GBR_PUB_1589
6.3.b

From: Stout, Joseph
Sent: Friday, September 26, 2014 6:57 AM
To: Leonard Gore
Subject: Fwd: GRSG NPT Compliance Maps - Great Basin
Attachments: GB_NPT_Compliance_Atlas.pdf

FYI

---------- Forwarded message ----------
From: **Quamen, Frank** <fquamen@blm.gov>
Date: Wed, Sep 24, 2014 at 5:35 PM
Subject: GRSG NPT Compliance Maps - Great Basin
To: Neil Kornze <nkornze@blm.gov>, Edwin Roberson <eroberso@blm.gov>, Kathryn Stangl <kstangl@blm.gov>, Matthew Magaletti <mmagalet@blm.gov>
Cc: Stephen Small <ssmall@blm.gov>, Roxanne Falise <rfalise@blm.gov>, Vicki Herren <vherren@blm.gov>, Joseph Stout <j2stout@blm.gov>, "Raby, Jon K" <jraby@blm.gov>

Hello Neil,
Attached is the Great Basin Region ADPP decision atlas depicting the decisions as either complying with the National Policy Team Guidance, or not complying. Due to e-mail size limits, I will have to e-mail Rocky Mountain Region separately. Please let me know if you would like any changes made.

Thanks,
Frank

--
Frank Quamen, PhD, Wildlife Biology
BLM National Operations Center
Denver Federal Center Building 40
303-236-6310

--
Joe Stout
Division Chief
Decision Support, Planning & NEPA
Bureau of Land Management
Washington DC
202-912-7275 (o)
202-658-8191 (c)

Great Basin Region

Greater Sage-grouse

National Policy Team Guidance

Administrative Draft Proposed Plan

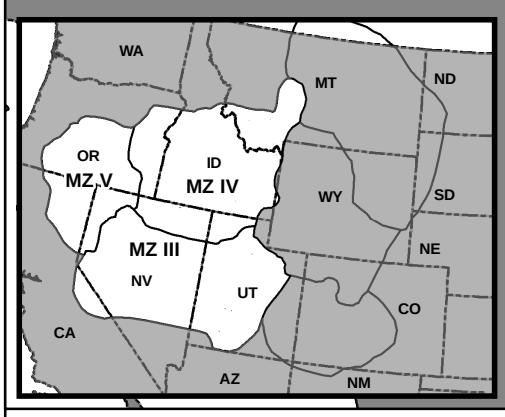
NPT Compliance Atlas

Map Guide:

Program/Decision Areas	Pages
Solar Energy	1,2
Wind Energy	3,4
Rights-of-Way	5,6
Fluid Mineral Leasing (Oil & Gas)	7,8
Non-energy Leasable Minerals	9,10
Salable Minerals (Mineral Materials)	11,12

Solar Energy and Greater Sage-Grouse Priority Areas for Conservation (PACs)

-ADPP-



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Legend

- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG PACs
- Non GRSG PACs
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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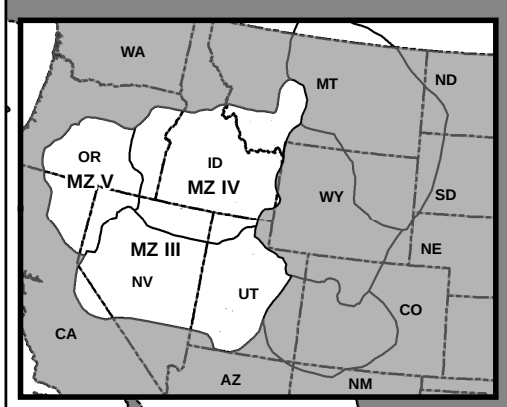

Solar Energy and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA and IHMA)

-ADPP-

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- Non-Compliant with National Policy Team Guidance
- GRSG PHMA
- GRSG GHMA
- Idaho GRSG IHMA
- Non PHMA, GHMA, or IHMA
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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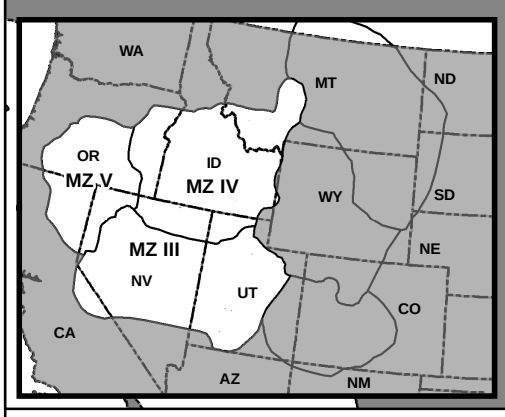
Wind Energy and Greater Sage-Grouse Priority Areas for Conservation (PACs) *-ADPP-*



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- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG PACs
- Non GRSG PACs
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
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Wind Energy and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA and IHMA)

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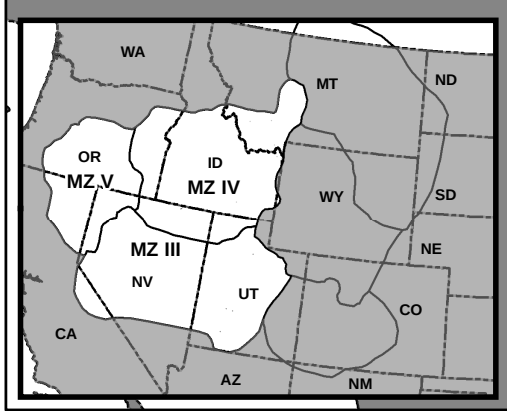

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- Non-Compliant with National Policy Team Guidance
- GRSG PHMA
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- Non PHMA, GHMA or IHMA
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
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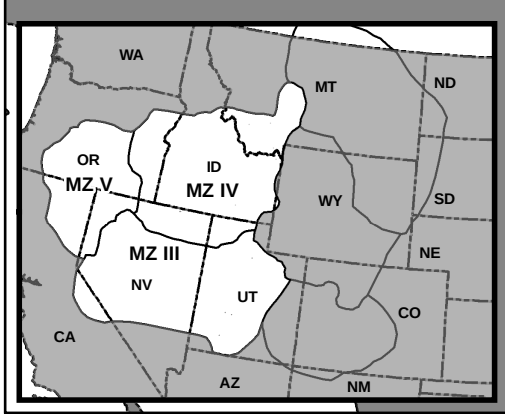
Rights-Of-Ways and Greater Sage-Grouse Priority Areas for Conservation (PACs) *-ADPP-*



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- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG PACs
- Non GRSG PACs
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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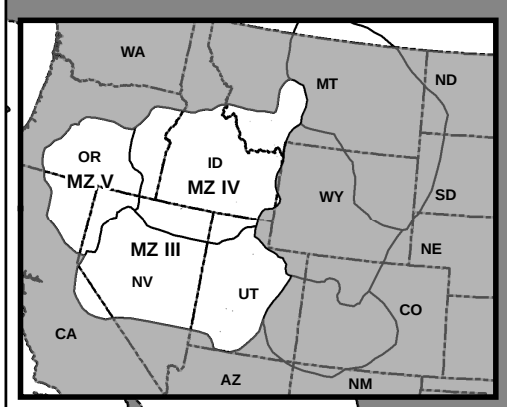

Rights-Of-Ways and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA and IHMA)

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- GRSG PHMA
- GRSG GHMA
- Idaho GRSG IHMA
- Non PHMA, GHMA, or IHMA
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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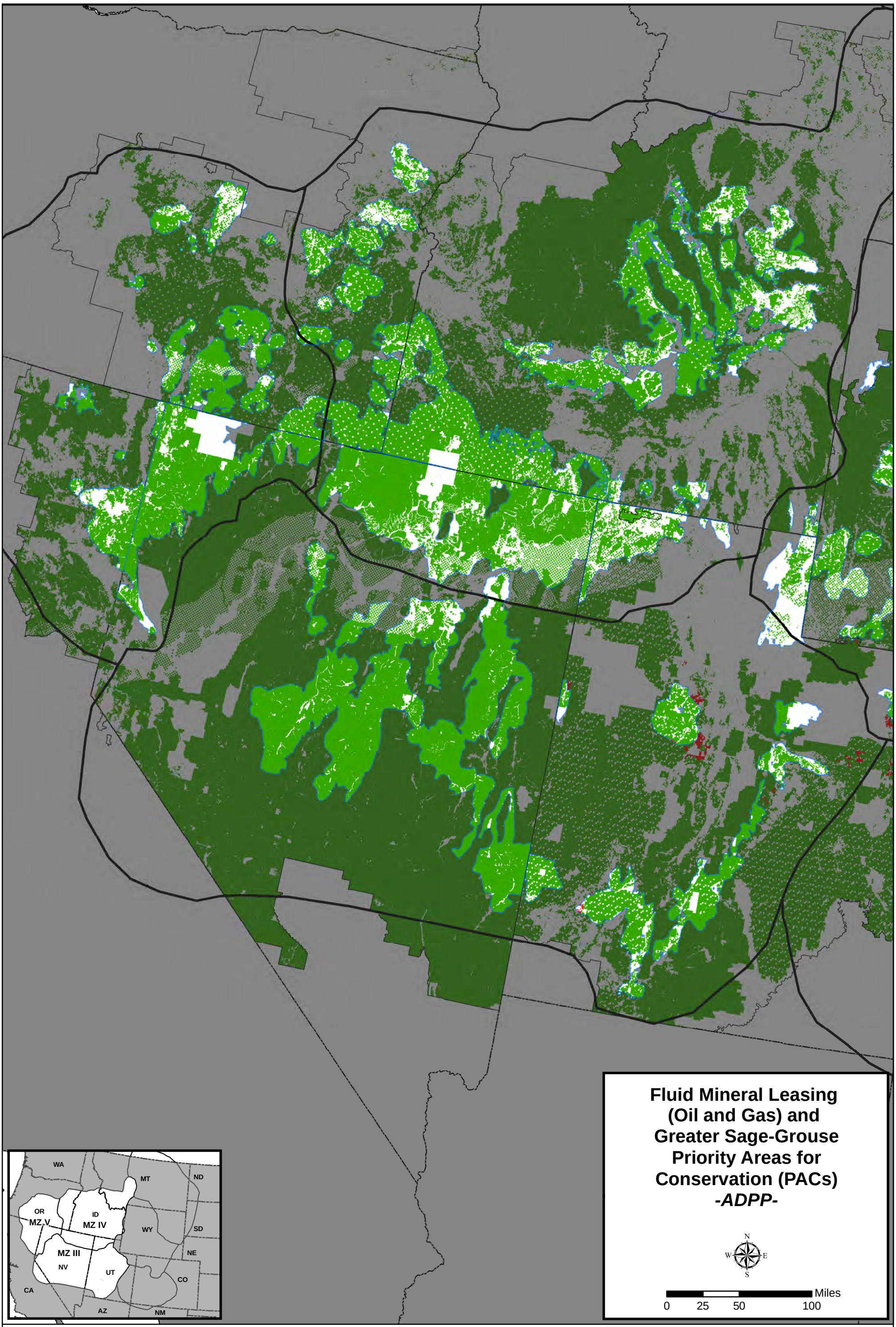
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Fluid Mineral Leasing (Oil and Gas) and Greater Sage-Grouse Priority Areas for Conservation (PACs)
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Non GRSG PACs
WAFWA Management Zones
EIS Boundaries
State Boundaries
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NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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Fluid Mineral Leasing (Oil and Gas) and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA, and IHMA)

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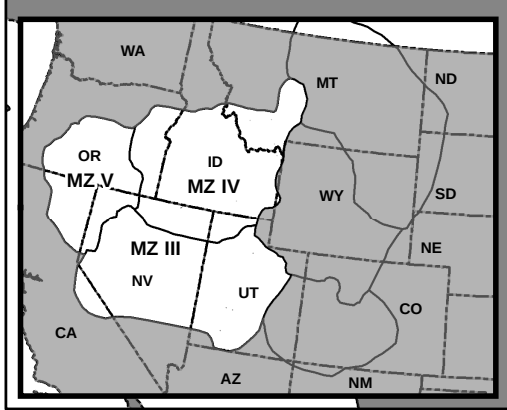

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- Non-Compliant with National Policy Team Guidance
- GRSG PHMA
- GRSG GHMA
- Idaho GRSG IHMA
- Non PHMA, GHMA, or IHMA
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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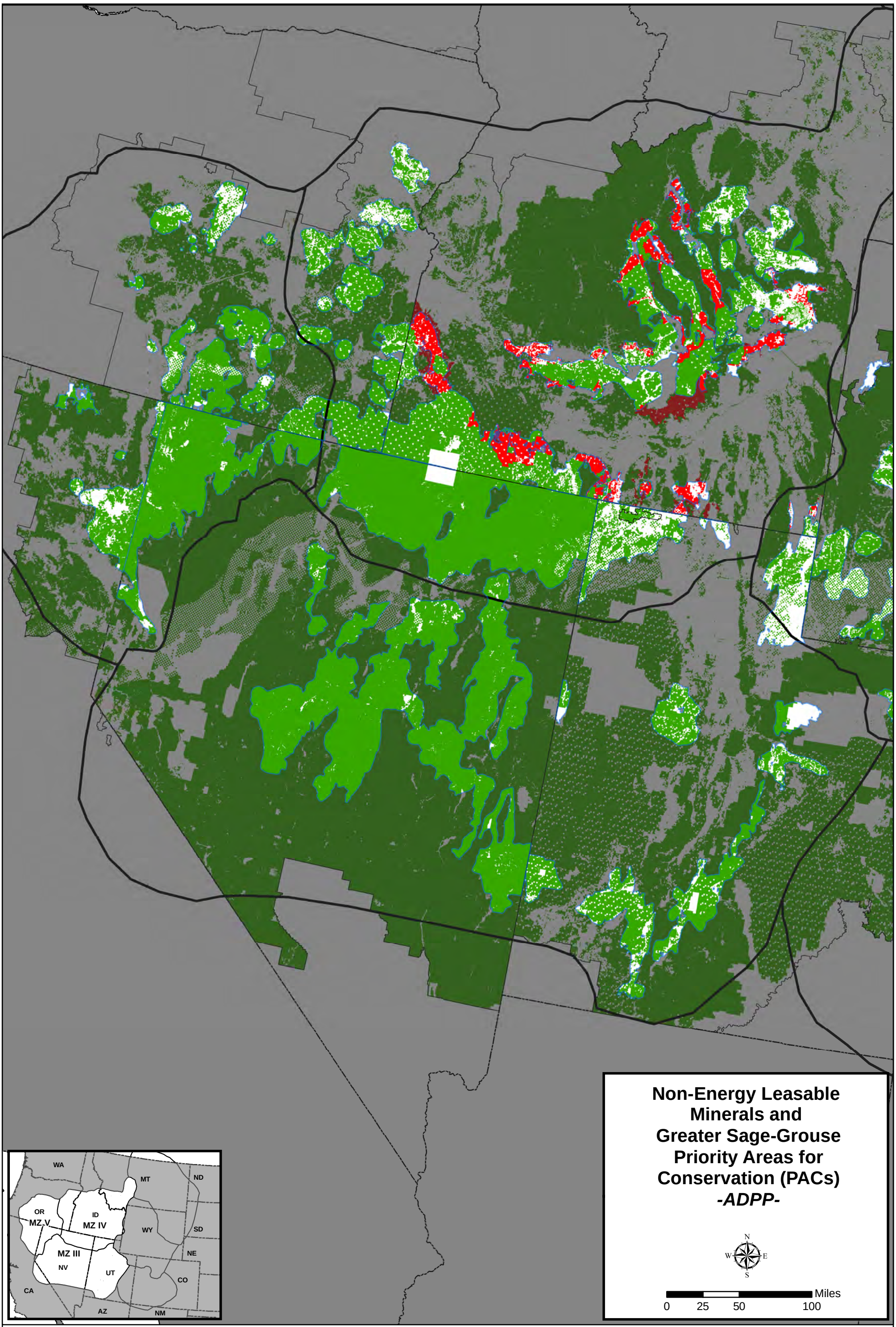

Non-Energy Leasable Minerals and Greater Sage-Grouse Priority Areas for Conservation (PACs) *-ADPP-*

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Legend

- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG PACs
- Non GRSG PACs
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
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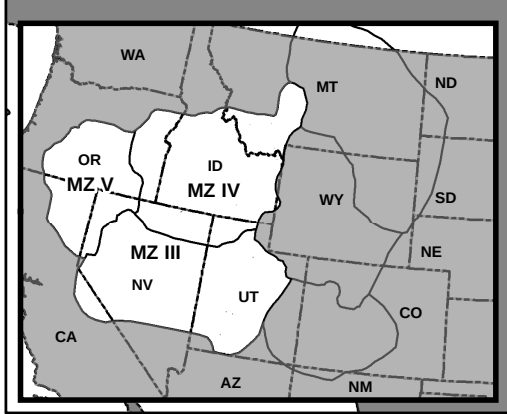
Non-Energy Leasable Minerals and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA and IHMA)
-ADPP-



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- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG GHMA
- GRSG PHMA
- Idaho GRSG IHMA
- Non PHMA, GHMA, or IHMA
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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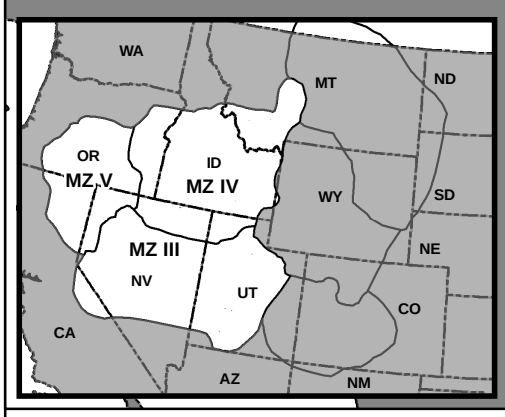
Salable - Mineral Materials Disposals and Greater Sage-Grouse Priority Areas for Conservation (PACs)
-ADPP-



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Legend

- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG PACs
- Non GRSG PACs
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
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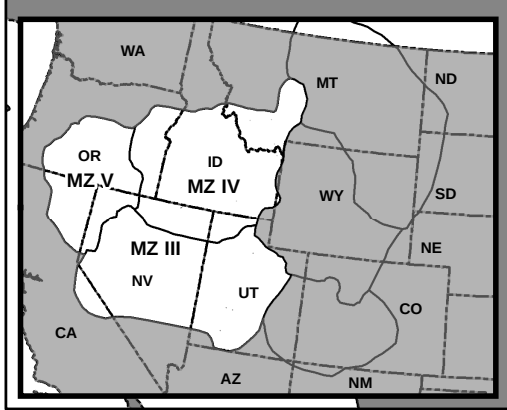
Salable - Mineral Materials Disposals and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA, and IHMA)

-ADPP-



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Legend

- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- GRSG PHMA
- GRSG GHMA
- Idaho GRSG IHMA
- Non PHMA, GHMA, or IHMA
- WAFWA Management Zones
- EIS Boundaries
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
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GBR_0009980

From: Magaletti, Matthew
Sent: Wednesday, October 29, 2014 9:34 AM
To: Joseph Stout
Subject: AM GB Comparison
Attachments: Great Basin Adaptive Management Strategies_10_29_14.docx

Hi Joe - Attached are the Great Basin AM approaches (summarized with soft and hard triggers and responses).

Thanks,

--
Matthew Magaletti
Planning and Environmental Analyst
Bureau of Land Management (WO-210)
(202) 912-7085

	Great Basin Adaptive Management Strategies			
	Soft Trigger	**Soft Trigger Response**	**Hard Trigger**	**Hard Trigger Response**
Nevada/ NE CA	**Population**: At the lek, lek cluster, and BSU scale -10% or more below the population trend over 3 years OR a >50% attendance decline within the first year immediately following a known disturbance. **Habitat:** At the lek cluster & BSU scale -disturbance exceeds 5% of any individual seasonal habitat component used by the local population OR in areas with 25-65% sagebrush cover, if there is a decline in sagebrush cover of 2%.	Determine the causal factor and adjust the activities within a given scale to ameliorate it.	**Population**: If soft trigger trend continues for 2 additional years (following the first 3 years). **Habitat:** At the lek cluster & BSU scale -disturbance exceeds 10% of any individual seasonal habitat component used by the local population OR 5% decline of sagebrush cover or if the disturbance reduces the landscape sagebrush cover below 30%.	Components of a more restrictive alternative.
Oregon	**Population:** When the 5-year running mean of GRSG population falls to 15% or lower in a Oregon PAC. **Habitat**: When the area with at least 5% sagebrush canopy cover and less than 5% tree canopy cover drops below 65% of the sagebrush capable area within an individual Oregon PAC but remains above 30%.	Interim responses (implementation level activities) to soft triggers will be put into place within one month of determining a soft trigger has been reached.	**Population:** In 1 year, the GRSG population falls to 20% in a Oregon PAC. **Habitat**: When the area with at least 5% sagebrush canopy cover and less than 5% tree canopy cover drops below 65% of the sagebrush capable area within an individual Oregon PAC but remains above 30%.	In fall of each year, BLM, ODFW, and FWS will conduct an annual review of population and habitat and the status of both determined. Within one month of determining a hard trigger has been reached, interim adaptive management responses within existing authorities will be implemented. Does not meet NPT.
Utah	**Population**: 4 years of 10% or greater annual decline in average males/lek, based on "trend leks"; or 6 years of declining average males/lek, based on "trend leks"; or 40% decline in any single year; or > 50% decline in a 4 year period; AND Lambda < 1 in 4 consecutive years, based on all leks in the population area. **Habitat**: 10% loss of nesting (3 mile buffer around occupied leks) or modeled wintering habitat, within a population area; OR, 5% loss of modeled essential winter habitat, within a population area; OR, 10% loss of total sage-grouse habitat within a population area; OR, any one fire that burns 5% of habitat.	If the BLM biologist determines the decline is caused by or contributed to discretionary actions, the BLM/FS would apply measures within their implementation-level discretion to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions.	**Population:** 4 years of 20% or greater annual decline in males per lek in each year, based on "trend leks"; or average males per lek, based on trend leks, drops 75% below the 10-year rolling average males per lek, in any given year; or Lambda < 1 in 6 of the last 6 years, based on all leks within the population area; or Lambda <1 in 8 of the last 10, based on all leks within the population area. **Habitat**: 20% loss of total suitable sage-grouse habitat within a population area; OR 20% loss of nesting (3 mile buffer around occupied leks) within a population area; OR 20% loss of modeled brood-rearing within a population area; OR 20% loss of modeled winter GRSG habitat within a population area; OR 20% loss of modeled essential GRSG winter habitat within a population area.	Hard Trigger Responses are hard-wired and identified in a matrix in the AM appendix. Utah does not adopt an entire alternative, but identifies specific management that would be applied in the event a trigger is hit. This has resulted in in the adoption of adapting to decisions from Alt B.
Idaho	**Population**: 10% decline in maximum number of males counted and a finite range of change below 1.0 but not significantly on a Core Habitat Zone over a period of 3 years. **Habitat**: 10% loss of nesting and wintering habitat in a Conservation Habitat Zone over a period of 3 years.	Implementation team (BLM, IDF&G, and USFWS) will assess the factors leading to the decline and will recommend to the BLM authorizing official of appropriate implementation responses.	**Population**: 20% decline in maximum number of males counted and a finite range of change below 1.0 but not significantly on a Core Habitat Zone over a period of 3 years. **Habitat**: 20% loss of nesting and wintering habitat in a Conservation Habitat Zone over a period of 3 years.	Within the Conservation Habitat Zone, Important Habitat would immediately be managed as Priority Habitat Management Areas.

From: Anthony Titolo
Sent: Friday, September 19, 2014 6:43 AM
To: Frank Quamen; Karla Mayne; Kathryn Stangl
Subject: RE: PDF map request
Attachments: RockyMountain_PAC_GHPH_Pop.pdf; GreatBasin_PAC_GHPH_Pop.pdf

Hello everyone,
Attached please find the PAC/PPH/PGH maps from the decision atlases.
Happy Friday,
Anthony

Anthony J. Titolo
Sanborn Onsite GIS Analyst
Wildlife Habitat Spatial Analysis Lab
Division of Resource Services
NOC/BLM/DOI
303-236-0446

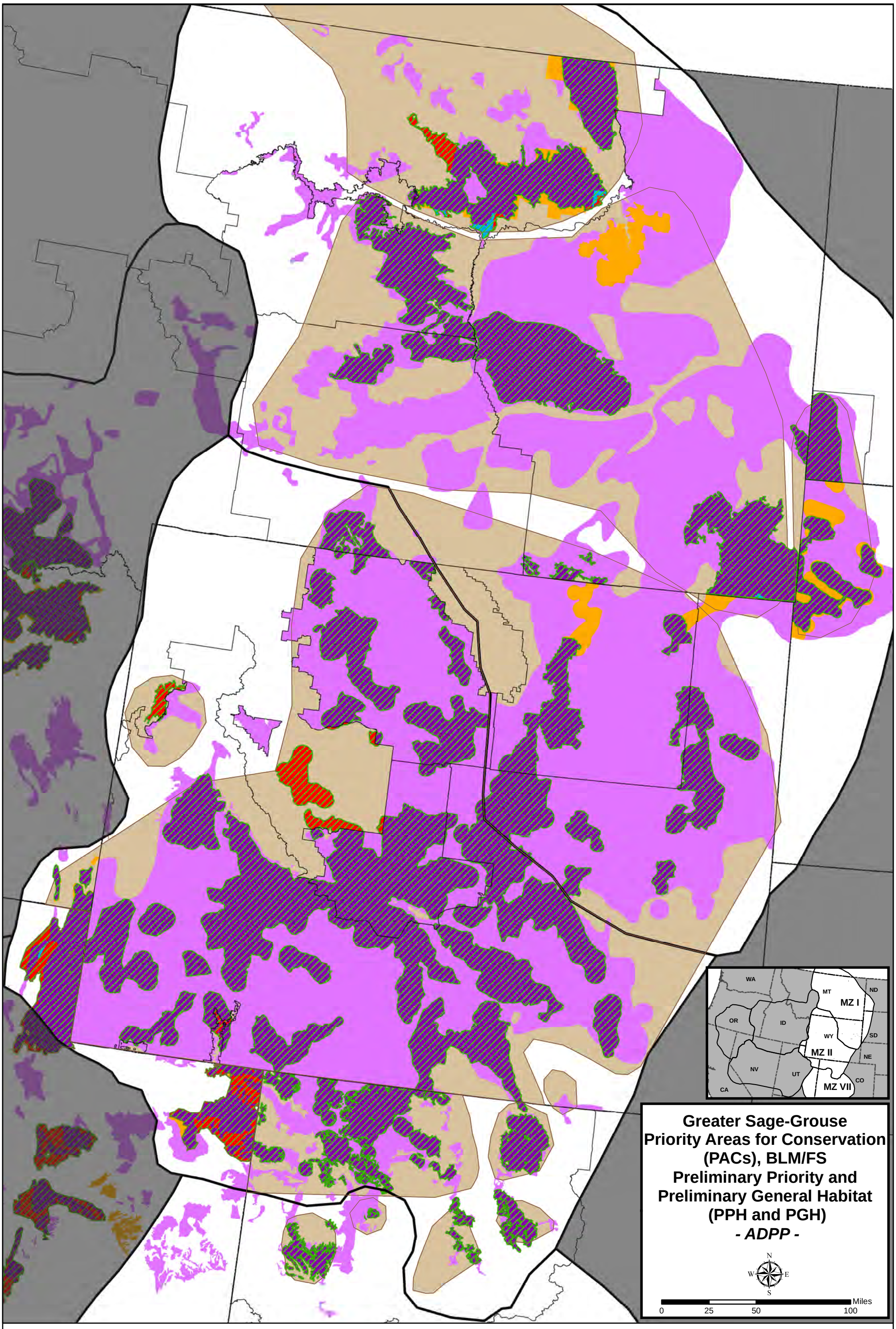
From: Quamen, Frank [mailto:fquamen@blm.gov]
Sent: Friday, September 19, 2014 7:25 AM
To: Anthony Titolo; Karla Mayne; Kathryn Stangl
Subject: PDF map request

Hi Anthony and Karla,
Hope you are doing well. Would you please email me the PDF maps from the decision atlases that show the PACs/PPH (page 2) for both Rocky Mountain and Great Basin?

Please reply all. Kathy would like these for a briefing.

Thank you!
Frank

--
Frank Quamen, Wildlife Biologist
BLM National Operations Center
Denver Federal Center Building 40
303-236-6310



Greater Sage-Grouse Priority Areas for Conservation (PACs), BLM/FS Preliminary Priority and Preliminary General Habitat (PPH and PGH)

- ADPP -

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Habitat Types
- PAC Only
- PAC and PPH
- PAC and PGH
- PPH Only
- PGH Only

- GRSG PACs
- GRSG Populations
- WAFWA Management Zones

- EIS Boundaries
- State Boundaries

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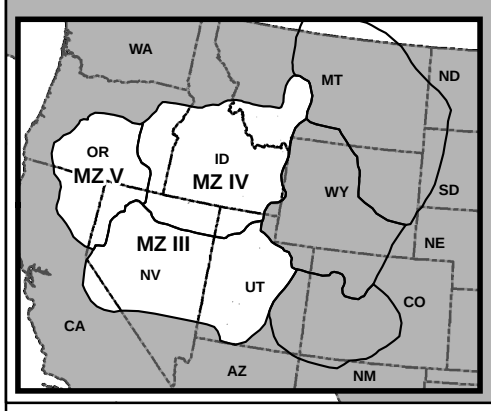
Greater Sage-Grouse Priority Areas for Conservation (PACs), BLM/FS Preliminary Priority and Preliminary General Habitat (PPH and PGH)

- ADPP -



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Habitat Types		
PAC Only	GRSG PACs	EIS Boundaries
PAC and PPH	GRSG Populations	State Boundaries
PAC and PGH	WAFWA Management Zones	
PPH Only		
PGH Only		

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

GBR_0010057

From: Quamen, Frank
Sent: Tuesday, September 30, 2014 5:18 PM
To: Kathryn Stangl; Matthew Magaletti
Cc: Vicki Herren; Anthony Titolo; Lauren Mermejo
Subject: ADPP NPT Compliance Atlases - Version 2 GB
Attachments: GreatBasin_ADPP_NPT_Compliance_Atlas_v2.pdf

--
Frank Quamen, Wildlife Biologist
BLM National Operations Center
Denver Federal Center Building 40
303-236-6310

Great Basin Region

Greater Sage-grouse

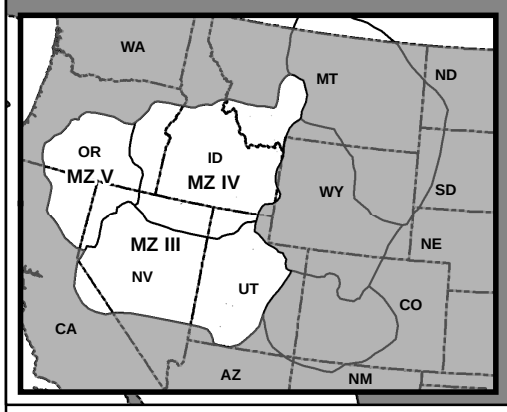
National Policy Team Guidance

Administrative Draft Proposed Plan

NPT Compliance Atlas

Map Guide:

Program/Decision Areas	Page
Solar Energy	1
Wind Energy	2
Rights-of-Way	3
Fluid Mineral Leasing (Oil & Gas)	4
Non-energy Leasable Minerals	5
Salable Minerals (Mineral Materials)	6



Solar Energy and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA and IHMA)

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- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- HMAs Outside of BLM/FS Management Jurisdiction and/or Threat Not Identified as an Issue for Analysis
- WAFWA Management Zones
- State Boundaries

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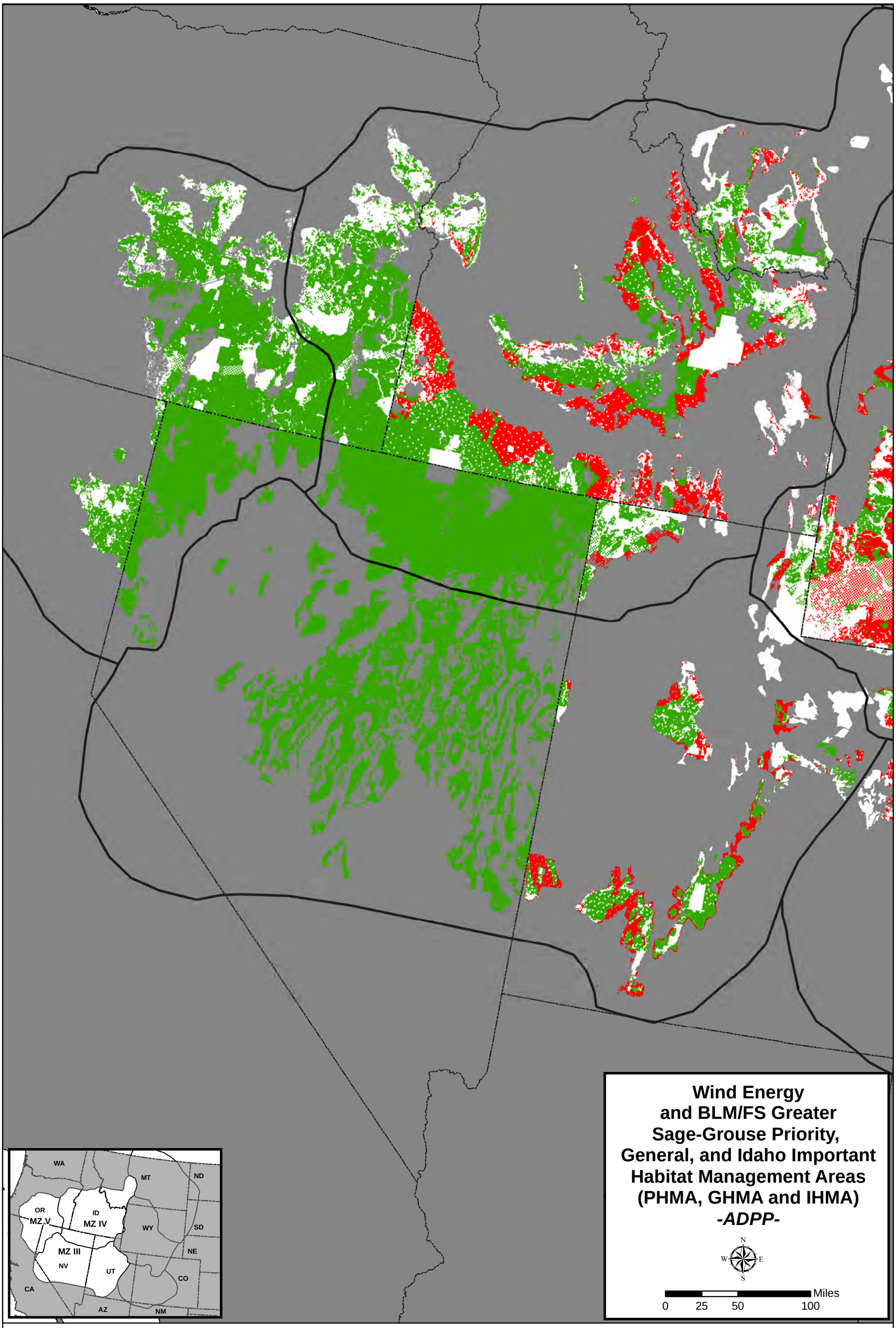
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General, and Idaho Important
Habitat Management Areas
(PHMA, GHMA and IHMA)
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Non-Compliant with National Policy Team Guidance
HMAs Outside of BLM/FS Management Jurisdiction
WAFWA Management Zones
State Boundaries
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NATIONAL SYSTEM OF PUBLIC LANDS
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BUREAU OF LAND MANAGEMENT

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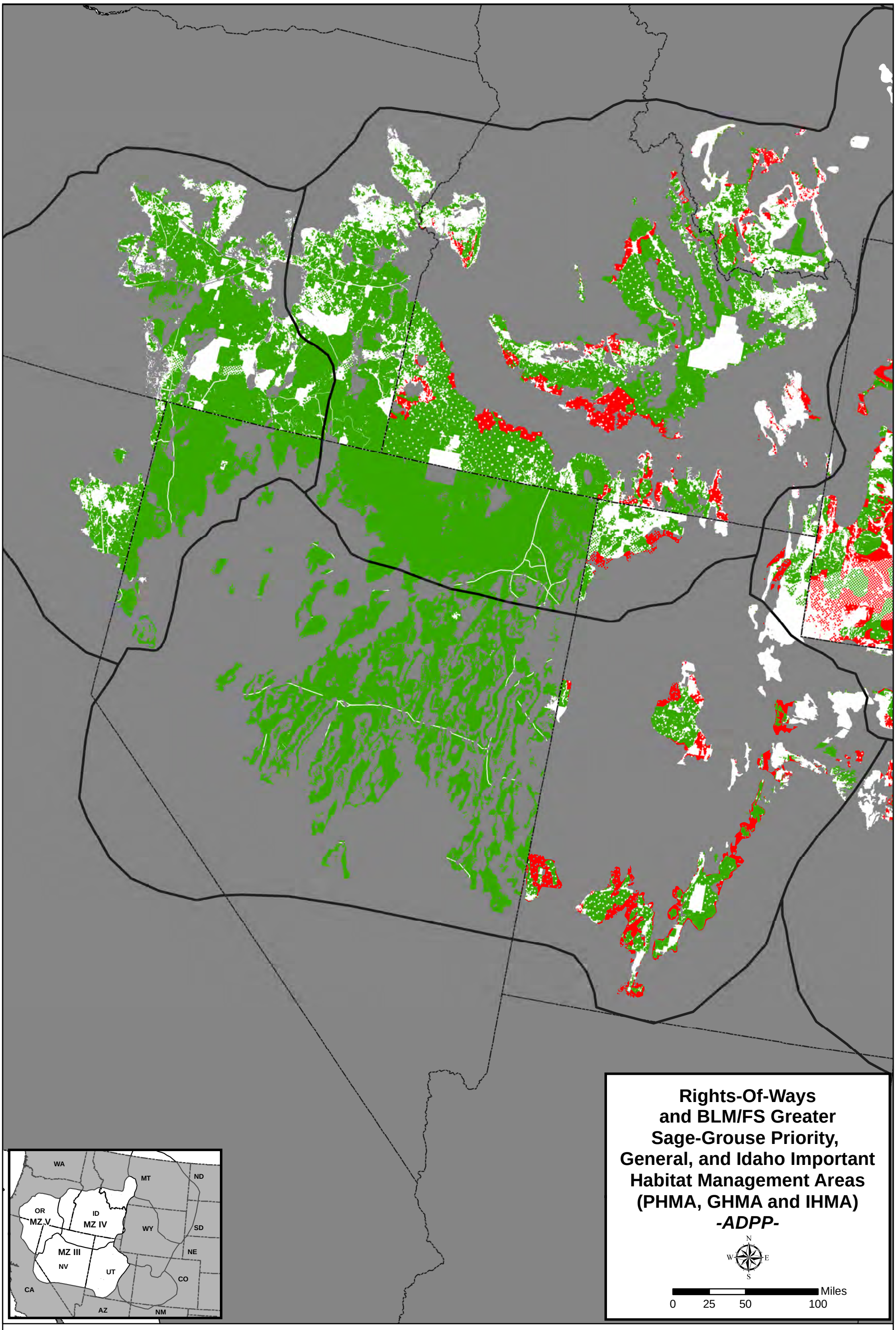
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Rights-Of-Ways
and BLM/FS Greater
Sage-Grouse Priority,
General, and Idaho Important
Habitat Management Areas
(PHMA, GHMA and IHMA)
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HMAs Outside of BLM/FS Management Jurisdiction
WAFWA Management Zones
State Boundaries
NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
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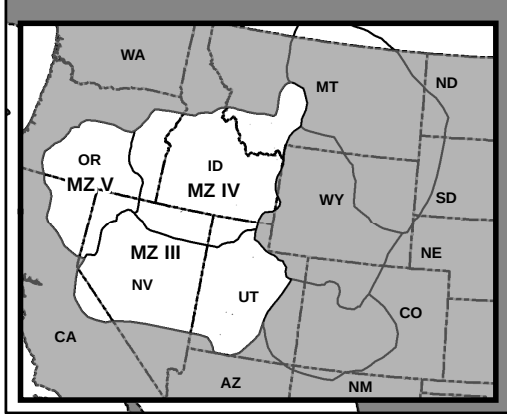
Fluid Mineral Leasing (Oil and Gas) and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA, and IHMA)

-ADPP-



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- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- HMAs Outside of BLM/FS Management Jurisdiction
- WAFWA Management Zones
- State Boundaries

NATIONAL SYSTEM OF PUBLIC LANDS
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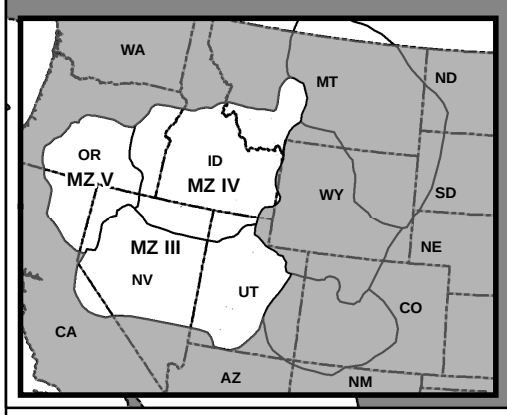
Non-Energy Leasable Minerals and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA and IHMA)

-ADPP-



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W E
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Legend

- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- HMAs Outside of BLM/FS Management Jurisdiction
- WAFWA Management Zones
- State Boundaries

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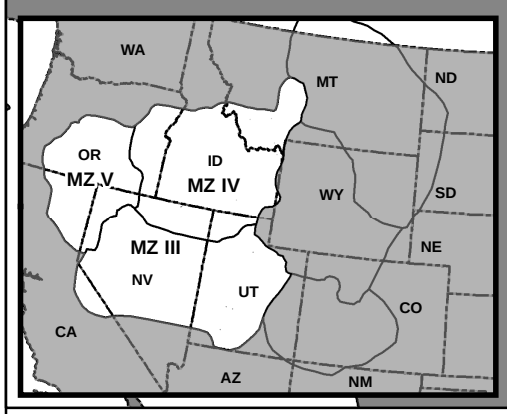
GBR_0010067

Salable - Mineral Materials Disposals and BLM/FS Greater Sage-Grouse Priority, General, and Idaho Important Habitat Management Areas (PHMA, GHMA, and IHMA)

-ADPP-



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Legend

- Compliant with National Policy Team Guidance
- Non-Compliant with National Policy Team Guidance
- HMAs Outside of BLM/FS Management Jurisdiction
- WAFWA Management Zones
- State Boundaries

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GBR_0010068

GBR_PUB_1591
6.4

From: Lyons, James
Sent: Monday, July 13, 2015 1:14 PM
To: Sarah Greenberger; Stephanie Carman; Sarah Shattuck; Matthew Magaletti; Brian Amme; Karen Kelleher
Subject: Draft revised ROD
Attachments: DRAFT ROD_Great Basin Region_v1_6.30.15.JRL_kk_JRL_CLEAN.docx

E copy of the draft we discussed earlier today.

As discussed, I will work with Matt and Sarah on revisions, with goal of a new draft by COB Thursday.

Hope that works for you Matt.

Jim

--

Jim Lyons
Deputy Assistant Secretary
Land and Minerals Management
Jim_Lyons@ios.doi.gov
202-208-4318 (direct)
202-815-4412 (mobile)

Internal Draft Document – Do Not Distribute

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana; Nevada and Northeastern California; Oregon; and Utah

Prepared by:

U.S. Department of Interior
Bureau of Land Management
Washington, DC

August 2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WO/XX/XX-XX+XXX

Cooperating Agencies

Great Basin Region-Wide

US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana

Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California

Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration
Washoe County
Washoe Tribe
White Pine County

Oregon

Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District US
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah

Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emory County
Garfield County
Grand County
Iron County
Kane County
Lincoln County
Miller County
Piute County
Rich County
San Pete County
Sevier County
State of Utah (PLPCO)
Sweetwater County
Sweetwater County Conservation District
Tooele County
Uinta County (UT and WY)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

[Insert BLM WO Letterhead]

In Reply Refer To:
In Reply, Refer to:
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). The ROD approves the four Great Basin Region ARMPAs, which are part of fifteen other sub-regional RMP Amendments and RMP revisions associated with the National Greater Sage-Grouse Planning Strategy that was initiated on December 11, 2011.

Commented [KK1]: 17?

The Bureau of Land Management (BLM) ARMPAs provide a range wide, comprehensive, science-based, collaborative strategy for addressing previously identified threats to the Greater Sage-Grouse (GRSG). This strategy, designed to address issues leading to the 2010 "warranted but precluded" decision by the U.S. Fish and Wildlife Service (FWS), was guided by over a decade of research, analysis and recommendations for GRSG conservation produced by the Conservation Objectives Team (COT), Western Association of Fish and Wildlife Agencies (WAFWA), and the BLM National Technical Team (NTT). Each of these reports was developed by a collaborative effort of state and federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, the U.S. Forest Service, and state and local partners were fundamental during the development of the land use plan decisions within these ARMPAs to address the identified threats to GRSG.

It is important to note that this ROD and these ARMPAs are specific only to BLM-administered lands. Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft EISs and Final EISs included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

The Federal Land Policy Management Act (FLPMA) requires the development and maintenance, and, as appropriate, the revision of land use plans for public lands. The National Environmental Policy Act (NEPA) requires Federal agencies to prepare an Environmental Impact Statement (EIS) for major Federal actions that could significantly affect the environment. In fulfillment of these requirements, the Draft RMP Amendments/Draft EISs, incorporating analysis and input provided by the public; local, State, and

other Federal agencies and organizations; Native American tribes; Cooperating Agencies, and BLM personnel were published in the fall of 2013. The 90-day public comment periods ensued, with more than 4,990 substantive comments from 1,348 letters that were submitted. These comments were reviewed, summarized and considered in preparing the Proposed RMP Amendments/Final EISs.

Commented [KK2]: Great basin only?

The Proposed RMP Amendments/Final EISs were made available on May 29, 2015, for a 30-day protest period. X protest letters were received, of which X were valid protests in need of resolution. Protest issues are addressed and resolved in the Protest Summary Report, available on line at: http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html.

After much consideration, the BLM now approves the RMP Amendments as the land use planning documents that will guide GRSG habitat management in the Great Basin Region for the life of the plan amendment.

Copies of the ROD and ARMPAs can be obtained from the BLM's National GRSG webpage at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the extensive public involvement and the involvement of groups, organizations, Cooperating Agencies; local, State, and other Federal agencies; and Native American tribal representatives who contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented and monitored for the conservation of GRSG and their habitat.

Sincerely,
X

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

Summary

This Record of Decision (ROD) is the culmination of an unprecedented effort in public land management to meet the multiple-use and sustained-yield management objectives for public lands administered by the Bureau of Land Management (BLM) in accordance with the Federal Land Policy and Management Act of 1976 (FLPMA).

In response to a 2010 determination by the U.S. Fish and Wildlife Service (FWS) that the greater sage-grouse listing under the Endangered Species Act (ESA) is "warranted but precluded" by other priorities, the BLM, in coordination with the U.S. Department of Agriculture Forest Service (Forest Service) has developed a targeted, multi-tiered, landscape-level management approach, based on the best available science, that offers the highest level of protection for Greater Sage-Grouse (GRSG) in the most important habitat areas to address the specific threats identified in the 2010 U.S. Fish and Wildlife "warranted but precluded" decision and Conservation Objectives Team (COT) report.

This Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon; and Utah includes land use allocations in the ARMPAs that limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMA), while minimizing disturbance in General Habitat Management Areas (GHMA). In addition to establishing protective land use allocations, the ARMPAs implement a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, as well as other conservation measures throughout the range. The cumulative effect of these conservation measures work in concert to protect, improve, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

Commented [JRL3]: The are not tools, but management actions to be implemented by the plans. DDCT is a tool, but establishing disturbance limits is a management action

Commented [JRL4]: This is the suite of actions facilitated by the plans

Commented [JRL5]: Certainty is better than "consistency" as that has become a "trigger" for negative response

Commented [JRL6]: Tie to ultimate goal and to benefit to other species and the ecosystem overall.

In conjunction with the management actions for GRSG included in the ROD and ARMPAs and ARMPRs for the Rocky Mountain GRSG subregion, this ROD and ARMPAs for the Great Basin subregion provides management direction to protect and restore habitat essential to the conservation of the GRSG across its remaining range. This conservation strategy, developed in collaboration with the 11 states in which the ARMPAs and ARMPRs apply, in addition to other state and federal actions underway and in development, represents an unprecedented, collaborative effort among federal land management agencies and the states to manage an entire ecosystem and associated flora and fauna, in order to "conserve the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future". [Dan Ashe. Transmittal letter to COT report. 2014]

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List of Tables

[Develop once there is a final draft]

List of Figures

[Develop once there is a final draft]

List of Acronyms

[Develop once there is a final draft]

1. INTRODUCTION

This Record of Decision (ROD) approves the Bureau of Land Management's (BLM) attached approved Resource Management Plans (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.) as amended and other applicable laws. The BLM prepared environmental impact statements (EISs) in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA), and BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1601 et seq.).

Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All four of these Draft EISs and Final EISs and associated Land Use Plans included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

Commented [KK7]: Either ROD & BLM carry from the dear readers letter or all acronyms need to be redefined here.

1.1 Great Basin Region Planning Area

The Great Basin Region is composed of four sub-regions, the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah sub-regions (see **Figure X** – Great Basin Region Greater Sage-Grouse Sub-regions). Four separate National Environmental Policy Act (NEPA) analyses were conducted, one for each sub-region. These sub-regional boundaries were developed considering the identified threats to the GRSG and the Western Association of Fish and Wildlife Agencies (WAFWA) Management Zones. Seven WAFWA Management Zones across the west were delineated in the *WAWFA 2006 Greater Sage-Grouse Comprehensive Strategy.* These large polygons were based on similar sage-grouse populations and sub-populations identified within seven floristic provinces.

Commented [JRL8]: Not surer why this is here? Unless we reference management decisions linked to the WAFWA zones, really not needed.

The Great Basin Region planning area boundaries include all lands regardless of jurisdiction (see **Figure X** - Great Basin Region Planning Area - Greater Sage-Grouse Habitat Management Areas). **Table X** outlines the amount of surface acres that are administered by specific Federal agencies, states, local governments, and lands that are privately owned in the four sub regions that make up the Great Basin. The planning area includes other BLM-administered lands that are not allocated as habitat management areas for GRSG. The ARMPAs do not establish any additional management for these lands; these lands will continue to be managed according to the existing land use plan for the areas.

Commented [KK9]: does this statement imply that we cannot make adjustments via maintenance action to the habitat boundaries? - since we very explicitly say that anything that is not inside of a habitat management area is not part of this decision making.

The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure X** - Great Basin Region Decision Area - Greater Sage-Grouse Habitat Management Areas), including surface and split-estate lands with BLM subsurface mineral rights. Any decisions in the Great Basin Region ARMPAs apply only to BLM-administered lands, including split-estate lands within GRSG habitat management areas (the decision area). These decisions are limited to providing land use planning direction specific to conserving GRSG and its habitat.

Table X
Land Management in the Great Basin Planning Area

Surface Land Management	NV/NE CA	ID/SW MT	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,975,500**
USFWS	805,900	121,900	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,200**	**48,209,900**	**31,656,300**	**194,208,300**

Source: BLM GIS 2015

1.2 THREATS TO GREATER SAGE-GROUSE

Currently, GRSG occupy an area that has been estimated to be a reduction of 44% from the historically occupied range. In addition, populations in most or all the range have been demonstrated to have declined from 1965- 2003, the period where data was collected most intensively.

The decline of the GRSG and its sagebrush-steppe habitat has been the focus of fish and wildlife agency and conservationists' concerns for decades. In 1994 the Western Association of Fish and Wildlife Agencies (WAFWA) formed a technical committee to monitor the distribution and abundance of GRSG. WAFWA formalized a program of interstate coordination and cooperation in 1995 to address the issues of GRSG population losses and degradation of sagebrush ecosystems in order to: 1) Maintain the present distribution of GRSG and 2) Maintain the present abundance of GRSG. In 1999 WAFWA amended the objectives to: 1) Maintain and increase where possible the present distribution of GRSG and 2) Maintain and increase where possible the present abundance of GRSG. The Bureau of Land Management, USFWS, and U.S. Forest Service formally joined with WAFWA in range-wide conservation efforts in 2000.

Between May 1999 and December 2003, eight petitions were filed with the U.S. Fish and Wildlife Service (USFWS) to have sage-grouse protected under provisions of the Endangered Species Act (ESA). In 2001 the USFWS determined that greater sage-grouse in the Columbia Basin of Washington state warranted protection under provisions of the ESA. On January 12, 2005, the FWS issued a decision that listing the GRSG for protection under the ESA was not warranted. However, in response to July 14, 2006 Western Watersheds Project filing alleging that the FWS 2005 finding was incorrect and arbitrary, the U.S. District Court of Idaho ruled that the 2005 finding was "arbitrary and capricious" and remanded it to the FWS for further consideration. Ultimately, as a result, in 2010 the FWS issued a finding that listing of the Greater sage-grouse was "warranted but precluded". Subsequent to that finding, and in accordance with a settlement agreement [details?] the FWS committed to make a final determination regarding the need to list the GRSG by September 30, 2015. Two factors led to the FWS decision to list the species as "warranted but precluded": threats to habitat and the inadequacy of existing regulatory mechanisms.

Primary threats affecting GRSG habitat on Forest Service and BLM-administered lands include infrastructure (power lines, communication towers, fences, roads, and railroads), and energy development (traditional oil and gas, mining, renewable energy, transmission corridors) within WAFWA GRSG Management Zone I, II and VII; and Fire, Invasive Weeds, and Pinyon-Juniper Encroachment within WAFWA GRSG Management Zone III, IV, V and VI. Improper grazing (livestock and wild horse) and climate change may be a threat across all management zones, and all threats exist to some degree across the range of the species. *Differences in ecological conditions within each MZ affect the susceptibility of these areas to the various threats facing sagebrush ecosystems and its potential for restoration. (FWS FRN 2010).* (See reference to WAFWA Management Zones (MZ) below.)

Commented [KK10]: THIS MIGHT NOW BE ABOVE

OR…

The Great Basin Region consists of WAFWA Management Zones III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin). The USFWS has identified a number of threats in this region, focusing on the present and widespread threats of wildfire and the loss of native habitat to invasive species. Other threats, some of which are more localized by nature, include habitat fragmentation due to anthropogenic disturbances associated with energy development, mining, infrastructure, recreation, urbanization and sagebrush elimination, as well as disturbance associated with free-roaming equids and improper livestock grazing.

Commented [JRL11]: Ditto

Commented [KK12]: changed from many to some because there are a lot of "Y" for some of these items - see threats table

Additional information regarding potential threats to the GRSG is contained in the BLM National Technical Team (NTT) report and the Conservation Objectives Team (COT) reports. A summary of the nature and extent of threats identified by the COT for each remaining identified population of GRSG – as articulated in the COT report – is summarized in Table A.

In addition, the Service found that existing local, state and federal regulatory mechanisms were not sufficient to address threats to the habitat. For the BLM and the Forest Service, which manage more than 50 percent of the remaining habitat rangewide, regulatory mechanisms are the agencies' Resource Management Plans (RMPs) and Land and Resource Management Plans, respectively.

The BLM and Forest Service initiated this planning effort to provide the needed federal regulatory mechanisms to address the individual threats listed in Table X. This Record of Decision (ROD) approves the Bureau of Land Management's (BLM) attached ARMPAs for the Great Basin Region GRSG Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM- administered lands. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.) and other applicable laws. The BLM prepared EISs in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA), and BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1601 et seq.).

Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft EISs and Final EISs included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and associated Land and Resource Management Plans (LRMPs) under their planning authorities.

Commented [JRL13]: REDUNDANT

Table A. Threats to GRSG in the Great Basin Region (Utah) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (UT)	9b				Y	Y	Y	Y		Y			Y	Y	Utah
Uintah (UT)	9c				Y	Y	Y	L	Y	Y			Y	Y	Utah
Strawberry Valley (UT)	10a	Y			Y	Y	Y	Y		Y			Y		Utah
Carbon (UT)	10b	Y			Y		Y	Y	Y	Y			Y		Utah
Sheeprock Mountains (UT)	11	Y			Y	L	L	Y	Y	L		Y	L		Utah
Emery (UT)	12	Y			Y	Y	Y	Y	Y	Y			Y		Utah
Greater Parker Mountain (UT)	13a				Y	Y	Y			Y			Y		Utah
Panguitch (UT)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	Utah
Bald Hills (UT)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Utah
Ibapah (UT)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		Utah
Hamlin Valley (UT)	15b	Y			Y	Y	Y			Y		Y	Y		Utah
Box Elder (UT)	26b			Y	Y	Y	Y	L	Y	Y			Y		Utah

Table A. (cont.) Threats to GRSG in the Great Basin Region (OR, CA, NV, ID, SWMT) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan(s)
N. Great Basin (OR, ID, NV)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	ID/SW MT, OR, NV/CA
Baker (OR)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	OR
Central Oregon (OR)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	OR
W. Great Basin (OR, CA, NV)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		OR, NV/CA
Klamath (CA)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	NV/CA
Northwest Interior (NV)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		NV/CA
Southern Great Basin (NV)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		NV/CA
Quinn Canyon Range (NV)	16	Y			Y	Y	Y			Y	Y	Y	Y		NV/CA
Warm Springs Valley (NV)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	NV/CA
East Central (ID)	18	Y	L	Y	L	Y	L	Y		Y	Y		L		ID/SW MT
Snake-Salmon-Beaverhead (ID)	23		L	L	Y	L	Y	Y		L	Y	Y	L		ID/SW MT
Weiser (ID)	25	Y	L	L	L	L	Y	Y		L	Y		L	L	ID/SW MT
Sawtooth (ID)	27	Y	L		L	U	L			Y	Y		L		ID/SW MT
Southwest Montana (MT)	19-22		L		L	L	Y	L	L	L	Y		L	L	ID/SW MT

1.3 Early GRSG Conservation

Commented [KK14]: This section is all background things that happened before the plans started. It isn't the national GRSG planning strategy

The BLM and the Forest Service collectively manage the majority of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State Distinct Population Segments) addressed in this planning effort. Efforts to conserve the habitat of this species did not begin with the 2011 BLM/Forest Service Planning Strategy, but rather, have been ongoing for many years.

The Western Association of Fish and Wildlife Agencies (WAFWA) 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, contributed to by the BLM and the Forest Service, was to present an unbiased and scientific documentation of dominant issues and their effects on GRSG populations and sagebrush habitats. http://sagemap.wr.usgs.gov/docs/Greater_Sage-grouse_Conservation_Assessment_060404.pdf

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the U.S. Fish and Wildlife Service (FWS), the Forest Service, the U.S. Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy*, with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the Strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The Strategy outlined the critical need to develop the associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats upon which they depend. The catalyst for this effort was widespread concern for declining populations and reduced distribution of GRSG. The WAFWA Sage-Grouse Management Zones were delineated in this Strategy. http://www.wafwa.org/documents/pdf/GreaterSage-grouseConservationStrategy2006.pdf

Commented [JRL15]: Link later if decide to use WAFWA zones to frame strategy

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation as well as summarizing BLM's ongoing conservation efforts. A product of this effort was one of the first range-wide priority habitat maps for GRSG that were referred to as "key habitat". At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression efforts in GRSG habitat on BLM lands. An additional outcome of this team was the signing of a Memorandum of Understanding by the WAFWA; the BLM, FWS, USGS in the Department of the Interior; and the US Department of Agriculture Forest Service and NRCS, to provide for cooperation among the participating state and federal land managers and wildlife management and science agencies in the conservation and management of GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the Western United States and Canada. http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/fwp.Par.95958.File.dat/SagegrouseMOU.pdf

In 2010, BLM commissioned an effort to map breeding densities of GRSG across the West. A conference was convened with the state wildlife agencies to get approval and to coordinate the lek survey data needed for this effort. This modelling project, through an agreement with the FWS, mapped known active leks across the West. This model served as a standard starting point for all states to identify priority habitat.

http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/bird_density.print.html

In March 2010, the US Fish and Wildlife Service (USFWS) published their 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 Federal Register 13910, March 23, 2010). In that finding, the USFWS concluded that GRSG was "warranted, but precluded" for listing as a threatened or endangered species. A warranted, but precluded determination is one of three results that may occur after a petition is filed by the public to list a species under the Endangered Species Act (ESA). This finding indicates that immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

The USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 Federal Register 13910, March 23, 2010). The USFWS identified the principal regulatory mechanisms for the BLM and Forest Service as conservation measures in land use plans.

1.4 National Greater Sage Grouse Planning Strategy

Based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a listing decision on this species, the BLM recognized the need to incorporate explicit objectives and adequate conservation measures into RMPs by 2015 to conserve GRSG habitat and avoid the need to list the species under the Endangered Species Act. In August, 2011, the BLM chartered a planning strategy to evaluate the adequacy of BLM RMPs and address revisions and amendments throughout the range of the GRSG (with the exception of the bi-state population in California and Nevada, and the Washington state distinct population segment, which were addressed through other planning efforts). This Charter established the teams, team membership, and team operating procedures for the BLM's National GRSG Planning Strategy. The BLM's objective for chartering this planning strategy effort was to develop new or revised regulatory mechanisms through RMPs to conserve and restore the GRSG and its habitat on BLM-administered lands on a range-wide basis for the long-term (Figure C).
http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/sage-grouse_planning/documents.Par.2415.File.dat/Final%20Signed%20GSG%20Planning%20Strategy%20Charter.pdf

[Insert Figure C here.]

Two national teams, and numerous other studies were used to help inform the planning efforts. The GRSG National Technical Team (NTT), comprised of BLM, FWS, USGS, NRCS, and State specialists, completed A Report on National Greater Sage-Grouse Conservation Measures in December, 2011. The

Commented [JRL16]: The COT had not been published prior to completion of the draft EISs.

Commented [JRL17]: Forest Service was not a part of the NTT.

charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable sage-grouse populations, and which focused on the threats in the FWS listing action (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones. The NTT Report proposed conservation measures based on habitat requirements and other life history aspects of sage-grouse and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

In 2012, FWS convened the Conservation Objectives Team (COT) of state and federal representatives to produce a peer-reviewed report which identified the principal threats to GRSG survival -- based upon the FWS 2010 listing decision -- and the degree to which these threats need to be reduced or ameliorated to conserve the GRSG so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. (See Figure A and Table A.) The COT report also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf

Additional science-based reviews by the US Geological Survey and related scientific literature provided further guidance on specific issues that arose in developing the ARMPAs.

To adequately address the reasons for the 2010 "warranted" determination by the FWS – and specific threats summarized in the COT report -- it was clear to BLM and Forest Service land and resource managers that additional regulatory measures on federal public lands would be necessary to deal with present or threatened destruction, modification, or curtailment of habitat or range. These measures would need to be incorporated into land use plans that guide management actions on lands within the remaining range of the GRSG administered by the agencies to conserve GRSG such that listing under the ESA was no longer necessary.

In December 2011, the BLM and the Forest Service published a Notice of Intent to prepare Environmental Impact Statements and Supplemental Environmental Impact Statements to incorporate GRSG Conservation Measures into Land Use Plans (LUPs) across the range of the species. A total of 15 subregional LUPs would amend or revise 78 BLM RMPs and 20 Forest LRMPs across the range of the species.

The federal public land conservation strategy reflects several key concepts:

- **Landscape-level**: The planning effort focuses on the remaining habitat of the GRSG on BLM and Forest Service lands, covering 10 western states in the Great Basin and Rocky Mountain regions.
- **Best Available Science** – The proposed LUPs are grounded in the best available science, drawn from published literature and input from recognized experts, state agencies, the US Geological Survey, the FWS and other sources. The COT report provided a "blueprint" for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat and the NTT report, prepared by the BLM, provided options for dealing with the most significant threats to the GRSG. A series of reports on how to improve efforts to reduce the threats of rangeland fire and invasive species prepared in collaboration with the Western

Commented [JRL18]: SUGGEST INCLUSION OF FIGURE ILLUSTRATING WAFWA ZONES.

Commented [JRL19]: Was not a recommendation

Commented [JRL20]: Suggest including table with list of threats from COT report.

Association of Fish and Wildlife Agencies also provided crucial guidance in formulating the conservation strategy.

- **Targeted, Multi-Tiered Approach** – The proposed LUPs were designed to incorporate a layered management approach to avoid or minimize additional surface disturbance in the most valuable habitat, known as Priority Habitat Management Areas (PHMA), which are largely consistent with PACs identified in the COT Report. Within PHMA, the proposed LUPs provide an added level of protection to limit or eliminate new surface disturbance through the delineation of Sagebrush Focal Areas (SFA), derived from areas identified by the FWS as "strongholds" essential for the species' survival. In General Habitat Management Areas (GHMA), the proposed LUPs seek to minimize disturbance while providing greater flexibility for land use activities.
- **Coordinated**: The BLM and Forest Service proposed LUPs were developed through a joint planning process led by the BLM with the Forest Service as partners. The USFWS provided guidance and input throughout the process to aid land managers in understanding the threats and the certainty and effectiveness of proposed land management actions in addressing those threats. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative**: The proposed LUPs reflected the input of states and local stakeholders from the outset and were developed with the benefit of input from the individual states and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Sage Grouse Task Force (SGTF) was particularly useful in facilitating this kind of collaborative input. The proposed LUPs reflect state and stakeholder developed approaches and economic priorities where consistent with conservation objectives.

The BLM adopted unique state and stakeholder developed approaches and priorities within the ARMPAs. In 2011, then Secretary of the Interior Ken Salazar sent letters to each of the sage-grouse state governors asking for a report and recommendations on how to best move forward with a multi-state conservation sage-grouse plan. Most states across the range provided recommendations for the management of the BLM lands in their state to conserve GRSG. In all cases, this input was incorporated into the range of alternatives analyzed in the Final EISs. Components of these state recommendations were used to develop the ARMPAs.

Commented [JRL21]: Is this correct? Haven't seen this letter.

Commented [JRL22]: Confusing to refer to state recommendations for managing BLM land in a state as "state plans". Suggest this alternative. Most readers would think of state plans as state plans to manage lands within their jurisdiction.

In addition, the Western Governors Association Sage Grouse Task Force was established in 2011 to identify and recommend state and federal conservation actions necessary to preclude the need for the GRSG to be listed under the ESA. This group, which includes designees from the 11 western states where GRSG is found as well as representatives from USFWS, BLM, Natural Resources Conservation Service, US Forest Service, US Geological Survey, and the Department of the Interior, played an integral role throughout this land use planning process.

Commented [JRL23]: SGTF did not implement

1.5 Addressing Threats to the Greater Sage-Grouse

The 2006 WAFWA *Greater Sage Grouse Comprehensive Conservation Strategy* stated goal for management of the GRSG was to "maintain and enhance populations and distribution of GRSG by

protecting and improving sagebrush habitats and ecosystems that sustain these populations".[1] The NTT report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed"[2] And, in establishing the COT, with the backing of the SGTF, FWS Director Dan Ashe affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report -- reversing negative population trends and achieving a neutral or positive population trend -- and emphasized the following,

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels."

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". To achieve this, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT emphasized an "avoidance first strategy" and stressed that threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

The four Great Basin ARMPAs addressed by this ROD and the 13 ARMPAs/ARMPs in the Rocky Mountain Region subregion were developed to remove or reduce identified threats to the species and are an essential component of the effort to conserve GRSG and avoid a listing of the species under ESA. Across ten western States, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain updated land use plan direction on approximately 50 percent of the remaining habitat for the species. These ARMPAs/ARMPs are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the USFWS in helping to inform land allocation and related management decisions by the BLM and Forest Service. The plans also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, and circumstances in each.

Commented [KK24]: From Stephanie – not sure if this is BLM only or includes FS

Major components of the attached ARMPAs developed to address the specific threats to the viability of the GRSG, as identified in the USFWS 2010 listing decision and COT Report (many of which were also identified by the BLM's NTT Report) are listed in Table XX and summarized below. Throughout the ARMPAs, a particular focus is placed on an "avoidance first strategy" as emphasized in the COT report by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished through identification and allocation of important GRSG habitat and excluding or avoiding surface disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, is important to the long-term viability of GRSG. Restoration decisions include specific habitat objectives, and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management*

[1] WAFWA 2006 Strategy. The 2006 objectives built on an initial framework and commitment made by the WAFWA directors, the BLM and the FWS in 2000 with the signing of an interagency sagebrush/sage-grouse conservation MOU.

[2] Sage-grouse National Technical Team. "A Report on National Greater Sage-Grouse Conservation Measures". December 21, 2011.

Strategy which provide a framework, specific actions, and Department-wide priority on managing Federal lands, particularly in the Great Basin, to protect and restore sagebrush-steppe habitat.

Table XX
Key Components of the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses of the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Require and ensure mitigation that provides a net conservation gain to GRSG and its habitat. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner. • Apply buffers necessary based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply Required Design Features (RDFs) when authorizing actions that affect GRSG habitat. • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
All development threats, including mining, infrastructure, and energy development.	• PHMA: Implement an anthropogenic disturbance cap of 3% within the Biologically Significant Unit and proposed project analysis areas in PHMA (slight variations to this management component in the State of Nevada only) • PHMA: Apply a disturbance density cap of 1 facility per 640 acres (except in the State of Nevada)
Energy development—fluid minerals, including geothermal resources	• PHMA: Open to fluid mineral leasing subject to a No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exceptions. In SFAs, a NSO stipulation would be applied without waiver, modification, or exception. • GHMA: Open to fluid mineral leasing subject to Controlled Surface Use (CSU) and Timing Limitation (TL) lease stipulations (except in the State of Utah where some portions of GHMA are open with standard lease stipulations)
Energy development—wind energy	• PHMA: Exclusion area (not available for wind energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • GHMA: Avoidance area (may be available for wind energy development with special stipulations) (except in the States of Utah and Idaho, where these areas would open to wind energy development)
Energy development—solar energy	• PHMA: Exclusion area (not available for solar energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • GHMA: Exclusion area (not available for solar energy development under any conditions) (except in the States of Oregon and Montana where these areas are avoidance areas for solar energy development and the State of Idaho, where these areas would open to solar energy development)

Commented [KK25]: there is a NV exception for geothermal that we need to capture here

Table XX
Key Components of the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses of the Great Basin Region GRSG ARMPAs
Infrastructure—major ROWs	• PHMA: Avoidance area (may be available for major ROWs with special stipulations) • GHMA: Avoidance area (may be available for major ROWs with special stipulations) (except in the State of Utah where GHMA is open)
Infrastructure—minor ROWs	• PHMA: Avoidance area (may be available for minor ROWs with special stipulations)
Mining—locatable minerals	• SFA: Recommend withdrawal from the Mining Law of 1872
Mining—nonenergy leasable minerals	• PHMA: Closed area (not available for nonenergy leasable minerals)
Mining—salable minerals	• PHMA: Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)
Livestock grazing	• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs followed by PHMA to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid management	• Prioritize gathers in SFAs, followed by other PHMAs. • Manage Herd Management Areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of Herd Management Area Plans in GRSG habitat.
Range management structures	• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas subject to valid existing rights.
Recreation	• PHMA: Do not construct new recreation facilities unless required for health and safety purposes. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain.

Table XX
Key Components of the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses of the Great Basin Region GRSG ARMPAs
	• PHMA & GHMA: OHV use limited to existing routes (routes to be designated through future travel management planning)
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. • Prioritize post-fire treatments in SFAs, other PHMAs and GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMA and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMA: Maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. • All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural conversion and exurban development	• GRSG habitat will be retained in federal management.

1.5.1 Conservation Measures for Habitat Protection, Restoration, and Improvement

Land Allocations

In order to protect the most important GRSG habitat areas, the conservation strategy began with mapping areas of important habitat across the remaining range of the GRSG and within each state. In collaboration with state fish and wildlife agencies, the BLM and Forest Service identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). Maps were revised and refined as further mapping was conducted and state fish and wildlife agencies – often in collaboration with GRSG experts and researchers – provided more detailed analysis of habitat characteristics and populations. The ARMPAs reflect this input and have generally aligned these habitats with Habitat Management Areas in the ARMPAs. GRSG habitat management areas on BLM-administered lands in the decision area consist of lands allocated as Priority Habitat Management Areas (PHMA) which largely coincide with Priority Areas for Conservation in the COT report, General Habitat Management Areas (GHMA), Other Habitat Management Areas (OHMA, applicable only to the Nevada and Northeastern California), and Important Habitat Management Areas (IHMA, applicable only to Idaho). **Table X** identifies surface acres of PHMA, GHMA, OHMA, and IHMA in the decision area for the Great Basin Region.

PHMA, GHMA, OHMA, and IHMA are defined as follows:

- **PHMA**— BLM-administered lands identified as having the highest value to maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA are derived from and generally follow the Preliminary Priority Habitat boundaries identified in the Draft LUPA/EIS. Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report.
- **GHMA**— BLM-administered lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMA are derived from and generally follow the Preliminary General Habitat boundaries identified in the Draft LUPA/EIS.
- **OHMA** —BLM-administered lands identified as unmapped habitat in the Draft LUPA/EIS that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA** —BLM-administered lands that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations, but that are not as important as PHMA. There are no IHMAs designated within southwestern Montana. The IHMA boundaries and management strategies are derived from and generally follow the Preliminary Medial Management Area (PMMA) and Important Habitat Zone (IHZ) boundaries identified in Alternatives D and E, respectively, of the Draft LUPA/EIS, but may be modified based on the objectives of each alternative. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

Table X
Surface Acres of PHMA, GHMA, OHMA, and IHMA in the Decision Area for the Great Basin Region

BLM administered surface acres	PHMA	GHMA	OHMA	IHMA
Idaho and Southwestern MT	4,627,200	2,179,700	0	2,737,600
Utah	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern CA	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure X** - Great Basin Region Decision Area - Greater Sage-Grouse Habitat Management Areas). SFAs correspond to the areas identified by the FWS as GRSG "strongholds" as detailed in an October 27, 2014 memo from FWS Director Ashe to BLM Director Kornze and Forest Service Chief Tidwell in response to a request to "identify a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection"[3] (http://www.fws.gov/greaterSageGrouse/documents/ESA%20Process/GRSG%20Strongholds%20memo%20to%20BLM%20and%20USFS%20102714.pdf) The FWS memo advised that "[s]trong, durable, and meaningful protection of federally administered lands in these areas will provide additional certainty and help obtain confidence for long term sage grouse persistence."

Commented [KK26]: would be helpful to identify the acres of SFA in each state

Commented [KK27]: I don't think we need to say this – the following quote makes clear that these are only meant to apply to federally administered lands

This tiered habitat framework provides for a nested or layered conservation design with the greatest protections and limited new surface disturbance in SFAs, a high degree of certainty that the integrity of PHMAs can be maintained through management decisions to avoid or minimize additional surface disturbance, and protection of remaining habitats in GHMAs, with more flexibility for land use activities that would be designed to minimize impacts on existing GRSG leks. In all GRSG habitat areas, anthropogenic surface disturbing activities would be mitigated, and degraded landscapes, due to fire or other causes, would be actively restored and protected with a priority on SFAs, then PHMAs, and then GHMAs. The combination of habitat classifications and land allocation decisions in the ARMPAs will provide the greatest protection for those areas identified as SFAs and meet the stated objective for these areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species."[4]

Habitat Protection/Surface Disturbance

To avoid or minimize further surface disturbance in PHMAs the ARMPAs either exclude or avoid major new surface disturbing activities. In SFAs, in addition to PHMA decisions described below and shown in Table XX, ARMPAs apply a no surface occupancy stipulation with no exceptions for oil and gas leasing and recommend these areas for withdrawal from future locatable mineral entry.

[3] Memorandum from Dan Ashe to Director, BLM and Chief, USFS, "Greater Sage Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes. October 27, 2014.
[4] USFWS memorandum. Greater Sage Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes. October 27, 2014.

The four Great Basin ARMPAs provide land use allocations and management guidance for PHMAs to avoid new disturbance and minimize any disturbance associated with projects that might be developed in PHMA in the future. Allocations to avoid and minimize additional disturbance in PHMA included the application of a no surface occupancy (NSO) stipulation associated with any future leasing and development of oil, gas, and geothermal reserves in PHMAs. With the exception of a few areas in Utah and in eastern Nevada, there is low potential for fluid minerals in the Great Basin Region.

Commented [KK28]: there is a NV exception for geothermal that we need to capture here

Similarly, mineral development, with the exception of locatable minerals governed under the 1872 Mining Act, is closed in PHMAs for non-energy leasable minerals and saleable minerals. An exception is granted for free use permits and the expansion of existing active pits for mineral material sales and expansion of existing non-energy leasable development. There is no potential for coal development in the Great Basin outside of Utah. In Utah, at the time of a new coal lease or lease modification, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods recognizing that PHMAs are "essential habitat" for purposes of suitability determinations.

In all PHMAs in the Great Basin Region, renewable energy development (solar and wind) is excluded, with the exception of three counties in southeastern Oregon where an avoidance allocation is applied; and new rights of way and development for transmission lines, pipelines, and related infrastructure is avoided through restrictions on land use authorizations. Where the allocation is avoidance, exceptions would be limited and based on rationale that explicitly demonstrates that adverse impacts will be avoided or that residual impacts could be mitigated. Also, new recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat. While restrictions on future development in PHMA are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMA are less stringent and can accommodate a limited amount of disturbance. Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation, see Table XX for more details on GHMA management decisions. However, any disturbance is subject to mitigation and should seek to first avoid and then minimize any impacts to GRSG or its habitat, while offsetting unavoidable impacts to a standard that produces a net conservation gain for the species. As noted in the COT report, " … Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur. …If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal , state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs."

Commented [JRL29]: I don't recall this exception.
KK – there is this exception – see Table XX

In addition to areas where uses are excluded or avoided, the ARMPAs direct the BLM to proactively prioritize oil and gas leasing and development outside of identified SFAs, PHMAs, and GHMAs in order to encourage new development in areas that would not conflict with GRSG and thus maximize the potential to limit disturbance to remaining GRSG habitat. This approach will also assist developers in reducing the time and cost associated with oil and gas leasing development by avoiding sensitive areas and decreasing the need for compensatory mitigation.

In general, all forms of new development would be excluded, avoided, or developed only if the resultant effect is a net conservation gain to the GRSG or its habitat, assuring that existing habitat would be protected and providing opportunities through compensatory mitigation to restore degraded habitats. This is consistent with the recommendation included in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0*, published by the FWS in September 2014, which states that mitigation "be strategically designed to result in net overall positive outcomes for sage-grouse." In all instances, whether in PHMA or GHMA, any adverse impacts associated with development would have to be

compensated for with habitat protection or restoration activities that produced a net conservation gain for the GRSG.

In addition to major surface disturbing activities such as energy and infrastructure development, the ARMPAs address other activities, including grazing, wild horse and burro management, and recreation. Grazing is the most widespread use of the sagebrush steppe ecosystem in the Great Basin states. The COT Report recommendation for grazing states, "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)." To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the four Great Basin ARMPAs require the incorporation of GRSG seasonal habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review and monitoring of grazing permits, and take numerous actions to avoid and minimize the impacts of range management structures (see Table XX).

To address the localized threat due to negative influences of grazing by free-roaming equids (wild horses and burros (WHB)), the BLM will focus on maintaining WHB Herd Management Areas in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending Herd Management Area plans to incorporate GRSG habitat objectives and management considerations. In SFAs and PHMA, the BLM will assess and adjust AMLs through the NEPA process within HMAs when WHBs are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

Commented [JRL30]: Should we make note of commitment to bring all SFAs to AML by 2020?

To ameliorate the threat from recreational activities, new facilities or expansion of existing facilities (e.g., roads, trails, campgrounds) will not be authorized in PHMA unless the development results in a net conservation gain to GRSG its habitat. In PHMA and GHMA travel would be limited to vehicle routes. Initially, vehicles would be limited to existing routes until implementation travel management planning could be completed to designate routes. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning process.

Habitat Management, Restoration, and Improvement

In addition to improving management of resource uses and avoiding further surface disturbance, the ARMPAs identify management actions to promote the restoration and improvement of GRSG habitat, particularly addressing the threats of invasive species, pinyon and juniper expansion, and fire, as well as climate change. As with the management of uses, habitat management, restoration, and improvement action is prioritized first in SFAs, followed by PHMA, and then GHMA. The ARMPAs specify seasonal habitat objectives necessary for GRSG, used both to evaluate grazing and wild horse and burro management and for restoration purposes. These objectives include maintaining a minimum of 70% of lands capable of producing sagebrush with 10-30% canopy cover, and addressing species richness and composition, as well as meeting land health standards considering the ecological potential for the site.

The ARMPAs include specific decisions related to treatment and removal of invasive annual grasses, removal of encroaching pinyon juniper, prioritization of fire suppression in SFA, PHMA, and GHMA, and post-fire restoration. The ARMPAs also describe a robust compensatory mitigation program, which will be developed in coordination with the states, to provide for habitat protection and restoration activities that produce a net conservation gain for the GRSG. (See

Section 5 for more information.)

Commented [JRL31]: Cross walk.

To ameliorate the threat from fire, the ARMPs seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush. Prescribed fire will not be used unless necessary to facilitate site preparation for restoration of GRSG habitat. The BLM *Greater Sage Grouse Invasive Annual Grasses & Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats. This information is being used to identify and design projects to change vegetation composition and/or structure to modify potential fire behavior for the purpose of improving fire suppression effectiveness and limiting fire spread and intensity due to invasive grasses and conifer encroachment. Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species, and prioritize vegetation treatments closest to occupied GRSG habitats and near occupied leks. Through guidance in the proposed ARMPAs supplemented by the *Integrated Rangeland Fire Management Strategy*, a commitment has been made to address the invasion and expansion of cheatgrass, medusa head, and other invasive grasses through expanded efforts to treat impacted acres and to accelerate and expand efforts to restore lands impacted by fire with native grasses and sagebrush seedlings. Efforts are underway to increase the acreages to be treated with chemical and biological agents to kill and stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion.

In addition to and complementing the ARMPAs described in this ROD, Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department".** (emphasis added) The strategy places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes in areas identified by the Fire and Invasives Assessment Tool (FIAT) in priority habitat, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT process, applying recent science, identified highly resistant and resilient landscapes to target fire management activities to these most important lands. In addition, through the issuance of a Leaders' Intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions with regard to the allocation of resources for firefighting in 2015. Additional resources have been allocated and will be targeted to fuel treatments (including invasive species control), suppression (through the prepositioning of fire-fighting resources and the training of additional Rural Fire Protection Associations, local volunteer firefighters, and veteran fire fighters), and habitat restoration in these areas. Firefighting assets (aircraft, firefighters and related equipment) will be located near areas of high priority for rangeland fire.

Commented [KK32]: Should this be included in the ROD or is the previous paragraph sufficient (since it ties more to the AMRMPA instead of just being about the rangeland fire strategy?)

With regard to the threat of climate change, the proposed ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the *Integrated Rangeland Fire Management Strategy* will further this effort. The Fire and Invasives Assessment Team (FIAT) assessments that inform that ARMPAs and supported the development of the *Integrated Rangeland Fire Management Strategy* are specifically designed to identify landscapes of high resistance and resilience based on research by Chambers (Chambers et al, 2014b). Additionally, by limiting or eliminating anthropogenic surface disturbance, especially in the SFAs, ensuring the integrity of the PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation efforts, connectivity and availability of sagebrush habitat are expected to increase thus contributing to increased climate resilience.

1.5.2 Other Measures to Reduce Habitat Disturbance

In addition to land allocations and management actions included in the Great Basin ARMPAs to conserve the GRSG, additional measures were included to ensure that disturbance to leks could be reduced or minimized through the application of disturbance caps, density limits, and required minimum buffers.

Commented [KK33]: This might be better above the section that I titled habitat management, restoration, and improvement since it goes back to talking about managing uses and goes better with the section I titled "habitat protection and surface disturbance"

Disturbance Caps

In addition to the management actions and allocations discussed in detail in the sections above, the ARMPAs limit the amount of anthropogenic disturbances in PHMAs through the use of disturbance caps. In general, if the 3% anthropogenic disturbance is exceeded on lands (regardless of land ownership) within PHMA in any given Biologically Significant Unit (BSU), no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872, as amended, valid existing rights, etc.) will be permitted within PHMAs in that Biologically Significant Unit. If the disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted until disturbance in the proposed project analysis area has been reduced to be under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872, as amended, valid existing rights, etc.). The ARMPAs have a few modifications to the disturbance cap: Oregon does not allow more than 1% new anthropogenic disturbance per decade, not to exceed 3% disturbance at any time. In Nevada, exceeding a 3% disturbance cap can occur at the BSU and/or the project level as long as the outcome results in a net conservation benefit and is approved by a cadre of high-level federal and state managers.

Commented [JRL34]: Need to clarify process that would apply to approving exceptions to 3% rule and offer a rationale for the exception.

Limiting Density of Disturbance

The ARMPAs incorporate a cap on the density of energy and mining facilities to encourage consolidation of structures and to reduce habitat fragmentation. The cap is set at an average of one facility per 640 acres in PHMA in a project authorization area, consistent with guidance contained in the NTT report. If the disturbance density in the PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law, valid existing rights, etc. The one facility per 640 density decision does not apply to Nevada.

Commented [JRL35]: Rationale for exception?

Buffering Development Impacts

The ARMPAs require that impacts to leks be evaluated for actions requiring NEPA analysis. In addition to any other relevant information determined to be appropriate (e.g. State wildlife agency plans), the BLM will assess and address impacts from certain activities using the lek buffer-distances as identified in the USGS Report Conservation Buffer Distance Estimates for GRSG – A Review (Open File Report 2014-1239). The lek buffer distances required vary by type of disturbance (road, energy development, infrastructure, etc.) and are fully described in Appendix XX of the ARMPAs.

Commented [KK36]: is this a common appendix that we can reference?

Commented [JRL37]: OR, should we insert the short table from the USGS report here for reference?

The lek buffer distances will be applied as required conservation measures to fully address the impacts to leks as identified in the NEPA analysis. Impacts should be avoided by locating the action outside of the applicable lek buffer-distance(s) as defined in the ARMPAs. In PHMA, if the action cannot be located outside of the buffer-distance, the BLM may approve actions in PHMAs that are within the applicable lek buffer-distance only if a different buffer distance offers the same or greater level of protection to GRSG and its habitat. In GHMAs actions may be approved within the applicable lek buffer distance only if a different distance offers the same or a greater level of protection to GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area; or impacts to GRSG and its habitat are minimized such that the project will cause minor or no new disturbance (ex. co-location with existing authorizations) and any residual impacts within the lek buffer-distances are addressed through compensatory mitigation measures sufficient to ensure a net conservation gain.

Required Design Features

Required Design Features (RDFs) and Best Management Practices (BMPs) are required for certain activities in all GRSG habitat, including PHMA, GHMA, IHMA in Idaho and OHMA in Nevada RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts. However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area). RDFs and BMPs have been developed for oil and gas development, infrastructure, range developments, and other surface disturbing activities and are fully described in Appendix XX of the ARMPAs.

Commented [KK38]: is this a common appendix that we can reference?

Commented [JRL39]: Should address by reference to appendix.

1.5.3 Other Management Actions to Enhance GSRG Conservation Success

Commitment to Monitoring

Commented [KK40]: There is also monitoring is section 6. However, this clearly needs to be co-located with Adaptive Management, so either Adaptive Management needs to move to section 6 or Monitoring needs to move here. . I think our RODs are supposed to have the monitoring section as standalone, so we need to be sure we understand that.

Monitoring tied to the ARMPAs has two parts: (1) implementation monitoring (i.e., are decisions being implemented in a timely manner, are actions taken consistent with the plan decisions), and (2) effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals). Through effectiveness monitoring, BLM can assess how decisions and actions impact GRSG habitat. Understanding the effectiveness and validating results of ARMPAs and management decisions is an important part of measuring performance under the Government Performance Results Act. For example, riparian condition is a primary measure for ARMPA effectiveness (see WO IM 2010-101). Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, size of patches, etc.). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by state wildlife agencies and other partners, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRSG populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ameliorate negative effects with appropriate conservation actions.

The BLM Assessment, Inventory, and Monitoring (AIM) Strategy (Toevs et al. 2011 and IB2012-080) describes a vision for integrated, cross-program assessment, inventory, and monitoring of resources at multiple scales of management. Following the AIM Strategy, the BLM is modernizing its resource monitoring approach to more efficiently and effectively meet local, regional, and national resource information needs. The AIM Strategy provides a process for the BLM to collect quantitative information on the condition, trend, amount, location, and spatial pattern of natural resources on the public lands. Each AIM-Monitoring survey, at any scale of inquiry (from the plot level to west-wide deployments), uses a set of core indicators, standardized field methods, remote sensing, and a statistically-valid study design to provide nationally-consistent and scientifically-defensible information to determine conditions (e.g., rangeland health) and trends on public lands.

The National-scale deployment of AIM, known as the Landscape Monitoring Framework (LMF), commenced in 2011 in coordination with NRCS, with the collection of 1,000 plots of field-collected monitoring data across the Western U.S. LMF aims to provide non-biased estimates of vegetation and soil condition and trend using a statistically balanced sample design across BLM lands. A group of GRSG habitat and sagebrush plant community subject matter experts from BLM, USFWS, WAFWA, NRCS, ARS, state wildlife agencies, and academia identified those vegetation indicators collected at LMF sampling points that inform GRSG habitat needs. The common indicators that were identified include: species composition, foliar cover, height of the tallest sagebrush and herbaceous plant, inter-canopy gap, percent of invasive species, sagebrush shape, and bare ground. To increase the precision of estimates of sagebrush conditions within the range of GRSG, additional plot locations in occupied GRSG habitat (Sage-grouse Intensification) were added in 2013. The common indicators are also collected on sampling locations in the NRCS Rangeland Monitoring Survey. The GRSG baseline data will be collected over a five year period and an annual report will be prepared describing the status of the indicators. Beginning in

year six, the annual status report will be accompanied with a trend report which will be available on an annual basis thereafter contingent upon continuation of the current monitoring budget. This information, in combination with mapping information, mid-scale habitat suitability indicator measures, and sagebrush availability information will be used to assess the effectiveness of the planning strategy.

The BLM has made significant commitments in the ARMPAs to monitoring actions to conserve GRSG habitats at multiple scales. The results from the monitoring will inform the agencies of the effectiveness of efforts to reduce disturbance and restore seasonal habitats in priority areas, and of the status of the triggers set in the proposed LUPs for adaptive management. The BLM and the Forest Service will report annually on the results of the monitoring efforts.

Adaptive Management

The ARMPAs include an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are not specific to any particular project, but identify habitat and population thresholds. Triggers are based on the two key metrics that are being monitored - habitat loss and/or population declines. Adaptive Management with specific triggers provide additional certainty that the regulatory mechanisms included in the ARMPAs are robust and able to respond to a variety of conditions and circumstances quickly and effectively to conserve GRSG habitat.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the proposed LUPs, the BLM and Forest Service response is to apply more conservative or restrictive conservation measures to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. In each proposed LUP, a soft trigger begins a dialogue between the state, FWS, and the BLM or Forest Service to see if the causal factor can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines). Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM and Forest Service proposed LUPs. In the event that new scientific information becomes available demonstrating that the hard trigger would be insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM and Forest Service proposed LUPs, the BLM and/or Forest Service will immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive such as an IM or a plan amendment, which, to the extent that it is supported scientifically, may be drawn from the range of alternatives analyzed in the development of the proposed LUPs.

[NEED TO ADD SECTIONS TO ADDRESS UNIQUE ASPECTS OF 4 PLAN AMENDMENTS IN THE GREAT BASIN!]

[ADD SUMMARY SECTION? – ABREVIATED VERSION OF SUMMARY FROM LANDSCAPE REPORT?]

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[Figure X & Figure X will be inserted here once NOC has completed them.]

2. DECISION

2.1 Summary of the Approved Management Decisions

The decision is hereby made to approve the Great Basin Region Greater Sage-Grouse ARMPAs for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments A, B, C, and D). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed. No further administrative remedies are available for these land use plan decisions.

The decisions included in this ROD and attached ARMPAs amend the land use plans described in Sections 1.1 of attachments A, B, C, and D. This ROD and ARMPAs become effective on the date this ROD is signed. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.) and other applicable laws. The BLM prepared EISs in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA), and BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1601 et seq.).

The land use decisions provide conservation measures to conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes), and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective upon signing of this ROD, they generally require additional implementation decision steps before on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 What the Record of Decision and Approved Resource Management Plan Amendments Provide

The ARMPAs include GRSG and GRSG habitat land use plan level management decisions in the form of:

- Goals
- Objectives (Desired Future Conditions)
- Land Use Allocations and Allowable Uses
- Management Actions

Goals are the broad statements of desired outcomes, and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the planning area that are available or not for certain uses. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/ or sale, and what lands are open, closed, or limited to motorized travel (please note that all acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Commented [KK41]: We also use these allocations to prioritize conservation and restoration management actions, not just allowable uses

Management actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands, including but not limited to stipulations, guidelines, best management practices (BMPs), and required design features.

Commented [KK42]: Are we really considering BMPs RMP decisions? Does that mean they cannot be changed without a RMP amendment?

The ARMPAs' management decisions were crafted to alleviate identified threats to GRSG and their habitats (see **Section 1.X**).

2.3 What the Record of Decision and Approved Resource Management Plan Amendments Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for travel management decisions in the Idaho and Southwestern Montana ARMPA.

The ARMPAs do not affect valid existing rights.

The ARMPAs do not contain decisions for the mineral estates of lands located in the planning area for lands under the jurisdiction of other Federal agencies such as the Forest Service, or for private or State-owned lands and minerals that are not administered by the BLM. ARMPA decisions for surface estate only apply to BLM managed lands. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

Commented [KK43]: This is a "what the ROD & ARMPA does provide" not what it doesn't – and it would be helpful to have the same "what the subsurface decisions do apply to" sentence.

- *Statutory requirements.* The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy.* The decision will not change BLM's obligation to conform to current or future National policy.
- *Funding levels and budget allocations.* These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

2.4 Modifications and Clarifications

During preparation of the ARMPAs for all four sub-regions, minor changes were made to the Proposed RMP Amendments to correct errors and to clarify decisions. Clarifications and corrections made since the Proposed RMP Amendments were published on May 29, 2015 are hereby adopted by this ROD.

2.4.1 Modifications and Clarifications by Sub-region

Modifications and clarifications are summarized below for each of the sub-regional ARMPAs.

Idaho and Southwestern Montana

All references to National Forest System lands in both text and on maps have been removed from the BLM ARMPA. This is because the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

Need to populate once we have a clear idea as to what changes will need to be made. Will need to work with the planners.

Nevada and Northeastern California

All references to National Forest System lands in both text and on maps have been removed from the BLM ARMPA. This is because the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

Need to populate once we have a clear idea as to what changes will need to be made. Will need to work with the planners.

Oregon

Need to populate once we have a clear idea as to what changes will need to be made. Will need to work with the planners.

Utah

All references to National Forest System lands in both text and on maps have been removed from the BLM ARMPA. This is because the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

Need to populate once we have a clear idea as to what changes will need to be made. Will need to work with the planners.

2.4.2 Protest Resolution

BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest proposed planning decisions within 30 days from the date the Notice of Availability of the Proposed RMPA/Final EIS was published in the Federal Register (May 29, 2015). Below are descriptions of the protest resolution process for each of the four sub-regional PRMPAs/FEISs.

These decisions are final for the Department of the Interior. With the exception of the granted protest issues, the Director concluded that the BLM followed the applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed Land Use Plan Amendments/Final EISs. Each protesting party will be notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed Land Use Plan Amendments/Final EISs, though minor clarifications were made and are summarized in Section 2.5.1.

Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Idaho and Southwestern Montana GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Will need to populate the "X" areas towards the end of the protest resolution process (end of July).

Nevada and Northeastern California

For the Nevada and Northeaster California GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Nevada and Northeastern California Sub-Regional GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Will need to populate the "X" areas towards the end of the protest resolution process (end of July).

Oregon

For the Oregon GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Oregon GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Will need to populate the "X" areas towards the end of the protest resolution process (end of July).

Utah

For the Utah GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Utah GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Will need to populate the "X" areas towards the end of the protest resolution process (end of July).

2.4.3 Governors Consistency Review

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and RMPs also are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)). The general requirement in FLPMA/planning regulations is to coordinate the land use planning process with plans of other agencies, states, and local governments to the extent consistent with law (see FLPMA s. 202(c)(9) and 1610.3-1(a)); and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with federal law, or to maximum extent practical) (see 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to state, local, and tribal land use plans and provided meaningful public involvement of the Proposed RMP Amendments/Final EISs.

The BLM is aware that there are specific state laws and local plans relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that BLM's land use plans be consistent with officially-approved state and local plans only if those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Where officially-approved state and local plans or policies and programs conflict with the purposes, policies, and programs of federal law applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved state and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to state or county plans, planning processes, policies, or planning stipulations.

In some instances, modifications to the Proposed RMP Amendments were addressed based on recommendations submitted to the BLM by the applicable states. These modifications to the ARMPAs are summarized below by sub-region and are now part of the attached ARMPAs.

Idaho and Southwestern Montana

Will need to populate the "X" areas towards the end of the GCR process (end of July).

Nevada and Northeastern California

Will need to populate the "X" areas towards the end of the GCR process (end of July).

Oregon

Will need to populate the "X" areas towards the end of the GCR process (end of July).

Utah

Will need to populate the "X" areas towards the end of the GCR process (end of July).

3. ALTERNATIVES

3.1 Alternatives Considered

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs influencing land management for the protection and enhancement of GRSG and its habitat. All management under any of the alternatives complied with federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The alternatives differed in how fast the goals would be met, the degree to which they would be met, the emphasis placed on certain programs and activities, and whether active or passive management would occur.

Commented [KK44]: Does the analysis actually differentiate between alternatives on how fast & to what degree goals would be met? If not, perhaps we don't want to say this. Also, this sentence & the next paragraph seem to be saying the same thing

The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping, and to maintain or increase GRSG abundance and distribution in the planning area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMP amendment. The goal was met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law or are not tied to planning issues, there are typically few or no distinctions between alternatives.

Commented [KK45]: These are amendments, so why would we have any decisions not tied to a planning issue – is this more of a revision thing?

3.1.1 Alternative A – No Action Alternative

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction and prevailing conditions derived from the existing field/district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments, activity-and implementation-level plans, and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Commented [KK46]: What does this mean – that the analysis assumed RFD the same as today?

Commented [KK47]: Really – are there implementation level decisions included in no action?

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. This alternative did not include changes that are needed to be made to the existing decisions based on the USFWS 2010 listing petition decision that identified inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B: National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the National Technical Team (NTT) Report. The GRSG National Technical Team (NTT), comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-Grouse Conservation*

Measures in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable sage-grouse populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones. The NTT Report proposed conservation measures based on habitat requirements and other life history aspects of sage-grouse and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. The Report can be accessed at: http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

The BLM's Washington Office Instructional Memorandum (IM) Number 2012-044 directed the sub-regional planning efforts to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in PHMA and avoid development in GHMA, would close PHMA to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals, and would recommend withdrawal from locatable mineral entry in all PHMA. These management actions would reduce surface disturbance in PHMA and would minimize disturbance in GHMA, thereby maintaining GRSG habitat. Management actions for wildfire would focus on suppression in PHMA and GHMA, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices (BMPs) proposed in the NTT report would be included as required design features as part of Alternative B and are listed in Appendix X, Required Design Features (RDFs), of this document.

Commented [KK48]: Or of each plan – will this be part of each plan appendix or a standalone appendix that each plan appendix references?

This alternative was not selected in its entirety as the ARMPAs because the majority of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMA, and few conservation measures in the Report were provided for in GHMA. As a result, most management actions in GHMA reverted back to the No Action Alternative, which was found to not meet the purpose and need for the Amendments. Alternative B was also not selected in whole because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

Commented [KK49]: Might need to explain what this means – it is in all the alternatives we don't choose & I don't know what it means

3.1.3 Alternative C: Citizen Groups' Recommended Alternative One

Alternative C was based on a citizen groups' recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and was applied to all occupied GRSG habitat (PHMA and GHMA. Alternative C limited commodity development in areas of occupied GRSG habitat, and closed or excluded large portions of the planning area to many land uses. This included all PHMA and GHMA as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and non-energy leasable mineral development, and exclusion areas for right-of-ways. The Utah LUPA/Draft EIS combined this alternative with Alternative F (discussed below).

Commented [KK50]: I added this. Is this right? What was the withdrawal for?

Alternative C is the most restrictive approach to GRSG conservation. It would eliminate all future ROWs, fluid mineral leasing, nonenergy leasable mineral development, and mineral material sales on GRSG habitat. Alternative C would also recommend withdrawal from locatable mineral entry for all GRSG habitat. It would manage all GRSG habitat as PHMA. This alternative would substantially reduce surface disturbance in all GRSG habitat. Under Alternative C, the BLM would take a passive management

approach to vegetation management and fuels treatments. Additionally, all GRSG habitat would be unavailable for livestock grazing.

Commented [KK51]: Seems to be a repeat of last 2 sentences in previous paragraph

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in whole because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D: Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the Preferred Alternative in the Draft EISs, balanced opportunities to use and develop the planning area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while still allowing for anthropogenic disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions based on BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMP Amendments/EISs, this alternative was modified to become the Proposed RMP Amendments and analyzed in the FEISs. The Preferred Alternatives, with slight variations, became the Proposed Plans in the FEISs.

In PHMA under Alternative D, there would be limitation on disturbance in GRSG habitat by excluding wind and solar energy development (except for certain counties in Southeastern Oregon where avoidance is applied), avoiding all other ROW development, applying no surface occupancy stipulations to fluid mineral development, and closing PHMA to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMA under Alternative D, allocation decisions were not consistent across the Great Basin. For example, in the Nevada and Northeastern California Proposed Amendment, nonenergy leasable mineral development and mineral material sales would be closed in GHMA, while in the Oregon, Utah, and Idaho and Southwestern Montana Proposed Amendments, these allocations in GHMA were open.

Commented [KK52]: Can we mention those that are consistent? How about, allocations are less stringent, but still aim to protect GRSG habitat, for example through avoidance areas for wind and solar development, but also providing more flexibility from state to state in the Great Basin. Table XX shows a lot of consistency so I don't want this sentence to just hang out there as if we were willy-nilly in our decision making for GHMA.

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMA and GHMA, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative provided by the State or Governor's offices for inclusion and analysis in the EISs. It incorporates guidance from specific State Conservation strategies, if developed, or recommendations from the state on management of Federal lands and emphasizes management of GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. This alternative was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a state GRSG conservation plan and under this alternative, reverted back to Alternative A, the no-action alternative.

Commented [KK53]: Is this right? – I suggest this because capitalized "State Conservation" implies an actual plan exists, but from the paragraphs below, it seems more like the states made recommendations on how BLM should manage – rather than a statewide, all lands conservation strategy.

For Nevada, Alternative E would apply an avoid, minimize, and mitigate strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. Effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed because allocation decisions were not part of the state's plan.

For Oregon, Alternative E contains GRSG conservation guidelines from Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. The state plan describes the Oregon Department of Fish and Wildlife's proposed management of GRSG. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the state plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the state plan.

Commented [KK54]: Does this plan include private and state lands or just federal lands?

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats such as recreation, improper livestock grazing, and West Nile virus for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, the planning area includes all occupied GRSG habitat in Utah. Alternative E1 is based on the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah and would apply to all BLM-administered lands in Utah. Alternative E1 was designed to eliminate the threats facing the GRSG while balancing the economic and social needs of the residents of Utah. Conservation measures would be applied to 11 areas that the state identified, called Sage-Grouse Management Areas (SGMAs). Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMAs. Occupied habitat outside of the state-identified SGMAs would not receive new management protection. They would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected, in whole, as the ARMPAs because some components of the state's plans were not consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands. However, many goals, objectives, and management actions in the ARMPA were carried forward.

3.1.6 – Alternative F: Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMA and GHMA. Alternative F would limit commodity development in areas of occupied GRSG habitat, and would close or designate portions of the planning area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMA, while limiting certain types of fuels treatments. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and wild horse and burro management utilization by 25 percent within PHMA and GHMA.

Commented [KK55]: Opinion?

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture. For example, this alternative closed all allotments to livestock grazing, which is not required by best available science from GRSG and its habitats. Alternative F was also not selected in whole because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

Commented [KK56]: According to the paragraph above grazing is not closed, but is reduced by 25% - think we need a different example for this alternative

3.1.7 – Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP Amendments/EISs, the BLM has developed the Proposed Amendments/Final EISs for managing BLM-administered lands. The Proposed Amendments/Final EISs focus on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the DEISs. The Proposed Plans, with slight variations (as outlined in Section 2.5 of this ROD), became ARMPAs.

3.1.8 Environmentally Preferable Alternative Considered in all Sub-Regions

Council on Environmental Quality (CEQ) regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2(b)). Question 6A of CEQ's 40 most-asked questions regarding CEQ's NEPA regulations defines that term to ordinarily mean the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs is the most environmentally preferable. However, NEPA expresses a continuing policy of the federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA).

Alternative C is most protective of resources, specifically GRSG habitat in the planning area and thus would be the most "environmentally preferable" as that term is defined in Question 6A of CEQ's 40 asked questions regarding NEPA, but both NEPA and FLPMA recognize resource uses as part of the policy of the United States and under the standard of FLPMA's multiple-use mandate, the Proposed Plan was determined to be the most balanced.

Commented [KK57]: Repeat of first sentence of previous paragraph?

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations;
- They did not meet the purpose and need;
- The alternative was already captured within the range of alternative analyzed in the EIS;
- They were already part of an existing plan, policy, or administrative function; or
- They did not fall within the limits of the planning criteria.

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11of each of the sub-regional Proposed Amendments/Final EISs.

Idaho and Southwestern Montana

- USFWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- USFWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative

Utah

- USFWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMA for all Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- Conservation Objectives Team (COT) Report Alternative
- BLM Policies and Regulations Alternative

4. MANAGEMENT CONSIDERATIONS

The BLM is tasked to provide multiple use management for public lands by the Federal Land Policy and Management Act (FLPMA) and numerous other laws and regulations that govern the management of public lands. Due to the diversity of community needs and stakeholders affected by management of BLM lands, there has been both support and opposition to certain components of the Proposed Plans. BLM's objective in choosing the Proposed Plan Amendments as the ARMPAs was to address diverse needs and concerns in a fair manner and provide a practical and workable framework for management of public

lands in GRSG habitat. The BLM is ultimately responsible for preparing these ARMPAs consistent with its legal mandates that reflect collective professional judgment using the best available science. The ARMPAs provide a balance between those reasonable measures necessary to conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat to meet the purpose and need of these plan amendments, and the ongoing public need for use of the public lands within the Great Basin Region planning area.

The ARMPAs were selected because they will reduce or eliminate threats to GRSG at a landscape scale, improve and sustain properly functioning resource conditions, and consider needs and demands for existing or potential resource commodities and values. In the end, GRSG habitat will be managed by integrating ecological, economic, and social principles in a manner that safeguards the long term sustainability, diversity and productivity of the land.

In 2012, the FWS convened a Conservation Objectives Team (COT) of state and federal representatives to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The final, peer-reviewed COT Report provided a brief overview of the threats to the greater sage-grouse's survival based upon the FWS 2010 listing decision and an assessment of the extent to which these threats affected remaining GRSG populations. **Table XX** provides a crosswalk between the threats to GRSG and their habitat identified in the COT Report and the key management responses from the ARMPAs that aim to ameliorate these threats.

Commented [KK58]: I moved Table XX up. It might make sense to reference the new Table A (threats) as well as this Table XX here but we probably don't need much text

5. MITIGATION MEASURES

In all GRSG habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the GRSG including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Actions which result in habitat loss and degradation include those identified as threats which contribute to GRSG disturbance as identified by the FWS in its 2010 listing decision (75 FR 13910), COT report, and depicted in the ARMPAs' Monitoring Framework (which can be found in Appendix X of each of the attached ARMPAs). Mitigation will follow the regulations from the CEQ (40 CFR, Part 1508.20; e.g. avoid, minimize, and compensate). If impacts from BLM management actions and authorized third-party actions (which are consistent with the goals, objectives, and management actions in the attached ARMPAs) that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects would be used to provide a net conservation gain to the species. Any compensatory mitigation would be durable, timely, and in addition to what would have resulted without the compensatory mitigation (see the concepts of durability, timeliness, and additionality as described further in the Mitigation Strategy, which can be found in Appendix X of each of the attached ARMPAs).

All practical means to avoid or minimize environmental harm, specifically to GRSG and its habitat are encompassed in the attached ARMPAs and associated appendices. Mitigation measures, including the application of required design features have been identified.

The ARMPAs also identify the development of regional mitigation strategies, in partnership with the states, to guide and target mitigation to achieve the greatest benefit to GRSG and habitat conservation and

restoration. Within 90 days of the issuance of the Record of Decisions, the BLM will establish a WAFWA Management Zone GRSG Conservation Team to develop a WAFWA Management Zone Regional Mitigation Strategy that will inform the NEPA decision making process including the application of the mitigation hierarchy for actions and third party authorizations that result in habitat loss and degradation. A robust and transparent Regional Mitigation Strategy will contribute to GRSG habitat conservation by reducing, eliminating, or minimizing threats and compensating for residual impacts to GRSG and its habitat. The mitigation strategy will be developed within one year of the issuance of the Record of Decisions.

6. PLAN MONITORING

Commented [KK59]: This currently appears twice – see also 1.5.3 where it is paired with adaptive management.

The BLM's Monitoring framework (Appendix X of each of the attached ARMPAs) describes the process that the BLM will use to monitor implementation and effectiveness of ARMPA decisions. The monitoring framework includes methods, data standards, and intervals of monitoring at broad- and mid-scales; consistent indicators to measure descriptions for each of the scales; analysis and reporting methods; and the incorporation of monitoring results into adaptive management.

The BLM has committed to consistently and systematically monitor the land use plans implementation actions authorized within the designated sage-grouse management areas (e.g., Sagebrush Focal Areas, Priority Habitat Management Areas, General Habitat Management Areas). An annual Implementation Monitoring Report will describe the number and types of authorized actions in each of the sage-grouse management areas and will document whether the authorized actions are in conformance with the applicable land use plan.

Effectiveness monitoring includes monitoring disturbance in habitats, as well as landscape habitat attributes. To monitor habitats, the BLM will measure and track attributes of GRSG habitat management areas at the broad scale, and attributes of habitat availability, patch size, linkage/connectivity habitat, edge effect, and human disturbances at the mid-scale. Disturbance monitoring will measure and track changes in the amount of sagebrush in the landscape and changes in the human footprint, including changes in density of energy development. The framework also includes: (1) methods for analyzing and reporting for field offices, states, and BLM districts; (2) geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and management action effectiveness.

The monitoring data will also provide the indicator estimates for adaptive management. The BLM will adjust management decisions through an adaptive management process (consistent with and in accordance with applicable law, as described in each of the specific adaptive management strategies outlined in Appendix X of the attached ARMPAs).

Commented [KK60]: What is this? Seems kind of wonky, can we say what we mean. Also, we need to talk more about adaptive management & the triggers – see 1.5.3

7. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

The BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable

alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed alternatives.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through Federal Register notices, public formal and informal meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related Web sites. This section documents the outreach efforts that have occurred to date.

7.1 Public Involvement

The scoping period for the National GRSG Planning Strategy, including the four sub-regional planning areas in the Great Basin Region, began with the publication of the NOI in the Federal Register on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012.

A Notice of Availability (NOA) for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMP Amendments/EISs were published in the Federal Register on November 1, 2013. The Oregon Draft RMP Amendment/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Proposed RMP Amendments/FEIS, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the Proposed Plans. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft EISs' comment periods. Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed Plan Amendments. Public comments resulted in the addition of clarifying text, but did not significantly change Proposed RMP Amendments.

A Notice of Availability (NOA) for the Great Basin Region GRSG Proposed RMP Amendments and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-Regions were released on May 29, 2015. The release of the EPA's NOA initiated a 30 day public protest period and a 60 day governors' consistency review. Refer to **Section 2.5** for a full description of the protest period and governors' consistency review outcomes.

7.2 Cooperating Agencies

A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into a formal agreement with the lead federal agency to help develop an environmental analysis. Cooperating Agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other federal, state, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal Memorandum of Understanding (MOU) for the National GRSG Planning Strategy with the USFWS and the U.S. Forest Service. In addition, the Great Basin sub-regions' also invited local, state, other federal, and tribal representatives to participate as Cooperating Agencies for these RMP Amendments/EISs. In total, there were 11 MOUs signed with Federal agencies, 10 MOUs signed with state agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. For a full list of these cooperating agencies divided by sub-region, refer to the Cooperating Agencies List at the beginning of this ROD. Additional information can also be found in Chapter 6 of each of the Proposed Amendments/FEISs.

Commented [KK61]: Just in GB or for the whole planning effort? I counted 13 federal agencies (if every state repeat is a separate MOU)

7.2 FWS Section 7 Consultation

Consultation with FWS is required under Section 7(c) of the ESA before the start of any BLM project that may affect any federally listed or endangered species or its habitat. These planning processes are considered a major project, and the four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the FEISs. The FWS is a cooperating agency in this planning process. FWS staff participated in interdisciplinary team meetings and has been provided drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the USFWS prior to the release of the Draft RMP Amendments/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan Amendments "may affect" the species for which this consultation occurred.

Prior to the release of the Proposed Amendments/FEISs, the BLM formally submitted the biological assessments to the USFWS for review. The USFWS evaluated the biological assessments and concurred with the "no affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana, which are appendices to each of these ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the threatened listed Utah Prairie Dog. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix X of Attachment X).

[Verify that the above paragraph is applicable to UT once BLM UT hears back from their local FWS.]

7.3 Native American Consultation

In accordance with the National Historic Preservation Act and several other legal authorities (see BLM Manual 8120), and in recognition of the government-to-government relationship between individual tribes and the federal government, the BLM initiated Native American consultation efforts related to preparation

of the four Great Basin sub-regional RMP Amendments/EISs. Coordination with Native American tribes occurred throughout the planning process. In December 2011, the BLM sent letters to 65 tribal governments providing initial notification of the RMP Amendments/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation efforts related to the planning process. Tribes have been participating in the RMP Amendments/EISs processes through numerous meetings and through personal BLM contacts.

The Draft RMP Amendments/EISs were provided to the Idaho, Montana, Nevada, California, Oregon, and Utah State Historic Preservation Offices (SHPO) concurrently with its release to the public. The Proposed Plan RMP Amendments/FEISs were also provided to the SHPOs.

[Verify that the above paragraph is applicable to UT.]

8. APPROVAL

Land Use Plan Amendment Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Great Basin Region Approved Resource Management Plan (RMP) Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions, as described in this Record of Decision. The Proposed Plan Amendments and related Final Environmental Impact Statements (EIS) were published on May 29, 2015, in the Federal Register (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze Director Bureau of Land Management	Date

Secretarial Approval

I hereby approve the land use plan amendments decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Department regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Sally Jewell Secretary Department of the Interior	Date

9. ATTACHMENTS

Appendix A. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix B. Nevada and Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment

Appendix C. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix D. Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

[NEED TO ADD RELEVANT APPENDICES – AS REFERENCED IN TEXT ABOVE.]

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6.4a

From: Lauren Mermejo
Sent: Monday, November 17, 2014 2:44 PM
To: marybeth.floyd@bryancave.com
Subject: Commenter Names and Organizations
Attachments: GreatBasinCmterList_all.xlsx

Marybeth –

Attached is the Excel Commenter List that has tabs for all four of the sub-regional EISs in the Great Basin (Nevada/NE California, Oregon, Idaho/EW Montana, and Utah). As we discussed on the phone, the list consists of all the unique submission commenters and only lists their names and/or organization affiliation; it does not include the form letter submitters. Every now and then you will see a random email address in the lists; this is because we only had an email from the person, not a full name, as the individual did not include their name with their comment.

The Commenter List for Montana and the Dakotas will come as a separate file, as will the Commenter List from Wyoming. You already have the list from Colorado.

Hope this is what you were requesting. If you have any questions, feel free to give me a call.

Lauren L. Mermejo
Great Basin GRSG Project Manager
BLM Nevada State Office
775 861-6580 (Office)
775 223-2770 (Cell)

Commenter	Organization
Albert Robb	
Allison Jones	Wild Utah Project
Amelia Pergl	C.E. Brooks & Associates, P.C.
Andrew Taft	
Angela Magrone	American Bird ConservancyArona
Anna Bryant	
Arlin Hughes	
Barbara Clarke	DreamCatcher Wild Horse and Burro Sanctuary
Barbara Sendelbach	
Barbara Wintch	
Bradford Frisby	National Mining Association
Brent Tanner	Utah Cattlemen's Association
Brian Bremmer	Garfield County
Brian Bremner	Garfield County
Brian Johnson	
Brien Maxfield	
Bryan Dixon	Bear River Watershed Council
Bryant McMullin	
Bryant Shakespear	Garkane Energy
Byard Kershaw	
Carlos Jallo	EOG Resources, Inc.
Catherine Degraw	
Chris Hansen	Bowie Resource Partners, LLC
Christian Rocklein	
Christie Finn	
Christine Landrum	National Park Service
Christopher Lish	
Claire Moseley	Public Lands Advocacy of America
Claudia Jarrett	Sanpete County
CTVA Action Committee	Capital Trail Vehicle Association
Cynthia Dott	
Dan Amador	Blue Ribbon Coalition
Dan Miller	Bear River Watershed Council
Dan Naatz	Independent Petroleum Association
Danell Johnson	Johnson and Livestock LLC
Danie Hamilton	
Darcy Helmick	Simplot Livestock
Dave Olsen	
David Eliason	
David Miller	Iron County Commission
Dedra Williams	J.R. Simplot Company
Del Dee Kunzler	
Denise Dragoo	Snell & Wilmer L.L.P.

DeRae Fillmore	Wayne County
Diane Tanner	
Dolores Proubasta	
Don Van Matre	Sweetwater County
Donald Kaleta	Mom and Pop Products Co.
Dorrell Barker	Castle Country Adaptive Resource Management Group
Duane Taylor	Motorcycle Industry Council
Ed Johnson	
Edward Newbold	
Edward Newbold	
Egret Plover	
Eileen Danni Dey	ConocoPhillips
Eileen Hennessy	
Elyse Gardner	
Eric Molvar	WildEarth Guardians
Erik Molvar	Wild Earth Guardians
Esther Wagner	Petroleum Association of Wyoming
Fred Selman	Harold Selman Inc.
Garry Miller	TransWest Express LLC
Gary Bailiff	Sweetwater County
Gary Taroli	
Gay and David Santerre	
Georganna Cushing	
Georgeanne Spates	
Glen Thompson	Randolph Land and Livestock
Gordon Topham	Sevier County
Greg Bodker	
Heather Zeleny	
Ingham Springs LLC	
James Brendemuehl	
Jane Beattie	
Janet Lynch	
Jean Public	
Jeff Richards	Rocky Mountain Power
Jeff Stone	
Jeffrey Rovner	
Jeremy Greenberg	Western Watersheds Project
Jerrie Tipton	Western Counties Alliance
Jess Larsen	
Jetta Robinson	Pearson Ranch
Jim Cane	Bridgerland Audubon Society
Jim Catlin	Wild Utah
Jim Matson	Kane County Commission
Joan Degiorgio	The Nature Conservancy

John Keeler	Utah Farm Bureau
John Kolb	Sweetwater County
John Thomlinson	
Jon Goode	Utah Phosphate Company
Jon Murphy	
Jonathan Steamer	Uintah County
Josh Jones	Western Counties Alliance
Judy Levi	
Julie Butera	
Kandace Nevin	
Kari Ramadorai	
Kathleen Clarke	Office of the Governor
Kathleen Gregg	
Kathleen Sgamma	Western Energy Alliance
Kelleen Wold	South Central Communications
Kelly Warr	
Ken Spackman	
Kendal Allan	Piute County
Kenneth Brown	Western Counties Alliance
Kent Connelly	Coalition of Local Governments
Kent Connelly	Coalition of Local Governments
Kent Marshall	
Kevin Heaton	Utah State University Extension
Kim Danielsen	
Kimberly Berman	
Kyle Christensen	
Larry Thompson	
Laura	American Exploration & Mining Association
Laura Leigh	Wild Horse Education
Laura Romin	U.S. Fish and Wildlife Service
Leland Pollock	Garfield County
Linda Kervin	Bridgerland Audubon Society
Logan West	
Lorien Belton	Community- Based Conservation Program
Luci Stremme	Holsinger Law, LLC
Lynn Carroll	Wasatch Audobon Society
Lynne Prescott	
Mack Morell	
Marci Schlup	Public Lands Council/ National Cattlemen's Beef Association
Margaret Doane	
Maria Seyrig	
Mark Belles	
Mark Compton	Utah Mining Association

Mark Ellis	Industrial Minerals Association- North America
Mark Kot	Sweetwaater County
Mark Salvo	Defenders of Wildlife
Mark Ward	Utah Association of Counties
Mark Wintch	Wintch Livestock Co
Mary Lou McFarland	
Marybeth Devlin	
Matthew Mead	The State of Wyoming
Matthew Reese	Defenders of Wildlife
Micael Brennan	Sagebrush Habitat Conservation Fund
Michael East	South Central Communications
Michael Weland	Utah Reclamation Mitigation & Conservation Commission
Michelle Dynes	Office of Governor Matthew Mead
Mike Hyde	Duchesne County
Mike Smith	QEP Energy Company
Mike Welch	Foundation for Quality Resource Management
Mike Wolf	Bridgerland Audubon Society
Mike Worthen	Iron County
Misty Auld	
Nada Culver	The Wilderness Society
Nanette Schieron	
Newell Ilarward	Wayne County
Nick Owens	Anadarko Petroleum
Nils Anders Lunde	Sierra Club
Nora and Terry Suppers	
Norman McKee	
Pace Hansen	Carbon County
Patrick Kell	International Mountain Bicycling Association
Paul Wintch	
Rachelle Zocco	
Randall Long	
Randy Bolles	Devon Energy Production Company L.P.
Randy Parker	Utah Farm Bureau Federation
Randy Parker	Utah Farm Bureau Federation
Ray Petersen	Emery County
Ray Smith	Great Salt Lake Audubon
Rebecca Peart	Rich County Commission
Redge Johnson	
Reid West	
Rex Sacco	Carbon County
Rhonda Bredesen	
Richard Mingo	Utah Reclamation Mitigation & Conservation Commission

Richard Muller	Bridggerland Audobon Society
Richard Ranger	American Petroleum Institute
Robert Williams	Wayne County
Robin Kennedy	Business Development CB Technologies, Inc.
Roger Barton	Price River Watershed Conservation District
Ronald Stevenson	Stevenson Intermountain Seed, Inc
Ronald Winterton	Duchesne County Commission
Royce Larsen	
Russell Goodwin	
Ryan	Enefit American Oil
Ryan Howell	
Sally White	
Sandra Waide	
Scott Albrecht	Beaver County
Scott Chew	Chew Livestock, Inc./Chew Ranch LLC;
Scott Hill	
Seth Davie	Person Ranch
Sherry Liguori	Avian Power Line Interaction Committee
Sherry Oster	
Sindy Smith	Public Lands Policy Coordination Office
Sue Barnard	
Sue Griffiths	
Suzanne Roy	American Wild Horse Preservation Campaign
Suzanne Roy	American WildHorse Preservation
Terry Dickey	
Thom Seal	
Thomas Manning	Department of the Air Force
Thomas O. Livingston	
Todd Black	Deseret Land and Livestock
Vickey Blaisdell	
Vickie Jamison	
W Fred Sanders	
W. Fred Sanders	
Wallace Schulthess	
Wally Johnson	Sweetwater County
William Butcher	William Marsing Livestock, Inc.
William Cox	Rich County Commission
William Scott	
Worth Carlin	Vantage Energy Uinta, LLC

Commenter	Organization
Aaron Harp	Central Idaho Rangelands Network (CIRN)
Aimee Ross	International Mountain Bicycling Association
Alan L. Prouty	J.R. Simplot Company
American Bird Conservancy	
Andrea Santarsiere	
Andy Piper	
Angela King	
Anna Laxague	International Mountain Bicycling Association
Aron Bennett	
Art Butler	
AWHP	
B. Roy Prescott	Prescott Land and Livestock
Barb Cestero	Greater Yellowstone Coalition
Barbara Clarke	DreamCatcher Wild Horse and Burro Sanctuary
Barbara Messick	Wood River Soil and Water Conservation District
Barbara Messick	Gooding Soil and Water Conservation District
Barbara Sendelbach	
Barry T. Williams	
Bert Brackett	Idaho State Senate
Bill Baker	
Bill Hubbard	
Bill Jones	
Billy Whitehurst	Makale Livestock LLC
Bob Kunau	Cassia County Commissioners
Bob Loucks	
Bob Schweigert	Intermountain Range Consultants
Bonnie Kershner	
Brad Brooks	The Wilderness Society
Brad Higgins	
Brad Lowe	Jarbidge Sage-Grouse Working Group
Bradford Frisby	Natioanl Mining Association
Brady Fife	Magic Valley Cattle Association
Brandi, Josie, Ruby, and Jess Lisle	
Brett Dumas	Idaho Power
Brett Meyer	
Brook Russell	Owyhee County
Bruce L. Mulkey	
C.L. Butch Otter	
Capital Trail Vehicle Association	
Carl Lufkin	
Carmelita Delgado	
Chad	
Chad and Dannelle Hensley	
Chad Reeder	
Challis Local Working Group	

Charles Lenkner	
Charles Lyons	
Charles M Howell	Jerome County
Chester W. Sellman	
Chris Lish	
Christian Rocklein	
Christie Finn	
Christine B.	EPA, region 10
Christopher Clark	Y-3 II Ranch
Christopher Dalley	Pale Horse Cattle Co.
Chuck Jones	Simplot Livestock Co.
Chyenne Smith	J Lazy S Angus Ranch
Claire Moseley	Public Lands Advocacy
Cleve Davis	Shoshone-Bannock Tribes
Cody & Polly Baldwin	
Curtis Hoskins	
D Reeser	
D. Lane Schumann	Arimo Corporation
D. Paul Dixon	
Dan H. Shewmaker	
Dan Happel	Madison County Board of Commissioners
Dan Murdock	Murdock Brothers Ranch
Dan VanDer Meullan	
Danie Hamilton	
Darcy Helmick	Simplot Livestock Co
Dave and Cathy Veselka	
Dave Ellis	
David Ellason	
David L. Udy	
David Little	
David Little	
David Schulz	Madision County Board of Commissioners
David Skinner	North Magic Valley LWG
Defender of Wildlife	
Deland Osborne	
Delbert Farmer	
Delila Scholes	
Dennis D. Crane	Board of Cassia County Commissioners
Dennis Heitman	
Dennis L. Stanford	06 Livestock
Dennis Mackey	U.S. Fish and Wildlife Services
Dennis R. Bortz	Rabo AgriFinance
Dennis Tanikuni	Idaho Farm Bureau
Dolores Proubasta	
Don Amador	BlueRibbon Coalition, Inc.
Donald Kaleta	Mom and Pop Products
Doris Fischer	

doublemfarm	
Doug Howard	
Douglas J. Balfour	
Duane Taylor	Motorcycle Industry Council
Edward B. Arnett	Theodore Roosevelt Conservation Partnership
Edward Newbold	
Eileen Hennessy	
Elias Jaca	Jaca Livestock
Elyse Gardner	
Erik Molvar	Wild Earth Guardians
Ernest Breuer	
Ernest Brewer	
F. James Whittakers	
Gary and Jackie Ingram	
Gary Childers	
Gary Farnsworth	
Gay Santerre	
Gay Santerre	
Gayle Buhrer and Paul Poorman	
George Shaw	Shaw Cattle Co
Georgeanne Spates	
Gerald Marchant	
Gerald Messerli	
Gina Knudson	
Glenda Gammett	
Greg Bodker	
Greg Cooper	
Gus and Jake Brackett	Brackett Livestock Inc.
Gus Brackett	71 Livestock Association
Harley W. Wallis	
Heather Zeleny	
Holly Endersby	Backcountry Hunters and Anglers
Holly Endersby	Backcountry Hunters & Anglers
J. Morgan Evans	
Jack Kirkley	The University of Montana-Western
Jack Lyman	Idaho Mining Association
James Brendemuehl	
James E. Brown	Montana Wollgrowers Association
James P. Hart	Madison County Board of Commissioners
Janet Lynch	
Jason Anderson	
Jay Smith	J Lazy S Angus Ranch
Jean Public	
Jeff Lord	Mountain Home Local Working Group
Jeff Richards	Rocky Mountain Power
Jeffrey Rovner	
Jerald Raymond	Jefferson County

Jerrie Tipton	Western Counites Alliance
Jerry Hoagland	Owyhee County
Jerry Tingey	
Jessica Sena	Montanta Petroleum Assoc
Jim Childs	
Jim Gerber	
Jim Grant	
Jim Hagenbarth	Hagenbarth Livestock
Joe Merrick	Owyhee County
Joe R Caywood	
John C. Jackson	Petan Company of Nevada, Inc
John Faulkner	Faulkner Land and Livestock
John Hagenbarth	Southwestern Montana Stockman's Association
John Jones	Western Counites Alliance
John Peters	
John Ricketts	
John Robison	Idaho Conservation League
John Thomlinson	
John W. Richard	Owhyhee County Farm Bureau
Jon Goode	Agrium Conda Phosphate Operations
Joseph Daniels	
Josh Bruce	
Judy Levi	
Judy Stockham	
Julie Randell	Prairie Falcon Audubon
Julie Serres	
Justin Naderman	
K. Scott Jensen	Owyhee Cattlemen's Association
Kandace Nevin	
Karen Fullen	NRCS
Karen Kantor	
Karen Steenhof	
Karen Steenhof	
Karen Williams	Idaho Cattle Association
Kari Ramadorai	
Kathleen Gregg	
Kathleen M. Sgamma	Western Energy Alliance
Kathy Van Kleeck	Specialty Vehicle Institute of America
Katie Fite	Western Watershed
Katie Fite	Western Watersheds Project
Katie Fite	Western Watersheds Project
Katie Fite	Western Watersheds Project
Katie Fite	
Katie Salvin	
Kay Hult	Gooding Soil Conservation District
Keagen Gardner	
Keith Severe	71 Livestock Association

Kelly Aberasturi	Owyhee County
Ken Eliason	
Kenneth Brown	Western Counites Alliance
Kenny Kershner	Owyhee Cattlemen's Association
Kenny Kershner	
Kerry Thompson	
Kevin A. Larson	
Kim Danielsen	
Kimberly Justice	
Kirk	Washington County Commissioners
Kirk Chandler	
Koy C. Holland	Holland Ranch Company, HRL, Inc.
Kraich	
Kyle Hardin	Matador Cattle Company
LaMar N. Orton	Idaho Native Plant Society
Larry W. Barkell	
Laura Skaer	American Exploration and Minind Association
Laurie Lichley	
Leah Osborn	
Lee Bradshaw	
Lee Juan Tyler	Sho Ban Tribes
Lee Saterwhite	
Leon W. Smith	
Les Cameron	
Leslie Jayo	
M Jeff. Hagener	Montana Fish, Wildlife and Parks
Marci L. Schlup	Public Lands Council/National Cattlemen's Beef Association
Margaret Doane	
Mark Elli	Industrial Minerals Association
Mark Ipsen	
Mark O'Brien	Lava and Sage Group
Mark Salvo	Defenders of Wildlife
Mark Sweeney	
Martin	
Martin	
Martin	
Marty I. Gill	
Mary Gail Sullivan	NorthWestern Energy
Mary Lou McFarland	
Marybeth Devlin	
Matt Dixon	
Matt Duckett	
Matthew Thompson	
Megan Satterwhite	
Melody Lenkner	
Melva Kauer	

Michael A. Guerry	Guerry, Inc
Michael Brennan	Sagebrush Habitat Conservation Fund
Michael F. Hanley	
Michael J. Henslee	Salmon Falls Land and Livestock Co.
Michael Lankow	
Misty Auld	
	Pioneer PR and Development LLC. Trifold Media
Mitch Staley	Company
Nancy Brackett	
Nanette Schieron	
Narry U. Keeheul	Gusman Livestock Co.
Neil Helmick	Helmick Ranch
Pamela Dugan	NRCS
Pamela Pantone	
Patti T. Odasz	Beaverhead County Commission
Paul Christensen	Cassia County Commissioners
Paul Moss	
Paul Nettleton	
Paul Vitrano	Recreational Off-Highway Vehicle Association
Phillip Law	
Quinton J. Barr	Western Range Service
QuintonJ. Barr	Western Range Service
Rachelle Zocco	
Raime Jo Lequercia	
Ramona Ridley	
Randi Spivak	Center for Biological Diversity
Randy Brown	
Randy Spencer	Spencer Ranch Inc.
Randy Vranes	Soda Springs Plant
Rich Micheals	Washington County Commissioners
Richard Line	
Richard Savage	
Robert M. Shirley	Department of Defense
Robin Kennedy	
Robin Lufkin	
Robyn Thompson	
Robyn Thompson	
Rod Perkins	
Ron Weaver	
Ronald M. Stevenson	Stevenson Intermountain Seed, Inc.
Royce Schwenkfelder	Weiser River Cattle Association
Royce Schwenkfelder	SS Cattle Company LLP
Sage Hen	
Sally White	
Sandra Mitchell	Idaho Recreation Council
Sandra Waide	
Sandy Jones	Ireland Bank

Sarah D. Baker	
Scott Allen	Twin Falls Highway District
Scott M. Rigby	
Shane and Laci Stanford	
Shell Howard	
Sherry Ligouri	Avian Power Line Interaction Committee
Sherry Oster	
Sidnee Rose Hill	
Stan Boyd	Idaho Woll Growers Association
Stanley Albee	
Stanley M Dowton	
Stephen Bauchman	
Stephen V. Goddard	Idaho Wildlife Federation
Steve and Helen Percy	Percy Ranch
Steve Jennings	Beaverhead Outdoors Association
Steve Lyshe	
Steve Murdock	Murdock Brothers Ranch
Steve Smith	
Sue Ellen Barnard	
Susan Griffiths	
Suzanne Budge	SBS Associates LLC
Suzanne Roy	WHE/AWHPC
Tanner Murdock	
Ted and Dorothy Payne	
Ted Thompson	
Terry Chandler	
Tex Kauer	
Thom Seal	
Tim T. Munns	
Timbri M. Hurst	Cassia County Commissioners
Tom Anderson	Washington County Commissioners
Tom Jesser	Jerome Peterbilt
Tom Peterson	
Tony and Brenda Richards	
Travis McAffeem	
Travis Skaar	
ttj7803@comcast.net	
Tyanne Freeburg	
Vernon Kershnew	
Victoria De Goff and family	
Von Bean	
Wayne Butts	Custer County Commissioner
Wayne F. Butts	Custer County Commissioners
Wendy Pratt	
Wild Earth Guardians	
Wiley F. Smith	
William J. Brockman	

William J. Mulder
William Whelan The Nature Conservancy
Winston Gammett

Commenter	Organization
Aaron Borror	
Abercrombie Fafonik	
Al and Melodee Bettman	
Alan Unger	Deshutes County
Alan Withers	
Alfred Dunten	
Alice Elshoff	
Alice Knapp	
Allan Chase	
Allan S. Boss	
Amanda Zgraggen	
Amy Woodruff	
Andrew Allison	Allison Ranch
Andrew Bentz	Bentz Solutions, LLC.
Andrew Shields	Roaring Spring Ranch
Andy Barr	
Andy Root	Rattlesnake Creek Ranch
Ann Langenfeld	
Annette Carson	
Art Chase	
Arthur Sappington	Jefferson Mining District
Arthur Waugh	
Ashley Wilhelm	Union County Comissioners
Barbara Ann Haak	
Barbara Isaacs	
Barbara Kull	
Barbara Sendelbach	
Barbara Wilcox	
Barry Bushue	Oregon Farm Bureau
Barry O'Connor	
Becky Cunningham	
Becky Rose	Rose Ranch
Bert Siddoway	
Betty Morgan	
Beverly Wolverston	Century Ranch
Bill Cleland	
Bill Harvey	
Bill Langenfeld	
Bill Peila	
Bill Roseberry	
Bill Sargent	Umpqua Valley Timber Cruisers
Blair Hampson	
Blair Sturgill	
Bob Elder	
Bob Hearst	
Bob Sallinger	Audubon Society of Portland

Bonnie Clugston	
Borden Beck	Oregon Chapter of the Sierra Club
Boyd Brittoll	Grant County
Brandon McMullen	Harney County
Brandon Smith	
Brenda Morgan	
Brenda Shively	
Bret and Karry Marchek	Marchek and Son, Inc.
Brett Dumas	Idaho Power
Bruce and Carol Hummel	
Bruce Ogilvie	
Bryanna Jasper	Jasper Ranch
Buck and Linda Taylor	
Buck Pilkenton	
Caleb Howard	Klages Ranch
Capitol Trail Vehicle assoiation (CTVA)	
Carla Hughes-Stull	
Carmelita Hollan	
Carol A. Dunten	Harney Soil and Water Conservation District
Carol Coleman	
Casey and Kristen Shelman	
Cathy Eldred	Whipple Spring, LLC
Cathy Ugalde	
Chad S. Boyd	Southeast Oregon Resource Advisory Council
Charles H. Cagle	
Cheryl Johnson	
Cheryl Martin	
Cheryl Williams	
Chris B. Lambert	Grant County
Chris Gregg	
Chris Howard	
Chris Scranton	
Christia Witham	
Christian Rocklein	
Christine B Reichgott	US Environmental Protection Agency Region 10 (EPA)
Christine Bates	
Chuck and Cheryl Buchanan	
Chuck Chase	
Cindy Clark	
Cindy Sitz	Sitz Ranch Partnership
Clark Maxwell	
Cliff Asmussen	
Cliff Bentz	OR House of Representatives
Clinton C. Shock	Scientific Ecological Services
Connie and Larry Lindsay	

Conrad Bateman	
Corey Younger	
Craig J. Herman	
Craig Miller	
Curt Jacobs	
Curtis Martin	VP Ranches
Cyndee Hill	
D.A. Danser	
D.L. "Jack" Nicol	
Dale Conlee	
Dale Smull	
Dan and Laury Cron	
Dan Forseps	
Dan Morse	Oregon Natural Desert Association
Dan Nichols	Harney County
Dan Otley	
Dan P. Joyce	Malheur County
Dan Sullivan	Sullivan Z Ranch, Inc.
Dan Warnock	Warnock Ranches
Dana Allison	
Dana Miller	
Daniel Haak	
Daniel Thee	Diversified Land Management
Darcy Helmick	Simplot
Darcy Ugalde	
Darren Lee	
Daryl Leggett	
Dave and Tami Stoddart	
Dave Freeman	
Dave Hagey	SmileyBuilt Offroad and Accessories, LLC
Dave Mellinger	Audubon Society of Corvallis
Dave Molony	
Dave Sandersfeld	
Dave Schneider	Midstate Electric Cooperative, Inc.
Dave Willis	Soda Mountain Wilderness Council
David Arntz	Harney Soil
David Scott	
David Simmons	Oregon Association of Conservation Districts
David Thompson	
Dawn Camara	
Dean and Petrina White	
DeForest Ballard	
Del Hussey	
Dennis Flynn	
Dennis Murchison	Union County Cattlemen
Denzil Robbins	Robbins Farm Equipment
Derrin Robinson	

Diane Elder	
Diane Luck	
Dick Fleming	
Dick Taug	
Dimari Enterprises, LLC	
Dominic Aiello	Oregon Outdoor Council
Don Amador	BlueRibbon Coalition, Inc.
Don and Sue Coleman	
Don Coats	Community Renewable Energy Association
Don Davidson	
Don George	
Donald A. Albright	
Donald A. Dryer	
Donald Martin	
Donald Petersen	
Donn Christy	
Dora St.	
Doris Kittredge	
Doug Breeze	Crook-Wheeler County Farm Bureau
Doug Heiken	Oregon Wild
Doug Reynolds	
Douglas E. Herron	
Duanne Morga	
Dwight Porter	
Earl Fisher	Association of Oregon Counties
Edward B. Arnett	Theodore Roosevelt Conservation Partnership
Edward Gheen	
Edward Newbold	
Edward Rich	Queen Resources, LLC
Eileen Hennessy	
Elaine Farris	
Eleanor Fitzgerald	
Ellen Gaston	
Elma Watts	
Emerald Trail Riders Association	
Eric Maupin	
Erik Molvar	WildEarth Guardians
Ernest and Ellen Harder	
Evan Barger	
Fran Ebbers	
Frank Cahill	Cahill Ranches Inc.
Frank Dougal	
Frank Vaughn	
Fred Meeks	
Fred Otley	Otley Bros. Inc (Ranch)
Fred Steen	

Frederick Phillips	
Gary Chandler	
Gary Defenbaugh	
Gary Landers	
Gary Marlette	
Gary McKay	Harney County Veterans Office
Gary McManus	
Gary Pearson	
Gary R. Miller	
Gene Grace	American Wind Energy Association
George and Frances Alderson	
George Rollins	Pine Valley Ranch
George Terrill	
Gerald Pimentel	
Geraldine Harris	
Gladys Ott	Spurlock Ranch LLC
Glenn E. Caywood	
Glenn Harris	
Gordon Clark	Haycreek Ranch
Gorley	
Greg Bodker	
Greta Anderson	Western Watershed Project
Gretchen Dietmeyer	
Hal Smith	
HARNEY ELECTRIC COOPERATIVE, INC.	
Harry Stoddart	
Heather Baker	
Herb Jasper	Jasper Ranch
Holly Kerns	Baker County Planning Department
Howard A. Heminger	
Hugh Cahill	Cahill Ranches Inc.
J. Capozzelli	
Jack Horton	
Jack Joyce	
Jaime H	
Jaime Yturriondobeitia	12 Mile Ranch
James Barnes	
James C. Carnahan	
James Longwell	
Jan Alexander	
Jan Alexander	
Jan Oster	Gourmet and Gadgets
Jan Oswald	Gourmet & Gadgets
Jane Shelley	
Janeen Starbuck	
Janet Lynch	

Janet Needler	
Jason Beck	Union County Cattlemen
Jason Radinovich	
Jay Carr	Oregon State University
Jean L. Bunch	
Jean Public	
Jeanette Yturriondobeitia	Oregon State University
Jeb Ball	
Jeese E. Laird	
Jeff Frontz	
Jeff Hussey	
Jeff Johnston	
Jeff Phillips	
Jeffery Maupin	
Jeffrey Rovner	
Jerry and Lezlie O'Sullivan	
Jerry and Linda Miller	
Jim and Frank Hammett	
Jim and Helen McDonald	Oregon End Ranch
Jim Baldwin	
Jim Bentz	
Jim Buchanan	
Jim Edison	
Jim Horan	Oregon Trail Electric Cooperative
Jim Marks	
Jim Myers	
Jim Steitz	
Jimmy Myers	
Joan Black	
Joan Davies	Joan Davies Real Estate
JoAnn Marlette	
Joanne Cunningham	
Joe and Autumn Toelle	
Joe and Julia Flynn	
Joe Baker	
Joe Cahill	Cahill Ranch
Joe Cahill	Cahill Ranches Inc.
Joe Johnson	
Joe Langenfeld	
Joe Maher	
Joe McKay	
Joe Ricker	Oregon Hunters Association
Joel Geier	
John & Lacy Blake	
John A. Heaston	
John A. Heaston	
John and Bobbi Stodart	

John and Judy Ahmann	Oregon Cattleman's Association
John and Karen Simmons	
John and Linda Hussa	
John and Lynne Breese	
John D. George	
John Faw	
John Flynn	
John Hale	
John Herkner	
John Kiely	Kiely Brothers Ranch
John O'Keeffe	
John Sword	
John Sword	
John Thomlinson	
Jon White	
Joseph Utley	
Josh Bryant	
Joy Langenfeld	
Juanita Marchek	Marchek and Son, Inc.
Judy Meredith	
Judy Wilber	Drewsey Field Ranch
Judy Wilkinson	GJ Wilkinson LLC
Julie Laird	Lake County School District 18 Board of Directors
Julie Miller	
Juliet Booth	
Jurgen A. Hess	
Kail Miller	
Karen Cottrell	
Karen Moon	Harney County Watershed Council
Karen Ramer	
Karen T. Coulter	Blue Mountains Biodiversity Project
Katherine Neal	
Kathleen Flynn	
Kathleen Gregg	
Kathy Collman	
Katie Baltzor	
Katie Umekubo	Natural Resources Defense Council
Kay Hart	
Kay Markgraf	
Kay Teisl	Oregan Cattlemen's Association
kcgallery	
Keith Baltzor	
Keith Baltzor	
Keith L Jones	Devil's Canyon Ranch
Kelli Marks	
Ken Alexander	

Ken Alexander	Eastern Oregon Mining Association, Inc.
Ken and Barbara Arnold	
Ken and Nancy Taylor	
Ken Engeberg	Triple E Land Holdings & Starlight Cattle Company
Ken Freese	
Ken Gibbs	Oregon Idaho Utilities
Ken Kestner	Lake County
Ken Thomas	
Kenny Bentz	Crow Camp Ranch
Kerry Kegel	
Kerry Williams	
Kim Richardson	
Kim Ross	Malheur County
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Kirk Scown	Parsnip Peak Cattle Co.
Kirk Winebarger	Gutierrez Cattle Company
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Larry Dinger	
Larry Dunn	
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Larry Maxwell	Maxwell Cattle Inc.
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Mary Ferrioli	
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Mary Wilson	Mann Lake Ranch
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Steve Jay	Three Valleys Ranch
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Steve McClure	Eastern Oregon Counties Association
Steve Russell	
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Susan & Donald Ramsay	
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Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Thursday, August 13, 2015 12:35 PM
To: nvca sagegrouse
Subject: Fwd: PreconsistencyReview_with_response
Attachments: PreconsistencyReview_with_response.docx

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Thu, Mar 12, 2015 at 4:10 PM
Subject: PreconsistencyReview_with_response
To: Stephanie Carman <scarman@blm.gov>
Cc: Michael Hildner <mhildner@blm.gov>, Matthew Magaletti <mmagalet@blm.gov>

I have bundled the responses up into one document….here ya go!

Lauren

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

GREAT BASIN REGION – RESPONSE TO WO REVIEWS OF PROPOSED PLANS

Oregon Proposed Plan Comment Response March 3, 2015

Comment	Resolution
Section 2.1—Remove the word "substantial" from the section header. "Substantial changes" are a trigger for Supplemental EISs. Suggest just describing this section as "Changes between the Draft EIS and Final EIS"	Removed "substantial" from the header. Note: it may be in the template
Objective SSS 3 needs to be changed to be described as an Action (and thus moved down to the "actions" table). The mitigation requirement is being consistently described as an action throughout the range.	Done. Minor re-write. This is now Action SSS 10.
After Action SSS 3 and SSS 4: After these two decisions, consider adding a row with a new decision discussing the density cap (1 energy facility/640 acres). Other ADPPs have a decision related to the density cap. As of right now, the density cap is not found anywhere in Oregon's Chap 2. It should be somewhere other than just the appendix.	Done. Now Action SSS 5.
Please make the following edits to be consistent with 1/30 drop in language (see red text and strikethrough). I know this is nitpicky, but DOI will be checking for consistent application of the dropin: "Action MLS 7: Stipulate all leases within PHMA as NSO~~, with no waivers or modifications~~. No waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action: ~~A single exception will be allowed:~~ ~~Exception: a lease exception may be considered where a portion of the proposed lease is determined to meet the following two criteria:~~ • Would not have direct, indirect, or cumulative effects to Greater Sage-grouse or its habitat. • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to GRSG.	Made suggested changes.

Exceptions based on conservation gain (ii) may only be considered in (a) PHMAs of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid Federal fluid mineral lease existing as of the date of this RMP amendment ~~[revision or amendment]~~. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other GRSG expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publically available at least quarterly."	
Modify to be consistent with drop in language. See strikethrough. The strike through language seems to contradict the dropin language. "Action LR 12: Designate PHMA and GHMA as Z-1 and retain public ownership. ~~Disposal of BLM-administered lands in PHMA and GHMA is not allowed.~~ Lands classified as priority habitat and general habitat for Greater Sage-Grouse will be retained in federal management. Exception: (1) the agency can demonstrate that disposal of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse."	Made suggested changes.
Objective VG 9 needs to be changed to be described as an Action (and thus moved down to the "actions" table). The conifer encroachment language is being consistently described as an action throughout the range.	Done. Now located in Action VG 16.
Pg. 13 of the Narrative Document, Table 2-2: It's unclear why this is in the Proposed Plan section, since it relates to Alternative D. Suggest removal.	This was intended to be carried forward from Alt D to Proposed Plan. Title has been changed to

	reflect PP.
See suggested changes to SSS-11 (strikethrough and red text): Where avoidance is not possible, disturbance would be allowed under the following conditions: • Development in each Oregon PAC and PHMA does not exceed the 3 percent disturbance cap and a density of 1 energy facility per 640 acres (see Appendix _X_). • Only authorize activities after documenting they will not adversely affect Greater Sage-grouse populations due to habitat loss or disruptive activities (independent of disturbance cap) except where such limitation would make accessing valid existing rights impracticable in PHMA and GHMA. [This does not correlate with many of land use allocations. For example, GHMA is "open" to many uses, which will likely adversely affect GRSG locally (although still have net conservation gain at a larger scale, per the mitigation standard). Suggest removing this or rewording this bullet point]. • New anthropogenic disturbance does not occur within 1.0 mile of an occupied or pending lek in PHMA or GHMA. • Development meets noise restrictions (see X) in PHMA and GHMA. • Analyze through implementation level NEPA seasonal protection and timing limitations of occupied and pending leks in PHMA and GHMA. • Mitigation is implemented to ~~offset impacts~~ ensure net conservation gain to Greater Sage-grouse and its habitats (see Appendix X, Mitigation Framework) in PHMA and GHMA. • All disturbance is subject to net conservation gain mitigation (see Appendix X) in PHMA and GHMA. (These two bullet points seem duplicative. Consider combining them) • All new permitted activities will follow Required Design Features (Appendix C) in PHMA and GHMA. • To the extent feasible, development should only occur in non-habitat areas. If this is not possible, then development must occur in the least suitable habitat for Greater Sage-grouse • Suggest adding a bullet point regarding application of lek buffer-distance protocol. This is in many other ADPP's screening criteria. • Screening criteria and conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, except noise and seasonal restrictions would apply.	Done. This is now Action SSS 13 (was Action SSS 11). Added suggested language. I removed this bullet. Changed wording. Changed wording slightly and removed duplication. This point was covered in Action SSS 9, but I also added it here.
Adaptive Management Appendix: Adaptive Management plan does not incorporate direction that	

"when a hard trigger is hit in a BSU within a PAC that has multiple BSUS, including those that cross state line, the WAFWA Management Zone Greater Sage-Grouse Conservation Team will convene to determine the casual factor, put project level responses in place, as appropriate and discuss further appropriate actions to be applied. The team will also investigate the status of the hard triggers in other BSUs within the PAC and will invoke the appropriate plan response". This does not have to be dropped in, but the adaptive management plan needs to reflect this somewhere.	

Nevada/NE California Response March 9, 2015

Comment	Resolution
"Action LG 12: Allotments within SFAs, followed by those within PHMAs, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and compliance." Replace "compliance" with "use supervision" to comply with Jan 30th drop in language.	Re-worded in Proposed Plan
In follow up from the 2/27 conversation: • Modify Action AM 1 as follows (new text in red): "Adjust GRSG habitat maps based on new science and monitoring information through the protocol identified in Appendix N. Evaluate and adjust GRSG habitat categorization and use management boundaries based on continuing inventory and monitoring results at least every 5 years. Based on the protocol review (Appendix N), the BLM will adjust management boundaries through plan maintenance and/or plan amendment as appropriate. • Remove Action AM 2*: "~~Based on the protocol review (Appendix N), adjustments up to plus or minus 10 percent of the mapped habitat within the Nevada and Northeastern California Sub-region planning area would be made.~~*" • ~~Provide more detail for Action AM 8. Where Action AM 8 states "manage GHMAs near areas where PHMA has been burned by wildfires as PHMA", define what "near" means (i.e. how many miles?). Also, provide timeline for how long areas would be managed as PHMA, until~~	Last sentence added [redacted]

~~they revert back to GHMA (e.g. until burned areas are meeting GRSG habitat objectives). This will make the management boundary change seem more "hard wired" per our adaptive management approach.~~ • Modify Appendix A and N to reflect removal of Action AM 2 and modification of Action AM 1.	Can't change Appendix A as it is tied to Alternative D, not the Proposed Plan. Appendix N has been changed.
Add into Proposed Plan a decision that "where more restrictive land use allocations or decisions are made in existing RMPs, those more restrictive land use allocations or decisions will remain in effect and will not be amended by this LUPA". This is drop in language from the January 30th guidance.	This is in Chapter 1 and twice in Chapter 2. It has always been in the "Common to All" section which was not provided to you at the time of review. We have also included it as an introduction to the Proposed Plan.
Appendix H drops in the January 30th GRSG Land Use Plans Disturbance Caps guidance. This wasn't meant to by drop-in language, but was meant to provide concepts and text that should be modified to fit into a land use plan. Most of the text should stay, since it describes the disturbance cap protocol. However, for example, lines like "planning units are directed" should be removed so that the appendix reads like a decision and not guidance. Consider removing the "Purpose" section (or at least rephrasing it), since it really reads like guidance, and not a decision.	Waiting for new drop in appendix language from the WO.
[redacted]	Added clarification that this could require plan maintenance or a plan amendment.
Action MSE 2 concerning split estate – should this be in fluids section?	No – applies to all minerals sections

Idaho/SW Montana Proposed Plan Comment Response March 11, 2015

Comment	Response
Section 2.1—Please remove "substantial" from section title. This is a change to the template.	Change made.
p.2-40 to p.2-42: Somewhere in the fluid minerals section, please reiterate that SFAs are NSO without waiver, exception, or modification.	Change made.
AD-1: Make following edit to be internally consistent with applying disturbance cap in IHMA: "…will be permitted by BLM within GRSG PHMAs and IHMAs in any given Biologically Significant Unit until the disturbance…"	Change made.
HM-OBJ-2/Table 2-3: Please add reference column to Table 2-3, and shown in 1/30 guidance. Please add reference for each desired condition.	Change made. Added citation, kept full references as footnotes below the table.
p. 2-43: Mineral Materials drop in language needs to apply to Idaho also.	Change made.
LR-13: Please make following change to drop in language. This was a mistake in the guidance. Apologies. Please replace last sentence of LR-13 with: "The BLM is analyzing GRSG mitigation measures through the projects' NEPA review process."	Change made.
LR-1: Please add language stating that GHMA (Montana) is open to minor ROWs. I don't think I saw this captured in LR-1 or LR-2.	Change made. Added to LR-1.
FM-15: Please replace with new prescribed fire drop in language sent on March 4th. Sorry for the late change.	Change made.
Mitigation Appendix: Please revise Part III of the mitigation appendix to remove the concept of "no net unmitigated loss". This concept/standard has been replaced with "net conservation gain". Is it possible to rephrase this Part III as the "Idaho and Southwestern Montana Subregion Net Conservation Gain Process" while keeping the rest of the content the same?	Change made.
Please indicate where the hard trigger responses are in the document. Not readily apparent in Chap 2 or the Appendix.	The triggers are in anthropocentric disturbance and adaptive management: AM-11 to AM-14 explain what will happen

	when an adaptive management trigger is tripped. AD-1 and AD-2 explains what will happen when the 3% cap has been exceeded.

Utah Response March 12, 2015

Comment	Response
Objective GRSG-3: Please take the GRSG Habitat Objectives table and make it its own decision (i.e. give it its own row and Objective GRSG-#). This is a key decision and needs to have its own decision number. With it nested in Objective GRSG-3, it looks like the objectives table only applies to PHMA. However, it applies to all GRSG habitats.	Change made. Replaced "Within PHMA" with "In all GRSG habitat." I talked to Michael and this was the intent of his change (making sure the table applied to both PHMA and GHMA).
MA-MIN-13: Please remove the term "sites" (should just read "…of existing active pits…."), per 1/30 drop-in. I know this is very nitpicky, but DOI will be looking for the drop in language to be applied as was written during the DOI Consistency Review in April. Adding "sites" will cause confusion, heartburn, etc with those reviewers. Please add "only", so that it reads "…only if the following criteria are met…", per 1/30 guidance. Again, sorry to be so nitpicky, but folks will insist on this later on.	Changes made.
MA-MIN-5: Please remove the underlined text "Leases Associated with Surface Mining". This drop in language is to be applied for all methods of mining.	No change made. Unsuitability criteria only apply to surface mining operations: 43 CFR 3461.1 – Underground mining exemption from criteria: (a) Federal lands with coal deposits that would be mined by underground mining methods shall not be assessed as unsuitable where there would be no surface coal mining operations, as defined in §3400.0-5 of this title, on any lease, if issued. (b) Where underground mining will include surface operations and surface impacts on

	Federal lands to which a criterion applies, the lands shall be assessed as unsuitable unless the surface management agency finds that a relevant exception or exemption applies. [redacted]
I can't find where Chap 2 makes PHMA/GHMA exclusion to solar. Please add this decision or indicate where it is.	Change made. We address it in chapter 1, and dismiss it from further discussion. On BLM lands, the exclusion from solar is common to all alternatives since the Programmatic Solar EIS closed all GRSG habitat to solar development. The DEIS never considered opening those lands, as that would not be consistent with the purpose and need of this planning effort. However, the FS wasn't part of the PEIS. Since the FS proposed plan has solar actions, we added an explanatory row in the proposed plan noting the existing decision (exclusion) as a counterpart to the FS action.
MA-FIRE-4: Please incorporate the most recent prescribed fire drop in language sent on March 4. Sorry for the late change.	Change made. Dropped in the revised text.
MA-GRSG-3**C**: Where this decision refers to "energy/mineral disturbance", please replace with "energy/mineral facility". This is how the density cap is being described consistently across the range and in the 1/30 guidance.	Changed as noted.
Disturbance Cap Appendix (p. 5): I think there's a typo where the formulas are written. Footnote 1 should point to Table XX-1, not Table XX-3.	No change made. 1) Table 1 identifies data sources and buffers to be used for the west-wide degradation estimates. It only identifies such information for 10 of the 12 degradation

	types. Table 3 identifies all 12 degradation types. At the local level of calculating disturbance, we are not bound to use the data sources and buffers in table 1, and also need to consider the two extra items identified in table 3. As such, the reference to table 3 is correct in describing the formula. Beyond all this, the disturbance appendix is being revised by WO (Vicky Heron). Whatever she provides will be checked for consistency with the above description before being dropped into the FEIS.
Mitigation Appendix: Please do a find/replace. Replace "assure" with "ensure". Sorry this was not provided in your 1/30 drop in appendix, but FWS is very adamant that we use "ensure".	Change made. Only one instance was missed. Changed it to "ensure."
Adaptive Management Appendix: Adaptive Management plan does not incorporate direction that "when a hard trigger is hit in a BSU within a PAC that has multiple BSUS, including those that cross state lines, the WAFWA Management Zone Greater Sage-Grouse Conservation Team will convene to determine the casual factor, put project level responses in place, as appropriate and discuss further appropriate actions to be applied. The team will also investigate the status of the hard triggers in other BSUs within the PAC and will invoke the appropriate plan response". This does not have to be dropped in, but the adaptive management plan needs to reflect this somewhere.	Change made. In Utah, we do not have any instances of multiple BSUs in PACs. On top of that, our PACs stop at our state lines (based on the state of Utah's data provided to the FWS). There are, however, populations that cross state lines. For small populations that are dependent on populations in other states for seasonal habitats, we do address that as a soft-trigger issue. To accomodate this direction, though, we did add some lanaguge to the hard trigger response section.

Commenter	Organization
Albert Robb	
Allison Jones	Wild Utah Project
Amelia Pergl	C.E. Brooks & Associates, P.C.
Andrew Taft	
Angela Magrone	American Bird ConservancyArona
Anna Bryant	
Arlin Hughes	
Barbara Clarke	DreamCatcher Wild Horse and Burro Sanctuary
Barbara Sendelbach	
Barbara Wintch	
Bradford Frisby	National Mining Association
Brent Tanner	Utah Cattlemen's Association
Brian Bremmer	Garfield County
Brian Bremner	Garfield County
Brian Johnson	
Brien Maxfield	
Bryan Dixon	Bear River Watershed Council
Bryant McMullin	
Bryant Shakespear	Garkane Energy
Byard Kershaw	
Carlos Jallo	EOG Resources, Inc.
Catherine Degraw	
Chris Hansen	Bowie Resource Partners, LLC
Christian Rocklein	
Christie Finn	
Christine Landrum	National Park Service
Christopher Lish	
Claire Moseley	Public Lands Advocacy of America
Claudia Jarrett	Sanpete County
CTVA Action Committee	Capital Trail Vehicle Association
Cynthia Dott	
Dan Amador	Blue Ribbon Coalition
Dan Miller	Bear River Watershed Council
Dan Naatz	Independent Petroleum Association
Danell Johnson	Johnson and Livestock LLC
Danie Hamilton	
Darcy Helmick	Simplot Livestock
Dave Olsen	
David Eliason	
David Miller	Iron County Commission
Dedra Williams	J.R. Simplot Company
Del Dee Kunzler	
Denise Dragoo	Snell & Wilmer L.L.P.

DeRae Fillmore	Wayne County
Diane Tanner	
Dolores Proubasta	
Don Van Matre	Sweetwater County
Donald Kaleta	Mom and Pop Products Co.
Dorrell Barker	Castle Country Adaptive Resource Management Group
Duane Taylor	Motorcycle Industry Council
Ed Johnson	
Edward Newbold	
Edward Newbold	
Egret Plover	
Eileen Danni Dey	ConocoPhillips
Eileen Hennessy	
Elyse Gardner	
Eric Molvar	WildEarth Guardians
Erik Molvar	Wild Earth Guardians
Esther Wagner	Petroleum Association of Wyoming
Fred Selman	Harold Selman Inc.
Garry Miller	TransWest Express LLC
Gary Bailiff	Sweetwater County
Gary Taroli	
Gay and David Santerre	
Georganna Cushing	
Georgeanne Spates	
Glen Thompson	Randolph Land and Livestock
Gordon Topham	Sevier County
Greg Bodker	
Heather Zeleny	
Ingham Springs LLC	
James Brendemuehl	
Jane Beattie	
Janet Lynch	
Jean Public	
Jeff Richards	Rocky Mountain Power
Jeff Stone	
Jeffrey Rovner	
Jeremy Greenberg	Western Watersheds Project
Jerrie Tipton	Western Counties Alliance
Jess Larsen	
Jetta Robinson	Pearson Ranch
Jim Cane	Bridgerland Audubon Society
Jim Catlin	Wild Utah
Jim Matson	Kane County Commission
Joan Degiorgio	The Nature Conservancy

John Keeler	Utah Farm Bureau
John Kolb	Sweetwater County
John Thomlinson	
Jon Goode	Utah Phosphate Company
Jon Murphy	
Jonathan Steamer	Uintah County
Josh Jones	Western Counties Alliance
Judy Levi	
Julie Butera	
Kandace Nevin	
Kari Ramadorai	
Kathleen Clarke	Office of the Governor
Kathleen Gregg	
Kathleen Sgamma	Western Energy Alliance
Kelleen Wold	South Central Communications
Kelly Warr	
Ken Spackman	
Kendal Allan	Piute County
Kenneth Brown	Western Counties Alliance
Kent Connelly	Coalition of Local Governments
Kent Connelly	Coalition of Local Governments
Kent Marshall	
Kevin Heaton	Utah State University Extension
Kim Danielsen	
Kimberly Berman	
Kyle Christensen	
Larry Thompson	
Laura	American Exploration & Mining Association
Laura Leigh	Wild Horse Education
Laura Romin	U.S. Fish and Wildlife Service
Leland Pollock	Garfield County
Linda Kervin	Bridgerland Audubon Society
Logan West	
Lorien Belton	Community- Based Conservation Program
Luci Stremme	Holsinger Law, LLC
Lynn Carroll	Wasatch Audobon Society
Lynne Prescott	
Mack Morell	
Marci Schlup	Public Lands Council/ National Cattlemen's Beef Association
Margaret Doane	
Maria Seyrig	
Mark Belles	
Mark Compton	Utah Mining Association

Mark Ellis	Industrial Minerals Association- North America
Mark Kot	Sweetwaater County
Mark Salvo	Defenders of Wildlife
Mark Ward	Utah Association of Counties
Mark Wintch	Wintch Livestock Co
Mary Lou McFarland	
Marybeth Devlin	
Matthew Mead	The State of Wyoming
Matthew Reese	Defenders of Wildlife
Micael Brennan	Sagebrush Habitat Conservation Fund
Michael East	South Central Communications
Michael Weland	Utah Reclamation Mitigation & Conservation Commission
Michelle Dynes	Office of Governor Matthew Mead
Mike Hyde	Duchesne County
Mike Smith	QEP Energy Company
Mike Welch	Foundation for Quality Resource Management
Mike Wolf	Bridgerland Audubon Society
Mike Worthen	Iron County
Misty Auld	
Nada Culver	The Wilderness Society
Nanette Schieron	
Newell Ilarward	Wayne County
Nick Owens	Anadarko Petroleum
Nils Anders Lunde	Sierra Club
Nora and Terry Suppers	
Norman McKee	
Pace Hansen	Carbon County
Patrick Kell	International Mountain Bicycling Association
Paul Wintch	
Rachelle Zocco	
Randall Long	
Randy Bolles	Devon Energy Production Company L.P.
Randy Parker	Utah Farm Bureau Federation
Randy Parker	Utah Farm Bureau Federation
Ray Petersen	Emery County
Ray Smith	Great Salt Lake Audubon
Rebecca Peart	Rich County Commission
Redge Johnson	
Reid West	
Rex Sacco	Carbon County
Rhonda Bredesen	
Richard Mingo	Utah Reclamation Mitigation & Conservation Commission

Richard Muller	Bridggerland Audobon Society
Richard Ranger	American Petroleum Institute
Robert Williams	Wayne County
Robin Kennedy	Business Development CB Technologies, Inc.
Roger Barton	Price River Watershed Conservation District
Ronald Stevenson	Stevenson Intermountain Seed, Inc
Ronald Winterton	Duchesne County Commission
Royce Larsen	
Russell Goodwin	
Ryan	Enefit American Oil
Ryan Howell	
Sally White	
Sandra Waide	
Scott Albrecht	Beaver County
Scott Chew	Chew Livestock, Inc./Chew Ranch LLC;
Scott Hill	
Seth Davie	Person Ranch
Sherry Liguori	Avian Power Line Interaction Committee
Sherry Oster	
Sindy Smith	Public Lands Policy Coordination Office
Sue Barnard	
Sue Griffiths	
Suzanne Roy	American Wild Horse Preservation Campaign
Suzanne Roy	American WildHorse Preservation
Terry Dickey	
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Thomas O. Livingston	
Todd Black	Deseret Land and Livestock
Vickey Blaisdell	
Vickie Jamison	
W Fred Sanders	
W. Fred Sanders	
Wallace Schulthess	
Wally Johnson	Sweetwater County
William Butcher	William Marsing Livestock, Inc.
William Cox	Rich County Commission
William Scott	
Worth Carlin	Vantage Energy Uinta, LLC

Commenter	Organization
Aaron Harp	Central Idaho Rangelands Network (CIRN)
Aimee Ross	International Mountain Bicycling Association
Alan L. Prouty	J.R. Simplot Company
American Bird Conservancy	
Andrea Santarsiere	
Andy Piper	
Angela King	
Anna Laxague	International Mountain Bicycling Association
Aron Bennett	
Art Butler	
AWHP	
B. Roy Prescott	Prescott Land and Livestock
Barb Cestero	Greater Yellowstone Coalition
Barbara Clarke	DreamCatcher Wild Horse and Burro Sanctuary
Barbara Messick	Wood River Soil and Water Conservation District
Barbara Messick	Gooding Soil and Water Conservation District
Barbara Sendelbach	
Barry T. Williams	
Bert Brackett	Idaho State Senate
Bill Baker	
Bill Hubbard	
Bill Jones	
Billy Whitehurst	Makale Livestock LLC
Bob Kunau	Cassia County Commissioners
Bob Loucks	
Bob Schweigert	Intermountain Range Consultants
Bonnie Kershner	
Brad Brooks	The Wilderness Society
Brad Higgins	
Brad Lowe	Jarbidge Sage-Grouse Working Group
Bradford Frisby	Natioanl Mining Association
Brady Fife	Magic Valley Cattle Association
Brandi, Josie, Ruby, and Jess Lisle	
Brett Dumas	Idaho Power
Brett Meyer	
Brook Russell	Owyhee County
Bruce L. Mulkey	
C.L. Butch Otter	
Capital Trail Vehicle Association	
Carl Lufkin	
Carmelita Delgado	
Chad	
Chad and Dannelle Hensley	
Chad Reeder	
Challis Local Working Group	
Charles Lenkner	
Charles Lyons	
Charles M Howell	Jerome County

Chester W. Sellman	
Chris Lish	
Christian Rocklein	
Christie Finn	
Christine B.	EPA, region 10
Christopher Clark	Y-3 II Ranch
Christopher Dalley	Pale Horse Cattle Co.
Chuck Jones	Simplot Livestock Co.
Chyenne Smith	J Lazy S Angus Ranch
Claire Moseley	Public Lands Advocacy
Cleve Davis	Shoshone-Bannock Tribes
Cody & Polly Baldwin	
Curtis Hoskins	
D Reeser	
D. Lane Schumann	Arimo Corporation
D. Paul Dixon	
Dan H. Shewmaker	
Dan Happel	Madison County Board of Commissioners
Dan Murdock	Murdock Brothers Ranch
Dan VanDer Meullan	
Danie Hamilton	
Darcy Helmick	Simplot Livestock Co
Dave and Cathy Veselka	
Dave Ellis	
David Ellason	
David L. Udy	
David Little	
David Little	
David Schulz	Madision County Board of Commissioners
David Skinner	North Magic Valley LWG
Defender of Wildlife	
Deland Osborne	
Delbert Farmer	
Delila Scholes	
Dennis D. Crane	Board of Cassia County Commissioners
Dennis Heitman	
Dennis L. Stanford	06 Livestock
Dennis Mackey	U.S. Fish and Wildlife Services
Dennis R. Bortz	Rabo AgriFinance
Dennis Tanikuni	Idaho Farm Bureau
Dolores Proubasta	
Don Amador	BlueRibbon Coalition, Inc.
Donald Kaleta	Mom and Pop Products
Doris Fischer	
doublemfarm	
Doug Howard	
Douglas J. Balfour	
Duane Taylor	Motorcycle Industry Council
Edward B. Arnett	Theodore Roosevelt Conservation Partnership
Edward Newbold	

Eileen Hennessy	
Elias Jaca	Jaca Livestock
Elyse Gardner	
Erik Molvar	Wild Earth Guardians
Ernest Breuer	
Ernest Brewer	
F. James Whittakers	
Gary and Jackie Ingram	
Gary Childers	
Gary Farnsworth	
Gay Santerre	
Gay Santerre	
Gayle Buhrer and Paul Poorman	
George Shaw	Shaw Cattle Co
Georgeanne Spates	
Gerald Marchant	
Gerald Messerli	
Gina Knudson	
Glenda Gammett	
Greg Bodker	
Greg Cooper	
Gus and Jake Brackett	Brackett Livestock Inc.
Gus Brackett	71 Livestock Association
Harley W. Wallis	
Heather Zeleny	
Holly Endersby	Backcountry Hunters and Anglers
Holly Endersby	Backcountry Hunters & Anglers
J. Morgan Evans	
Jack Kirkley	The University of Montana-Western
Jack Lyman	Idaho Mining Association
James Brendemuehl	
James E. Brown	Montana Wollgrowers Association
James P. Hart	Madison County Board of Commissioners
Janet Lynch	
Jason Anderson	
Jay Smith	J Lazy S Angus Ranch
Jean Public	
Jeff Lord	Mountain Home Local Working Group
Jeff Richards	Rocky Mountain Power
Jeffrey Rovner	
Jerald Raymond	Jefferson County
Jerrie Tipton	Western Counites Alliance
Jerry Hoagland	Owyhee County
Jerry Tingey	
Jessica Sena	Montanta Petroleum Assoc
Jim Childs	
Jim Gerber	
Jim Grant	
Jim Hagenbarth	Hagenbarth Livestock
Joe Merrick	Owyhee County

Joe R Caywood	
John C. Jackson	Petan Company of Nevada, Inc
John Faulkner	Faulkner Land and Livestock
John Hagenbarth	Southwestern Montana Stockman's Association
John Jones	Western Counites Alliance
John Peters	
John Ricketts	
John Robison	Idaho Conservation League
John Thomlinson	
John W. Richard	Owhyhee County Farm Bureau
Jon Goode	Agrium Conda Phosphate Operations
Joseph Daniels	
Josh Bruce	
Judy Levi	
Judy Stockham	
Julie Randell	Prairie Falcon Audubon
Julie Serres	
Justin Naderman	
K. Scott Jensen	Owyhee Cattlemen's Association
Kandace Nevin	
Karen Fullen	NRCS
Karen Kantor	
Karen Steenhof	
Karen Steenhof	
Karen Williams	Idaho Cattle Association
Kari Ramadorai	
Kathleen Gregg	
Kathleen M. Sgamma	Western Energy Alliance
Kathy Van Kleeck	Specialty Vehicle Institute of America
Katie Fite	Western Watershed
Katie Fite	Western Watersheds Project
Katie Fite	Western Watersheds Project
Katie Fite	Western Watersheds Project
Katie Fite	
Katie Salvin	
Kay Hult	Gooding Soil Conservation District
Keagen Gardner	
Keith Severe	71 Livestock Association
Kelly Aberasturi	Owyhee County
Ken Eliason	
Kenneth Brown	Western Counites Alliance
Kenny Kershner	Owyhee Cattlemen's Association
Kenny Kershner	
Kerry Thompson	
Kevin A. Larson	
Kim Danielsen	
Kimberly Justice	
Kirk	Washington County Commissioners
Kirk Chandler	
Koy C. Holland	Holland Ranch Company, HRL, Inc.

Kraich	
Kyle Hardin	Matador Cattle Company
LaMar N. Orton	Idaho Native Plant Society
Larry W. Barkell	
Laura Skaer	American Exploration and Minind Association
Laurie Lichley	
Leah Osborn	
Lee Bradshaw	
Lee Juan Tyler	Sho Ban Tribes
Lee Saterwhite	
Leon W. Smith	
Les Cameron	
Leslie Jayo	
M Jeff. Hagener	Montana Fish, Wildlife and Parks
Marci L. Schlup	Public Lands Council/National Cattlemen's Beef Association
Margaret Doane	
Mark Elli	Industrial Minerals Association
Mark Ipsen	
Mark O'Brien	Lava and Sage Group
Mark Salvo	Defenders of Wildlife
Mark Sweeney	
Martin	
Martin	
Martin	
Marty I. Gill	
Mary Gail Sullivan	NorthWestern Energy
Mary Lou McFarland	
Marybeth Devlin	
Matt Dixon	
Matt Duckett	
Matthew Thompson	
Megan Satterwhite	
Melody Lenkner	
Melva Kauer	
Michael A. Guerry	Guerry, Inc
Michael Brennan	Sagebrush Habitat Conservation Fund
Michael F. Hanley	
Michael J. Henslee	Salmon Falls Land and Livestock Co.
Michael Lankow	
Misty Auld	
Mitch Staley	Pioneer PR and Development LLC. Trifold Media Company
Nancy Brackett	
Nanette Schieron	
Narry U. Keeheul	Gusman Livestock Co.
Neil Helmick	Helmick Ranch
Pamela Dugan	NRCS
Pamela Pantone	
Patti T. Odasz	Beaverhead County Commission

Paul Christensen	Cassia County Commissioners
Paul Moss	
Paul Nettleton	
Paul Vitrano	Recreational Off-Highway Vehicle Association
Phillip Law	
Quinton J. Barr	Western Range Service
QuintonJ. Barr	Western Range Service
Rachelle Zocco	
Raime Jo Lequercia	
Ramona Ridley	
Randi Spivak	Center for Biological Diversity
Randy Brown	
Randy Spencer	Spencer Ranch Inc.
Randy Vranes	Soda Springs Plant
Rich Micheals	Washington County Commissioners
Richard Line	
Richard Savage	
Robert M. Shirley	Department of Defense
Robin Kennedy	
Robin Lufkin	
Robyn Thompson	
Robyn Thompson	
Rod Perkins	
Ron Weaver	
Ronald M. Stevenson	Stevenson Intermountain Seed, Inc.
Royce Schwenkfelder	Weiser River Cattle Association
Royce Schwenkfelder	SS Cattle Company LLP
Sage Hen	
Sally White	
Sandra Mitchell	Idaho Recreation Council
Sandra Waide	
Sandy Jones	Ireland Bank
Sarah D. Baker	
Scott Allen	Twin Falls Highway District
Scott M. Rigby	
Shane and Laci Stanford	
Shell Howard	
Sherry Ligouri	Avian Power Line Interaction Committee
Sherry Oster	
Sidnee Rose Hill	
Stan Boyd	Idaho Woll Growers Association
Stanley Albee	
Stanley M Dowton	
Stephen Bauchman	
Stephen V. Goddard	Idaho Wildlife Federation
Steve and Helen Percy	Percy Ranch
Steve Jennings	Beaverhead Outdoors Association
Steve Lyshe	
Steve Murdock	Murdock Brothers Ranch
Steve Smith	

Sue Ellen Barnard	
Susan Griffiths	
Suzanne Budge	SBS Associates LLC
Suzanne Roy	WHE/AWHPC
Tanner Murdock	
Ted and Dorothy Payne	
Ted Thompson	
Terry Chandler	
Tex Kauer	
Thom Seal	
Tim T. Munns	
Timbri M. Hurst	Cassia County Commissioners
Tom Anderson	Washington County Commissioners
Tom Jesser	Jerome Peterbilt
Tom Peterson	
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Victoria De Goff and family	
Von Bean	
Wayne Butts	Custer County Commissioner
Wayne F. Butts	Custer County Commissioners
Wendy Pratt	
Wild Earth Guardians	
Wiley F. Smith	
William J. Brockman	
William J. Mulder	
William Whelan	The Nature Conservancy
Winston Gammett	

Commenter	Organization
Aaron Borror	
Abercrombie Fafonik	
Al and Melodee Bettman	
Alan Unger	Deshutes County
Alan Withers	
Alfred Dunten	
Alice Elshoff	
Alice Knapp	
Allan Chase	
Allan S. Boss	
Amanda Zgraggen	
Amy Woodruff	
Andrew Allison	Allison Ranch
Andrew Bentz	Bentz Solutions, LLC.
Andrew Shields	Roaring Spring Ranch
Andy Barr	
Andy Root	Rattlesnake Creek Ranch
Ann Langenfeld	
Annette Carson	
Art Chase	
Arthur Sappington	Jefferson Mining District
Arthur Waugh	
Ashley Wilhelm	Union County Comissioners
Barbara Ann Haak	
Barbara Isaacs	
Barbara Kull	
Barbara Sendelbach	
Barbara Wilcox	
Barry Bushue	Oregon Farm Bureau
Barry O'Connor	
Becky Cunningham	
Becky Rose	Rose Ranch
Bert Siddoway	
Betty Morgan	
Beverly Wolverston	Century Ranch
Bill Cleland	
Bill Harvey	
Bill Langenfeld	
Bill Peila	
Bill Roseberry	
Bill Sargent	Umpqua Valley Timber Cruisers
Blair Hampson	
Blair Sturgill	
Bob Elder	
Bob Hearst	
Bob Sallinger	Audubon Society of Portland
Bonnie Clugston	
Borden Beck	Oregon Chapter of the Sierra Club
Boyd Brittoll	Grant County

Brandon McMullen	Harney County
Brandon Smith	
Brenda Morgan	
Brenda Shively	
Bret and Karry Marchek	Marchek and Son, Inc.
Brett Dumas	Idaho Power
Bruce and Carol Hummel	
Bruce Ogilvie	
Bryanna Jasper	Jasper Ranch
Buck and Linda Taylor	
Buck Pilkenton	
Caleb Howard	Klages Ranch
Capitol Trail Vehicle assoiation (CTVA)	
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Carmelita Hollan	
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Carol Coleman	
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Cathy Ugalde	
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Cheryl Johnson	
Cheryl Martin	
Cheryl Williams	
Chris B. Lambert	Grant County
Chris Gregg	
Chris Howard	
Chris Scranton	
Christia Witham	
Christian Rocklein	
Christine B Reichgott	US Environmental Protection Agency Region 10 (EPA)
Christine Bates	
Chuck and Cheryl Buchanan	
Chuck Chase	
Cindy Clark	
Cindy Sitz	Sitz Ranch Partnership
Clark Maxwell	
Cliff Asmussen	
Cliff Bentz	OR House of Representatives
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Conrad Bateman	
Corey Younger	
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Craig Miller	
Curt Jacobs	
Curtis Martin	VP Ranches

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Dan Nichols	Harney County
Dan Otley	
Dan P. Joyce	Malheur County
Dan Sullivan	Sullivan Z Ranch, Inc.
Dan Warnock	Warnock Ranches
Dana Allison	
Dana Miller	
Daniel Haak	
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Darcy Helmick	Simplot
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Dave Freeman	
Dave Hagey	SmileyBuilt Offroad and Accessories, LLC
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Dave Molony	
Dave Sandersfeld	
Dave Schneider	Midstate Electric Cooperative, Inc.
Dave Willis	Soda Mountain Wilderness Council
David Arntz	Harney Soil
David Scott	
David Simmons	Oregon Association of Conservation Districts
David Thompson	
Dawn Camara	
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DeForest Ballard	
Del Hussey	
Dennis Flynn	
Dennis Murchison	Union County Cattlemen
Denzil Robbins	Robbins Farm Equipment
Derrin Robinson	
Diane Elder	
Diane Luck	
Dick Fleming	
Dick Taug	
Dimari Enterprises, LLC	
Dominic Aiello	Oregon Outdoor Council
Don Amador	BlueRibbon Coalition, Inc.
Don and Sue Coleman	
Don Coats	Community Renewable Energy Association

Don Davidson	
Don George	
Donald A. Albright	
Donald A. Dryer	
Donald Martin	
Donald Petersen	
Donn Christy	
Dora St.	
Doris Kittredge	
Doug Breeze	Crook-Wheeler County Farm Bureau
Doug Heiken	Oregon Wild
Doug Reynolds	
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Edward Gheen	
Edward Newbold	
Edward Rich	Queen Resources, LLC
Eileen Hennessy	
Elaine Farris	
Eleanor Fitzgerald	
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Emerald Trail Riders Association	
Eric Maupin	
Erik Molvar	WildEarth Guardians
Ernest and Ellen Harder	
Evan Barger	
Fran Ebbers	
Frank Cahill	Cahill Ranches Inc.
Frank Dougal	
Frank Vaughn	
Fred Meeks	
Fred Otley	Otley Bros. Inc (Ranch)
Fred Steen	
Frederick Phillips	
Gary Chandler	
Gary Defenbaugh	
Gary Landers	
Gary Marlette	
Gary McKay	Harney County Veterans Office
Gary McManus	
Gary Pearson	
Gary R. Miller	
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George and Frances Alderson	
George Rollins	Pine Valley Ranch

George Terrill	
Gerald Pimentel	
Geraldine Harris	
Gladys Ott	Spurlock Ranch LLC
Glenn E. Caywood	
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Gordon Clark	Haycreek Ranch
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Greg Bodker	
Greta Anderson	Western Watershed Project
Gretchen Dietmeyer	
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Harry Stoddart	
Heather Baker	
Herb Jasper	Jasper Ranch
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Jack Horton	
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Jaime Yturriondobeitia	12 Mile Ranch
James Barnes	
James C. Carnahan	
James Longwell	
Jan Alexander	
Jan Alexander	
Jan Oster	Gourmet and Gadgets
Jan Oswald	Gourmet & Gadgets
Jane Shelley	
Janeen Starbuck	
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Jeffery Maupin	
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Jim Edison	
Jim Horan	Oregon Trail Electric Cooperative
Jim Marks	
Jim Myers	
Jim Steitz	
Jimmy Myers	
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Joan Davies	Joan Davies Real Estate
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Joanne Cunningham	
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Joe and Julia Flynn	
Joe Baker	
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John Faw	
John Flynn	
John Hale	
John Herkner	
John Kiely	Kiely Brothers Ranch
John O'Keeffe	
John Sword	
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John Thomlinson	
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Joseph Utley	
Josh Bryant	
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Kay Teisl	Oregan Cattlemen's Association
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Ken and Nancy Taylor	
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Ken Freese	
Ken Gibbs	Oregon Idaho Utilities
Ken Kestner	Lake County
Ken Thomas	
Kenny Bentz	Crow Camp Ranch
Kerry Kegel	
Kerry Williams	
Kim Richardson	
Kim Ross	Malheur County
Kim Ross	Malheur County Court
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Kirk Winebarger	Gutierrez Cattle Company

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Larry G. Hammond	
Larry Larson	
Larry Mapleson	
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Larry Otley	
Larry Thomas	
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Laura Leigh	Wild Horse Education
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Leigh Ann Evans	Washington Federal
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Mary E. Brooks	
Mary Ferrioli	
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Mary Shivell	
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Mary Wilson	Mann Lake Ranch
Mary Woodworth	Adel School Dist #21
Maryanne Lovell	
Marybeth Devlin	
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Matt Ellsworth	American Exploration & Mining Association
Matt Kerns	Animal Clinic of Baker inc.
Matt Kniesel	
Matt Little	
Meb Dailey	
Megan Decker	Renewable Northwest Project
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Micahel Quinn	
Michael Brennan	Sagebrush Habitat Conservation Fund
Michael Getty	
Michael O'Leary	O'Leary Ranch, Inc
Michael Rossi	Rossi Ranches
Michael Tyner	
Mike Bentz	
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Pat Wilber	Drewsey Field Ranch
Patricia Ryno	
Patricia Wagner	
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Peter Uglesich	
Phil Whitley	
Phil Williams	
Philip Wirth	Auburn Ranch and High Bar Mining,, LLC
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Ralph and Myrna Morgan	
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Ralph Poole	
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Randi Spark	Center for Biological Diversity
Randy Jones	Department of Environmental Quality
Ray	
Ray Dickerson	
Ray Huff	
Ray Lay	
Ray Sessler	Sessler Ranches
Ray Sessler	Oregon Cattlemen's Association
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Rena Uhalde	
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Retail Merchants of Burns, Hines and Harney County	
Rich Jenkins	
Richard "Dick" Jenkins	
Richard and Sherryl Grady	
Richard Beck	
Richard Hiatt	
Richard Imholt	
Richard Musser	
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Richard Whitman	State of Oregon
Richard Yturriondobeitia	12 Mile Ranch
Rick & Sheryl Johnson	
Rick Habein	Habein Livestock Companty/ Lamb Ranch (1879)
Rick Ponte	
Robert Harris	
Robert Kern	
Robert McKim	
Robert Oswald	
Rochelle Heid	
Rod and Donna Harlan	
Rodney & Debra Johnson	
Rodney Ferry	Lakeview Animal Hospital, Inc.
Rodney Hoagland	
Roland Lee	
Ron Burris	
Ron Cunningham	Cunningham Ranch
Ron Stevenson	Stevenson Intermountain Seed, Inc
Rosalie Averett	
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Runnisha McNamee	
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Sam Kaser	
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Sandy Greenwald	
Sara Snyder	
Scott and Gina Abbe	Abbe Ranch
Scott and Nellie Franklin	

Scott Dahlman	Oregonians for Food & Shelter
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Scott W. Myers	County Court of Grant County
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Sharron Hoag	
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Sheri Jensen	
Sherri Hussey	
Sherry Ligouri	Avian Powerline Interaction Committee
Sherry Oster	
Sheryl Pierce	East Cascades Audubon Society
Sheryll Harper	
Shirley Rugg	
Sonja Weems	
Stacy L. Davies	Roaring Springs Ranch
Stan Shepardson	
Stephan Finlayson	
Stephanie Howes	
Steve Culley	
Steve Goeller	
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Steve Jay	Three Valleys Ranch
Steve Maher	Blue Mountain RFPA
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Steve McClure	Eastern Oregon Counties Association
Steve Russell	
Steven Grasty	
Steven Marker	
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Susan	
Susan & Donald Ramsay	
Susan Bunch	
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Tim Blount	
Tim Colgrove	
Tim K Smith	
Tim Kerns	
Tim Shively	
Timothy Vollmer	
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Todd Carson	
Todd Isaacs	
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Tom Holtz	
Tom Kiely	Adel Water Improvement District
Tom Sharp	Chair, Harney County Sage-Grouse CCAA Steering Committee
Tom Wolverton	Lucky Creek Ranch
Tony Joyce	
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Yulee Yanok	
Zak Morgan	
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California Association of 4 Wheel Drive Clubs, John Stewart

California Cattlemen's Association, Justin Oldfield
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Brion Theriault
John Thomlinson
Orson Tingey
Tomera Ranches, Pete Tomera
Humboldt County, Bill Deist
U.S. Fish and Wildlife Service, Edward D. Koch
Valerie Van Horn

Buckhorn Land and Livestock, LLC, Randy Venturacci
Elizabeth Waldock
Washoe County Community Services Department, Chad Giesinger
Kathleen Watkins
Wild Earth Guardians, Erik Molvar
Wells Rural Electric Company, Clay Fitch
Wells Rural Electric Company, Clay R. Fitch
Western Counties Alliance
Jungo Ranches, Rondey and Virginia St. Clair
Western Lithium Corp., Dennis Bryan
Western Lithium Corp, Catherine Clark
Petan Company of Nevada Inc.
Chuck Whipple

Harney Electric Cooperative, Inc., Randall Whitaker

The White Pine Board of Commission, John Lampros

Sage-grouse Conservation Fund , Michael Brennan
The Wilderness Society , Nada Culver
GJ Livestock LLC, Judy Wilkinson
Jean Williams
Richard Williams
April Marie Wilson
Bill Wilson
Walter Wilson
Buster Wines
Jay C Winrod
Women's Mining Coalition, Wanda Bunquet
Lassen County Farm Bureau, Ramsey Wood

Western Watersheds Project, Michael J. Connor
Western Watersheds Project, katie Fite
Y-3 II Ranch, Christopher W. Clark
Y-3 II Ranch, Christopher W. Clark
Pole Creek Grazing Assoiciation, LLC, Lyman Youngberg
Ross Zimmerman
Rachelle Zocco
NRCS, James Gatzke
Churchill County, Eleanor Lockwood
Teri Johnson
marjorie lynne
Jay Wright
Bill Phillips
Ray Reynolds
Rachel Buzzetti
Randy Rowley
Lanny Morrison
Leon Frey
Kevin Tomera
Kevin Tomera

Duckwater Shoshone Tribe, Maurice Frank-Churchill
U.S. Fish and Wildlife Service, Edward Koch
Richard Bruinsma
California Department of Natural Resources, Neil Manji
Michelle
Gaylord Cleveland
Teresa T. Conner
Eastern Oregon Mining, D.A. Danser
NV Conservation League, Kyle Davis
Jennifer Garrett
Friends of Black Rock volunteer, Josh Harison
Steven Koehler
BLM-Carson City District, Chris Kula

Ron La Bate
John Mosley
National Mining Association, Bradford Frisby
David Neff
Noble Energy, Inc., Brian Lockard
Northeastern Great Basin Resource Advisory Council, Jeff White

Nevada Department of Wildlife, Shawn Espinosa
Nevada State Grazing Boards, Central Committee, Steve Boles
Nevada High Desert Outfitters, Mitch Buzzetti
O&De Cattle Co. , Dave DeMulder
Paris Livestock, Rama Paris
Board of Pershing County Commissoners, Darin Bloyed
Triangle L Ranch, Ira Renner
Ann Reynolds

Rural Heritage Preservation Project, Cliff Gardner
Hondo Mining, Nelson Spear
Judy Stovall
Summit Lake Paiute Council, Ran DeSoto
Wells Resource Area Grazing Association, Brad Dalton
Tom Williams
Tony Witherspoon
Wylin and Lili Wolf
Edwin Depaoli
Richard Hubbell
Redge Johnson
Katherine Landstom
Lincoln Resource Group Corp., Jeffrey Wilson

American Wind Energy Association, Gene Grace
Shirley Allen
Thad Ballard
Duck Lake Ranch LLC, Mark Barlow
Cindy Barnett
Michelle Benes
Boies Ranch, Steve and Robin Boies
Elaine Brown
John and Susie Bunyard
Winecup Gamble Ranch, James Rogers
Eileen Hennessy
Keith Hansen
Kerry Hart
Resource Conservation District, Ramsey Wood
Jackrabbit Properties LLC, Todd Jaksick
Wells Rural Electric Company, Hank James

McGarva Ranch, Jared McGarva
Mexivada Mining Corp, Richard Redfern
Jette Seal
Isaac Morrison
Parks Ranch Inc., Buck Parks
Department of Conservation and Natural Resources,
Brian Rookstool
Ralph Sacrison
Quinn River Conservation District, Clay Smith
White Pine Ranch, Arlo Stockham

Premier Gold Mines Limited, Warren Thompson
Torell Livestock and Custom A.I., Ron Torell
Renee Vincent
Charmane Wadsworth
American Wild Horse Preservation Campaign,
Suzanne Roy
Marta Williams
Fort McDermitt Paiute and Shoshone Tribe, Tildon
Smart

Great Basin Region
Greater Sage-Grouse Public Comments
Issue Summary & Response Comparison

A note of clarification for what information these examples are intended to convey.

Three examples are provided; they all have the Response first, followed by the Issue Statement. Table #1 are the responses & issues from Section 12.1, Fire/Fuels Range of Alternatives; Table #2 are from 12.3 Fire/Fuels Best Available Information/Baseline Data; Table #3 are from 15.1 Fluid Minerals Range of Alternatives.

The examples provided are to illustrate the differences in response structural types, not to illustrate the differences in response content. Note that some of the responses are written out as explanatory text with an intro-body-conclusion construction; in Table 12.1 see OR & UT as examples. Other responses are bullet points; in Table 12.1, see NV as example.

Consistency in CONTENT of the response can be achieved with check lists of key messages which have been done for some of the NEPA & SG responses. For example, to address the issue raised by some commenters that the NTT report is not scientifically sound, the response needs to include the following key points:

- Statement that the NTT is scientifically valid
  - The methodology is sound
  - It was peer-reviewed and generated
  - Authors were recognized experts in their field
  - It utilized recent, current literature and data
- Statement that the NTT scope is appropriate for the SG EIS programmatic, broad planning level analysis

Are there some issues that must have key messages? If so, which ones?

Do it for all original common responses. Common NEPA standards. Send out to EMPSi folks for additional messages that might need to be highlighted.

Section 12.1 – Fire Range of Alts				
	Idaho	**Oregon**	**Nevada**	**Utah**
Response	The BLM and the Forest Service considered a reasonable range of alternatives during the GRSG planning process in full compliance with the NEPA (see section 4.3, NEPA Range of Alternatives, of this report, as well as Chapter 2 of the FEIS). The CEQ regulations	1. The assessments in Appendix H will be analyzed in the FEIS. Site assessments and NEPA review will be conducted for specific projects. Appendix H, Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, describes a minimal framework example and suggested	• Prescribed mitigation came from action B-FFM-HFM-9 (NTT Report) and action F-FFM-HFM-9. See action B-FFM-HFM-9. Alternative D has implementation actions which are tiered to the local GRSG landscape wildfire and invasive species assessment	The BLM and the Forest Service considered a reasonable range of alternatives during the GRSG planning process in full compliance with the NEPA (see section 4.3, NEPA Range of Alternatives, of this report, as well as Chapter 2 of the FEIS). The CEQ regulations

	(40 CFR 1502.1) require that the BLM and the Forest Service consider reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. While there are many possible alternatives or actions to manage public lands and greater sage-grouse in the planning area, the BLM and the Forest Service fully considered the planning issues and criteria developed during the scoping process to determine a reasonable range of alternatives. As a result, six alternatives were analyzed in detail in the DLUPA/DEIS that best addressed the issues and concerns identified by the affected public. The DEIS management actions in Table 2-2 provide for a range of level of use of fuel breaks, including use of green-strips. The fuels RDFs under Alternatives XX do not exclude the use of non-native species for fuel breaks. These RDFs will be adopted in the preferred alternative *[ensure language is correct for RDFs]* Management actions for prescribed fire will be modified in the preferred alternative to include restricting use of prescribed fire in intact Wyoming sagebrush *[Need to make sure changes are added to FEIS, add*	approach for this assessment. As noted in section 4.3, NEPA Range of Alternatives, of this report, the alternatives, including the management actions for the fire program meet the purpose and need for the EIS. Additionally, the Greater Sage-grouse Wildland Fire and Invasive Species Assessment, which provides a framework for site assessments, was updated and finalized. See Appendix XX of this FEIS. The assessments will be conducted during implementation of the planning decisions from the ROD. 2. BLM coordinates with RFPAs, rural fire protection districts, and state/Tribal partners for improved fire management actions, such as initial attack. To facilitate safety, efficiency, effectiveness, all partners must meet minimum training and equipment standards. *[BLM note: Response needs wordsmithing by BLM. This comment will result in changes to the DEIS.]* 3. New roads can fragment habitat, can increase human-caused fires, and can facilitate weed invasion. The BLM seeks to find a balance between roads used for fire response, public access, and protecting natural resources. 4. Juniper is not a noxious weed or invasive plant. Fire and vegetation management	described in GEN-1 *[replace with new management action code]* utilizing best available science related to the conservation of GRSG. • Coordinate and collaborate with federal, tribal, state, local governments, as well as associations sanctioned through either California or Nevada states that meet fire standards for effective and efficient wildfire response.	(40 CFR 1502.1) require that the BLM and the Forest Service consider reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. While there are many possible alternatives or actions to manage public lands and GRSG in the planning area, the BLM and the Forest Service fully considered the the planning issues and criteria developed during the scoping process to determine a reasonable range of alternatives. As a result, six alternatives were analyzed in detail in the DLUPA/DEIS that best addressed the issues and concerns identified by the affected public. The DLUPA/DEIS considered a range of alternatives. Within that the range of alternatives fire is included as disturbance under Alternative C and E. Fire is not counted as disturbance under alternatives B or D. Under the proposed plan fire would not be counted as disturbance but would be taken into consideration when evaluating habitat availability-percent sagebrush on the landscape. The EIS also considers a range of alternatives considering use of prescribed fire within priority management areas and use of certain best management

	reference to appropriate section here]. *[Need input from sage-grouse team in relation to 15% canopy cover language changes]* This FEIS/RMPA is intended to direct planning level actions. Timelines and details for implementation will be specified in future site specific planning efforts. Alternative language will be reviewed and revised for clarity as needed.	coordination occurs in order to manage fuels. *[BLM note: BLM to place fuels management for invasives, juniper, fire risk (e.g. fuels breaks) in the vegetation section of alternatives matrix.]* 5. The design and location of fuel breaks and fuels treatments are analyzed for site-specific projects. Prescribed fire and grazing are considered at various intensities in the alternatives. The Vegetation section of Table 2-6 contains an action for seed sources with respect to climate change.		practices. The BLM has provided Monitoring and Adaptive Management strategies in the FEIS, see Appendices XX and XX. The strategies provide a framework would be put in place to account for habitat losses due to natural causes (fire and invasives) and/or population declines at the appropriate localized scale. *[NOTE TO BLM: Are adaptive management strategies being added to Section 2.3.2, Adaptive Management Strategy? Or are they being included as a separate appendix?]*
Issue Summary	The BLM and the Forest Service should examine the location and size of proposed fuel breaks in further detail as fuel breaks in large areas of intact sagebrush limit fire and related habitat destruction. Specifically, one commenter requests use of green-strips, including non-native species, for fuel breaks. Use of prescriptive fire as a management tool should be further examined. The FEIS should consider the quality, sustainability, or relative importance of habitat to GRSG when determining whether it is appropriate to maintain the 15% sagebrush canopy in key/core habitat. Timelines for long-term fire	1. The RMPA/DEIS does not analyze wildfire management in a manner that fulfills the purpose and need of the document. The Greater Sage-Grouse Wildland Fire and Invasive Species Assessment noted in the Preferred Alternative needs to be completed and included in the RMPA/DEIS. 2. The BLM failed to analyze the role of Rangeland Fire Protection Districts. According to FLPMA the BLM needs to coordinate with these associations and the BLM should better evaluate the benefits of this coordination. The BLM should also share wildfire risk assessment information with cooperating agencies and	The management action should apply to brood rearing and winter habitat as well as nest habitat. It may not be appropriate to maintain 15% sagebrush canopy in all key/core habitat in an area where removal and creation of a fuel break would have net beneficial effects on GRSG. Clearly define how readjustment of resources to provide suppression for Sage Grouse habitat would be coordinated with the local fire departments. Nevada Rural Electric Association requests the flexibility to fight wildfire that threaten their infrastructure within authorized ROWs and requests application of the Rangeland Fire Protection Association model to all	Commenters included information about the inclusion of fire in the disturbance cap and the effects of fire on sagebrush availability. Additionally, commenters questioned the use of various treatment types such as prescribed fire in GRSG habitats and appropriateness of best management practices.

	management measures should be established in the FEIS. One commenter recommends that measures be implemented one year after the ROD. Implementation details of fire control measures should be specified. The BLM/Forest Service should acknowledge the importance of flexibility in fire management plans in the FEIS and allow for on-the ground decision making for effective fire-management. Alternative language should be revised for clarity.	Rangeland Fire Protection Associations. 3. The BLM needs to ensure fire response time is minimized and needs to be careful not to close or restrict the construction of new roads that could enable firefighters to have the quickest response time. The RMPA/DEIS needs to include decision-making priorities for fires that extend across BLM districts and jurisdictions. 4. The BLM should ensure consistency and coordination between wildfire and noxious weeds programs, particularly in regards to juniper encroachment. The BLM should include mechanisms in the RMPA/DEIS that will allow the BLM to adjust invasive and fire management as new technology is developed. 5. The BLM should improve, clarify and modify actions describing the design and location of fuel breaks. The BLM should also clarify where fuel breaks will and will not be permitted, include more details on fuel treatments, invasive species management, and re-consider the use of prescribed fire and grazing as fire prevention techniques. Consider potential changes in climate when proposing post-fire seed sources.	LUPA/DEIS alternatives.	

Section 12.3 – Fire Baseline /Best Available Info				
	Idaho	**Oregon**	**Nevada**	**Utah**
Response	The impact analysis provides the appropriate information for the scope and scale of the project (see section 4.6, NEPA Impact Analysis, of this report). Upon BLM and Forest Service reviews and public comment suggestions, some sections in Chapter 4 have been updated and revised to include clarifications to the text. Section 4.XX, [insert section name], in the FEIS has been revised to clarify the impacts of reduced grazing on fuel loads. *[BLM/Forest Service- need to add review impacts in Ch 4 for consistency with this language added to chapter 3 for relation between grazing and fire. .Review impacts analysis to make sure that impacts analysis has sufficient info on impacts of reduced grazing on fuel loads]* In addition, impacts analysis discussion has been modified to clarify the impacts of different suppression measures proposed by Alternative.[BLM/Forest Service- need to review and modify discussion of impacts of fire suppression measures (i.e. specific conservation measures under B vs. approach under E)]	Responding to a wildfire is unrelated to a disturbance cap. RFPA coordination will be included in the Proposed Plan. Analysis of the role that RFPAs play in wildfire control cannot be analyzed because data are not available involving RFPAs that meet National Wildfire Coordinating Group standards. *[BLM note: This response will result in new text for the Proposed Plan. Needs wordsmithing by BLM.]*	• The discrepancy in Chapter 4 at 109 has been noted and changes will be made in Chapter 3 & 4 as needed. • Mineral reduction (page 4-127) - This assumption is based on Shlisky et al 2007 which shows a correlation between mining and risk of wildfire by introducing new ignition sources. • The term "Federal Ownership" should be changed to federally managed lands in the document. • See Human Caused fires in the Impacts from Recreation Management in Section 4.8.3 on page 4-129. • Impacts from Alternative E would be less than that of Alternative A because not more than five percent of the occupied and suitable and 20 percent in potential habitat would undergo habitat disturbance. This in turn will cause a shift in Condition Class to a more historical regime. (from 4.8.8 Impacts from greater sage-grouse management) • Table 2.6 states fuel loading requirements and fuel loading is covered in the Chambers assessment table and FIAT assessment.	As indicated by the USFWS COT evaluation, many of the measures recommended are currently included within the preferred alternative in the DLUPA/DEIS. In addition, many of these measures are already used by the BLM as part of standard fire management policy and procedures. Specific language that states GRSG must occupy an area for restoration to be considered successful is included in the range of alternative under alternative C.
Issue Summary	The DEIS does not contain sufficient analysis of indirect impacts of reduced grazing on fuel loads and related wildfire	Commenters noted that BLM and Forest Service did not provided adequate analysis	1. Resolve the discrepancy in Ch.4 at 109 claiming between 1992 and 2011 human-caused-fires resulted in the	Commenters suggested that Alternative D should be revised to meet the COT objectives for

Section 12.3 – Fire Baseline /Best Available Info				
	Idaho	**Oregon**	**Nevada**	**Utah**
	risk. Additionally, the analysis of impacts of fire suppression activities should be reexamined. It is particularly important that this analysis is clarified as lack of sufficient regulatory mechanisms for wildland fire was cited as a primary threat to GRSG in the FWS listing decision.	for how the disturbance cap could hamper wildfire response and the impacts from BLM coordination with the Rangeland Fire Protection Associations. The 3% disturbance cap hampers the ability to quickly respond to wildfire and the impact of the disturbance cap on wildfire suppression efforts was not adequately analyzed. The DEIS should include fire in the Preferred Alternative 3% cap on anthropogenic disturbances and in any other percentage limits on anthropogenic disturbance, as was recommended by USFWS. The RMPA/DEIS should evaluate the impacts of coordination with the Rangeland Fire Protection Associations and coordination with these associations should be stated within the objective and action tables.	loss of 305,076 acres. This is inconsistent with the acreage BLM reports in Chapter 3 at 75 which indicates that 198,691 acres burned due to human caused ignitions between 1992-2011. 2. Constructing livestock enclosures around post-fire recovery areas is impractical for large-burn areas. 3. Placing more limitation on mineral development will not indirectly decrease risk of fire; this assumptive unsubstantiated statement and should not be include in the FEIS/LUPA document. 4. The statement "Federal Ownership" should be corrected the federal government doesn't own the land. 5. Clarify how the elimination of cross-country travel will show significant changes in human caused ignition or a reduction of invasive grasses. 6. Impacts under Alternate E would not be the same as under Alternative A because more than five percent of the occupied and suitable and 20 percent in potential habitat would undergo habitat disturbance under Alternative A. Clarify what is meant by "sagebrush cover will be maintained or increased to cover at	fire.

Section 12.3 – Fire Baseline /Best Available Info				
	Idaho	**Oregon**	**Nevada**	**Utah**
			least 70 percent of the land." 7. Provide citations/information detailing how development of mineral resources introduces additional ignition sources.	

Section 15.1 – Fluid Minerals Range of Alts				
	Idaho	**Oregon**	**Nevada**	**Utah**
Response	*[NOTE TO BLM: The BLM should examine the existing discussion of valid existing rights that will survive the proposed LUPA and should expand that discussion if it seems insufficient.]* The BLM and the Forest Service considered a reasonable range of alternatives during the greater sage-grouse planning process in full compliance with the NEPA. The CEQ regulations (40 CFR 1502.1) require that the BLM and the Forest Service consider reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. While there are many possible alternatives or actions to manage public lands and greater sage-grouse in the planning area, the BLM and the Forest Service fully considered the planning issues and criteria developed during the scoping process to determine a	Closure in PGMA and PPMA is already considered in the alternatives. CSU consideration is considered in alternative D, discussing NSO buffers, water closures, etc. *NOTE TO BLM: Review the following citation for 10 km NSO* *Naugle, D.F., K.E. Doherty, B.L. Walker, M.J. Holloran, and H.E. Copeland. 2011. Energy development and Greater Sage-Grouse. Pp. 489-503 in S.T. Knick and J.W. Connelly (editors). Greater Sage-Grouse: ecology and conservation of a landscape species and its habitats. Studies in Avian Biology (vol. 38). University of California Press. Berkeley, CA.* ***New alternative proposed : phased leasing alternative-less than 1/3 of planning area.*	The establishment of an appeal process is outside the scope of work for this document. DEIS is consistent with current BLM/FS best management practices for restoration (see existing list of best management practices). The Executive Summary does not provide the level of specificity as the remainder of the document. DEIS Action D FFME 15 will be revised to read: "Insure bonds are sufficient for costs relative to reclamation."	As noted above previously in the response in Section 4.3, Range of Alternatives, Section 1.5 of the Draft EIS describes how the Utah GRSG LUPA/EIS planning team employed the BLM and Forest Service planning process to develop a reasonable range of alternatives for the LUPA. The BLM and Forest Service complied with NEPA and the CEQ implementing regulations at 40 CFR 1500 in the development of alternatives for this draft LUPA/EIS, including seeking public input and analyzing reasonable alternatives. The alternatives include management options for the planning area that would modify or amend decisions made in the field office RMPs, as amended, to meet the planning criteria, to address issues and comments from cooperating agencies and the public, or to provide a reasonable range of

Section 15.1 – Fluid Minerals Range of Alts				
	Idaho	**Oregon**	**Nevada**	**Utah**
	reasonable range of alternatives. As a result, six alternatives were analyzed in detail in the DLUPA/DEIS that best addressed the issues and concerns identified by the affected public. The DLUPA/DEIS includes alternatives that provide a greater and lesser degree of restrictions in various use programs, but would not eliminate or invalidate any valid existing development rights. BLM agrees that it cannot impose an NSO on an existing lease. A definition of valid and existing rights has been added to the Glossary in the FEIS. *[NOTE TO BLM: Multiple changes were recommended to the FEIS by Porter- see separate tracking sheet.]* *[NOTE TO BLM: Have minerals program elaborate on where the phosphate leases are relative to the management designations for the various Alternatives. Makela- is there an adequate baseline description for leaseable minerals? Also, BLM look into the issue of restrictions in proposed plan relative to restrictiosn under an ESA listing for minerals development.]* *[NOTE TO BLM: determine whether there are mineral leases in the ACECs proposed by Alts C and F. Determine mineral potential in*			alternatives. 1. As stated in Section 1.7, Development of Planning Criteria, the LUPA will recognize all valid existing rights. The potential impacts on valid existing rights from management decisions in this plan amendment are further discussed in Section 4.20, Minerals, and Appendix R, Oil and Gas Reasonably Foreseeable Development Scenario for Greater Sage-Grouse Occupied Habitat in Utah Sub-Region. 2. The range of alternatives analyzed in Section 2.6, Detailed Comparison of Alternatives, of the DEIS included alternatives that focus on both site-specific and broad restrictions, and the impacts of these varying types of restrictions are analyzed in Section 4.20.2, Nonenergy Leasable Minerals. In appropriate cases where broad restrictions are applied, exceptions ensure that these restrictions are only applied where appropriate. 3. Where appropriate, the BLM has added clarity to explain how restrictions will be applied and has clarified definitions of terms in the FEIS Glossary (Volume II). Definitions of restrictions and explanations of how they will be

Section 15.1 – Fluid Minerals Range of Alts				
	Idaho	**Oregon**	**Nevada**	**Utah**
	ACECs proposed by Alts. C and F.] *[NOTE TO BLM: Add to GLOSSARY-Valid Existing Rights]* *[NOTE TO BLM: Discuss how the NTT recommendations and USFWS policy were included in the alternatives development.]* Selenium bioaccumulation is not identified by the US Fish and Wildlife Service or the NTT Report as a major threat to GRSG and is not part of the conservation strategy being applied by the BLM. No change to the EIS has resulted from this comment. *[NOTE TO BLM: BLM to examine its jurisdiction to prioritize GRSG conservation over laws relating to KPLAs and to describe that result in the comment response, along with any appropriate changes to the EIS.]* *[NOTE TO BLM: BLM's preferred alternative may be changed in the FEIS, to keep all lands in KPLAs open to future non-energy solid mineral leasing, but to close areas in PPMA and PMMA outside of KPLAs. An exception would be made when additional lands are needed to recover ore on the lease (fringe acreage leasing, lease modifications).]*			applied are included in Section 4.20.2 and Table 2.1. [EMPSi ACTION ITEM FOR FEIS: add definitions of restrictions and explanations of how they are applied to minerals development.] 4. The DEIS evaluate a reasonable range of alternatives. The impacts of these alternatives on leasable mineral development are discussed in Section 4.20.2. The applicability of the RDFs depends on the alternative being considered. For example, under Alternative D, an RDF would not be applied if the RDF is not applicable given the site-specific conditions (see Section 2.6, Table 2.1, MA-MIN-30: "The RDFs identified in Appendix G, Required Design Features for Fluid Minerals, would be attached as mandatory COAs during development of a lease, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: - A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; - A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; - Analyses conclude that following a specific

Section 15.1 – Fluid Minerals Range of Alts				
	Idaho	**Oregon**	**Nevada**	**Utah**
				feature will provide no more protection to GRGS or its habitat than not following it, for the specific project being proposed."). 5. The DEIS evaluated a reasonable range of alternatives, as described in Section 4.3 of this comment response chapter. The impacts of these alternatives on leasable mineral development are discussed in Section 4.20.2.
Issue Summary	The DEIS needs a better explanation on how valid existing rights are defined and how they will be protected, including fringe or preference right leases. The alternatives need to follow the NTT report recommendations more closely, as well as reflect current USFWS policy recommendations. The BLM needs to clarify the location of non-leased Known Phosphase Areas in relation to GRSG habitat. The plan is potentially more restrictive to phosphate leasing than a listing under the ESA and did not properly define the environmental baseline for leasable minerals. Without prohibiting new phosphate mining in GRSG habitat, the LUPA does not protect GRSG from the potential impacts of selenium being	Consider new management actions for minerals and energy development. *[Note to BLM: The actions proposed that are not currently considered are:* *• Pursue buy outs or exchanges of leases in order to direct leasing and development toward areas with low or no habitat conflicts* *• Only allowing fluid mineral leasing in connectivity habitat subject to no surface occupancy stipulations.* *For SGCAs [10km ~ 6mi]:* *• In existing leased and permitted areas, apply a 10 km non-surface occupancy around active leks and limit permitted disturbance to 1 per section and no more than 3% surface disturbance per section.* *• Implement courtship, nesting, early-brood rearing and winter seasonal and timing restrictions for all human*	The BLM and Forest Service should provide additional detail and/or revisions regarding leasable minerals alternatives, including provisions for an appeal process associated with SSUS-3, requiring reclamation instead of restoration, and specifying an NSO buffer distance. All priority habitats should be found unsuitable for coal leasing to provide regulatory certainty. The DEIS did not accurately reflect the state alternative in terms of withdrawals. Commenters asserted Alternative B management (specifically application of the 3% disturbance cap) is inappropriate for existing leases. Commenters noted that restoration is too rigorous of a standard to meet and the term	1. The DLUPA/EIS violates valid existing rights by applying additional restrictions to existing mineral leases. 2. The DLUPA/EIS should not apply blanket restrictions in this programmatic document. Site-specific restrictions tailored to individual circumstances are more appropriate. 3. The restrictions on leasable mineral development proposed in the DLUPA/EIS are too vague to be consistently enforced. 4. The restrictions on leasable mineral development proposed in the DLUPA/EIS are too burdensome and will have unintended negative consequences. Other measures would work just as well and provide more flexibility for

Section 15.1 – Fluid Minerals Range of Alts				
	Idaho	**Oregon**	**Nevada**	**Utah**
	released to the environment and poisoning wildlife, including GRSG, through transport in air and water and subsequent bioaccumulation. The EIS fails to explain or discuss the authority that the BLM has to close public lands to leasable mineral prospecting and leasing under the LUPA process under Alternatives B, C and D.	*activities.* *• Avoid the surface disposal of produced water257 unless it can be proven to be beneficial to sage-grouse and includes measures to preclude the spread of West Nile virus.* *For GRSG habitat outside of SGCAs:* *• Apply a 10 km non-surface occupancy around active leks and limit permitted disturbance to 1 per section and no more than 3% surface disturbance per section.* *• Implement courtship, nesting, early-brood rearing and winter seasonal and timing restrictions for all human activities, including exploration.* *• Avoid the surface disposal of produced water unless it can be proven to be beneficial to sage-grouse and includes measures to preclude the spread of West Nile virus.]* *•Use phased leasing (not to exceed 1/3 of planning area)*	should be replaced with reclamation with the type of plant community specified at the time of the bond development.	developers. 5. The restrictions on leasable mineral development proposed in the DLUA/EIS are not stringent enough to adequately protect GRSG.

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6.4a

Brent Ralston

From: Brent Ralston
Sent: Thursday, March 13, 2014 2:11 PM
To: Melvin (Joe) Tague; Lauren Mermejo; Quincy Bahr; Joan Suther
Cc: 'Glen Stein'; 'mdillon@fs.fed.us'; Matthew Magaletti; Joseph Stout; 'David Batts'
Subject: RE: Draft Justification btw RMR and GBR

Looks good to me. So we would use this in response to appropriate comments on this subject?

Brent Ralston
Greater Sage-Grouse Planning Lead
Idaho and Southwestern Montana Subregion
Idaho State Office
208-373-3812

From: Melvin (Joe) Tague [mailto:jtague@blm.gov]
Sent: Thursday, March 13, 2014 2:03 PM
To: Lauren Mermejo; Quincy Bahr; Brent Ralston; Joan Suther
Cc: Glen Stein; mdillon@fs.fed.us; Matthew Magaletti; Joseph Stout; David Batts
Subject: RE: Draft Justification btw RMR and GBR

Looks good to me, I have no issues.

From: Lauren Mermejo [mailto:lmermejo@blm.gov]
Sent: Thursday, March 13, 2014 10:52 AM
To: Quincy Bahr; Brent Ralston; Suther, Joan; Melvin (Joe) Tague
Cc: Glen Stein; mdillon@fs.fed.us; Matthew Magaletti; Joseph Stout; David Batts
Subject: Draft Justification btw RMR and GBR

Hi Folks –

As we work towards putting our Proposed Plans together, there well may be differences between management actions proposed in the Great Basin Region and the Rocky Mountain Region that are justifiable. As I told you on our Project Lead call on Tuesday, I have put together a one pager that helps explain the differences in threats between the two regions and the rationale for why we may be going down different paths.

This is just a draft …. Please provide me your comments or suggested changes before next Monday so that we can discuss on the Project Lead call next Tuesday. Thanks!
Lauren

GBR_PUB_0212
6.4.c

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, August 12, 2015 5:39 PM
To: nvca sagegrouse
Subject: Fwd: Chapter 2 Template Change
Attachments: Amendments_PROPOSED_CH2_TEMPLATE_FINAL_2_25_14.docx

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Wed, Feb 25, 2015 at 5:04 PM
Subject: Chapter 2 Template Change
To: Randall Sharp <sharphay@att.net>, jmbeck@blm.gov, Joan Suther <jsuther@blm.gov>, Jessica Rubado <jarubado@blm.gov>, Quincy Bahr <qfbahr@blm.gov>
Cc: Holly Prohaska <holly.prohaska@empsi.com>, Peter Gower <peter.gower@empsi.com>, "Zaccherio, Meredith" <meredith.zaccherio@empsi.com>, Chad Ricklefs <chad.ricklefs@empsi.com>, Derek Holmgren <derek.holmgren@empsi.com>, David Batts <david.batts@empsi.com>, Matthew Magaletti <mmagalet@blm.gov>

Hi All –

Please see Matt's apology below, and put Table 2-X where it really belongs!

Thanks

Lauren

From: Magaletti, Matthew [mailto:mmagalet@blm.gov]
Sent: Wednesday, February 25, 2015 4:59 PM
To: Ruth Miller; Erin Jones; Bridget Clayton
Cc: Lauren Mermejo
Subject: Fwd: Question on Comment #112

Ok - I admit it, I screwed up. You or your contractors may have already caught this, but when I was incorporating the new Table 2-X into the updated Ch. 2 Amendment Template, the table jumped to section 2.6.1. The intent was for the intro language and table to be in section 2.5.1. If you have already uploaded your ch. 2s to the Sharepoint site for WO, do not worry about it (WO probably wont even catch). I just wanted to bring this to your attention.

The revisions' GRSG habitat management section template is still ok.

-Matt

---------- Forwarded message ----------
From: **Magaletti, Matthew** <mmagalet@blm.gov>
Date: Wed, Feb 25, 2015 at 1:44 PM
Subject: Re: Question on Comment #112
To: "West, William" <wwest@blm.gov>
Cc: Pamela Murdock <pmurdock@blm.gov>

Hi William - Sorry for the confusion. This was my fault as I forgot to delete the old language and inserted the table and the language in the wrong location. My attempt to help just became confusing Please place the language below before table 2-1 and ensure the below language and table are within Section 2.5. I corrected and attached the template for clarity purposes.

Thank Bryan for the catch!

Table 2-1: BLM Programs for Addressing Greater Sage-Grouse Threats

The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS's in their 2010 warranted but precluded finding on listing the GRSG, as well as their Conservation Objectives Team (COT) Report. The USFWS threats do not necessarily align with BLM or Forest Service resource program areas, and are often integrated into several different resource program areas. Table 2-1, USFWS Threats to GRSG and Their Habitat, Applicable BLM and Forest Service Proposed Plan Amendment Resource Program Areas Addressing these Threats, provides a cross-walk between each of the 2010 warranted but precluded finding and COT identified threats and the BLM/Forest Service program areas addressing these threats, with references to specific sections of the LUPA/proposed plan."

Pam - the revision template was not impacted by this error, so we are good still with Buffalo and Bighorn.

On Wed, Feb 25, 2015 at 12:30 PM, West, William <wwest@blm.gov> wrote:

Hi Matt,

I received the following questions from our contractor regarding introduction of Table 2-1 (threats).

How should I answer them?

Thanks

William West

Planning and Environmental Coordinator

Rock Springs Field Office, BLM

280 Highway 191 North

Rock Springs, WY 82901

wwest@blm.gov

Office 307-352-0259

---------- Forwarded message ----------
From: **Klyse, Bryan [USA]** <klyse_bryan@bah.com>
Date: Wed, Feb 25, 2015 at 10:18 AM
Subject: Question on Comment #112
To: "West, William" <wwest@blm.gov>
Cc: "Middleton, Pamela [USA]" <middleton_pamela@bah.com>

William:

Below is comment #112 from batch 5. The direction is to include this text immediately before Table 2-1, which would put this text in Section 2.6.1. However, there is already similar/same text in Section 2.5. Should I replace the existing Section 2.5 text with the text below? I assume this is the correct course of action, but wanted to confirm with you. Also, does this include change the Section 2.5 heading, which currently includes "BLM/Forest Service" and "Resource Programs." Please advise on the desired changes.

Thanks,

Bryan

“Immediately before the new table 2-1 insert the following text:

Table 2-1: BLM Programs for Addressing Greater Sage-Grouse Threats

The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS’s in their 2010 warranted but precluded finding on listing the GRSG, as well as their Conservation Objectives Team (COT) Report. The USFWS threats do not necessarily align with BLM or Forest Service resource program areas, and are often integrated into several different resource program areas. Table 2-1, USFWS Threats to GRSG and Their Habitat, Applicable BLM and Forest Service Proposed Plan Amendment Resource Program Areas Addressing these Threats, provides a cross-walk between each of the 2010 warranted but precluded finding and COT identified threats and the BLM/Forest Service program areas addressing these threats, with references to specific sections of the LUPA/proposed plan.”

Bryan Klyse

Booz | Allen | Hamilton

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Matthew Magaletti

Rocky Mountain Region Sage Grouse Coordinator (Acting)

Bureau of Land Management

(307) 775-6329

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Rocky Mountain Region Sage Grouse Coordinator (Acting)

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Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

NOTE: This template includes all applicable references to Forest Service. Any reference to Forest Service will need to be removed from sub-regional plans that do not have a Forest Service component. This template is also written under the direction of having two (2) Proposed Plans (one for BLM and one for Forest Service). The template will need to be revised accordingly if including only one Proposed Plan (BLM).

This template also includes placeholders and notes highlighted in yellow for sub-regions to complete/address.

2.1 SUBSTANTIAL CHANGES BETWEEN THE DRAFT EIS AND FINAL EIS

[*NOTE: select one of the following two options depending on how sub-region proposed plan was developed*]

[*OPTION 1: Proposed Plan = new alternative*] As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft LUPA/EIS, the BLM and Forest Service have developed the Proposed Plan/LUPA for managing BLM-administered and National Forest System lands within the XX [NOTE: insert sub-regional planning area]. Alternative X (the Preferred Alternative) from the Draft LUPA/EIS has not been selected. Rather the Proposed Plan/LUPA consists of a combination of various management actions from all the alternatives and is now considered the Proposed LUPA for managing BLM-administered and National Forest System lands within the X [*NOTE: insert sub-regional planning area*]. The Proposed Plan/LUPA focuses on addressing public comments, while continuing to meet the BLM's and Forest Service's legal and regulatory mandates.

[*OPTION 2: Proposed Plan = modified Preferred Alternative*] As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft LUPA/EIS, the BLM's and Forest Service's Preferred Alternative, identified as Alternative X in the Draft LUPA/EIS, has been modified and is now the Proposed Plan/LUPA for managing BLM-administered and National Forest

System lands within the XX [*NOTE: insert sub-regional planning area*]. The Proposed Plan/LUPA focuses on addressing public comments, while continuing to meet the BLM's and Forest Service's legal and regulatory mandates.

[*BOTH OPTIONS include the following*] Changes to the alternatives between the Draft EIS and Final EIS are [*NOTE: include bulleted summary list of substantial changes to Chapter 2 between DEIS and FEIS*]:

- **Chapter 2** has been reorganized for consistency between all sub-regional GRSG LUPAs/EISs.
- The GRSG adaptive management plan has been further defined in **Section 2.6.1**, Adaptive Management.
- The GRSG monitoring strategy has been further defined in **Section 2.6.2**, Monitoring for the Greater Sage-grouse Planning Strategy, and **Appendix X** of the Final EIS.
- The GRSG mitigation strategy has been further defined in **Section 2.6.3**, Regional Mitigation, and **Appendix X** of the Final EIS.
- Disturbance [*NOTE: describe changes related to disturbance*]
- The Forest Service Proposed Plan is now a stand-alone Proposed Plan in the FEIS.
- [*NOTE: provide a summary of the difference in PPMA, PGMA, PHMA and GHMA nomenclature between draft and final and compare to your state plan nomenclature. i.e. Core*]
- Others? [*NOTE: include other major changes*]

2.2 INTRODUCTION

The LUPA/EIS complies with NEPA, which directs the BLM and Forest Service to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources…" (NEPA Section 102[2][e]). At the heart of the alternative development process is the required development of a reasonable range of alternatives. Public and internal (within BLM and Forest Service) scoping (see **Section 1.X**, Scoping and Identification of Issues for Development of the Proposed Plan and Draft Alternatives) identified issues that present opportunities for alternative courses of action, while the purpose and need for action described in **Section 1.X**, Purpose and Need, provides sideboards for determining "reasonableness."

This chapter introduces and details the Proposed Plan. The Proposed Plan is a mix of management actions selected from the range of alternatives in the Draft LUPA/EIS and is based on best science, public scoping comments, public comments on the Draft LUPA/EIS and internal agency discussion. The alternatives that were in the Draft LUPA/EIS are also included in this chapter. These include the No Action Alternative, which would continue the existing

policies of the BLM and Forest Service; X [*NOTE: insert # of alternatives accordingly*] action alternatives; and the alternatives considered but eliminated from detailed analysis.

The identification of the Preferred Alternative in the Draft LUPA/EIS did not constitute a commitment or decision in principle, and there is no requirement to select the Preferred Alternative or any of the separate alternatives presented in the Draft LUPA/EIS in the Final LUPA/EIS as the Proposed Plan. The BLM and Forest Service have the discretion to select any of the alternatives as their Preferred Alternative in the Draft LUPA/EIS. The agencies also have the discretion to modify the Preferred Alternative between the Draft EIS and the Final EIS into the Proposed Plan. The modifications are allowable as long as the actions presented in the Proposed Plan within the Proposed LUPA/Final EIS were analyzed somewhere in the Draft EIS. The various parts of the separate alternatives that were analyzed in the Draft EIS can be "mixed and matched" to develop an alternative – known as the Proposed Plan - in the Final EIS, as long as the reasons for doing so are explained (40 CFR 1506.2(b)).

2.3 Introduction to Draft Alternatives

LUP decisions consist of identifying and clearly defining goals and objectives (desired outcomes) for resources and resource uses, followed by developing allowable uses and management actions necessary for achieving the goals and objectives. These critical determinations guide future land management actions and subsequent site-specific implementation actions to meet multiple use and sustained yield mandates while sustaining land health.

2.3.1 Components of Alternatives

Goals are broad statements of desired (LUP-wide and resource- or resource-use-specific) outcomes and are not quantifiable or measurable. Objectives are specific measurable desired conditions or outcomes intended to meet goals. Goals and objectives can vary across alternatives, resulting in different allowable uses and management actions for some resources and resource uses. Forest Service objectives are also time specific.

Management actions and allowable uses are designed to achieve objectives. Management actions are measures that guide day-to-day and future activities. Allowable uses delineate which uses are permitted, restricted, or prohibited, and may include stipulations or restrictions. Allowable uses also identify lands where specific uses are excluded to protect resource values, or where certain lands are open or closed in response to legislative, regulatory, or policy requirements. Implementation decisions are site-specific on-the-ground actions and are typically not addressed in LUPs.

On National Forest System lands, forest plans guide management activities and contain desired conditions and objectives as well as standards and guidelines that provide direction for project planning and design. Desired conditions are descriptions of specific social, economic, and/or ecological characteristics of the

plan area, or a portion of the plan area, toward which management of the land and resources should be directed. Standards are mandatory constraints on project and activity decision making. Not meeting a standard would require a site-specific forest plan amendment. A guideline is a constraint on project and activity decision making that allows for departure from its terms, so long as the purpose of the guideline is met.

2.3.2 Purpose of Alternatives Development

Land use planning and NEPA regulations require the BLM and Forest Service to formulate a reasonable range of alternatives. Alternative development is guided by established planning criteria (as outlined for the BLM at 43 CFR 1610) (see **Chapter 1**).

The NEPA regulations at 40 CFR Part 1501.2(c) state that Federal agencies shall: "Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflict concerning alternatives uses of available resources…."

The basic goal of alternative development is to produce distinct potential management scenarios that:

- Address the identified major planning issues;
- Explore opportunities to enhance management of resources and resource uses;
- Resolve conflicts among resources and resource uses; and
- Meet the purpose of and need for the LUP or LUPA.

Pursuit of this goal provides the BLM, Forest Service, and the public with an appreciation for the diverse ways in which conflicts regarding resources and resource uses might be resolved, and offers the decision maker a reasonable range of alternatives from which to make an informed decision. The components and broad aim of each alternative considered for the X [*NOTE: insert sub-regional plan name*] are discussed below.

2.4 Alternative Development Process for the X *[NOTE: INSERT SUB-REGION NAME]* Greater Sage-Grouse Land Use Plan Amendment

The X [*NOTE: insert sub-regional plan name*] planning team employed the BLM planning process (outlined in **Section 1.X**, Planning Process) to develop a reasonable range of alternatives for the LUPA/EIS. The BLM and Forest Service complied with NEPA and the CEQ implementing regulations at 40 CFR Part 1500 in the development of alternatives for this Proposed LUPA/EIS, including seeking public input and analyzing reasonable alternatives. Where necessary to meet the planning criteria, to address issues and comments from cooperating agencies and the public, or to provide a reasonable range of alternatives, the alternatives include management options for the planning area that would

modify or amend decisions made in the applicable LUP. Since this LUPA/EIS will specifically address GRSG conservation, many decisions within existing LUPs that do not impact GRSG are acceptable and reasonable; in these instances, there is no need to develop alternative management prescriptions.

Public input received during the scoping process was considered to identify significant issues deserving of detailed study to help identify alternatives. The planning team developed planning issues to be addressed in the LUPA/EIS, based on broad concerns or controversies related to conditions, trends, needs, and existing and potential uses of planning area lands and resources. All comments were reviewed to determine whether they identified significant issues or unresolved conflicts.

2.4.1 Develop a Reasonable Range of Alternatives

Based on scoping and collaboration efforts, the BLM and Forest Service finalized their planning criteria and identified X [*NOTE: insert #*] key planning issues to help frame the alternatives development process. Following the close of the public scoping period in X [*NOTE: insert date*], the BLM and the Forest Service began the alternatives development process. Between X and X 2012 [*NOTE: insert date range*], the planning team (BLM, Forest Service, and cooperating agencies) met to develop management goals and to identify objectives and actions to address the goals. The various groups met numerous times throughout this period to refine their work. As outcomes of this process, the planning team [*NOTE: bullets below provide examples, revise bullets accordingly to match sub-regional alternatives*]:

- Developed one No Action Alternative (Alternative A) and X [*NOTE: insert #*] preliminary action alternatives. The first action alternative (Alternative B) is based on *A Report on National Greater Sage-Grouse Conservation Measures* (NTT 2011).
- Two alternatives (Alternatives C and F) are based on a proposed alternatives submitted by conservation groups.
- Customized the goals, objectives, and actions from the NTT-based alternative (Alternative B) to develop a third action alternative (Alternative D) that strives for balance among competing interests.
- Incorporated proposed GRSG protection measures recommended by state governments as a fifth alternative (Alternative E).

Each of the preliminary action alternatives in the Draft LUPA/EIS was designed to:

- Address the X [*NOTE: insert #*] planning issues (identified in **Section 1.X.X**);
- Fulfill the purpose and need for the LUPA (outlined in **Section 1.X**, Purpose and Need); and

- Meet the multiple use mandates of the FLPMA (43 CFR 1716), MUSYA and NFMA.

2.4.2 Resulting Range of Alternatives in Draft LUPA/EIS

The X [*NOTE: insert #*] resulting action alternatives (Alternatives X, X, X, X, X, and X) [*NOTE: insert alternative IDs*] in the Draft LUPA/EIS offer a range of management approaches to maintain or increase GRSG abundance and distribution of GRSG by conserving, enhancing, or restoring the sagebrush ecosystem upon which GRSG populations depend in collaboration with other conservation partners. While the goal is the same across all the alternatives, each alternative contains a discrete set of objectives and management actions constituting a separate LUPA. The goal is met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differs as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law or are not tied to planning issues, there are typically few or no distinctions between alternatives.

The meaningful differences among the alternatives are described in **Section 2.8**, Comparison of Proposed Plan Amendment and Draft Alternatives. **Section 2.9**, Detailed Description of Draft Alternatives, also provides a complete description of the proposed decisions for each alternative, including the project goal and objectives, management actions, and allowable uses for individual resource programs. Maps and figures in **Appendix X** provide a visual representation of differences between alternatives. In some instances, varying levels of management overlap a single area, or polygon, due to management prescriptions from different resource programs. In instances where varying levels of management prescriptions overlap a single polygon, the stricter of the management prescriptions would apply.

2.5 BLM/Forest Service Resource Programs for Addressing GRSG Threats

The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS's in their 2010 warranted but precluded finding on listing the GRSG, as well as their Conservation Objectives Team (COT) Report. The USFWS threats do not necessarily align with BLM or Forest Service resource program areas, and are often integrated into several different resource program areas. Table 2-X, USFWS Threats to GRSG and Their Habitat, Applicable BLM and Forest Service Proposed Plan Amendment Resource Program Areas Addressing these Threats, provides a cross-walk between each of the 2010 warranted but precluded finding and COT identified threats and the BLM/Forest Service program areas addressing these threats, with references to specific sections of the LUPA/proposed plan.

[*NOTE: revise Table 2-X accordingly*]

Table 2-X **USFWS Threats to GRSG and Their Habitat, Applicable BLM and Forest Service Proposed Plan Resource Program Areas Addressing these Threats**		
USFWS-Identified Threats to GRSG and Its Habitat (2010 warranted but precluded finding)	**COT Report-Identified Threats to GRSG and Its Habitat (2013)**	**Applicable BLM/Forest Service Proposed Plan Resource Program Addressing Threat**
Wildland Fire	Fire	BLM: Wildland Fire Management (see section X) Forest Service: Fire Management (see section X)
Invasive Species	Nonnative, Invasive Plants Species	BLM: Vegetation Management(see section X), Range Management (see section X), Wildland Fire Management (see section X), and Recreation (see section X) Forest Service: GRSG Habitat (see section X), Fire Management (see section X), and Roads and Transportation (see section X)
Oil and Gas For wind energy development, see *Infrastructure – power lines/pipelines, roads (below)*	Energy Development	BLM: Lands and Realty (see section X) and Fluid Minerals (see section X) Forest Service: Lands and Realty (see section X) and Fluid Minerals (see sections X)
Prescribed Fire	Sagebrush Removal	BLM: Vegetation Management (see section X) and Wildland Fire Management (see section X) Forest Service: GRSG Habitat (see section X) and Fire Management (see section X)

Grazing	Grazing	BLM: Range Management (see section X), Wild Horse and Burro Management (see section X), Special Status Species (see section X), and Vegetation Management (see section X) Forest Service: Livestock Grazing (see section X) and Wild Horse and Burro Management (see section X),
See *Grazing Management (above)*	Range Management Structures	BLM: Range Management (see section X) Forest Service: Livestock Grazing (see section X)
No similar threat identified	Free-Roaming Equid Management	BLM: Wild Horse and Burro Management (see section X) Forest Service: Wild Horse and Burro Management (see section X)
Conifer Encroachment	Pinyon and/or Juniper Expansion	BLM: Wildland Fire Management (see section X) and Vegetation Management (see section X) Forest Service: Fire Management (see section X) and GRSG Habitat (see section X)
Agriculture & Urbanization	Agricultural Conversion and Ex-Urban Development	BLM: Lands and Realty (see section X) Forest Service: Lands and Realty/Land Ownership Adjustments (see section X)
Hard Rock Mining	Mining	BLM: Lands and Realty (see section X), Locatable Minerals (see section X), Salable Minerals (see section X), and Non-energy Leasable Minerals (see section X) Forest Service: Coal Mines (see section X), Locatable Minerals (see section X), Non-energy Leasable Minerals (see sections X), and Mineral Materials (see section X)
See Infrastructure, Roads	Recreation	BLM: Recreation (see section X) and Trails and Travel Management (see section X)

		Forest Service: Recreation (see section X) and Roads/ Transportation (see section X)
Infrastructure - Power lines/ pipelines - Roads - Communication sites - Railroads Range improvements (see below)	Infrastructure	BLM: Lands and Realty (see section X) and Trails and Travel Management (see section X) Forest Service: Lands and Realty (see section X) and Roads/ Transportation (see section X)
Infrastructure – Range Improvements	Range Management Structures	BLM: Range Management (see section X) Forest Service: Livestock Grazing (see section X)
Water Developments	No similar threat identified	All applicable programs
Climate Change	No similar threat identified	*There is no BLM or Forest Service resource program in the proposed plan addressing this threat.*
Weather	No similar threat identified	*There is no BLM or Forest Service resource program in the proposed plan addressing this threat.*
Predation	No similar threat identified	BLM: All applicable programs Forest Service: GRSG Habitat (see section X), Land and Realty (see section X), and Minerals (see section X)
Disease	No similar threat identified	BLM: All applicable programs Forest Service: Minerals/Fluid Mineral Operations
Hunting	No similar threat identified	*There is no BLM or Forest Service resource program in the proposed plan addressing this threat.*

Contaminants	No similar threat identified	BLM: Public Health and Safety (see section X) Forest Service: Mineral (see section X)

Source: USFWS 2010, 2013

2.6 .PROPOSED PLAN AMENDMENT

2.6.1 Development of Proposed LUPA

In developing the Proposed Plan Amendment, the BLM/FS made modifications to the Preferred Alternative identified in the Draft LUPA/EIS. The modifications are based on public comments received on the Draft LUPA/EIS, internal BLM review, new information and best available science, the need for clarification in the plans, and ongoing coordination with stakeholders across the range of the GRSG. As a result, the Proposed Plan Amendment provides consistent GRSG habitat management across the range, prioritizes development outside of GRSG habitat, and focuses on a landscape-scale approach to conserving GRSG habitat.

The BLM/FS . . .

[Note: select one of the following two options depending on how the sub-region's proposed plan was developed. Also, remove references to "Forest Service," "SFAs," and "LUPAs" if not applicable to your sub-region]

Option 1: did not carry forward Alternative X (the Preferred Alternative) from the Draft LUPA/EIS. Rather the LUPA/proposed plan consists of a combination of all the alternatives and is now considered the Proposed LUPA for managing BLM-administered and National Forest System lands within the X [*NOTE: insert sub-regional planning area*].

Option 2: modified the Preferred Alternative, identified as Alternative X as presented in the Draft LUPA/EIS, which is now considered the LUPA/proposed plan for managing BLM-administered and National Forest System lands within the X *[NOTE: insert sub-regional planning area]*.

Since release of the Draft LUPA/EIS, the BLM/FS have continued to work closely with a broad range of governmental partners, including Governors, State Fish and Game agencies, the USFWS, Indian tribes, county commissioners and many others. Through this coordination, the BLM/FS have developed a Proposed Plan Amendment that is consistent with state, Tribal, and local strategies to the maximum extent possible and ensures the long-term conservation of the GRSG. The BLM/FS also received many substantive public comments on the Draft LUPA (see Appendix X), which greatly informed the BLM/FS's development of the Proposed Plan Amendment.

The BLM/FS's Proposed Plan Amendment incorporates documents related to the conservation of GRSG that have been released since the publication of the draft LUPA/EIS. For example, this Proposed Plan Amendment considers the USFWS' October 27th, 2014 memorandum *"Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes"* (see X) and the USGS' November 21st, 2014 report *"Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review" (USGS 2014)*. Based on these documents, the BLM is proposing to designate Sagebrush Focal Areas (SFAs) to further protect highly valuable habitat and is proposing to include lek-buffer distances when authorizing activities near leks. The BLM/FS also updated the

Proposed Plan Amendment to reflect new GRSG state conservation strategies, including recent State Executive Orders.

The BLM/FS has refined the Proposed Plan Amendment to provide a layered management approach that offers the highest level of protection for GRSG in the most valuable habitat. Land use allocations in the Proposed Plan would limit or eliminate new surface disturbance in PHMA, while minimizing disturbance in GHMA. In addition to establishing protective land use allocations, the Proposed Plan Amendment would implement a suite of management tools such as disturbance limits (see X), GRSG habitat objectives and monitoring (see X), mitigation approaches (see X), adaptive management triggers and responses (see X), and lek buffer-distances (see X) throughout the range. These overlapping and reinforcing conservation measures will work in concert to improve GRSG habitat condition and provide clarity and consistency on how the BLM/FS will manage activities in GRSG habitat.

For the sake of clarity, BLM and FS decisions have been separated into two sections (described in Section X and Y, respectively) in the Proposed Plan Amendment.

2.6.2 BLM Proposed Plan Amendment

The proposed plan incorporates the following GRSG goals:

- Conserve, enhance, and restore the sagebrush ecosystem upon which Greater Sage-Grouse populations depend in an effort to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners.
- *ADD OTHERS FROM EACH SUBREGION*

[*NOTE: Provide a full description or table of the BLM proposed plan. Use the following headings (can have subheadings). These headings meet GRSG3 and LUP Handbook, Appendix C.*]

- **Special Status Species**
  - GRSG
    - Objectives
      - Actions (predation if applicable)
  - T&E and other SSS, if applicable
- **Vegetation**
  - Sagebrush-steppe
  - Conifer encroachment
  - Invasive Species (e.g., cheat grass)
  - Riparian and Wetlands

    - Climate Change
- **Wildland Fire Management**
    - Pre-suppression
    - Suppression
    - Fuels Management
    - Post Fire Management
- **Livestock Grazing**
    - Grazing actions
    - Facilities
- **Wild Horses and Burros**
- **Lands and Realty**
    - Land Tenure
    - Solar and Wind
    - Major Transmission Line and Pipeline ROWs
    - Other ROWs
    - Withdrawals (*no withdrawals are being proposed – use standard language*)
- **Minerals** (*NOTE: address direction for fee lands and split estate as appropriate*)
    - Fluid Minerals (oil, gas, and geothermal)
        - Unleased fluid mineral estate
        - Leased fluid mineral estate
    - Locatable Minerals
    - Mineral Materials (Saleable Minerals)
    - Non-energy Leasable Minerals
- **Coal (if applicable to the Sub-region)**
- **Comprehensive Trails and Travel Management**
- **Recreation and Visitor Services**
- **Special Designations**
- **OTHER DIRECTIONS; e.g., Tribal Interests**

RDFs are means, measures, or practices intended to reduce or avoid adverse environmental impacts. This LUPA/EIS proposes a suite of design features that would establish the minimum specifications for water developments, certain

mineral development, and fire and fuels management and would mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementing BMPs.

In general, the design features are accepted practices that are known to be effective when implemented properly at the project level. However, their applicability and overall effectiveness cannot be fully assessed except at the project-specific level when the project location and design are known. Because of site-specific circumstances, some features may not apply to some projects (e.g., when a resource is not present on a given site) or may require slight variations from what is described in the LUPA/EIS (e.g., a larger or smaller protective area). All variations in design features would require appropriate analysis and disclosure as part of future project authorizations. Additional mitigation measures may be identified and required during individual project development and environmental review. The proposed RDFs are presented in **Appendix X,** Greater Sage-Grouse Habitat Required Design Features and Best Management Practices.

2.6.3 Forest Service Proposed Plan Amendment

[*NOTE: Provide a full description or table of the Forest Service proposed plan*]

2.7 Adaptive Management, Monitoring, and Mitigation

[*NOTE: provide description of what alternatives each of these apply towards*]

2.7.1 Adaptive Management Plan

Adaptive management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits.

In relation to the BLM/Forest Services' National Greater Sage-grouse Planning Strategy, adaptive management will help identify if sage grouse conservation measures presented in this EIS contain the needed level of certainty for effectiveness. Principles of adaptive management are incorporated into the conservation measures in the plan to ameliorate threats to a species, thereby increasing the likelihood that the conservation measure and plan will be effective in reducing threats to that species. The following provides the BLM/Forest Service's adaptive management strategy for the X *[NOTE: insert name of sub-regional/amendment*].

Adaptive Management and Monitoring

This EIS contains a monitoring framework plan (**Appendix X**) that includes an effectiveness monitoring component. The agencies intend to use the data collected from the effectiveness monitoring to identify any changes in habitat conditions related to the goals and objectives of the plan and other range-wide conservation strategies (US Department of the Interior 2004; Stiver et al. 2006; U.S. Fish and Wildlife Service 2013). The information collected through the Monitoring Framework Plan outlined in **Appendix X** will be used by the BLM/Forest Service to determine when adaptive management hard and soft triggers (discussed below) are met.

[*NOTE: If a state adaptive management strategy exists or is in the process of being developed, insert a summary here explaining this state (s) strategy and how it corresponds with what is proposed in this plan. If the strategy is complex, simply place the information into an appendix and reference that appendix here.*

If a state adaptive management strategy has not been established, describe this planning area's commitment to work with state partners to create a group that is responsible for recommending adaptive management trigger responses to the appropriate Federal agency and for identifying what the causal factors are that have led to hitting the hard trigger. This group should at a minimum, contain membership from BLM, USFWS, Forest Service, and state representatives. If necessary, this group can reach out to the USGS, NRCS, and other Federal/state/tribal agencies for added information.]

Adaptive Management Triggers

Soft Triggers

Soft triggers represent an intermediate threshold indicating that management changes are needed at the project/implementation level to address habitat and population losses. If a soft trigger is identified, the BLM/Forest Service will apply more conservative or restrictive implementation conservation measures to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. For example, monitoring data within an already federally authorized project area within a given GRSG population area indicates that there has been a slight decrease in GRSG numbers in this area. Data also suggests the decline may be attributed to GRSG collisions with monitoring tower guy-wires from this federally authorized project. BLM then receives an application for a new tower within the same GRSG population area. The response would be to require the new authorization's tower guy-wires to be flagged. Monitoring data then shows the decline is curtailed. The adaptive management soft trigger response is to require future applications to flag for guy-wires. These types of adjustments will be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines). While there should be no expectation of hitting a hard trigger, if unforeseen circumstances occur that trip either a habitat or population hard trigger, more restrictive management will be required.

Hard Triggers

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives as set forth in the BLM and Forest Service plans. The hard trigger and the proposed management response to this trigger are presented in [*NOTE: reference the appropriate management action here*].

2.7.2 Monitoring for the Greater Sage-grouse Planning Strategy

The BLM's planning regulations, specifically 43 CFR 1610.4-9, require that land use plans establish intervals and standards for monitoring based on the sensitivity of the resource decisions. Land use plan monitoring is the process of tracking the implementation of land use plan decisions (implementation monitoring) and collecting data/information necessary to evaluate the effectiveness of land use plan decisions (effectiveness monitoring). For GRSG, these types of monitoring are also described in the criteria found in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (50 CFR Vol. 68, No. 60). One of the Policy for Evaluation of Conservation Efforts When Making Listing Decisions criteria evaluates whether provisions for monitoring and reporting progress on implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort are provided.

A guiding principle in the BLM National Sage-grouse Conservation Strategy (US Department of the Interior 2004) is that "the Bureau is committed to sage-grouse and sagebrush conservation and will continue to adjust and adapt our National Sage-grouse Strategy as new information, science, and monitoring results evaluate effectiveness over time." In keeping with the WAFWA Sage-grouse Comprehensive Conservation Strategy (Stiver et al. 2006) and the Greater Sage-grouse Conservation Objectives: Final Report (USFWS 2013), the BLM and Forest Service will monitor implementation and effectiveness of conservation measures in GRSG habitats.

On March 5, 2010, USFWS' 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered were posted as a Federal Register notice (75 Federal Register 13910-14014, March 23, 2010). This notice stated:

"…the information collected by BLM could not be used to make broad generalizations about the status of rangelands and management actions. There was a lack of consistency across the range in how questions were interpreted and answered for the data call, which limited our ability to use the results to understand habitat conditions for sage-grouse on BLM lands."

Standardization of monitoring methods and implementation of a defensible monitoring approach (within and across jurisdictions) will resolve this situation. The BLM, Forest Service, and other conservation partners use the resulting information to guide implementation of conservation activities.

Monitoring strategies for GRSG habitat and populations must be collaborative, as habitat occurs across jurisdictional boundaries (52 percent on BLM-administered lands, 31 percent on private lands, 8 percent on National Forest System lands, 5 percent on state lands, 4 percent on tribal and other federal lands) (75 *Federal Register* 13910, March 23, 2010), and state fish and wildlife agencies have primary responsibility for population level wildlife management, including population monitoring. Therefore, population efforts will continue to be conducted in partnership with state fish and wildlife agencies. The BLM and Forest Service have finalized a monitoring framework, which can be found in **Appendix X**. This framework describes the process that the BLM and Forest Service will use to monitor implementation and effectiveness of RMP/LUP decisions. The monitoring framework includes methods, data standards, and intervals of monitoring at broad and mid scales; consistent indicators to measure and metric descriptions for each of the scales; analysis and reporting methods; and the incorporation of monitoring results into adaptive management. The need for fine-scale and site-specific habitat monitoring may vary by area depending on existing conditions, habitat variability, threats, and land health. Indicators at the fine and site scales will be consistent with the Habitat Assessment Framework; however, the values for the indicators could be adjusted for regional conditions.

More specifically, the framework discusses how the BLM and Forest Service will monitor and track implementation and effectiveness of planning decisions (e.g., tracking of waivers, modifications, site-level actions). The two agencies will monitor the effectiveness of RMP/LUP decisions in meeting management and conservation objectives. Effectiveness monitoring will include monitoring disturbance in habitats, as well as landscape habitat attributes. To monitor habitats, the BLM and Forest Service will measure and track attributes of occupied habitat, priority habitat, and general habitat at the broad scale, and attributes of habitat availability, patch size, connectivity, linkage/connectivity habitat, edge effect, and anthropogenic disturbances at the mid-scale. Disturbance monitoring will measure and track changes in the amount of sagebrush in the landscape and changes in the anthropogenic footprint, including change energy development density. The framework also includes methodology for analysis and reporting for field offices, states, ranger districts, BLM districts, National Forests, and Forest regions, including geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and management actions effectiveness.

2.7.3 Regional Mitigation

Consistent with the proposed plan's goal outlined in [Table 2-X – Description of Alternatives], the intent of the [Proposed Plan/Proposed Plan Amendment] is to provide a net conservation gain to the species. To do so, in undertaking BLM/USFS management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty

associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. This is also consistent with BLM Manual 6840 – Special Status Species Management, Section .02B, which states "to initiate protective conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of the need for listing of these species under the ESA."

Mitigation Standards. In undertaking BLM/USFS management actions, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Mitigation will follow the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g. avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM/USFS management actions and authorized third party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e. residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation (see the concepts of durability, timeliness, and additionality as described further in Appendix X).

Greater Sage-Grouse Conservation Team. The BLM/USFS will establish a WAFWA Management Zone Greater Sage-Grouse Conservation Team (hereafter, Team) to help guide the conservation of greater sage-grouse, within 90 days of the issuance of the Record of Decision. This Team will develop a WAFWA Management Zone Regional Mitigation Strategy (hereafter, Regional Mitigation Strategy). The Team will also compile and report on monitoring data (including data on habitat condition, population trends, and mitigation effectiveness) from States across the WAFWA Management Zone (see Monitoring section). Subsequently, the Team will use these data to either modify the appropriate Regional Mitigation Strategy or recommend adaptive management actions (see Adaptive Management section).

The BLM/USFS will invite governmental and Tribal partners to participate in this Team, including the State Wildlife Agency and U.S. Fish and Wildlife Service, in compliance with the exemptions provided for committees defined in the Federal Advisory Committee Act and the regulations that implement that act. The BLM/USFS will strive for a collaborative and unified approach between Federal agencies (e.g. FWS, BLM, and USFS), Tribal governments, state and local government(s), and other stakeholders for greater sage-grouse conservation. The Team will provide advice, and will not make any decisions that impact Federal lands. The BLM/USFS will remain responsible for making decisions that affect Federal lands.

Developing a Regional Mitigation Strategy. The Team will develop a Regional Mitigation Strategy to inform the mitigation components of NEPA analyses for BLM/USFS management actions and third party actions that result in habitat loss and degradation. The Strategy will be developed within one year of the issuance of the Record of Decision. The BLM's Regional Mitigation Manual MS-1794 will serve as a framework for developing the Regional Mitigation Strategy. The Regional Mitigation Strategy will be applicable to the States/Field Offices/Forests within the WAFWA Management Zone's boundaries.

Regional mitigation is a landscape-scale approach to mitigating impacts to resources. This involves anticipating future mitigation needs and strategically identifying mitigation sites and measures that can provide a net conservation gain to the species. The Regional Mitigation Strategy developed by the Team will elaborate on the components identified above (i.e. avoidance, minimization, and compensation; additionality, timeliness, and durability) and further explained in Appendix [X].

In the time period before the Strategy is developed, BLM will consider regional conditions, trends, and sites, to the greatest extent possible, when applying the mitigation hierarchy and will ensure that mitigation is consistent with the standards set forth in the first paragraph of this section.

Incorporating the Regional Mitigation Strategy into NEPA Analyses. The BLM/USFS will include the avoidance, minimization, and compensatory recommendations from the Regional Mitigation Strategy in one or more of the NEPA analysis' alternatives for BLM/USFS management actions and third party actions that result in habitat loss and degradation and the appropriate mitigation actions will be carried forward into the decision.

Implementing a Compensatory Mitigation Program. Consistent with the principles identified above, the BLM/USFS need to ensure that compensatory mitigation is strategically implemented to provide a net conservation gain to the species, as identified in the Regional Mitigation Strategy. In order to align with existing compensatory mitigation efforts, this compensatory mitigation program will be implemented at a State-level (as opposed to a WAFWA Management Zone, a Field Office, or a Forest), in collaboration with our partners (e.g. Federal, Tribal, and State agencies).

To ensure transparent and effective management of the compensatory mitigation funds, the BLM/USFS will enter into a contract or agreement with a third-party to help manage the State-level compensatory mitigation funds, within one year of the issuance of the Record of Decision. The selection of the third-party compensatory mitigation administrator will conform to all relevant laws, regulations, and policies. The BLM/USFS will remain responsible for making decisions that affect Federal lands.

2.8 DRAFT LUPA/EIS ALTERNATIVES

The following are alternatives to the Proposed Plan and were presented and analyzed in the Draft LUPA/EIS. Some alternatives have been refined based on public comment.

[NOTE: Generally describe any changes to alternatives based on public comments]

2.8.1 Alternative A (No Action)

[*NOTE: provide a summary description of Alternative A*]

2.8.2 Management Common to Action Alternatives [*this section is optional*]

[*NOTE: if applicable, provide bulleted summary list of management actions common to all action alternatives (e.g., delineating PH and GH and RDFs)*]

[*NOTE: discuss process for habitat boundary adjustments*]

2.8.3 Alternative B

[*NOTE: provide a summary description of Alternative B*]

2.8.4 Alternative C

[*NOTE: provide a summary description of Alternative C*]

2.8.5 Alternative D

[*NOTE: provide a summary description of Alternative D*]

2.9 Summary Comparison of Proposed Plan Amendment and Draft Alternatives

This section summarizes and compares Alternatives A through X and the BLM and Forest Service Proposed Plans considered in the Final EIS. Combined with the appendices and maps, **Table 2-X**, Comparative Summary of Allocation Decisions of the Proposed Plan Amendment and Draft Alternatives, provides the differences among the alternatives relative to what they establish and where they occur. The table compares the differences with the most potential to affect resources among the alternatives.

Table 2-X
Comparative Summary of Allocation Decisions of the Proposed Plan Amendment and Draft Alternatives

Resources/ Resource Uses	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	BLM Proposed Plan Amendment	Forest Service Proposed Plan Amendment
[insert allocation]	PHMA: [insert acreages or other quantitative value (e.g., AUMs)]	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:

Table 2-X
Comparative Summary of Allocation Decisions of the Proposed Plan Amendment and Draft Alternatives

Resources/ Resource Uses	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	BLM Proposed Plan Amendment	Forest Service Proposed Plan Amendment
	GHMA: [insert acreages or other quantitative value (e.g., AUMs)]					
Livestock Grazing [Example]						
AUMs	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:
Open for all classes of livestock grazing (acres)	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:
Not allocated to livestock grazing (acres)	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:	PHMA: GHMA:

2.10 Detailed Description of Draft Alternatives

2.10.1 How to Read Table 2-X

The following describes how **Table 2-X**, Description of Draft Alternatives, below, is written and formatted to show the land use plan decisions proposed for each alternative.

In accordance with Appendix C of the BLM's *Land Use Planning Handbook* (H-1601-1), land use plan and plan amendment decisions are broad-scale decisions that guide future land management actions and subsequent site-specific implementation decisions (BLM 2005). Land use plan decisions fall into two categories, which establish the base structure for desired outcomes (goals and objectives), and allowable uses and actions to achieve outcomes.

- Goals are broad statements of desired outcomes that usually are not quantifiable.

- Objectives identify specific desired outcomes for resources. They may be quantifiable and measurable and may have established timeframes for achievement, as appropriate.
- Allowable uses identify uses, or allocations, that are allowable, restricted, or prohibited on BLM-administered lands and mineral estate.
- Actions identify measures or criteria to achieve desired objectives, including actions to maintain, restore, or improve land health.

Stipulations (NSO and CSU, which fall under the allowable uses category) are also applied to surface-disturbing activities to achieve desired outcomes (i.e., objectives).

In general, only those resources and resource uses that have been identified as planning issues have notable differences between the alternatives.

Actions that are applicable to all alternatives are shown in one cell across a row. These particular objectives and actions would be implemented regardless of which alternative is ultimately selected.

Actions that are applicable to more than one but not all alternatives are indicated by either combining cells for the same alternatives, or by denoting those objectives or actions as the "same as Alternative A," for example.

In some cells, "No Similar Action" is used to indicate that there is no similar goal, objective or action to the other alternatives, or that the similar goal, objective or action is reflected in another management action in the alternative.

Table 2-X
Description of Draft Alternatives A, B, C, and D

Alterative A (No Action)	Alternative B	Alternative C	Alternative D
LUPA Goal:			
Travel and Transportation Management			
Objectives:	Objectives:	Objective:	Objective:
ALTERNATIVES DIRECTION/MANAGEMENT ACTIONS			
Action:	Action:	Action:	Action:

2.11 Alternatives Eliminated from Detailed Analysis

The following alternatives were considered but were not carried forward for detailed analysis because (1) they would not fulfill the requirements of FLPMA, NFMA or other existing laws or regulations, (2) they did not meet the purpose and need, (3) they were already part of an existing plan, policy, or administrative function, or (4) they did not fall within the limits of the planning criteria. FLPMA requires the BLM and Forest Service to manage the public lands and resources in accordance with the principles of multiple use and sustained yield.

2.11.1 [NOTE: insert dismissed alternative name]

[*NOTE: provide description of alternative and why dismissed*]

2.12 Summary Comparison of Environmental Consequences

Table 2-X, Summary Comparison of Environmental Consequences, presents a comparison summary of impacts from management actions proposed for the management alternatives. **Chapter 4** provides a more detailed impact analysis.

[*NOTE: order of resources in table follows order in Chapter 4*]

Table 2_X
Summary Comparison of Environmental Consequences

Alternative A *(No Action)*	Alternative B	Alternative C	Alternative D	BLM Proposed Plan Amendment	Forest Service Proposed Plan Amendment
SPECIAL STATUS SPECIES – GREATER SAGE-GROUSE					
LANDS AND REALTY					

GBR_PUB_1592
6.4.g

From: Kelleher, Karen
Sent: Tuesday, August 25, 2015 12:31 PM
To: Magaletti, Matthew; Stephanie Carman; Amy Lueders
Subject: Re: Comments/edits on GB ROD

Hi
two more things (I am done; I have not heard from Jim today but I am going to call him shortly to get an update).

1. p. 22 first paragraph " . . . with the direction provided by . . ." - maybe I'm being too BLM-centric, but FWS doesn't direct BLM management. maybe "consistent with"?

or maybe even better, I think this is a continuation of the quote at the bottom of p. 21 from the Ashe letter - how about just combining the 2 part of the quote into page 21 & deleting this whole sentence on p. 22.

2. p. 26 - i don't think Jim's edits to the first paragraph in 1.6 really address sarah shattuck's comment. I'd suggest something like this (because this section is really just organized into these categories for ease of reading by the public, not because we are trying to create new objectives or components):
Consistent with guidance contained in the COT and NTT Reports, the GRSG conservation strategy can be organized into four general categories: 1) avoiding or minimizing new and additional surface disturbances, 2) improving habitat conditions, 3) reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin, and 4) monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management as needed.

and then the next sentence could just be:

The land allocations and management actions included in the ARMPAs are summarized below.

On Tue, Aug 25, 2015 at 2:00 PM, Magaletti, Matthew <mmagalet@blm.gov> wrote:

> In my version, I made sure to keep "may." Jim changed it back to "can" in several locations, I rejected the edit.
>
> On Tue, Aug 25, 2015 at 1:58 PM, Kelleher, Karen <kkelleh@blm.gov> wrote:
>
> > Hi Stephanie,
> > one thing I noticed - in the first paragraph of the summary, Jim changed "may" to "can" (referring to avoiding listing). I seem to recall Aaron being pretty adamant about how we phrased this in the GCR responses - I could be wrong, but I thought he wanted "may" since we shouldn't be presuming what FWS can do?

On Tue, Aug 25, 2015 at 11:26 AM, Carman, Stephanie <scarman@blm.gov> wrote:

I have reviewed and addressed the comments/edits in the plans. The vast majority of were not a problem, and I left them - to be accepted. I deleted all comments which were addressed in the text, both from Jim and SOL, and included comment boxes in response to questions. The few areas where I disagreed with Jim's edits or made substantial changes are highlighted. Amy, I am printing you up a copy.

Matt, I think you can get started on incorporating this into the RM ROD, excepting the highlighted portions for a bit.

Stephanie Carman
Bureau of Land Management
Sage-Grouse Project Coordinator
office 202-208-3408
mobile 202-380-7421
scarman@blm.gov

On Tue, Aug 25, 2015 at 7:27 AM, Magaletti, Matthew <mmagalet@blm.gov> wrote:

FYI

---------- Forwarded message ----------
From: **Lyons, James** <james_lyons@ios.doi.gov>
Date: Mon, Aug 24, 2015 at 6:39 PM
Subject: Comments/edits on GB ROD
To: Karen Kelleher <kkelleh@blm.gov>, Matthew Magaletti <mmagalet@blm.gov>

Attached are my final comments/edits on the GB ROD. Also attached is a draft section implementation that we will need to discuss.

Thanks for your patience Matt. Karen, we should discuss after you take a look at this am.

Thanks, Jim

--
Jim Lyons
Deputy Assistant Secretary
Land and Minerals Management
Jim_Lyons@ios.doi.gov
202-208-4318 (direct)

202-815-4412 (mobile)

--
Matthew Magaletti
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~~LYONS FINAL EDITS – AUGUST 23, 2015~~

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region including the Greater Sage-Grouse Sub-Regions of:

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:

U.S. Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WO/XX/XX-XX+XXX

[Insert BLM WO Letterhead]

In Reply Refer To:
In Reply, Refer to:
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). The ROD approves the four Great Basin Region ARMPAs, which are part the National Greater Sage-Grouse Planning Strategy that was initiated on December 11, 2011. The planning strategy was initiated by the Bureau of Land Management (BLM) in response to the USFWS's March 2010 "warranted, but precluded" ESA listing petition decision. In this decision, the USFWS identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism.

The BLM's ARMPAs provide a landscape-level, science-based, coordinated, collaborative strategy for addressing threats to the Greater Sage-Grouse (GRSG) and its habitat. This strategy was designed to address issues identified in the U.S. Fish and Wildlife Service's (FWS) 2010 "warranted but precluded" decision. In addition, the strategy was guided by over a decade of research, analyses and recommendations for GRSG conservation including the Conservation Objectives Team (COT) Report and the BLM National Technical Team and (NTT). Each of these reports was developed through a collaborative effort of state and federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, the U.S. Forest Service, and state and other partners were fundamental to the development of these ARMPAs.

It is important to note that this ROD and these ARMPAs apply only to BLM-administered lands. Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of the Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs for the Great Basin sub-regions included proposed GRSG management direction for National Forest System lands. However,

~~LYONS FINAL EDITS – AUGUST 23, 2015~~

~~T~~the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

The Federal Land Policy and Management Act (FLPMA) requires the development and maintenance, and, as appropriate, the revision of land use plans for public lands. The National Environmental Policy Act (NEPA) requires Federal agencies to prepare an Environmental Impact Statement (EIS) for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the Draft RMP Amendments/Draft EISs incorporated analysis and input provided by the public; local, State, and other Federal agencies and organizations; Native American tribes; Cooperating Agencie~~s~~, and ~~the~~ BLM resource specialists, and were published in the fall of 2013. Ninety ~~The 90~~-day public comment periods ensued, with more than 4,990 substantive comments from 1,348 letters submitted on all four sub-regional proposed LUPAs/Final EISs in the Great Basin Region. These comments were reviewed, summarized and considered in preparing the Proposed RMP Amendments/Final EISs.

The Proposed RMPAs/Final EISs were made available on May 29, 2015, for a 60-day governor's consistency review and 30-day protest period. The BLM received consistency review letters from the States of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region and has worked closely with these states to address their concerns and to resolve inconsistencies where possible. Across all four sub-regions in the Great Basin Region, 133 protest submission letters were received from government entities, private citizens, NGOs, and other stakeholders;124 of these submissions contained valid protest issues pursuant to 43 CFR 1610.5-2 and were addressed in the Director's Protest Resolution Reports. These reports are available on line at: http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html.

The BLM now approves the attached ARMPAs as the land use plans that will guide future land and resource management within GRSG habitat in the Great Basin Region for the life of the plan amendments. The ARMPAs will benefit GRSG and over 350 other species of wildlife as well as other multiple uses, including grazing and recreation, which depend on healthy sagebrush-steppe landscapes.

Copies of the ROD and ARMPAs can be obtained from the BLM's National Greater Sage-Grouse webpage at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the public, local, state, and other federal agencies, Native American tribal representatives, and the Cooperating Agencies, all of whom contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented~~ and monitored for the conservation of GRSG and its habitat.~~

Sincerely,
X

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

Summary

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse habitat on public lands administered by the Bureau of Land Management (BLM), consistent with BLM's multiple use and sustained-yield mission and the joint objective established by federal and state leaders ship through the Greater Sage Grouse Task Force to conserve GRSG habitat on federal, state, and private land such that additional protections under the Endangered Species Act (ESA) can~~may~~ be avoided.

In response to a 2010 determination by the U.S. Fish and Wildlife Service (FWS) that the listing of the GRSG under the ESA was "warranted but precluded" by other priorities, the BLM, in coordination with the U.S. Department of Agriculture Forest Service (Forest Service), has developed a targeted, multi-tiered, coordinated, collaborative landscape-level management strategy, based on the best available science, that offers the highest level of protection for GRSG in the most important habitat areas to address the specific threats identified in the 2010 U.S. Fish and Wildlife "warranted but precluded" decision and the FWS' 2013 Conservation Objectives Team (COT) report.

This Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon; and Utah include management direction ~~which limits or eliminates~~ avoids and minimizes additional disturbance in GRSG habitat management areas as well as

targets restoration and improvements to the most important areas of habitat. The management direction in the ARMPAs is accomplished through land use allocations that generally apply to GRSG habitat. These allocations (1) eliminate new surface disturbance in the most highly-valued sagebrush ecosystem areas - identified as Sagebrush Focal Areas (SFAs); (2) limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMAs), of which SFAs are a subset; and (3) minimize surface disturbance in General Habitat Management Areas (GHMA). In addition to protective land use allocations in important habitat areas, the ARMPAs include a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, and other conservation measures that apply throughout designated habitat management areas. The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The targeted land use plan protections presented in this ROD and ARMPAs not only protect the GRSG and its habitat, but also over 350 wildlife species associated with the sagebrush-steppe ecosystem, which is widely recognized as one of the most endangered ecosystems in North America. Reversing the slow degradation of this valuable ecosystem will also benefit local rural economies and a variety of rangeland uses in addition to habitat protection, including recreation and grazing, in a manner that safeguards the long term sustainability, diversity and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 states in which the ARMPAs in the Great Basin and the plans in the Rocky Mountain Region apply. In combination with additional state and federal actions underway and in development, this strategy~~it~~ represents an unprecedented,

collaborative effort among federal land management agencies and the states to manage an entire ecosystem and associated flora and fauna in order to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future". [Dan Ashe. Transmittal letter to COT Report. 2013].

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1. INTRODUCTION

This Record of Decision (ROD) approves the (BLM's attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR] §1601 et seq.), and other applicable laws. The BLM prepared Environmental Impact Statements (EISs) in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA) and the Council on Environmental Quality's Regulations for implementing the procedural provisions of NEPA (40 CFR §1500.1 et seq.).

Throughout the GRSG planning process, the Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities for the Great Basin Region, which is available at http://www.fs.usda.gov/r4/.

Commented [JRL2]: Is the Forest Service not involved in OR plan? SMC - Corre

Commented [SMC3]: correct

1.1 Great Basin Region Planning Area

The Great Basin Region planning area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. (see **Figure 1-1** – Great Basin Region Greater Sage-Grouse Sub-regions). A separate EIS was prepared for each of these sub-regions. Each sub-region conducted its own planning effort with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, as well as areas that shared common threats to the GRSG and their habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the Western Association of

Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Conservation Strategy to delineate management zones with similar ecological and biological issues.

[Insert **Figure 1-1** - Great Basin Region Greater Sage-Grouse Sub-regions]

The Great Basin Region planning area boundaries include all lands regardless of jurisdiction (see **Figure 1-2** - Great Basin Region Planning Area, Greater Sage-Grouse Habitat Management Areas). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, states, local governments, and privately owned lands within the four sub regions that make up the Great Basin. The planning area also includes other BLM-administered lands that are not identified as habitat management areas for GRSG. The ARMPAs do not establish any additional management for these lands which will continue to be managed according to the existing land use plan for the areas.

[Insert **Figure 1-2** - Great Basin Region Planning Area, Greater Sage-Grouse Habitat Management Areas]

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	NV/NE CA	ID/SW MT	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,975,500**
USFWS	805,900	121,900	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,200**	**48,209,900**	**31,656,300**	**194,208,300**

Source: BLM GIS 2015

The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure 1-3** - Great Basin Region Decision Area , Greater Sage-Grouse Habitat Management Areas), including surface and split-estate lands where the BLM has subsurface mineral rights. For a description of these habitat management areas, refer to **Section 1-5**. The decisions in the Great Basin Region ARMPAs apply only to BLM-administered lands, including split-estate lands within GRSG habitat management areas (the decision area) and are limited to providing direction that incorporates appropriate measures to conserve, enhance, and/or restore GRSG and its habitat.

[Insert **Figure 1-3** - Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas]

1.2 Early GRSG Conservation Efforts

Currently, GRSG occupy an estimated 66% of the historically occupied range. The BLM manages the majority of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State Distinct Population Segments). Efforts to conserve GRSG habitat by the BLM and other wildlife conservation agencies and organizations have been ongoing for many years. These efforts provide an important foundation for the GRSG conservation strategy that guides these plans.

Commented [4]: It seems that this intro paragraph should also add something about how this planning effort builds on the early/past GRSG conservation efforts identified below.

Commented [JRL5]: To address SOL comment.

The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

http://sagemap.wr.usgs.gov/docs/Greater_Sage-grouse_Conservation_Assessment_060404.pdf

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the U.S. Fish and Wildlife Service (FWS), the Forest Service, the U.S. Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy*, with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the Strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The Strategy outlined the critical need to develop the associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats upon which they depend. The catalyst for this effort was widespread concern for declining populations and reduced distribution of GRSG.
http://www.wafwa.org/documents/pdf/GreaterSage-grouseConservationStrategy2006.pdf

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and summarize BLM's ongoing conservation efforts. A product of this effort was one of the first range-wide priority habitat maps for GRSG that were referred to as "key habitat". At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression efforts in

GRSG habitat on BLM lands. An additional outcome of this team was the signing of a Memorandum of Understanding by the WAFWA; the BLM, FWS, USGS in the Department of the Interior; and the US Department of Agriculture Forest Service and NRCS, to provide for cooperation among the participating state and federal land managers and wildlife management and science agencies in the conservation and management of GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the Western United States and Canada.

http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/fwp.Par.95958.File.dat/SagegrouseMOU.pdf

In 2010, BLM commissioned an effort to map breeding densities of GRSG across the West. A conference was convened with state wildlife agencies to coordinate the lek survey data needed for this effort. This modelling project, through an agreement with the FWS, mapped known active leks across the West. This model served as a standard starting point for all states to identify priority habitat for the species.

http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/bird_density.print.html

In March 2010, the US Fish and Wildlife Service (USFWS) published its 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 Federal Register 13910(March 23, 2010)). In that finding, the USFWS concluded that GRSG was "warranted, but precluded" for listing as a threatened or endangered species under the ESA. This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in greater need of the limited resources available to provide protection.

As part of their 2010 finding, the USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 Federal Register 13910 (March 23, 2010)). In addition, the FWS found that existing local, state and federal regulatory mechanisms were not sufficient to address threats to the habitat. For the BLM, which manages approximately 66 million acres of the remaining habitat for the species (See **Figure 1-~~54~~**.), the USFWS has identified the agency's Resource Management Plans (RMPs) as the primary regulatory mechanisms

The conservation measures in the BLM and Forest Service plans amended and adopted through this decision are designed to strengthen the regulatory mechanisms and avoid and minimize ~~limit~~ the destruction and modification of GRSG habitat as well as target and accelerate efforts to restore it.

1.3 Threats to Greater Sage-Grouse in the Great Basin Region

~~Two of the factors that led to the USFWS "warranted but precluded" finding were threats to GRSG habitat and the inadequacy of existing regulatory mechanisms.~~ The USFWS identified a number of specific threats to GRSG in the Great Basin Region in the context of its 2010 finding. The primary threats identified ~~by the USFWS in the Great Basin Region~~ are the widespread present and potential impacts of wildfire and the loss of native habitat to invasive species. Other threats, some of which are more localized by nature, include habitat fragmentation due to anthropogenic disturbances associated with energy development, mining, infrastructure, recreation, urbanization and sagebrush elimination, as well as impacts to habitat ~~impacts~~ associated with free-roaming equids and improper livestock grazing. ~~To help inform this planning effort,~~

In 2011,the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones (Figure 1-4). The NTT produced *A Report on National Greater Sage-grouse Conservation Measures* (The NTT Report) which proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. The NTT Report also emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones.
http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

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In 2012, the USFWS, with the support of the Western Governors Association Sage Grouse Task Force, convened the Conservation Objectives Team (COT), comprising state and federal representatives, to produce a peer-reviewed report identifying ~~In 2012, the Conservation Objectives Team (COT), composed of state and federal representatives, evaluated~~ the principal threats to GRSG survival and the degree to which these threats need to be reduced or ameliorated to conserve the GRSG so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT report also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". Finally, the COT report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2**). **Figure 1-4**~~**5**~~ from the COT Report identifies the PACs, GRSG populations (and their names), and WAFWA Management Zones across the West.
http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf

[Insert **Figure 1-4**~~**5**~~ - GRSG Priority Areas for Conservation, Populations (and names), and WAFWA Management Zones.]

~~the principal threats to GRSG survival, based upon the FWS 2010 listing decision.~~ A summary of the nature and extent of threats identified by the COT for each remaining identified population of GRSG in the Great Basin Region– as highlighted in the 2013 COT report – is provided in **Table 1-2**.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (UT)	9b			Y	Y	Y	Y		Y			Y	Y	UT
Uintah (UT)	9c			Y	Y	Y	L	Y	Y			Y	Y	UT
Strawberry Valley (UT)	10a	Y		Y	Y	Y	Y		Y			Y		UT
Carbon (UT)	10b	Y		Y		Y	Y	Y	Y			Y		UT
Sheeprock Mountains (UT)	11	Y		Y	L	L	Y	Y	L		Y	L		UT
Emery (UT)	12	Y		Y	Y	Y	Y	Y	Y			Y		UT
Greater Parker Mountain (UT)	13a			Y	Y	Y			Y			Y		UT
Panguitch (UT)	13b		Y	Y	Y	Y	Y	L	Y			Y	L	UT
Bald Hills (UT)	13c	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	UT
Ibapah (UT)	15a	Y		Y	Y	Y	Y	Y	Y		Y	Y		UT
Hamlin Valley (UT)	15b	Y		Y	Y	Y			Y		Y	Y		UT
Box Elder (UT)	26b		Y	Y	Y	Y	L	Y	Y			Y		UT

Table 1-2. Threats to GRSG in the Great Basin Region (Utah) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan(s)
N. Great Basin (OR, ID, NV)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	ID/SW MT, OR, NV/CA
Baker (OR)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	OR
Central Oregon (OR)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	OR
W. Great Basin (OR, CA, NV)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		OR, NV/CA
Klamath (CA)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	NV/CA
Northwest Interior (NV)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		NV/CA
Southern Great Basin (NV)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		NV/CA
Quinn Canyon Range (NV)	16	Y			Y	Y	Y			Y	Y	Y	Y		NV/CA
Warm Springs Valley (NV)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	NV/CA
East Central (ID)	18	Y	L	Y	L	Y	L	Y		Y	Y		L		ID/SW MT
Snake-Salmon-Beaverhead (ID)	23		L	L	Y	L	Y	Y		L	Y	Y	L		ID/SW MT

Weiser (ID)	25	**Y**	L	L	L	L	**Y**	**Y**		L	**Y**		L	L	ID/SW MT
Sawtooth (ID)	27	**Y**	L		L	U	L			**Y**	**Y**		L		ID/SW MT
Southwest Montana (MT)	19-22		L		L	L	**Y**	L	L	L	**Y**		L	L	ID/SW MT

Table 1-2. (cont.) Threats to GRSG in the Great Basin Region (OR, CA, NV, ID, SWMT) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

~~In addition, the FWS found that existing local, state and federal regulatory mechanisms were not sufficient to address threats to the habitat. For the BLM, which manages approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.), the USFWS has identified the agency's Resource Management Plans (RMPs) as the primary regulatory mechanisms~~

1.4 National Greater Sage Grouse Conservation Strategy

Based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a listing decision on this species, the BLM recognized the need to incorporate explicit objectives and concrete conservation measures into Resource Management Plans (RMPs) to conserve GRSG habitat and provide robust regulatory mechanisms. In August, 2011, the BLM chartered a strategy to evaluate the adequacy of BLM RMPs and revise and amend existing RMPs throughout the range of the GRSG to incorporate management actions intended to conserve, enhance, and restore the species and the habitat on which it depends. Separate planning efforts were initiated to address the conservation needs of the Bi-State population in California and Nevada, and the Washington State distinct population segment.

~~To help inform this planning effort, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones (Figure 1-4). The NTT produced A Report on National Greater Sage-grouse Conservation Measures (The NTT Report) which proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. The NTT Report also emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones.~~
~~http://www.blm.gov/style/medialib/blm/wo/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf~~

~~In 2012, the Conservation Objectives Team (COT), composed of state and federal representatives, evaluated the principal threats to GRSG survival and the degree to which these threats need to be reduced or ameliorated to conserve the GRSG so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT report also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". Finally, the COT report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2**). **Figure 1-4** from the COT Report identifies the PACs, GRSG populations (and their names), and WAFWA Management Zones across the West.~~
~~http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf~~

~~[Insert **Figure 1-4** – GRSG Priority Areas for Conservation, Populations (and names), and WAFWA Management Zones.]~~

In light of the 2010 "warranted" determination by the FWS, and specific threats summarized in the COT Report, the BLM found that ~~consideration of~~ additional management direction and specific conservation measures on federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. The BLM proposed to incorporate the management direction and conservation measures into the BLM's land use plans. The goal of incorporating these specific conservation measures into BLM land use plans, is to protect, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA can~~may~~ be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and Supplemental EISs to incorporate GRSG Conservation Measures into Land Use Plans (LUPs) across the range of the species. A total of 15 EISs were conducted to analyze the alternatives developed for each of the plan amendments and revisions across the range of the species. [1] **Figure 1-5** illustrates the National GRSG Planning Strategy planning area boundaries, along with BLM-administered priority and general habitat management areas across the Western United States.

Commented [JRL6]: SOL: Does this not constitute a significant change so late in the planning process?

Commented [SMC7]: I don't know what you are talking about.

[Insert **Figure 1-5** – National GRSG Planning Strategy Regional and Sub-regional Planning Areas Boundaries with BLM-administered PHMA and GHMA]

The planning efforts associated with the National GRSG Conservation Strategy have been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by USFWS in the 2010 listing decision, along with the Western Association of Fish and Wildlife Agencies (WAFWA) Management

[1] The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP has been split between the two filed offices that make up the Bighorn Basin planning area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.

Zones (MZs) framework (Stiver et al. 2006). Due to differences in the ecological characteristics~~,~~ of sagebrush across the range of the greater sage-grouse, WAFWA delineated seven Management Zones (MZs I-VII) based primarily on floristic provinces. Vegetation found within a MZ is similar and sage-grouse and their habitats within these areas are likely to respond similarly to environmental factors and management actions.

The Rocky Mountain Region is comprised of BLM planning efforts (which includes plan revisions and plan amendments) in the states of Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin) and a portion of VII (Colorado Plateau). The Great Basin Region comprises of planning efforts (plan amendments) in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. This region falls within WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. The NEPA EIS analyses were done at the sub-regional level. These sub-regions are based on the identified threats to the GRSG and the WAFWA MZs from the FWS 2010 listing decision with additional detail regarding threats to individual populations and sub-regions from the USFWS's COT report. In the Rocky Mountain Region, some sub-regions correspond to BLM field/district office boundaries, specifically for planning efforts that are incorporating GRSG conservation measures through plan revisions that were initiated prior to the start of the National GRSG Conservation Strategy in December 2011.

The BLM used the best available science, including additional review from the US Geological Survey on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered state GRSG conservation strategies where they existed, as well as state recommendations for measures to conserve ~~sage grouse~~GRSG on BLM-administered lands, where relevant, in the planning effort. ~~and t~~ These are reflected in the final plans to the extent compatible with GRSG conservation objectives~~, including the need to establish management direction~~ to conserve, enhance and restore GRSG habitat ~~and~~ to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the Approved Resource Management Plan Amendments Address the ~~Threats~~ Identified Threats to the Conservation of the GRSG~~in the Conservation Objectives Team Report~~

The 2006 WAFWA *Greater Sage Grouse Comprehensive Conservation Strategy* stated goal for management of the GRSG was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations". The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed".

In establishing the COT, with the backing of the Sage Grouse Task Force, FWS Director Dan Ashe affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA

report -- reversing negative population trends and achieving a neutral or positive population trend -- and emphasized the following:

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (WAFWA 2006 Strategy)"

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". To achieve this, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT emphasized an "avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

The plans were developed to address specific, identified threats to the species in order to ~~and are an essential component of the effort to~~ conserve GRSG such that the need to list the species under ESA can~~may~~ be avoided. Across ten western States, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the USFWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, priorities and approaches in each.

In order to protect the most important GRSG habitat areas, the planning effort began with mapping areas of important habitat across the range of the GRSG. In collaboration with state fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). The draft land use plans used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) in the Proposed RMP Amendments/Final EISs to identify the management decisions which apply to those areas. The designated GRSG Habitat Management Areas on BLM-administered lands in the decision area include: PHMA, which largely coincide with Priority Areas for Conservation (PACs) in the COT report (See **Figure 1-4**); GHMA; Other Habitat Management Areas (OHMA, applicable only to the Nevada and Northeastern California); and Important Habitat Management Areas (IHMA, applicable only to Idaho). **Table 1-4** identifies surface acres of PHMA, GHMA, OHMA, and IHMA in the decision area for the Great Basin Region.

PHMA, GHMA, OHMA, and IHMA are defined as follows:

- **PHMA**— BLM-administered lands identified as having ~~the~~ high~~est~~ habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the Preliminary Priority Habitat boundaries identified in the

Draft LUPA/EIS. Areas of PHMAs largely coincide with areas identified as Priority Areas for Conservation in the COT report.

- **GHMA**— BLM-administered lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the Preliminary General Habitat boundaries identified in the Draft RMP/EIS.
- **OHMA** —BLM-administered lands in Nevada, identified as unmapped habitat in the Proposed RMP/EIS that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA** —BLM-administered lands in Idaho that provide a management buffer for PHMAs and connect patches of PHMAs. IHMAs encompasses areas of generally moderate to high ~~conservation~~ habitat value habitat and/or populations, but that are not as important as PHMAs. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

Table 1-3
Surface Acres of PHMA, GHMA, OHMA, and IHMA in the Decision Area for the Great Basin Region

BLM administered surface acres	PHMA	GHMA	OHMA	IHMA
Idaho and Southwestern MT	4,627,200	2,179,700	0	2,737,600
Utah	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern CA	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

~~This tiered habitat framework consists of a nested or layered conservation design with the goal of providing a high degree of certainty that the integrity of PHMAs can be maintained through management decisions to avoid or minimize additional surface disturbance.~~

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure 1-3** - Great Basin Region Decision Area - Greater Sage-Grouse Habitat Management Areas). Across the Great Basin Region, there are 9,076,948 acres of BLM administered SFAs. SFAs correspond to the areas identified by the FWS as GRSG "strongholds" as detailed in an October 27, 2014 memorandum from the FWS Director to BLM Director and Forest Service Chief in response to a request to "identify a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection". (http://www.fws.gov/greaterSageGrouse/documents/ESA%20Process/GRSG%20Strongholds%20memo%20to%20BLM%20and%20USFS%20102714.pdf). SFAs are areas of highest habitat value for

GRSG and are managed to ~~maximize protection from~~ avoid new surface disturbance, to the extent permitted by law, given that they contain high-quality sagebrush habitat; highest breeding densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and, in some cases, are adjacent to protected areas that serve to anchor the conservation importance of the landscape. They will be managed consistent with direction provided by FWS Director Ashe in the context of his memo on SFAs, "

~~The combination in the ARMPAs of habitat area classifications and the land allocation decisions specifying the extent to and conditions under which certain activities is permitted to occur in those areas (these land allocation decisions are explained more fully in Section 1.6.2 of this ROD) provide the greatest protection for those areas identified as SFAs and meet the stated objective for these areas "~~where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species."

Protection of remaining habitats in GHMAs and IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important habitats outside of PACs be conserved to the extent possible". Thus, land allocations in GHMAs and IHMAs provide for more flexibility for land use activities while minimizing impacts on existing GRSG leks. (These land allocation decisions are explained more fully in Section 1.6.2 of this ROD.)

Major components of the attached ARMPAs that address the specific threats to GRSG and its habitat, as identified in the USFWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report) are listed in **Table 1-5** and summarized below.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Require mitigation that provides a net conservation gain to GRSG and its habitat. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining,	• PHMA: Implement an anthropogenic disturbance cap of 3% within the Biologically Significant Unit and proposed project analysis areas in PHMA (slight variations to this management component in the State of Nevada only)

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
infrastructure, and energy development.	• PHMA and IHMA: Apply a disturbance density cap of 1 facility per 640 acres (except in the State of Nevada) • IHMA: Implement the 3% disturbance cap. Apply Anthropogenic Disturbance Development Criteria. • Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat. • Inform infrastructure siting in GRSG habitat through best available science and monitoring to minimize indirect effects • ~~Take into e~~Consider~~ation existing ROWs, fluid mineral leases, and~~ the potential for the development of valid existing rights when ~~deciding upon future leasing in a given area of GRSG habitat~~authorizing new projects in PHMA.
Energy development—fluid minerals, including geothermal resources	• PHMA: Open to fluid mineral leasing subject to a No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exceptions. In SFAs, a NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if certain criteria are met. • IHMA: Open to fluid mineral leasing subject to NSO stipulation without waiver or modification, and with limited exception. • GHMA: Open to fluid mineral leasing subject to Controlled Surface Use (CSU) and Timing Limitation (TL) lease stipulations (except in the State of Utah where some portions of GHMA are open with standard lease stipulations) • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
Energy development—wind energy	• PHMA: Exclusion area (not available for wind energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • IHMA: Avoidance area (may be available for wind energy development with special stipulations) • GHMA: Avoidance area (may be available for wind energy development with special stipulations) (except in the States of Utah and

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Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	Idaho, where these areas are open to wind energy development)
Energy development—solar energy	• PHMA: Exclusion area (not available for solar energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • IHMA: Avoidance area (may be available for solar energy development with special stipulations) • GHMA: Exclusion area (not available for solar energy development under any conditions) (except in the States of Oregon and Montana where these areas are avoidance areas for solar energy development and the State of Idaho, where these areas are open to solar energy development)
Infrastructure—major ROWs	• PHMA: Avoidance area (may be available for major ROWs with special stipulations) • IHMA: Avoidance area (may be available for major ROWs with special stipulations) • GHMA: Avoidance area (may be available for major ROWs with special stipulations) (except in the State of Utah where GHMA is open)
Infrastructure—minor ROWs	• PHMA: Avoidance area (may be available for minor ROWs with special stipulations) • IHMA: Avoidance area (may be available for minor ROWs with special stipulations)
Mining—locatable minerals	• SFA: Recommend withdrawal from the Mining Law of 1872
Mining—nonenergy leasable minerals	• PHMA: Closed area (not available for nonenergy leasable minerals)
Mining—salable minerals	• PHMA: Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)
Improper Livestock grazing	• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	the GRSG Habitat Objectives Table, Land Health Standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs followed by PHMA to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid management	• Prioritize gathers in SFAs, followed by other PHMAs. • Manage Herd Management Areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of Herd Management Area Plans in GRSG habitat.
Range management structures	• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	• PHMA and IHMA: Do not construct new recreation facilities unless required for health and safety purposes. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. • PHMA & GHMA: OHV use limited to existing routes (routes to be designated through future travel management planning)
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. • ~~Limit~~Restrict the use of prescribed fire for fuel treatments ~~unless no other alternative is determined to be effective~~. • Prioritize post-fire treatments in SFAs, other PHMAs, IHMAs, and GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMA, IHMA, and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMA: Maintain all ~~minimum of 70 percent of~~ lands capable of

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Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	producing sagebrush with a minimum of 15~~10 to 30~~ percent sagebrush canopy cover, or as consistent with specific ecological site conditions. ● All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or juniper expansion	● Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural conversion and exurban development	● GRSG habitat will be retained in federal management unless: (1) the agency can demonstrate that disposal (including exchanges) of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal (including exchanges) of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

1.6 Key Components of the BLM Greater Sage-Grouse Conservation Strategy

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG and their habitat by ~~reducing,~~ eliminating~~,~~ or minimizing threats to GRSG habitat identified in the 2010 listing decision and highlighted in the "background and purpose" section of the COT report. ~~and c~~Consequently, ~~include three range-wide objectives~~ consistent with guidance contained in the COT and NTT Reports, four essential components of the GRSG conservation strategy were identified: 1) avoiding or minimizing new and additional surface disturbances, 2) ~~restoring and~~ improving habitat conditions ~~conditions~~, ~~and~~ 3) reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin, and 4) monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management as needed.

Commented [12]: this is the first time that the "3 objective" approach is discussed in the planning documents right? (not including press materials, etc.). if BLM can tie the "3 objective approach" more to the purpose and need (as suggested here) it may reduce litigants' arguments that BLM shifted its focus late in the game (in support of supplementation claims).

The land allocations and management actions included in the ARMPAs incorporate these components ~~meet these objectives~~ and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Land Allocations and Habitat Protection/Surface Disturbance Measures

The four Great Basin ARMPAs include land use allocations and management guidance for habitat management areas to avoid new disturbance and minimize any disturbance associated with proposed projects as described below and shown in **Table 1.4**. Land use plan allocations specify locations within the planning area that are available or unavailable for certain uses. ~~and~~ They ~~are~~ also ~~used~~ prioritize ~~conservation and~~ habitat protection, restoration, and enhancement management actions based on habitat management area designations. Surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat ~~in the Great Basin~~ as rangeland fire and invasive species. Nevertheless, the BLM ARMPAs include ~~has selected~~ land allocations and management actions that avoid and minimize surface disturbance in PHMA for identified threats (e.g., energy, mining, infrastructure, improper grazing, free-roaming equids, recreation and urbanization). These land allocations and management actions are necessary because the location and extent of habitat loss to fire is difficult to predict and much of the habitat due to low precipitation in the Great Basin is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

The most restrictive allocations include requirements to avoid and minimize additional disturbance in SFAs, which are subset of PHMA, where surface disturbance is avoided by NSO without waiver, modification, or exception~~, closures, or exclusions~~. In addition, these areas will be recommended for withdrawal to address the risk of disturbance due to mining.

In PHMAs outside of SFAs ~~(particularly in SFAs, which are a subset of PHMA). For example, new fluid mineral leasing would be subject to a no surface occupancy (NSO) stipulation in SFAs with no waivers, modifications, or exceptions. In the rest of PHMA,~~ new fluid mineral leasing would be subject to NSO with no waivers or modifications. Exceptions c~~w~~ould only be granted if ~~a~~the BLM, state fish and wildlife, and FWS biologists concur ~~it can be demonstrated~~ that the exception would provide an overall conservation benefit to the species. The BLM state director would then have the authority, but is not required to, grant the exception. ~~In addition, SFAs include additional protection from new surface disturbance by recommending those areas for withdrawal from mineral entry.~~

Similarly, PHMA is closed to non-energy and saleable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free–use permits and the expansion of existing active pits for saleable minerals and expansion of existing non-energy leasable development. This exception is included because of the importance of these materials to local communities and their limited disturbance which will be offset by the mitigation requirements. Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat. In Utah, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is

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"unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

All PHMAs will be managed as exclusion areas for renewable energy development (solar and wind) with the exception of areas outside of SFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas ~~and BLM will prioritize development outside of PHMA first or in non-habitat areas within PHMA before authorizing solar or wind development is permitted in higher value habitat areas~~. New rights-of-ways and development for transmission lines, pipelines, and related infrastructure would be avoided through restrictions on land use authorizations. In avoidance areas, exceptions would only be provided if it can be demonstrated that adverse impacts will be avoided or that residual impacts will be mitigated.

~~Although h~~High voltage transmission lines will be avoided in PHMA. ~~,~~However, the planning, siting, and environmental review of a limited number of ~~Presidential~~ priority transmission lines (Transwest Express and portions of Gateway South, Gateway West and Boardman to H~~M~~emingway), which has~~ve~~ been underway for a several years and~~. These lines~~ are deemed critical to expanding access to renewable sources of energy and to improving the reliability of the western grid, will proceed through~~.~~ NEPA analysis of these lines ~~is preceding~~ under separate authorization processes. Conservation measures for GRSG are being analyzed as part of those NEPA processes, which should achieve a net conservation benefit for GRSG ~~and the lines will be required to meet all mitigation requirements for projects in PHMAs~~.

While restrictions on future development in PHMA are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMA are more flexible and tailored to allow projects but with restrictions to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for unavoidable impacts will be required for proposed projects in GHMA. Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. See **Table 1-3** for more details on GHMA management decisions. Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts to GRSG or its habitat and then compensating for unavoidable impacts to GRSG or its habitat, to a net conservation gain standard for the species. ~~As noted in~~ This is consistent with guidance in the COT Report which states:~~;~~ "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur. …If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal , state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs."

In addition to allocations that limit disturbance in PHMA and GHMA, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs, and GHMAs to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide~~focus~~ development ~~in~~to lower conflict areas and as such, reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the need for

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Commented [JRL14]: Doesn't sound like avoidance – if only mitigation is to address residual impacts is required. Is this to net conservation gain?

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complex environmental review and analysis of potential impacts to sensitive species, and decreasing the need for compensatory mitigation.

Additionally, new recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat. In PHMA and GHMA travel would be limited to existing routes until routes are designated through the implementation travel management planning process. ~~-~~ Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning process.

In general, all forms of new development in PHMAs and GHMAs would either be closed, excluded, or avoided, or developed only if the resultant effect is a net conservation gain to the GRSG or its habitat, assuring that existing habitat would be protected and providing opportunities, through compensatory mitigation, to restore and improve degraded habitats due to a net conservation gain standard.

~~Livestock grazing was not recognized by the USFWS as a major threat to GRSG or its habitat.~~

~~Livestock grazing will be managed to ensure that allotments meet ecological potential and wildlife habitat requirements to ensure that the health and diversity of the native perennial grass community is consistent with the ecological site. Sage-grouse habitat needs will be incorporated into relevant resource and allotment plans. Habitat assessments will be prioritized to focus on SFAs first, the PHMAs and GHMAs and, where desired conditions are not being achieved or progressing toward that goal and are due to existing livestock grazing, appropriate adjustments will be made.~~

While improper livestock grazing can be a threat to GRSG habitat, ~~G~~grazing is not considered a discrete surface disturb~~ance~~ing activity for purposes of monitoring and calculating disturbance. The plans address grazing management for the conservation of GRSG and its habitat through incorporating habitat objectives into permits and prioritizing assessment and review of grazing permits (see Section 1.6.2).

Disturbance Caps, Density Caps, Lek Buffers, and Required Design Features

In addition to the management actions and allocations discussed above, the ARMPAs provide further assurance that anthropogenic disturbances in PHMAs will be limited through the use of disturbance caps, density caps and lek buffers.

A 3% disturbance cap in PHMA was established in accordance with the recommendations contained in the NTT Report. Disturbance will be calculated at two scales: first at a Biologically Significant Unit (BSU) scale determined in coordination with the state and second, for the proposed project area. BSUs are geographic units of PHMA that contain relevant and important GRSG habitat. In Oregon and Utah for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of anthropogenic disturbance cap and in some ARMPAs, the adaptive management habitat triggers.

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If 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within PHMA in any given BSU, no further discrete anthropogenic disturbances (subject to valid existing rights) will be permitted on BLM-managed lands within PHMAs in that BSU until the level of disturbance in the BSU is below the cap.

An exception to the 3% disturbance cap is provided in ~~for ROWs in order to ensure that disturbance for future ROWs can be directed to existing~~ designated utility corridors for purposes of achieving a net conservation gain to the species. This exception is limited to projects which fulfill the use for which the corridors were designated (e.g., transmission lines and pipelines) within ~~and~~ the designated width of a corridor~~ will not be exceeded as a result of any project location~~. ~~The purpose of t~~ This exception ~~is to~~ will~~continue to~~ concentrate~~ any~~ future ROW surface disturbance ~~from new ROWs~~ in areas of existing disturbance and ~~to~~ avoid new development of infrastructure corridors in PHMAs consistent with guidance in the COT report. In addition, ~~T~~the Oregon and Nevada/Northeast California ARMPAs include varia~~except~~tions to the disturbance cap: Oregon does not allow more than 1% new anthropogenic disturbance per decade, not to exceed 3% disturbance at any time.~~;~~ ~~and i~~ In Nevada, permit exceed~~ing a~~ances of the 3% disturbance cap ~~can occur~~ at the BSU and/or the project level ~~as long~~ can occur provided that ~~as~~ the outcome results in a net conservation benefit to the species with the concurrence of the BLM, ~~State of Nevada~~Nevada Department of Wildlife, and FWS in each exception~~as approved by the BLM~~.

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The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage co-location of structures to reduce habitat fragmentation. The cap is set at an average of one facility per 640 acres in PHMA in a project authorization area, consistent with guidance contained in the NTT Report. If the disturbance density in the PHMA in a proposed project area is, on average, less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The one facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer-distances as identified in the USGS Report Conservation Buffer Distance Estimates for GRSG – A Review (Open File Report 2014-1239). ~~The l~~Lek buffer distances will be applied at the project specific level as required conservation measures to address the impacts to leks as identified in the NEPA analysis. The lek buffer distances vary by type of disturbance (road, energy development, infrastructure, etc.) and justifiable departures may be appropriate as fully described in Appendix B of the ARMPAs. In both PHMA and GHMA, impacts should be avoided first by locating the action outside of the applicable lek buffer-distance(s) as defined in the ARMPAs. In PHMA, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed. In GHMA, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions."

Additionally, Required Design Features (RDFs) are required for certain activities in all GRSG habitat, including oil and gas development, infrastructure, range developments, and other surface disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts to GRSG or its habitat from threats (such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators). However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area).

1.6.2 Improving Habitat Condition

In addition to prescribing land allocations and managing resource uses to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

The ARMPAs contain an overall habitat management objective that "In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush canopy cover or as consistent with specific ecological site conditions~~a minimum of 70% of lands capable of producing sagebrush with a minimum of 15% sagebrush canopy cover, consistent with referenced conditions for the specific ecological sites~~." To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into all land management programs, including wild horse and burros, grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives through treatment of invasive annual grasses and the removal of encroaching pinyon juniper in SFA, PHMA, and GHMA, and restoration of degraded landscapes, including those impacted by fire events (See **Section 1.6.3**.)

The BLM recognizes that improper grazing is a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing~~Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing.~~ The COT Report recommendation for grazing states, "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage- grouse (e.g. shrub cover, nesting cover)." To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs include requirements for the incorporation of terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review

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and monitoring of grazing permits, and take numerous actions to avoid and minimize the impacts of range management structures (**see Table 1-4**).

The BLM will prioritize reviews and updates of grazing allotments in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMA, focusing first on riparian and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area, but rather reflects a decision to prioritize resources to ensure permittees manage grazing properly in those areas most important to the species. If the BLM finds that relevant habitat objectives are not being met due to improper grazing, the BLM will work with the permittee to ensure progress towards meeting them.

To address the localized threat due to negative influences of grazing by free-roaming equids (wild horses and burros (WHB)), the BLM will focus on maintaining WHB Herd Management Areas in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending Herd Management Area plans to consider incorporating GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFA, then the remainder of PHMA, and then GHMA. In SFAs and PHMA, the BLM will assess and adjust AMLs through the NEPA process within HMAs when WHBs are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

During the implementation of the ARMPAs, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in GRSG habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action. This standard is consistent with the recommendation included in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* published by the FWS in September, 2014, which states that mitigation "be strategically designed to result in net overall positive outcomes for sage-grouse"**.** Mitigation will follow the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g. avoid, minimize, and compensate) and be implemented on BLM-managed lands in a manner consistent with Departmental guidance for landscape mitigation pursuant to Secretarial Order 3330. If impacts from BLM and Forest Service management actions and authorized third party actions result in habitat loss and degradation that remain after applying avoidance and minimization measures (i.e. residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

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To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams based on WAFWA Management Zones, including members from the

respective states, Forest Service, USFWS, NRCS, and other local governments. These Conservation Teams will facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response. These Teams will convene to advise on these specific tasks and will utilize existing coordination and management structures to the extent possible.

With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the Integrated Rangeland Fire Management Strategy will further these goals and objectives. The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the Integrated Rangeland Fire Management Strategy are specifically designed to identify landscapes of high resistance and resilience based on research by Chambers (Chambers et al, 2014b). Additionally, by limiting or eliminating anthropogenic surface disturbance, especially in the SFAs, ensuring the integrity of the PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation efforts, connectivity and availability of sagebrush habitat are expected to increase thus contributing to increased climate resilience. The SFAs in particular, were identified as key areas to conserve as climate changes.

Commented [JRL23]: May want to include reference to the OR plan provisions on climate change as an example of how CC considerations are incorporated in plans.

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1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency". For this reason, the ARMPAs seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush. Prescribed fire will not be used ~~unless~~ except under the following conditions: the NEPA analysis for the Burn Plan ~~addresses~~ provides a clear rationale for why alternative techniques were not selected as a viable option, how GRSG habitat management goals and objectives would be met by its use, how the COT Report objectives would be addressed and met, and a risk assessment is prepared to address how potential threats to GRSG habitat would be minimized. ~~The BLM *Greater Sage-Grouse Invasive Annual Grasses & Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats.~~

The cornerstone of the FIAT protocol is recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers, et al., 2014b). The final FIAT process report was completed in June 2014 by the Fire and Invasive Assessment Team. The BLM, the Forest Service, and FWS agreed to incorporate this approach into the final GRSG EISs. This information is being used to identify and design projects to change vegetation composition and/or structure to modify potential fire behavior for the purpose of improving fire suppression effectiveness and limiting fire spread and intensity due to invasive grasses and conifer encroachment. The BLM *Greater Sage Grouse Invasive Annual Grasses & Conifer Expansion*

Assessment (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats.

Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species, and prioritize vegetation treatments closest to occupied GRSG habitats and near occupied leks. Through guidance in the ARMPAs supplemented by the *Integrated Rangeland Fire Management Strategy*, a commitment has been made to address the invasion and expansion of cheatgrass, medusa head, and other invasive grasses through expanded efforts to treat impacted acres and to accelerate and expand efforts to restore lands impacted by fire with native grasses and sagebrush seedlings. Efforts are underway to increase the acreages to be treated with chemical and biological agents to kill and stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion.

In addition to and complementing the ARMPAs described in this ROD, Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department".** (emphasis added) The strategy places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes in areas identified by the Fire and Invasives Assessment Tool (FIAT) in priority habitat, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT process, applying recent science, identified highly resistant and resilient landscapes to target fire management activities to these most important lands. In addition, through the issuance of a Leaders' Intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions with regard to the allocation of resources for firefighting in 2015. Additional resources have been allocated and will be targeted to fuel treatments (including invasive species control), suppression (through the prepositioning of fire-fighting resources and the training of additional Rural Fire Protection Associations, local volunteer firefighters, and veteran fire fighters), and habitat restoration in these areas. Firefighting assets (aircraft, firefighters and related equipment) will be located near areas of high priority for rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT report noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective." The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats."

A rangewide monitoring and evaluation framework will be established and implemented as described in the Monitoring Framework (Appendix X of each attached ARMPA) This monitoring strategy has two parts: (1) implementation monitoring (i.e., are decisions being implemented in a timely manner, are actions taken consistent with the plan decisions), and (2) effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals). Through effectiveness monitoring, BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat to determine if the desired management objectives (e.g. avoiding and minimized additional surface disturbance in PHMAs) have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, size of patches, etc.). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by state wildlife agencies and other partners, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRSG populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ameliorate negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Team (as described in Section 1.6.2) will also be used to advise regional monitoring strategies and data analysis ~~on~~ as described in the plans ~~and utilize existing management structures~~.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored - habitat condition and/or population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after the issuance or signature of this ROD.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the proposed ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the state, FWS, and the BLM to see if the causal factor can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines).

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger is tripped, the BLM will implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. In the event that new scientific information becomes available demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM will immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive such as an Instruction Memorandum (IM) or a plan amendment.

1.7 Unique Aspects of the Great Basin ARMPAs

The ARMPAs and their associated environmental impact statements were developed through four planning efforts across the Great Basin Region (as described in Section 1.1). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing, in particular, the importance of addressing the threat of rangeland fire and the challenge of restoring fire-impacted landscapes and implementing measures to limit anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the subregional plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and state-specific management approaches.

This tailored approach provided management flexibility as well as the opportunity to incorporate recommendations resulting from collaboration with local cooperators and public comments in each subregion. This~~he~~ subregional planning strategy will strengthen implementation efforts for each subregional plan given that the contributions of local partners will be reflected in the plans and the plans will benefit from local knowledge, expertise, and experience. Measures incorporated into the subregional plans in this manner remain consistent with the range-wide objective of protecting, enhancing, and restoring GRSG habitat by ~~reducing,~~ eliminating~~,~~ or minimizing threats to GRSG habitat such that the need for additional protections under the ESA ~~may~~ can be avoided.

Below is a brief description of the unique aspects of each of the Great Basin sub-regional ARMPAs.

Idaho and Southwestern Montana

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The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third category of habitat referred to as Important Habitat Management Areas (IHMA). IHMA are BLM-administered and National Forest System lands that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations. In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance while providing an acceptable additional level of flexibility in IHMA and GHMA since surface disturbance due to development is not as great a threat to habitat in the subregion. The three tiers also serve as the foundation for an adaptive management approaches that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, IHMA will be managed as PHMA to maintain sufficient PHMA to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat, as described in Appendix J of the attached Idaho and Southwestern Montana ARMPA, which was developed by the BLM in concert with

the Idaho Department of Fish and Game, Forest Service, and FWS. The Idaho and Southwestern Montana ARMPA also includes additional Required Design Features (RDFs) based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local U.S. Fish and Wildlife Service office. Examples include avoiding building new wire fences within 2 km of occupied leks and placing new, taller structures out of line of sight or at least one kilometer from occupied leks. The BLM will also work with the state of Idaho in setting priorities for the review and processing of grazing permits/leases in SFAs consistent with the methodology recommended by the State of Idaho in its proposed plan for the management of BLM-administered lands in the state.

The decisions affecting Southwestern Montana in the ARMPA complement the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development. Recognizing that the State of Montana efforts are just beginning, the plans include measures to incorporate aspects of the Montana Plan as it is instituted. The BLM plans will switch to a 5% disturbance cap, consistent with the Montana Plan when the process is instituted and being effectively implemented. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if some sage-grouse related management actions can be adjusted with coordination from the State of Montana and the USFWS to achieve consistent and effective conservation across all lands, regardless of ownership. There is no IHMA in Montana.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the "2014 Coates Maps", developed locally using the best available science, and included "Other Habitat Management Areas", where required design features will be applied at the project level. Decisions for BLM-administered lands in the State of California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Decisions for BLM-administered lands in the State of Nevada incorporate key elements of the State of Nevada Greater Sage-Grouse Conservation Plan (State of Nevada 2014) including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the planning area. This mitigation strategy focuses restoration efforts in the key areas most valuable to the GRSG. The ARMPA adopts a Disturbance Management Protocol (DMP) to provide for a 3% limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, State of Nevada, and FWS. The plan provides for this exception due to the development of ~~strong~~ mitigation tools in Nevada, including the Conservation Credit System, in collaboration with the FWS. Furthermore, g~~G~~iven the concurrence of the ~~State of Nevada~~Nevada Department of Wildlife and FWS in each exception, this approach is consistent with

conservation objectives. The Disturbance Management Protocol in BLM-administered lands in Nevada was also deemed sufficient such that the Nevada ARMPA does not have density cap, which is required in the three other Great Basin Region ARMPAs.

In coordination with the USFWS, the Nevada ARMPA also allows for an exception to geothermal NSO which is an energy development priority for the state and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (Conservation Plan for Greater Sage-Grouse in Utah) and the State of Wyoming (Executive Orders 2011-05 and 2013-3), which establishes conservation measures for protecting GRSG and also focuses conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the state's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in GHMA because 96% of the breeding GRSG in Utah are within PHMAs where conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and required design features as well as requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates GHMA as open to wind energy and high voltage transmission ROW development (consistent with the net-conservation-gain mitigation framework for the ARMPA). The Utah ARMPA also designates GHMA open to ~~as~~ oil and gas development with standard constraints.

Commented [JRL26]: What is the mitigation framework for UT?

Commented [SMC27]: Is is the same as everywhere else – to a net conservation gain

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Hagen 2011) which establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the Oregon Department of Fish and Wildlife in which disturbance is capped at 1% per decade.

The BLM Oregon plans provide additional flexibility for wind development in PHMA in Harney, Lake, and Malheur counties by allowing ~~fo~~r avoidance rather than exclusion within PHMAs that are outside of the SFAs. The BLM provided this flexibility after recognizing the extent of high and medium potential wind areas in these counties that is in PHMAs, the fact that wind energy is excluded in SFAs in these counties, and, after coordination with the USFWS, determining that the more rigorous disturbance cap (in which disturbance is capped at 1% per decade) and adaptive management triggers adopted by the Oregon plan would compensate for the limited wind development likely to occur in these areas. In addition, the

plan encourages development of wind energy ROWs outside of PHMA first, or in non-habitat areas within PHMA, before development is permitted in higher value habitat areas. Due to these factors, the BLM finds these limited areas of flexibility for wind development are not inconsistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic areas where habitat enhancement and restoration activities are encouraged, as well as key areas to address the impacts associated with climate change.

For additional information regarding the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs, which provides a crosswalk regarding how the ARMPAs address specific threats to GRSG identified in the COT Report through these state-specific management prescriptions.

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1.8 Decision Rationale ~~(Management Considerations)~~

The ARMPAs provide a comprehensive and effective conservation strategy for addressing the threats identified by the FWS such that the need for additional protections under the ESA can~~might~~ be avoided. The ARMPAs contain objectives which strive to conserve the GRSG and its habitat on BLM-administered lands across the remaining range of the species consistent with measures identified or recommended in the NTT or COT reports.

In combination with the sage-grouse conservation actions taken by the individual states within the remaining range of the bird and separate but connected initiatives to address the threat of rangeland fire to curb the continuing spread of non-native invasive grasses, and to promote conservation measures to benefit the Greater sage-grouse on private lands, the BLM and Forest Service proposed ARMPAs are an essential component of the effort to conserve the GRSG and its habitat. ~~and may avoid the need for a listing of the species under ESA.~~ Combined, all of the ARMPAs associated with the BLM's National GRSG Conservation Strategy would affect approximately 66 million acres of the remaining habitat for the species.

The BLM Greater Sage-Grouse Conservation Strategy is built upon the following key concepts:

- **Landscape-level**: The planning effort encompasses the remaining habitat of the GRSG on BLM-administered public lands, covering 10 western states in the Great Basin and Rocky Mountain regions. As such, the strategy provides a coherent framework across the Resource Management Plans to implement landscape-level conservation for GRSG while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple use and sustained yield mandates under FLPMA. The conservation measures included as part of this landscape-level conservation effort ~~are consistent with the severity of~~ appropriately address relevant threats, recognize~~ing~~ local ecological conditions, and incorporate~~ing~~ existing

conservation efforts where they are consistent with the overall objective of conserving the species across its remaining range.

- **Best Available Science** – The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, state agencies, the US Geological Survey, the FWS and other sources. The COT Report provided a "blueprint" for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The BLM National Technical Team (NTT) Report provided additional guidance for addressing the most significant threats to the GRSG. A series of subsequent reports on how to improve efforts to reduce the threats of rangeland fire and invasive species prepared in collaboration with the WAFWA, as well as a report to the Secretary of the Interior entitled "An Integrated Rangeland Fire Management Strategy" also provided crucial guidance in formulating the conservation strategy.
- **Targeted, Multi-Tiered Approach** – The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration efforts to the most important habitat management areas as determined by state and federal sage grouse experts, largely consistent with the Priority Areas for Conservation (PACs) identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as Priority Habitat Management Areas (PHMAs). Within PHMA, the ARMPAs/ARMPs provide an added level of protection to prohibit surface disturbance through the delineation of Sagebrush Focal Areas (SFA), derived from areas identified by the FWS as "strongholds" essential for the species' survival. General Habitat Management Areas (GHMAs), ~~is~~ identified in the ARMPAs recognize the potential value of habitat areas outside of PACs -- as recommended by the COT -- where surface disturbance is minimized to provide greater flexibility for land use activities but where disturbance will be mitigated.
- **Coordinated**: The ARMPs and ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, all federally-administered lands essential to the conservation of the GRSG will be managed to achieve this objective through amendments or revisions to their land management plans. The USFWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative**: The ARMPAs reflected extensive input from the relevant states, collaborators, and stakeholders and the public from the outset. The ARMPAs d were developed with the benefit of input from the individual states and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force (SGTF) was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate state and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG consistent with the multiple-use and sustained-yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis and recommendations for GRSG conservation including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through a collaborative

effort of state and federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report –which identified threats to GRSG habitat as well as the most important habitat to protect--provided an important framework for development of the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of state and federal scientists, wildlife biologists, and resource managers, was tasked by the Director of the USFWS "with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future."

In addition, the Fire and Invasives Assessment Team (FIAT) Report and the USGS compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and infrastructure on GRSG populations -- *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review*, and the *Integrated Rangeland Fire Management Strategy: Final report to the Secretary* (Manier et al, 2014; DOI 2015b) provided important guidance in the development of critical aspects of the proposed ARMPAs/ARMPs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG experience where consistent with the overall GRSG management objectives.

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The BLM ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs/ARMPs also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate state-developed conservation measures in each of the subregional plans has added complexity in developing the overall conservation strategy, the body of local knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the difficult task of implementing the plans upon completion.

In his transmittal letter accompanying the final COT report, FWS Director Dan Ashe reaffirmed his charge, "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. … Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels."

The BLM ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report and the BLM NTT. ~~The COT Report emphasized the need to avoid or minimize additional disturbance in PACs (which largely coincide with PHMAs in the ARMPAs).~~ As previously noted, the COT report stated, "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing

these activities to achieve the same goal". The COT further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

In order to address the identified threats~~,~~ and meet the recommendations of the COT, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMA which align closely with PACs identified in the COT Report. Within PHMA, the plans identify SFAs based on the FWS analysis of strongholds for the species based on population density, habitat integrity, and resilience to climate change among other factors. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in wildlife horse and burro populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS which are most important to long-term ecosystem health and species persistence.

PHMA and GHMA boundaries are based on Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH), as represented in the Draft LUPAs/EISs. Consistent with BLM's Instruction Memorandum 2012-044, PPH and PGH are based on data and maps developed through a collaborative effort between the BLM and the respective state wildlife agency. PPH and PGH (now PHMA and GHMA in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty 2010), sage grouse proportionality, density of leks, and key seasonal habitats. PGH (now GHMA) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

Allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMA – from energy, to transmission lines, to recreation facilities and grazing structures are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. In all instances, whether in PHMA or GHMA, any adverse impacts associated with development would have to be compensated with habitat protection or restoration activities that produce a net conservation benefit for the GRSG. The ARMPAs/ARMPs will also prioritize future oil and gas leasing and development outside of identified GRSG habitat (i.e., SFAs, PHMAs, and GHMAs) ~~in areas of low~~ to reduce the potential for future conflict with GRSG ~~habita~~t.

In addition, the ARMPAs include measures to limit surface disturbance in PHMA through the establishment of disturbance limits or "caps" of 3%, density restriction of on average 1 energy facility per 640 acres and lek buffers. These requirements were established in accordance with recommendations contained in the NTT Report. As described in Section 1.6.1, BLM determined the appropriate buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al, 2014).

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in SFAs, then in PHMAs, and finally in areas designated as GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMA or GHMA will be designed to a net conservation gain standard consistent with the recommendation included in the September 2013 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework*. According to the authors, the Framework was prepared …

> "to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse".

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT to …

> "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g. shrub cover, nesting cover)."

The ARMPAs also address the adverse impacts of free-roaming equids (wild horses and burros) on GRSG habitat by prioritizing gathers and removal of wild horses and burros to reach AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has made a considerable investment in concert with the National Academy of Sciences in new research of methods to reduce wild horse and burro reproduction rates. Through a combination of targeted gathers and the development of an effective agent for reducing future free-roaming equid reproductive rates, over time, this threat to GRSG may be effectively mitigated.

Since the interaction of fire and invasive species represents the greatest threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat that led to Secretarial Order (S.O.) 3336 and subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior*.

http://www.forestsandrangelands.gov/rangeland/documents/IntegratedRangelandFireManagementStrategy_FinalReportMay2015.pdf

In accordance with the S.O. and subsequent rangeland fire management strategy, substantial changes in policy and management direction affecting all aspects of the rangeland fire management program – from better coordination between resource managers and fire management officers; to the identification and prioritization of prevention, suppression, and restoration efforts in SFAs, PHMAs, and GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This effort, and the initiative to fight the spread of non-native invasive species that contributes to higher rangeland fire risk (e.g. cheatgrass) discussed below, has fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

The COT report – and other more recent research and analysis – amplify concern for the contribution of cheatgrass and other invasive species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers (Chambers et al, 2014b) led to the Fire and Invasives Assessment Tool and a subsequent assessment that identified areas of resistance and resilience to fire within SFAs, PHMAs, and GHMAs. Through use of the FIAT assessment/Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss as well as target restoration to those areas important to the species where success is more likely. The BLM is also committed to and accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive species.

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Even prior to completion of the FIAT assessment, BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY2014 Omnibus Appropriation, BLM prioritized the funding of treatments and activities within each state that benefit GRSG **(See Figure 1-6)**.

In addition, the Sage Grouse Initiative (SGI) launched by the Natural Resources Conservation Service in 2010 also contributes to the effort to protect and restore important GRSG habitat in the Great Basin states. In collaboration with the states and private landowners on private lands, as well as with the BLM and USFS on federally-administered public lands, NRCS has worked to reduce the encroachment of pinyon-juniper trees and restore rangeland habitat on private and BLM-administered lands.

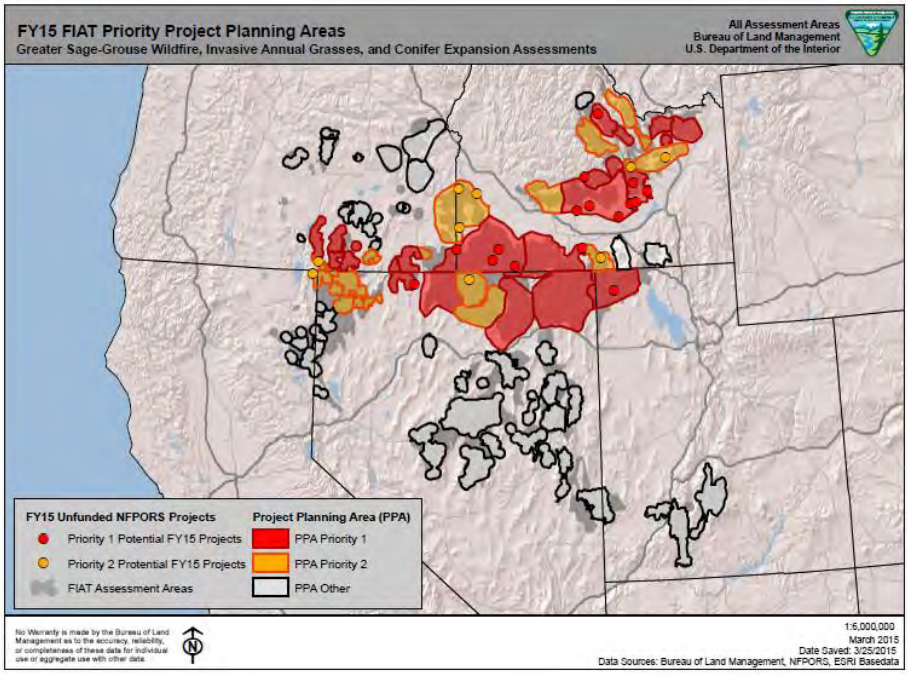

Figure 1-6. FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments.

To further supplement these efforts, the Department has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes and BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. The Department has identified required policy changes to increase the commitment, flexibility and timeframe for use of Emergency Stabilization and Burned Area Restoration (ES & BAR) funding on priority sagebrush-steppe habitats.

Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy,* the BLM and Forest Service conservation strategy places heavy reliance on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs . Monitoring plans will be developed in coordination with relevant state and federal agencies and will incorporate evaluation of GRSG population trends by the states and changes in habitat condition by the federal land management agencies. As the WAFWA report states …

> Monitoring provides the "currency" necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and there, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort.

In addition, the ARMPAs incorporate an adaptive management framework that provides an "early warning system" of "soft triggers" to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes in population levels or habitat conditions occur. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and "hard triggers" are reached, more significant plan-level changes in management actions and land allocations will occur to ensure that more protective measures to conserve the species are in place.

In summary, the ARMPAs emphasize an "avoidance first strategy" consistent with the recommendations in the COT Report by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished through identification of important GRSG habitat areas and then applying allocations that exclude or avoid surface disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, are important to the long-term viability of GRSG. Restoration decisions include specific habitat objectives, and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management Strategy* as well as NRCS' Sage Grouse Initiative (SGI) investments in private landowners' conservation efforts. This strategy reflects a high level of commitment by federal partners to conserve the GRSG and its habitat. These actions on over half of the most important lands for GRSG conservation will serve as an anchor and complement the significant actions being taken by state and local governments as well as private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of reinforcing conservation actions that will go into effect upon completion of the BLM and Forest Service ARMPAs as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for both resource management agencies since 2010 and a long-term commitment to assure the conservation of the species consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape for the BLM and amplifies the need for collaborationve conservation among federal, state, triballocal, and private partners to conserve the GRSG consistent with direction articulated in the NTT report:. This paradigm shift is best characterized as follows:

"Land uses, habitat treatments, and anthropogenic disturbances will need to be managed below threshold necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes

as well. Management priorities will need to be shifted and balanced to maximize benefits to sage grouse habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future."

~~The conservation benefits to the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPAs provide an essential foundation for conserving the GRSG which, in conjunction with the amended Forest Service LRMPs, affect XX percent of the remaining GRSG habitat in the Great Basin Region? In conjunction with the [RockyMountain ARMPAs?] and GRSG management initiatives of other federal, state, and local partners, the cumulative benefits of these conservation actions constitute an effective strategy for conserving the GRSG and may avoid the need to list the species as threatened or endangered under the Endangered Species Act..~~

2. DECISION

2.1 Summary of the Approved Management Decisions

The decision is hereby made to approve the Great Basin Region Greater Sage-Grouse ARMPAs for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments A, B, C, and D). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.
The decisions included in this ROD and attached ARMPAs amend the land use plans described in **Sections 1.3** of attachments A, B, C, and D.

The land use decisions conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes), and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective upon signing of this ROD, they generally require additional implementation decision steps before on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 What the Record of Decision and Approved Resource Management Plan Amendments Provide

The ARMPAs include GRSG and GRSG habitat land use plan level management decisions in the form of:

- Goals
- Objectives (Desired Future Conditions)
- Land Use Allocations and Allowable Uses
- Management Actions

Goals are the broad statements of desired outcomes, and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the planning area that are available or not for certain uses and are also used prioritize conservation and restoration management actions. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/ or sale, and what lands are open, closed, or limited to motorized travel (please note that all acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Management actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands..

The ARMPAs' management decisions were crafted to incorporate conservation measures into LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats (see **Section 1.3**).

2.3 What the Record of Decision and Approved Resource Management Plan Amendments Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for travel management decisions in the Idaho and Southwestern Montana ARMPA.

Commented [30]: really? are these implementation level decisions designating routes? was this clear in the PRMP?

Commented [MEM31]: Jon Beck – is this accurate?

The ARMPAs respect valid existing rights.

The ARMPAs do not contain decisions for the mineral estates of lands located in the planning area for lands under the jurisdiction of other Federal agencies such as the Forest Service, or for private or State-owned lands and minerals that are not administered by the BLM. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

- *Statutory requirements.* The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.

- *National policy*. The decision will not change BLM's obligation to conform to current or future National policy.
- *Funding levels and budget allocations*. These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

Commented [32]: except in Idaho for travel management decisions?

Commented [MEM33]: Jon Beck – same comment as above.

2.4 Modifications and Clarifications

During preparation of the ARMPAs for all four sub-regions, minor changes were made to the Proposed RMP Amendments. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency review. Clarifications and corrections made since the Proposed RMP Amendments were published on May 29, 2015 are hereby adopted by this ROD.

Based on internal review, the following modifications/clarifications were made to all of the ARMPAs in the Great Basin. The management actions did not change as a result of these modifications/clarifications.

- The plans were reformatted for consistency across the Great Basin; the order of management actions and the prefixes for the goals, objectives, and management actions were changed in the Great Basin sub-regions in the combined Record of Decision to provide consistency between the Great Basin amendments.
- All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. This is because the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plan Amendment under their planning authorities
- [Clarification - Consistent drop-in language related to habitat mapping changes will be discussed here once final drop-in language is provided.]
- [Clarification - Consistent drop-in language related to Sagebrush Focal Area prioritization for other activities language will be discussed here once final drop-in language is provided. This does not have to be included if the planning area does not have an SFA.]
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions
- As a result of internal BLM reviews, the Greater Sage-Grouse Adaptive Management Strategy in each ARMPS were slightly revised to include a commitment that the hard and soft trigger data

will be evaluated as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.

- Wildlife Suppression management actions modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.

- *[Clarification – Consistent drop-in language related to the exception language for the three priority transmission projects (clarifying that these priority projects will incorporate Greater Sage-Grouse conservation measures) will be discussed here once final drop-in language is provided.] [If the planning area does not include the Gateway West, Boardman to Hemingway, and TransWest Express, or Gateway South transmission project, you can delete this bullet.]*

Commented [MEM34]: This section will updated once final drop-in language is completed.

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the FEIS in various places was grouped into a stipulation appendix and added it to the ARMPA as Appendix G Stipulations.
- Appendix G Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA was modified to delete the reference to Tables 2 to 7. Tables 2 to 7 were deleted from the FEIS Appendix G before it was made available to the public for protest, but the reference was not deleted in text of the Appendix. This discrepancy was identified during protest resolution and by the Governor during the Governor's Consistency Review. These values will be calculated after the signing of the ROD (see Adaptive Management below).
- Many editorial changes including, deleting repeated numbers, spelling errors, etc, were made when finalizing the ARMPA.

Special Status Species

- Greater Sage-grouse Management Areas MA- 10, third bullet from the PMPA which is now MD SSS 10 in the ARMPA had the following sentence added as an accepted recommendation made by the Governor during the Governor's Consistency Review to clarify management and conservation action prioritization in SFA and:
  "Management and conservation action prioritization will occur at the Conservation Area (CA) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFAs followed by areas of PHMA outside SFAs."
- Deleted the Seasonal Timing Restrictions from Appendix C FEIS to reduce redundancy because these restrictions were already in the Required Design Features Appendix.

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in PHMA, IHMA, and GHMA would only be available for disposal through exchange. This was removed because it was not consistent with BLM policy and the net conservation gain clause in MD LR-13 will provide assurance that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes such as changing 'should' to 'shall', and 'would' to 'will' to reflect the final decision language.
- Re-categorizing some of the Management Decisions into other common resource programs. For example, all of the Fire and Fuels management decisions are all numbered under FIRE, and are not split into different sub-category names.
- Re-lettering of the critical Appendices, and deletion of those that are no longer applicable for the ARMPA.

Special Status Species

- Added clarity to MD SSS 2 A 3, by describing what energy and mining facilities to which this decision would apply; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A, by including references to valid existing rights and applicable law for the requirement of a 'net conservation gain'.
- Specified in MD SSS 8 that this activity would be coordinated with NDOW or CDFW, and that breeding activity surveys would be for actions involving mineral activities and rights-of-ways.
- Deleted Action PR 4 from the Proposed LUPA because BLM does not manage landfills and transfer stations.

Adaptive Management

- Moved the Adaptive Management Strategy section out of Chapter 2 and made it into Appendix J; moved the Adaptive Management decisions under MD SSS 17 – MD SSS 22.
- Clarified under MD SSS 21 that BLM will coordinate with NDOW, and that the decision was specific to mineral activities and rights-of-way actions.

Fire and Fuels Management

- Deleted 'field offices and districts' from MD FIRE 3, as there will be a multi-layer approach to coordination, including BLM State Offices.

- In Objective FIRE 3, added 'in SFAs first' to provide more emphasis to the SFA over the rest of the PHMA for this action.
- Modified MD FIRE 26 to delete 'Districts', as there will be a multi-layer approach to identifying treatment needs for wildfire and invasive species management across the state.
- Added 'USFWS' as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include, "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to". This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…".
- The following statement was added to LG 21 from the Proposed RMP Amendment which is still is LG 21 in the ARMPA: "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet in width… "or a different width is specified for congressional designated corridors". This is in response to the Lincoln County Conservation Recreation Development Act (2204) which included congressionally designated corridors that were not included in the plan amendment or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this Act.
- Rewording of MD LR 19 to state that the federal and state road easements would continue to be managed as PHMA or GHMA, but the Federal Highway Administration and Nevada Department of Transportation would not be bound by the decisions in the plan amendment.

Travel and Transportation

Commented [MEM35]: Lauren – can you rework this bullet to address Aaron's comment below?

Commented [36]: I don't think this is accurate. See our email exchange on this topic:

I think its an overstatement. It's not that nothing would apply to anything they could possibly do within the ROW, it's that we aren't changing the terms and conditions of that ROW, right? And I think the latter point is covered by the "subject to VER language". So, while I think you could clarify that separately to the cooperators, I'm not sure putting something explicit in there makes sense (and might lead others to question why BLM didn't call out their specific instruments).

- Due to confusion that was outlined in protest letters and in the Governor's Consistency Review, MD TTM 2 was clarified that limiting off-highway travel to existing routes in PHMAs and GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations".
- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning". This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment", as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning area, the two Mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed LUPA (which are now separate Appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Required Design Features and Best Management Practices

- Appendix C was revised to include the statement that state-implemented conservation measures or protections may be considered as an alternative in the application of RDFs, as appropriate, on a site-specific basis.

Fire and Fuels Management

- Management action WFM 2, from the Proposed RMP Amendment, which is now MD FIRE 2 in the ARMPA, was modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.

Livestock Grazing

- LG/RM 2 from the Proposed RMP Amendment, which is now MD LG 2 in the ARMPA, was modified to provide further clarification that changes in livestock grazing management through grazing authorization would occur only when livestock management practices are determined to not be compatible with meeting or making progress towards achieving habitat objectives and/or Land Health Standards. This modification was recommended by the Governor during the Governor's Consistency Review.

- The following statement was added to LG/RM 15 from the Proposed RMP Amendment which is now MD LG 15 in the ARMPA :"This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

Lands and Realty

- A typographical error in the socioeconomic analysis of the proposed RMPA was identified during the Protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows:
- Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D,E, F, and the Proposed Plan…" is replaced with: "Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-state providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on terrain. In rural areas, burial of new distribution lines would be more than double the cost of new overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers, infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat."

Commented [MEM37]: Joan and/or Jennifer – can you complete this statement?

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and

anthropogenic disturbances. This modification was recommended by the Governor during the Governor's Consistency Review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the proposed RMP/RMP amendment, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMP Amendment, the use of words like "would," "could," "should," and "may" were generally removed or revised to reflect the active management direction of an ARMPA rather than potential management presented when the Proposed RMP Amendment was one of many alternatives the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMP Amendment), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMP Amendment), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog (UPD), a federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is applied to all applicable objectives and management actions, not just the five actions in the Proposed RMP Amendment where this concept and language was already present.
- Throughout the Proposed RMP Amendment there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or state biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during the Governor's Consistency Review.
- The Proposed RMP Amendment introduced the term "biologically significant units" (BSU) for adaptive management and the disturbance cap to provide a consistent approach for managing and monitoring across the GRSG range. In the Utah Sub-Region, the BSU concept is the same as PHMA within population areas. As part of resolving protests, the ARMP was revised to note that "BSUs" are PHMA within population areas. Whenever the term BSU was used, it was replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across state lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMP Amendment, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA management zones when addressing designation of PHMA. This change was made during the Governor's Consistency Review to

more closely reflect the management in the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah (2013).

- MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, was revised to include the following text: "The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language was added based on an accepted recommendation made by the Governor during the Governor's Consistency Review.
- The language of MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, regarding non-habitat areas within PHMA and GHMA was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMP Amendment, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMP Amendment, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual, incremental increases in noise levels.
- The language of MA-GRSG-6 from the Proposed RMP Amendment, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside PHMA/GHMA. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction regarding management of areas outside PHMA/GHMA that have been treated to improve GRSG habitat. The change was necessary to avoid implication of changing allocations or altering PHMA/GHMA boundaries outside a planning process while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

<u>Livestock Grazing</u>

- The language of MA-GRA-6 from the Proposed RMP Amendment, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to align with similar concepts and intent that was present in the livestock grazing sections in GRSG amendments throughout the Great Basin.
- The following statement was added to MA-GRA-18 from the Proposed RMP Amendment, which is now MA-LG-18 in the ARMPA: "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

2.4.2 Protest Resolution

BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest proposed planning decisions within 30 days from the date the Notice of Availability of the Proposed RMP/Final EIS was published in the Federal Register (May 29, 2015). Below are descriptions of the protest resolution process for each of the four Great Basin Region PRMPAs/FEISs.

The Director concluded that the BLM followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed Land Use Plan Amendments/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed Land Use Plan Amendments/Final EISs, though minor clarifications were made and are summarized in Section 2.4.1. The BLM Director's decisions on the protests are summarized in each of the PRMPAs/FEISs Director's Protest Resolution Reports, which are available on the following BLM website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

2.4.2.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed LUPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,

- special status species,
- lands and realty, and
- travel and transportation management.

2.4.2.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed LUPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- Air Quality,
- Climate Change,
- Noise,
- ACECs,
- solid minerals,
- special status species,
- lands with wilderness characteristics,
- lands and realty,
- tribal issues,
- wild horse and burros, and
- travel and transportation management.

2.4.2.3 Oregon

For the Oregon GRSG Proposed LUPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,

- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- monitoring,
- ACECs,
- fire and fuels management,
- solid minerals,
- special status species, and
- travel and transportation management.

2.4.2.4 Utah

For the Utah GRSG Proposed LUPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- land use allocations,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- air quality,
- climate change,
- Noise,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty,
- travel and transportation management, and
- reasonable foreseeable development scenarios.

2.4.3 Governor's Consistency Review

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)). The general requirement in FLPMA/planning regulations is to coordinate the land use planning process with plans of other agencies, states, and local governments to the extent consistent with law (see FLPMA s. 202(c)(9) and 1610.3-1(a)); and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with federal law, or to maximum extent practical) (see 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to state, local, and tribal land use plans and provided meaningful public involvement of the Proposed RMP Amendments/Final EISs.

The BLM is aware that there are specific state laws and local plans relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that BLM's land use plans be consistent with officially-approved state and local plans only if those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Where officially-approved state and local plans or policies and programs conflict with the purposes, policies, and programs of federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved state and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to state or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors identifying inconsistencies between the BLM's proposed RMP amendments and their state's or local governments' resource-related plans, policies and/or procedures, as well as other concerns that they had with the proposed planning documents. The BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected on August 6, 2015. These Governors were then provided with 30-days to appeal the BLM State Director's decisions to the BLM Director. By September 8, 2015, the BLM Director received appeals from.

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In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications to the ARMPAs were made and are summarized in Section 2.4.1.

3. ALTERNATIVES

3.1 Alternatives Considered

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs in order to meet in the purpose and need of this effort to identify and incorporate appropriate management direction in LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. All management under any of the alternatives complied with federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping, and to maintain or increase GRSG abundance and distribution in the planning area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMP amendment. The goal was met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law there are typically few or no distinctions between alternatives.

3.1.1 Alternative A – No Action Alternative

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction derived from the existing field/district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. This alternative did not include changes that are needed to be made to the existing

decisions based on the USFWS 2010 listing petition decision that identified inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B: National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the National Technical Team (NTT) Report. The GRSG National Technical Team (NTT), comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-Grouse Conservation Measures* in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable sage-grouse populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones. The NTT Report proposed conservation measures based on habitat requirements and other life history aspects of sage-grouse and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. The Report can be accessed at: http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

The BLM's Washington Office Instructional Memorandum (IM) Number 2012-044 directed the sub-regional planning efforts to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in PHMA and avoid development in GHMA, would close PHMA to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals, and would recommend withdrawal from locatable mineral entry in all PHMA. These management actions would reduce surface disturbance in PHMA and would minimize disturbance in GHMA, thereby maintaining GRSG habitat. Management actions for wildfire would focus on suppression in PHMA and GHMA, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices (BMPs) proposed in the NTT report would be included as required design features as part of Alternative B and are listed in Appendix C, Required Design Features (RDFs), of each of the attached ARMPAs.

This alternative was not selected in its entirety as the ARMPAs because the majority of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMA, and few conservation measures in the Report were provided for in GHMA. As a result, this alternative did not provide adequate conservation in GHMA. .

3.1.3 Alternative C: Citizen Groups' Recommended Alternative One

Alternative C was based on a citizen groups' recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and was applied to all occupied GRSG habitat (PHMA and GHMA. Alternative C limited commodity development in areas of occupied GRSG habitat, and closed or excluded large portions of the planning area to many land uses. This included all PHMA and GHMA as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and non-energy leasable mineral development, and exclusion areas for right-of-ways. The Utah LUPA/Draft EIS combined this alternative with Alternative F (discussed below).

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D: Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the Preferred Alternative in the Draft EISs, balanced opportunities to use and develop the planning area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while still allowing for anthropogenic disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions based on BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMP Amendments/EISs, this alternative was modified to become the Proposed RMP Amendments and analyzed in the FEISs. The Preferred Alternatives, with slight variations, became the Proposed Plans in the FEISs.

In PHMA under Alternative D, there would be limitation on disturbance in GRSG habitat by excluding wind and solar energy development (except for certain counties in Southeastern Oregon where avoidance is applied), avoiding all other ROW development, applying no surface occupancy stipulations to fluid mineral development, and closing PHMA to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMA under Alternative D, allocations are less stringent, but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMA).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMA and GHMA, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative provided by the State or Governor's offices for inclusion and analysis in the EISs. It incorporates guidance from specific state conservation strategies, if developed or recommendations from the state on management of Federal lands and emphasizes management of GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. This alternative was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a state GRSG conservation plan and under this alternative, reverted back to Alternative A, the no-action alternative.

For Nevada, Alternative E would apply an avoid, minimize, and mitigate strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. Effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed because allocation decisions were not part of the state's plan.

For Oregon, Alternative E contains GRSG conservation guidelines from Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the state plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the state plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats such as recreation, improper livestock grazing, and West Nile virus for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, the planning area includes all occupied GRSG habitat in Utah. Alternative E1 is based on the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah and would apply to all BLM-administered lands in Utah. In alternative E1 conservation measures would be applied to 11 areas that the state identified, called Sage-Grouse Management Areas (SGMAs). Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMAs. Occupied habitat outside of the state-identified SGMAs would not receive new management protection. They would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the state's plans were not consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 – Alternative F: Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMA and GHMA. Alternative F would limit commodity development in areas of occupied GRSG habitat, and would close or designate portions of the planning area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMA. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and wild horse and burro management utilization by 25 percent within PHMA and GHMA.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 – Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP Amendments/EISs, the BLM developed the Proposed Amendments/Final EISs for managing BLM-administered lands. The Proposed Amendments/Final EISs focused on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the DEISs. The Proposed Plans, with slight variations (as outlined in Section 2.5 of this ROD), became ARMPAs.

3.1.8 Environmentally Preferable Alternative

Council on Environmental Quality (CEQ) regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2(b)). Question 6A of CEQ's 40 most-asked questions regarding CEQ's NEPA regulations defines that term to ordinarily mean the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs is the most environmentally preferable. However, NEPA expresses a continuing policy of the federal government to "use all practicable means and measures…to foster and promote the

general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA).

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations;
- They did not meet the purpose and need;
- The alternative was already captured within the range of alternative analyzed in the EIS;
- They were already part of an existing plan, policy, or administrative function; or
- They did not fall within the limits of the planning criteria.

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11of each of the sub-regional Proposed Amendments/Final EISs.

Idaho and Southwestern Montana

- USFWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- USFWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative

Utah

- USFWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMA for all Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- Conservation Objectives Team (COT) Report Alternative
- BLM Policies and Regulations Alternative

4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed alternatives.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through Federal Register notices, public formal and informal meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related Web sites. This section documents the outreach efforts that have occurred to date.

4.1 Public Involvement

The scoping period for the National GRSG Planning Strategy, including the four sub-regional planning areas in the Great Basin Region, began with the publication of the NOI in the Federal Register on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012.

A Notice of Availability (NOA) for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMP Amendments/EISs were published in the Federal Register on November 1, 2013. The Oregon Draft RMP Amendment/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Proposed RMP Amendments/FEIS, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the Proposed Plan Amendments. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft EISs' comment periods. Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed Plan Amendments. Public comments resulted in the addition of clarifying text, but did not significantly change Proposed RMP Amendments.

A Notice of Availability (NOA) for the Great Basin Region GRSG Proposed RMP Amendments and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-Regions were released on May 29, 2015. The release of the EPA's NOA initiated a 30 day public protest period and a 60 day governor'' consistency review. Refer to **Section 2.5** for a full description of the protest period and governor's consistency review outcomes.

4.2 Cooperating Agencies

A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into a formal agreement with the lead federal agency to help develop an environmental analysis. Cooperating Agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other federal, state, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal Memorandum of Understanding (MOU) for the National GRSG Planning Strategy with the USFWS and the U.S. Forest Service. In addition, the Great Basin sub-regions also invited local, state, other federal, and tribal representatives to participate as Cooperating Agencies for these RMP Amendments/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 MOUs signed with state agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. Additional information can also be found in Chapter 6 of each of the Proposed Amendments/FEISs. These cooperating agencies divided by sub-region are provided below:

Great Basin Region-Wide
US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana
Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California
Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural

Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration
Washoe County
Washoe Tribe
White Pine County

Oregon
Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District US
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah
Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian
Reservation
Duchesne County
Emory County
Garfield County
Grand County
Iron County
Kane County
Lincoln County
Miller County
Piute County
Rich County
San Pete County

Sevier County
State of Utah (PLPCO)
Sweetwater County
Sweetwater County Conservation District
Tooele County
Uinta County (UT and WY)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

4.2 FWS Section 7 Consultation

Consultation with FWS is required under Section 7(c) of the ESA before the start of any BLM project that may affect any federally listed or endangered species or its habitat. These planning processes are considered a major project, and the four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the FEISs. The FWS is a cooperating agency in this planning process. FWS staff participated in interdisciplinary team meetings and has been provided drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the USFWS prior to the release of the Draft RMP Amendments/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan Amendments "may affect" the species for which this consultation occurred.

Prior to the release of the Proposed Amendments/FEISs, the BLM formally submitted the biological assessments to the USFWS for review. The USFWS evaluated the biological assessments and concurred with the "no affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana, which are appendices to each of these ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah Prairie Dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix K).

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4.3 Native American Consultation

In accordance with the National Historic Preservation Act and several other legal authorities (see BLM Manual 8120), and in recognition of the government-to-government relationship between individual tribes and the federal government, the BLM initiated Native American consultation efforts related to preparation of the four Great Basin sub-regional RMP Amendments/EISs. Coordination with Native American tribes occurred throughout the planning process. In December 2011, the BLM sent letters to 65 tribal governments providing initial notification of the RMP Amendments/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation efforts related to the planning process. Tribes have been participating in the RMP Amendments/EISs processes through numerous meetings and through personal BLM contacts.

As part of the NEPA scoping and consultation process, the BLM notified the Idaho, Montana, Nevada, California, Oregon, and Utah State Historic Preservation Officers (SHPOs) seeking information about the identification of historic properties in consideration of land use planning decisions included in these ARMPAs. The ARMPAs do not require compliance with NHPA Section 106 because the ARMPA's management decisions regarding Greater Sage-Grouse do not authorize specific activities that have the potential to cause effects on historic properties. The BLM will comply with the requirements of NHPA Section 106 at a later stage, i.e., for implementation-level decisions such as project proposals, which will include adequate consultation with SHPOs, THPOs, Native American Tribes, and other interested parties. ~~The Draft RMP Amendments/EISs were provided to the Idaho, Montana, Nevada, California, Oregon, and Utah State Historic Preservation Offices (SHPO) concurrently with its release to the public. The Proposed Plan RMP Amendments/FEISs were also provided to the SHPOs.~~

5. REFERENCES

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6. APPROVAL

Land Use Plan Amendment Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Great Basin Region Approved Resource Management Plan (RMP) Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions, as described in this Record of Decision. Notices of the public availability of the Proposed Plan Amendments and related Final Environmental Impact Statements (EIS) were published in the Federal Register on May 29, 2015. in the (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze
Director
Bureau of Land Management

Date

Secretarial Approval

I hereby approve the land use plan amendment decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Department regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice Schneider
Assistant Secretary for Land and Minerals Management
Department of the Interior

Date

7. ATTACHMENTS

Appendix A. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix B. Nevada and Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment

Appendix C. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix D. Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

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6.4.g

From: Bahr, Quincy
Sent: Tuesday, August 25, 2015 6:02 AM
To: Magaletti, Matthew; Stephanie Carman
Cc: Skye Sieber
Subject: Re: Draft Great Basin ROD for your review
Attachments: GB_ROD_8.20.15_for PL review_UT comments.docx

I've attached the Utah comments on the ROD.

Q

On Thu, Aug 20, 2015 at 9:25 AM, Magaletti, Matthew <mmagalet@blm.gov> wrote:

> Hello Great Basin Project Leads,
>
> Attached for your review is the Draft Great Basin Region Record of Decision which your approved ARMPAs will be attached to. The primary focus for your review is to see if the ROD accurately describes your effort's planning area (that means verifying acres and area descriptions), cited sections and appendices, alternatives, and most importantly - the management decisions. Please use track changes to make the necessary edits/comments to fix any inaccuracies and email the edited document back to me and Stephanie by **COB Tuesday August 25, 2015**.
>
> Stephanie has discussed with you all on the Project Leads calls some of the drop-in language that is still in the works, so the content in the ROD associated with that language may change. The Governor's Consistency Review and Modification and Clarifications sections may also change as a result of this language. Lauren, Joan, Jennifer, and Jon – the SOLs' have a few questions about your Modifications and Clarifications section that we could use your help addressing.
>
> If you have any questions, please don't hesitate to call me or Stephanie.
>
> As always, thank you for all your hard work!
>
> --
> **Matthew Magaletti**
> Planning and Environmental Analyst

Bureau of Land Management, WO-210
(202) 912-7085

--
Quincy Bahr
Project Manager – Greater Sage-Grouse LUP Amendments, Utah Sub-Region
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Internal Draft Document – Do Not Distribute

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region including the Greater Sage-Grouse Sub-Regions of:

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:

U.S. Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WO/XX/XX-XX+XXX

Internal Draft Document – Do Not Distribute

[Insert BLM WO Letterhead]

In Reply Refer To:
~~In Reply, Refer to:~~
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). The ROD approves the four Great Basin Region ARMPAs, which are part the National Greater Sage-Grouse Planning Strategy that was initiated on December 11, 2011. The planning strategy was initiated by the Bureau of Land Management (BLM) in response to the USFWS's March 2010 "warranted, but precluded" ESA listing petition decision. In this decision, the USFWS identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism.

The BLM's ARMPAs provide a landscape-level, science-based, collaborative strategy for addressing threats to the Greater Sage-Grouse (GRSG) and its habitat. This strategy was designed to address issues identified in the U.S. Fish and Wildlife Service's (FWS) 2010 "warranted but precluded" decision. In addition, the strategy was guided by over a decade of research, analyses and recommendations for GRSG conservation including the Conservation Objectives Team (COT) Report and the BLM National Technical Team and (NTT). Each of these reports was developed through a collaborative effort of state and federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, the U.S. Forest Service, and state and other partners were fundamental to the development of these ARMPAs.

It is important to note that this ROD and these ARMPAs apply only to BLM-administered lands. Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of the Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs for the Great Basin sub-regions included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

The Federal Land Policy and Management Act (FLPMA) requires the development and maintenance, and, as appropriate, the revision of land use plans for public lands. The National Environmental Policy Act (NEPA) requires Federal agencies to prepare an Environmental Impact Statement (EIS) for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the Draft RMP Amendments/Draft EISs incorporated analysis and input provided by the public; local, State, and other Federal agencies and organizations; Native American tribes; Cooperating Agencies, and the BLM resource specialists, and were published in the fall of 2013. The 90-day public comment periods ensued, with more than 4,990 substantive comments from 1,348 unique letters submitted on all four sub-regional proposed LUPAs/Final EISs in the Great Basin Region. These comments were reviewed, summarized and considered in preparing the Proposed RMP Amendments/Final EISs.

The Proposed RMPAs/Final EISs were made available on May 29, 2015, for a 60-day governor's consistency review and 30-day protest period. The BLM received consistency review letters from the States of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region and has worked closely with these states to address their concerns and to resolve inconsistencies where possible. Across all four sub-regions in the Great Basin Region, 133 protest submission letters were received from government entities, private citizens, NGOs, and other stakeholders; 124 of these submissions contained valid protest issues pursuant to 43 CFR 1610.5-2 and were addressed in the Director's Protest Resolution Reports. These reports are available on line at: http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html.

The BLM now approves the attached ARMPAs as the land use plans that will guide future land and resource management within GRSG habitat in the Great Basin Region for the life of the plan amendments. The ARMPAs will benefit GRSG and over 350 other species of wildlife as well as other multiple uses, including grazing and recreation, which depend on healthy sagebrush-steppe landscapes.

Copies of the ROD and ARMPAs can be obtained from the BLM's National Greater Sage-Grouse webpage at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the public, local, state, and other federal agencies, Native American tribal representatives, and the Cooperating Agencies, all of whom contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented and monitored for the conservation of GRSG and its habitat.

Sincerely,
X

Enclosure:

Summary

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse habitat on public lands administered by the Bureau of Land Management (BLM), consistent with BLM's multiple use and sustained-yield mission and the joint objective established by federal and state leaders ship through the Greater Sage Grouse Task Force to conserve GRSG habitat on federal, state, and private land such that additional protections under the Endangered Species Act (ESA) may be avoided.

In response to a 2010 determination by the U.S. Fish and Wildlife Service (FWS) that the listing of the GRSG under the ESA was "warranted but precluded" by other priorities, the BLM, in coordination with the U.S. Department of Agriculture Forest Service (Forest Service), has developed a targeted, multi-tiered, collaborative landscape-level management strategy, based on the best available science, that offers the highest level of protection for GRSG in the most important habitat areas to address the specific threats identified in the 2010 U.S. Fish and Wildlife "warranted but precluded" decision and the FWS' 2013 Conservation Objectives Team (COT) report.

This Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon; and Utah include management direction which limits or eliminates additional disturbance in GRSG habitat management areas as well as targets restoration and improvements to the most important areas of habitat. The management direction in the ARMPAs is accomplished through land use allocations that generally apply to GRSG habitat. These allocations (1)

eliminate new surface disturbance in the most highly-valued sagebrush ecosystem areas - identified as Sagebrush Focal Areas (SFAs); (2) limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMAs), of which SFAs are a subset; and (3) minimize surface disturbance in General Habitat Management Areas (GHMA). In addition to protective land use allocations in important habitat areas, the ARMPAs include a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, and other conservation measures that apply throughout designated habitat management areas. The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The targeted land use plan protections presented in this ROD and ARMPAs not only protect the GRSG and its habitat, but also over 350 wildlife species associated with the sagebrush-steppe ecosystem, which is widely recognized as one of the most endangered ecosystems in North America. Reversing the slow degradation of this valuable ecosystem will also benefit local rural economies and a variety of rangeland uses in addition to habitat protection, including recreation and grazing, in a manner that safeguards the long term sustainability, diversity and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 states in which the ARMPAs in the Great Basin and the plans in the Rocky Mountain Region apply. In combination with additional state and federal actions underway and in development, it represents an unprecedented, collaborative effort among federal land management agencies and the states to manage an entire ecosystem and associated flora and fauna in order to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is

no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future".

[Dan Ashe. Transmittal letter to COT Report. 2013].

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List of Tables

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List of Figures

[Develop once there is a final draft]

List of Acronyms

[Develop once there is a final draft]

1. INTRODUCTION

This Record of Decision (ROD) approves the (BLM's attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR] §1601 et seq.), and other applicable laws. The BLM prepared Environmental Impact Statements (EISs) in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA) and the Council on Environmental Quality's Regulations for implementing the procedural provisions of NEPA (40 CFR §1500.1 et seq.).

Throughout the GRSG planning process, the Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities for the Great Basin Region, which is available at http://www.fs.usda.gov/r4/.

1.1 Great Basin Region Planning Area

The Great Basin Region planning area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. (see **Figure 1-1** – Great Basin Region Greater Sage-Grouse Sub-regions). A separate EIS was prepared for each of these sub-regions. Each sub-region conducted its own planning effort with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, as well as areas that shared common threats to the GRSG and their habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the Western Association of Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Conservation Strategy to delineate management zones with similar ecological and biological issues.

[Insert **Figure 1-1** - Great Basin Region Greater Sage-Grouse Sub-regions]

The Great Basin Region planning area boundaries include all lands regardless of jurisdiction (see **Figure 1-2** - Great Basin Region Planning Area, Greater Sage-Grouse Habitat Management Areas). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, states, local governments, and privately owned lands -within the four sub regions that make up the Great Basin. The planning area also includes other BLM-administered lands that are not identified as habitat management

areas for GRSG. The ARMPAs generally do not establish any additional management for these lands which will continue to be managed according to the existing land use plan for the areas.

Commented [BQF2]: The Utah ARMPA does include some management for areas outside PHMA and GHMA.

[Insert **Figure 1-2** - Great Basin Region Planning Area, Greater Sage-Grouse Habitat Management Areas]

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	NV/NE CA	ID/SW MT	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,975,500**
USFWS	805,900	121,900	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,200**	**48,209,900**	**31,656,300**	**194,208,300**

Source: BLM GIS 2015

The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure 1-3** - Great Basin Region Decision Area , Greater Sage-Grouse Habitat Management Areas), including surface and split-estate lands where the BLM has subsurface mineral rights. For a description of these habitat management areas, refer to **Section 1-5**. The decisions in the Great Basin Region ARMPAs apply only to BLM-administered lands, including split-estate lands within GRSG habitat management areas (the decision area) and are limited to providing direction that incorporates appropriate measures to conserve, enhance, and/or restore GRSG and its habitat.

[Insert **Figure 1-3** - Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas]

1.2 Early GRSG Conservation Efforts

Currently, GRSG occupy an estimated 66% of the historically occupied range. The BLM manages the majority of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State Distinct Population Segments). Efforts to conserve GRSG habitat by the BLM and other wildlife conservation agencies and organizations have been ongoing for many years.

The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, -was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

http://sagemap.wr.usgs.gov/docs/Greater_Sage-grouse_Conservation_Assessment_060404.pdf

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the U.S. Fish and Wildlife Service (FWS), the Forest Service, the U.S. Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy*, with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the Strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The Strategy outlined the critical need to develop the associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats upon which they depend. The catalyst for this effort was widespread concern for declining populations and reduced distribution of GRSG.
http://www.wafwa.org/documents/pdf/GreaterSage-grouseConservationStrategy2006.pdf

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and summarize BLM's ongoing conservation efforts. A product of this effort was one of the first range-wide priority habitat maps for GRSG that were referred to as "key habitat". At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression efforts in GRSG habitat on BLM lands. An additional outcome of this team was the signing of a Memorandum of Understanding by the WAFWA; the BLM, FWS, USGS in the Department of the Interior; and the US Department of Agriculture Forest Service and NRCS, to provide for cooperation among the participating state and federal land managers and wildlife management and science agencies in the conservation and management of GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the Western United States and Canada.

http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/fwp.Par.95958.File.dat/SagegrouseMOU.pdf

In 2010, BLM commissioned an effort to map breeding densities of GRSG across the West. A conference was convened with state wildlife agencies to coordinate the lek survey data needed for this effort. This

modelling project, through an agreement with the FWS, mapped known active leks across the West. This model served as a standard starting point for all states to identify priority habitat for the species.

http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/bird_density.print.html

In March 2010, the US Fish and Wildlife Service (USFWS) published its 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 Federal Register 13910(March 23, 2010)). In that finding, the USFWS concluded that GRSG was "warranted, but precluded" for listing as a threatened or endangered species under the ESA. This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are ~~more~~ in greater need of the limited resources available to provide protection.

As part of their 2010 finding, the USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 Federal Register 13910 (March 23, 2010)). The conservation measures in the BLM and Forest Service plans amended and adopted through this decision are designed to strengthen the regulatory mechanisms and limit the destruction and modification of GRSG habitat.

1.3 Threats to Greater Sage-Grouse in the Great Basin Region

Two of the factors that led to the USFWS "warranted but precluded" finding -were threats to GRSG habitat and the inadequacy of existing regulatory mechanisms. The USFWS identified a number of specific threats to GRSG in the Great Basin Region. The primary threats identified by the USFWS -in the Great Basin Region are the widespread present and potential impacts of wildfire and the loss of native habitat to invasive species. Other threats, some of which are more localized by nature, include habitat fragmentation due to anthropogenic disturbances associated with energy development, mining, infrastructure, recreation, urbanization and sagebrush elimination, as well as impacts to habitat impacts associated with free-roaming equids and improper livestock grazing. In 2012, the USFWS, with the support of the Western Governors Association Sage Grouse Task Force, convened the Conservation Objectives Team (COT), comprising state and federal representatives, to produce a peer-reviewed report identifying the principal threats to GRSG survival, based upon the FWS 2010 listing decision. A summary of the nature and extent of threats identified by the COT for each remaining identified population of GRSG in the Great Basin Region– as highlighted in the 2013 COT report – is provided in **Table 1-2**. The BLM and Forest Service identified and explained additional threats in the environmental impact statements.

Commented [CRY3]: For Utah, this table includes several inaccuracies and can be misleading. The COT threats table, and the COT report in general, did not include BLM include, especially at the sub-region level. Unlike all the other states except WY, the representative from Utah was not the state biologist, but an attorney from the governor's office. This combination resulted in the COT table for Utah having several obvious errors, such as listing wild horses as a threat in Bald Hills where there are no wild horses present, listing mining as a present and widspread threat in multiple populations when there are only 700 acres of mineral materials disturbance and two surface mines (coal and phosphate), or being the only state west-wide to not include improper livestock grazing as even an "L" threat (threat present, but localized). In the existing environment section of the Utah EIS, we based our plan on the actual threats, including accurate information from the COT report. The COT table is inconsistent with the actual threats on the landscape. While the ROD presents it as a FWS document, it would be very good to include the BLM actions and explanations of threats in the EIS.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (UT)	9b				Y	Y	Y	Y		Y			Y	Y	UT
Uintah (UT)	9c				Y	Y	Y	L	Y	Y			Y	Y	UT
Strawberry Valley (UT)	10a	Y			Y	Y	Y	Y		Y			Y		UT
Carbon (UT)	10b	Y			Y		Y	Y	Y	Y			Y		UT
Sheeprock Mountains (UT)	11	Y			Y	L	L	Y	Y	L		Y	L		UT
Emery (UT)	12	Y			Y	Y	Y	Y	Y	Y			Y		UT
Greater Parker Mountain (UT)	13a				Y	Y	Y			Y			Y		UT
Panguitch (UT)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	UT
Bald Hills (UT)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	UT
Ibapah (UT)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		UT
Hamlin Valley (UT)	15b	Y			Y	Y	Y			Y		Y	Y		UT
Box Elder (UT)	26b			Y	Y	Y	Y	L	Y	Y			Y		UT

Table 1-2. Threats to GRSG in the Great Basin Region (Utah) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan(s)
N. Great Basin (OR, ID, NV)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	ID/SW MT, OR, NV/CA
Baker (OR)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	OR
Central Oregon (OR)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	OR
W. Great Basin (OR, CA, NV)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		OR, NV/CA
Klamath (CA)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	NV/CA
Northwest Interior (NV)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		NV/CA
Southern Great Basin (NV)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		NV/CA
Quinn Canyon Range (NV)	16	Y			Y	Y	Y			Y	Y	Y	Y		NV/CA
Warm Springs Valley (NV)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	NV/CA
East Central (ID)	18	Y	L	Y	L	Y	L	Y		Y	Y		L		ID/SW MT
Snake-Salmon-Beaverhead (ID)	23		L	L	Y	L	Y	Y		L	Y	Y	L		ID/SW MT
Weiser (ID)	25	Y	L	L	L	L	Y	Y		L	Y		L	L	ID/SW MT
Sawtooth (ID)	27	Y	L		L	U	L			Y	Y		L		ID/SW MT
Southwest Montana (MT)	19-22		L		L	L	Y	L	L	L	Y		L	L	ID/SW MT

Table 1-2. (cont.) Threats to GRSG in the Great Basin Region (OR, CA, NV, ID, SWMT) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

In addition, the FWS found that existing local, state and federal regulatory mechanisms were not sufficient to address threats to the habitat. For the BLM, which manages approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.), the USFWS has identified the agency's Resource Management Plans (RMPs) as the primary regulatory mechanisms

1.4 National Greater Sage Grouse Conservation Strategy

Based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a listing decision on this species, the BLM recognized the need to incorporate explicit objectives and concrete conservation measures into Resource Management Plans (RMPs) to conserve GRSG habitat and provide robust regulatory mechanisms. In August, 2011, the BLM chartered a strategy to evaluate the adequacy of BLM RMPs and revise and amend existing RMPs throughout the range of the GRSG to incorporate management actions intended to conserve, enhance, and restore the species and the habitat on which it depends. Separate planning efforts were initiated to address the conservation needs of the Bi-State population in California and Nevada, and the Washington State distinct population segment.

To help inform this planning effort, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones (Figure 1-4). The NTT produced A Report on National Greater Sage-grouse Conservation Measures (The NTT Report) which proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. The NTT Report also emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones.
http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

In 2012, the Conservation Objectives Team (COT), composed of state and federal representatives, evaluated the principal threats to GRSG survival and the degree to which these threats need to be reduced or ameliorated to conserve the GRSG so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT report also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". Finally, the COT report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2)**. **Figure 1-4** from the COT Report identifies the PACs, GRSG populations (and their names), and WAFWA Management Zones across the West.
http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf

[Insert **Figure 1-4** - GRSG Priority Areas for Conservation, Populations (and names), and WAFWA Management Zones.]

In light of the 2010 "warranted" determination by the FWS, and specific threats summarized in the COT Report, the BLM found that consideration of additional management direction- and specific conservation measures on federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. The BLM proposed to incorporate the management direction and conservation measures into the BLM's land use plans. The goal of incorporating these specific conservation measures into BLM land use plans, is to protect, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA may be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and Supplemental EISs to incorporate GRSG Conservation Measures into Land Use Plans (LUPs) across the range of the species. A total of 15 EISs were conducted to analyze the alternatives developed for each of the plan amendments and revisions across the range of the species. [1] **Figure 1-5** illustrates the National GRSG Planning Strategy planning area boundaries, along with BLM-administered priority and general habitat management areas across the Western United States.

[Insert **Figure 1-5** – National GRSG Planning Strategy Regional and Sub-regional Planning Areas Boundaries with BLM-administered PHMA and GHMA]

The planning efforts associated with the National GRSG Conservation Strategy have been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by USFWS in the 2010 listing decision, along with the Western Association of Fish and Wildlife Agencies (WAFWA) Management Zones (MZs) framework (Stiver et al. 2006). Due to differences in the ecology of sagebrush across the range of the greater sage-grouse, WAFWA delineated seven Management Zones (MZs I-VII) based primarily on floristic provinces. Vegetation found within a MZ is similar and sage-grouse and their habitats within these areas are likely to respond similarly to environmental factors and management actions.

The Rocky Mountain Region is comprised of BLM planning efforts (which includes plan revisions and plan amendments) in the states of Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin) and a portion of VII (Colorado Plateau). The Great Basin Region comprises of planning efforts (plan amendments) in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. This region falls within WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

[1] The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP has been split between the two filed offices that make up the Bighorn Basin planning area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. The NEPA EIS analyses were done at the sub-regional level. These sub-regions are based on the identified threats to the GRSG and the WAFWA MZs from the FWS 2010 listing decision with additional detail regarding threats to individual populations and sub-regions from the USFWS's COT report. In the Rocky Mountain Region, some sub-regions correspond to BLM field/district office boundaries, specifically for planning efforts that are incorporating GRSG conservation measures through plan revisions that were initiated prior to the start of the National GRSG Conservation Strategy in December 2011.

The BLM used the best available science, including additional review from the US Geological Survey on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered state conservation strategies in the planning effort and these are reflected in the final plans to the extent compatible with GRSG conservation objectives, including the need to establish management direction to conserve, enhance and restore GRSG habitat and to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the Approved Resource Management Plan Amendments Address the Threats Identified in the Conservation Objectives Team Report

The 2006 WAFWA *Greater Sage Grouse Comprehensive Conservation Strategy* stated goal for management of the GRSG was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations". The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed". In establishing the COT, with the backing of the Sage Grouse Task Force, FWS Director Dan Ashe affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report -- reversing negative population trends and achieving a neutral or positive population trend -- and emphasized the following:

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (WAFWA 2006 Strategy)"

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". To achieve this, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT emphasized an "avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

Commented [4]: Hotlink

The plans were developed to address identified threats to the species and are an essential component of the effort to conserve GRSG such that the need to list the species under ESA may be avoided. Across ten western States, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the USFWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, priorities and approaches in each.

In order to protect the most important GRSG habitat areas, the planning effort began with mapping areas of important habitat across the range of the GRSG. In collaboration with state fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). The draft land use plans used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) in the Proposed RMP Amendments/Final EISs to identify the management decisions which apply to those areas. The designated GRSG Habitat Management Areas on BLM-administered lands in the decision area include: PHMA, which largely coincide with Priority Areas for Conservation (PACs) in the COT report (See **Figure 1-4**); GHMA; Other Habitat Management Areas (OHMA, applicable only to the Nevada and Northeastern California); and Important Habitat Management Areas (IHMA, applicable only to Idaho). **Table 1-4** identifies surface acres of PHMA, GHMA, OHMA, and IHMA in the decision area for the Great Basin Region.

PHMA, GHMA, OHMA, and IHMA are defined as follows:

- **PHMA**— BLM-administered lands identified as having the highest value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA are derived from and generally follow the Preliminary Priority Habitat boundaries identified in the Draft LUPA/EIS. Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report.
- **GHMA**— BLM-administered lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMA are derived from and generally follow the Preliminary General Habitat boundaries identified in the Draft RMP/EIS.
- **OHMA** —BLM-administered lands in Nevada, identified as unmapped habitat in the Proposed RMP/EIS that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA** —BLM-administered lands in Idaho that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations, but that are not as important as PHMA. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

Commented [BQF5]: This fits for everywhere but Utah. We used all occupied GRSG habitat as PPH because the BLM and the state couldn't agree on which areas were the priority for the interim management.

Commented [BQF6]: If this is referencing the general concepts, okay. If this is referencing the polygons, it is absolutely not correct for Utah, or some other subregions like NV. This needs to be clarified.

Commented [CRY7]: There is no mention of Anthro Mountain, is that because it is on USFS lands? Is it because it isn't formally a designated GRSG habitat management area? It's only about 41k acres, but it is mentioned in several tables in the Utah ARMPA.

Commented [BQF8]: If at all possible, we should use the definitions from IM 2012-044. In that IM, it referrs to GHMA as other occupied habitat. That is a critical component and definition for Utah mapping of these areas which the state would rather see us not even map. Plus, it's our policy. The addition of OHMA and IHMA are additions to match with their states. We should stick with our IM definitions if at all possible.

Commented [BQF9]: First off, in the DEIS these were referred to as PGMA (Preliminary General Management Areas). Secondarily, in Utah, both the management strategy and polygons for general in the ARMPA are different than those used in the DEIS.

Table 1-3

Surface Acres of PHMA, GHMA, OHMA, and IHMA in the Decision Area for the Great Basin Region

BLM administered surface acres	PHMA	GHMA	OHMA	IHMA
Idaho and Southwestern MT	4,627,200	2,179,700	0	2,737,600
Utah	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern CA	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

Commented [BQF10]: In the Utah ARMPA, we include a footnote where we acknowledge the 41k acres that are in "Occupied - Anthro Mountain." That foot note should be brought over and added to this table.

This tiered habitat framework consists of a nested or layered conservation design with the goal of providing a high degree of certainty that the integrity of PHMAs can be maintained through management decisions to avoid or minimize additional surface disturbance.

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure 1-3** - Great Basin Region Decision Area - Greater Sage-Grouse Habitat Management Areas). Across the Great Basin Region, there are 9,076,948 acres of BLM administered SFAs. SFAs correspond to the areas identified by the FWS as GRSG "strongholds" as detailed in an October 27, 2014 memorandum from the FWS Director to BLM Director and Forest Service Chief in response to a request to "identify a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection". (http://www.fws.gov/greaterSageGrouse/documents/ESA%20Process/GRSG%20Strongholds%20memo%20to%20BLM%20and%20USFS%20102714.pdf). SFAs maximize protection from new surface disturbance, given that they contain high-quality sagebrush habitat; highest breeding densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and in some cases are adjacent to protected areas that serve to anchor the conservation importance of the landscape.

The combination in the ARMPAs of habitat area classifications and the land allocation decisions specifying the extent to and conditions under which certain activities is permitted to occur in those areas (these land allocation decisions are explained more fully in Section 1.6.2 of this ROD) provide the greatest protection for those areas identified as SFAs and meet the stated objective for these areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species."

Protection of remaining habitats in GHMAs and IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important habitats outside of PACs be conserved to the extent possible". Thus, land allocations in GHMAs and IHMAs provide for more flexibility for land use activities while minimizing impacts on existing GRSG leks. Major components of the attached ARMPAs that address the specific threats to GRSG and its

habitat, as identified in the USFWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report) are listed in **Table 1-5** and summarized below.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Require mitigation that provides a net conservation gain to GRSG and its habitat. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining, infrastructure, and energy development.	• PHMA: Implement an anthropogenic disturbance cap of 3% within the Biologically Significant Unit and proposed project analysis areas in PHMA (slight variations to this management component in the State of Nevada only) • PHMA and IHMA: Apply a disturbance density cap of 1 facility per 640 acres (except in the State of Nevada) • IHMA: Implement the 3% disturbance cap. Apply Anthropogenic Disturbance Development Criteria. • Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat. • Inform infrastructure siting in GRSG habitat through best available science and monitoring to minimize indirect effects
Energy development—fluid minerals, including geothermal resources	• PHMA: Open to fluid mineral leasing subject to a No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exceptions. In SFAs, a NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if certain criteria are met. • IHMA: Open to fluid mineral leasing subject to NSO stipulation without waiver or modification, and with limited exception. • GHMA: Open to fluid mineral leasing subject to Controlled Surface Use (CSU) and Timing Limitation (TL) lease stipulations (except in the State of Utah where some portions of GHMA are open with standard lease stipulations)

Commented [CRY11]: The way this reads is that net conservation gain is applied to all threats…..including grazing and wild horse and burro management. We may need to clarify. As defined in the Glossary and clarified through emails between Quincy and Matt, net conservation gain does not apply to all threats.

Commented [MEM12]: May change based on national direction.

Table 1-4

Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	• Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
Energy development—wind energy	• PHMA: Exclusion area (not available for wind energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • IHMA: Avoidance area (may be available for wind energy development with special stipulations) • GHMA: Avoidance area (may be available for wind energy development with special stipulations) (except in the States of Utah and Idaho, where these areas are open to wind energy development)
Energy development—solar energy	• PHMA: Exclusion area (not available for solar energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • IHMA: Avoidance area (may be available for solar energy development with special stipulations) • GHMA: Exclusion area (not available for solar energy development under any conditions) (except in the States of Oregon and Montana where these areas are avoidance areas for solar energy development and the State of Idaho, where these areas are open to solar energy development)
Infrastructure—major ROWs	• PHMA: Avoidance area (may be available for major ROWs with special stipulations) • IHMA: Avoidance area (may be available for major ROWs with special stipulations) • GHMA: Avoidance area (may be available for major ROWs with special stipulations) (except in the State of Utah where GHMA is open)
Infrastructure—minor ROWs	• PHMA: Avoidance area (may be available for minor ROWs with special stipulations) • IHMA: Avoidance area (may be available for minor ROWs with special stipulations)
Mining—locatable minerals	• SFA: Recommend withdrawal from the Mining Law of 1872

Table 1-4

Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
Mining—nonenergy leasable minerals	• PHMA: Closed area (not available for nonenergy leasable minerals)
Mining—salable minerals	• PHMA: Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)
Improper Livestock grazing	• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs followed by PHMA to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid management	• Prioritize gathers in SFAs, followed by other PHMAs. • Manage Herd Management Areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of Herd Management Area Plans in GRSG habitat.
Range management structures	• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	• PHMA and IHMA: Do not construct new recreation facilities unless required for health and safety purposes. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. • PHMA & GHMA: OHV use limited to existing routes (routes to be designated through future travel management planning)
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection.

Commented [BQF13]: If we're going to note that expansion of existing salable is okay, we should do the same for non-energy leasables. If criteria are met, expansion of these types of mineral developments is also okay.

Commented [BQF14]: Utah has a "net conservation gain" allowance here too, not just health and safety.

Commented [BQF15]: Utah has retained two open areas in PHMA.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	• Prioritize post-fire treatments in SFAs, other PHMAs, IHMAs, and GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMA, IHMA, and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMA: Maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. • All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural conversion and exurban development	• GRSG habitat will be retained in federal management unless: (1) the agency can demonstrate that disposal (including exchanges) of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal (including exchanges) of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

Commented [BQF16]: WO changed this action. This text needs to be updated to reflect that updated action.

1.6 Key Components of the BLM Greater Sage-Grouse Conservation Strategy

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat and consequently include three range-wide objectives consistent with guidance contained in the COT and NTT Reports: 1) avoiding or minimizing new and additional surface disturbances, 2) improving habitat conditions, and 3) reducing threats of rangeland fire to GRSG and sagebrush habitat. The land allocations and management actions included in the ARMPAs meet these objectives and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Allocations and Habitat Protection/Surface Disturbance Measures

The four Great Basin ARMPAs include land use allocations and management guidance for habitat management areas to avoid new disturbance and minimize any disturbance associated with proposed projects as described below and shown in **Table 1.4**. Land use plan allocations specify locations within the planning area that are available or unavailable for certain uses and are also used prioritize conservation and restoration management actions. Surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat in the Great Basin as rangeland fire and invasive species. Nevertheless, the BLM has selected allocations and management actions that avoid and minimize surface disturbance in PHMA. These allocations and management actions are necessary because the location and extent of habitat loss to fire is difficult to predict and much of the habitat due to low precipitation in the Great Basin is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

The most restrictive allocations include requirements to avoid and minimize additional disturbance in PHMA (particularly in SFAs, which are a subset of PHMA). For example, new fluid mineral leasing would be subject to a no surface occupancy (NSO) stipulation in SFAs with no waivers, modifications, or exceptions. In the rest of PHMA, new fluid mineral leasing would be subject to NSO with no waivers or modifications. Exceptions would only be granted if it can be demonstrated that the exception would provide an overall conservation benefit to the species. In addition, SFAs include additional protection from new surface disturbance by recommending those areas for withdrawal from mineral entry.

Similarly, PHMA is closed to non-energy and saleable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free use permits and the expansion of existing active pits for saleable minerals and expansion of existing non-energy leasable development. This exception is included because of the importance of these materials to local communities and their limited disturbance which will be offset by the mitigation requirements. Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat. In Utah, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

Commented [BQF17]: I've seen this both as "salable" and "saleable" in this ROD. EMPSi needs to run a check for consistent use.

All PHMA will be managed as exclusion areas for renewable energy development (solar and wind) with the exception of areas outside of SFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas. New rights-of-ways and development for transmission lines, pipelines, and related infrastructure would be avoided through restrictions on land use authorizations. In avoidance areas, exceptions would only be provided if it can be demonstrated that adverse impacts will be avoided or that residual impacts will be mitigated.

Although high voltage transmission lines will be avoided in PHMA, the planning, siting, and environmental review of a limited number of Presidential priority lines (Transwest Express and portions of Gateway South, Gateway West and Boardman to Memingway) have been underway for a several years. These lines are critical to expanding access to renewable sources of energy and to improving the reliability of the western grid. NEPA analysis of these lines is preceding under separate

authorization processes. Conservation measures for GRSG are being analyzed as part of those NEPA processes.

While restrictions on future development in PHMA are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMA are more flexible and tailored to allow projects but with restrictions to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for unavoidable impacts will be required for proposed projects in GHMA. Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. See **Table 1-3** for more details on GHMA management decisions. Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts to GRSG or its habitat and then compensating for unavoidable impacts to GRSG or its habitat, to a net conservation gain standard for the species. As noted in the COT Report, "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur. …If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal , state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs."

In addition to allocations that limit disturbance in PHMA and GHMA, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs, and GHMAs to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to focus development into lower conflict areas and as such, reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the need for complex environmental review and analysis of potential impacts to sensitive species, and decreasing the need for compensatory mitigation.

Additionally, new recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat. In PHMA and GHMA travel would be limited to existing routes until routes are designated through the implementation travel management planning process. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning process.

Commented [BQF18]: …or the facilitiy is required for health and safety purposes.

In general, all forms of new development in PHMAs and GHMAs would be closed, excluded, avoided, or developed only if the resultant effect is a net conservation gain to the GRSG or its habitat, assuring that existing habitat would be protected and providing opportunities through compensatory mitigation to restore degraded habitats.

Livestock grazing was not recognized by the USFWS as a major threat to GRSG or its habitat. Grazing is not considered a discrete surface disturbance activity for purposes of monitoring and calculating disturbance

Disturbance Caps, Density Caps, Lek Buffers, and Required Design Features

In addition to the management actions and allocations discussed above, the ARMPAs provide further assurance that anthropogenic disturbances in PHMAs will be limited through the use of disturbance caps, density caps and lek buffers.

A 3% disturbance cap in PHMA was established in accordance with the recommendations contained in the NTT Report. Disturbance will be calculated at two scales: first at a Biologically Significant Unit (BSU) scale determined in coordination with the state and second for the proposed project area. BSUs are geographic units of PHMA that contain relevant and important GRSG habitat. In Oregon, ~~and Utah~~ for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of anthropogenic disturbance cap and in some ARMPAs, the adaptive management habitat triggers.

Commented [BQF19]: Knick 2013 also supports this buffer. Maybe add: " and peer-reviewed literature from the Great Basin."

Commented [CRY20]: This is not correct for Utah. In Utah, the BSU is PHMA. There is PHMA outside of PACs that we are still including in our BSUs.

If 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within PHMA in any given BSU, no further discrete anthropogenic disturbances (subject to valid existing rights) will be permitted on BLM-managed lands within PHMAs in that BSU until the BSU below the cap. The Oregon and Nevada/Northeast California ARMPAs include exceptions to the disturbance cap: Oregon does not allow more than 1% new anthropogenic disturbance per decade, not to exceed 3% disturbance at any time; and in Nevada, exceeding a 3% disturbance cap can occur at the BSU and/or the project level as long as the outcome results in a net conservation benefit as approved by the BLM.

The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage co-location of structures to reduce habitat fragmentation. The cap is set at an average of one facility per 640 acres in PHMA in a project authorization area, consistent with guidance contained in the NTT Report. If the disturbance density in the PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The one facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer-distances as identified in the USGS Report Conservation Buffer Distance Estimates for GRSG – A Review (Open File Report 2014-1239). The lek buffer distances will be applied at the project specific level as required conservation measures to address the impacts to leks as identified in the NEPA analysis. The lek buffer distances vary by type of disturbance (road, energy development, infrastructure, etc.) and justifiable departures may be appropriate as fully described in Appendix B of the ARMPAs. In both PHMA and GHMA, impacts should be avoided first by locating the action outside of the applicable lek buffer-distance(s) as defined in the ARMPAs. In PHMA, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed. In GHMA, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions."

Additionally, Required Design Features (RDFs) are required for certain activities in all GRSG habitat, including oil and gas development, infrastructure, range developments, and other surface disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts to GRSG or its habitat from threats (such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators). However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area).

Commented [BQF21]: There were no RDFs for range developments in the NTT report. Utah does not have any RDFs for range developments. Just fluid and other minerals, ROWs, fire and fuels, and RDFs to minimize west nile virus. The west nile virus RDFs are NOT for range developments. One of the bullets is to fence the water from livestock. The west nile RDFs were developed based on research from Powder River Basin and relate to water for minerals development.

1.6.2 Improving Habitat Condition

In addition to prescribing land allocations and managing resource uses to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

The ARMPAs contain an overall habitat management objective that "Maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush canopy cover or as consistent with specific ecological site conditions~~.a minimum of 70% of lands capable of producing sagebrush with a minimum of 15% sagebrush canopy cover, consistent with referenced conditions for the specific ecological sites.~~" To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into all land management programs, including wild horse and burros, grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

Commented [BQF22]: This is what WO dropped into our ARMPA. I assume it should be updated here too.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives through treatment of invasive annual grasses and the removal of encroaching pinyon juniper in SFA, PHMA, and GHMA, and restoration of degraded landscapes, including those impacted by fire events (See **Section 1.6.3**.)

The BLM recognizes that improper grazing is a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report recommendation for grazing states, "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)." To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs include requirements for the incorporation of terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review and monitoring of grazing permits, and take numerous actions to avoid and minimize the impacts of range management structures (**see Table 1-4**).

The BLM will prioritize reviews and updates of grazing allotments in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMA, focusing first on riparian and wet

meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area, but rather reflects a decision to prioritize resources to ensure permittees manage grazing properly in those areas most important to the species. If the BLM finds that relevant habitat objectives are not being met due to improper grazing, the BLM will work with the permittee to ensure progress towards meeting them.

To address the localized threat due to negative influences of grazing by free-roaming equids (wild horses and burros (WHB)), the BLM will focus on maintaining WHB Herd Management Areas in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending Herd Management Area plans to consider incorporating GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFA, then the remainder of PHMA, and then GHMA. In SFAs and PHMA, the BLM will assess and adjust AMLs through the NEPA process within HMAs when WHBs are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

During the implementation of the ARMPAs, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in GRSG habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions-) to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action. This standard is consistent with the recommendation included in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* published by the FWS in September, 2014, which states that mitigation "be strategically designed to result in net overall positive outcomes for sage-grouse"**.** Mitigation will follow the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g. avoid, minimize, and compensate) and be implemented on BLM-managed lands in a manner consistent with Departmental guidance for landscape mitigation pursuant to Secretarial Order 3330. If impacts from BLM and Forest Service management actions and authorized third party actions result in habitat loss and degradation that remain after applying avoidance and minimization measures (i.e. residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

Commented [23]: Hotlink.

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams based on WAFWA Management Zones, including members from the respective states, Forest Service, USFWS, NRCS, and other local governments. These Conservation Teams will facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response. These Teams will convene to advise on these specific tasks and will utilize existing coordination and management structures to the extent possible.

With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the Integrated Rangeland Fire Management Strategy will further these goals and objectives. The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the Integrated Rangeland Fire Management Strategy are specifically designed to identify landscapes of high resistance and resilience based on research by Chambers (Chambers et al, 2014b). Additionally, by limiting or eliminating anthropogenic surface disturbance, especially in the SFAs, ensuring the integrity of the PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation efforts, connectivity and availability of sagebrush habitat are expected to increase thus contributing to increased climate resilience.

1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency". For this reason, the ARMPAs seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush. Prescribed fire will not be used unless the NEPA analysis for the Burn Plan addresses why alternative techniques were not selected as a viable option, how GRSG habitat management goals and objectives would be met by its use, how the COT Report objectives would be addressed and met, and a risk assessment is prepared to address how potential threats to GRSG habitat would be minimized. The BLM *Greater Sage Grouse Invasive Annual Grasses & Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats.

The cornerstone of the FIAT protocol is recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers, et al., 2014b). The final FIAT process report was completed in June 2014 by the Fire and Invasive Assessment Team. The BLM, the Forest Service, and FWS agreed to incorporate this approach into the final GRSG EISs. This information is being used to identify and design projects to change vegetation composition and/or structure to modify potential fire behavior for the purpose of improving fire suppression effectiveness and limiting fire spread and intensity due to invasive grasses and conifer encroachment. Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species, and prioritize vegetation treatments closest to occupied GRSG habitats and near occupied leks. Through guidance in the ARMPAs supplemented by the *Integrated Rangeland Fire Management Strategy*, a commitment has been made to address the invasion and expansion of cheatgrass, medusa head, and other invasive grasses through expanded efforts to treat impacted acres and to accelerate and expand efforts to restore lands impacted by fire with native grasses and sagebrush seedlings. Efforts are underway to increase the acreages to be treated with chemical and biological agents to kill and stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion.

In addition to and complementing the ARMPAs described in this ROD, Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department".** (emphasis added). The strategy places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes in areas identified by the Fire and Invasives Assessment Tool (FIAT) in priority habitat, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT process, applying recent science, identified highly resistant and resilient landscapes to target fire management activities to these most important lands. In addition, through the issuance of a Leaders' Intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions with regard to the allocation of resources for firefighting in 2015. Additional resources have been allocated and will be targeted to fuel treatments (including invasive species control), suppression (through the prepositioning of fire-fighting resources and the training of additional Rural Fire Protection Associations, local volunteer firefighters, and veteran fire fighters), and habitat restoration in these areas. Firefighting assets (aircraft, firefighters and related equipment) will be located near areas of high priority for rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective." The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats."

A rangewide monitoring and evaluation framework will be established and implemented as described in the Monitoring Framework (Appendix X of each attached ARMPA). This monitoring strategy has two parts: (1) implementation monitoring (i.e., are decisions being implemented in a timely manner, are actions taken consistent with the plan decisions), and (2) effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals). Through effectiveness monitoring, BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat to determine if the desired management objectives (e.g. avoiding and minimized additional surface disturbance in PHMAs) have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, size of patches, etc.). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by state wildlife agencies and other partners, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRSG populations. This analysis will enable managers

to identify indicators associated with population change across large landscapes and to ameliorate negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Team (as described in Section 1.6.2) will also be used to advise regional monitoring strategies and data analysis on as described in the plans and utilize existing management structures.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored - habitat condition and/or population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after the issuance or signature of this ROD.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the proposed ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the state, FWS, and the BLM to see if the causal factor can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines).

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger is tripped, the BLM will implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. In the event that new scientific information becomes available demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM will immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive such as an IM or a plan amendment.

1.7 Unique Aspects of the Great Basin ARMPAs

The ARMPAs and their associated environmental impact statements were developed through four planning efforts across the Great Basin Region (as described in Section 1.1). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing, in particular, the importance of addressing the threat of rangeland fire and the challenge of restoring fire-impacted landscapes and implementing measures to limit anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the subregional plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and state-specific management approaches.

This tailored approach provided management flexibility as well as the opportunity to incorporate recommendations resulting from collaboration with local cooperators and public comments in each subregion. The subregional planning strategy will strengthen implementation efforts for each subregional

plan given that the contributions of local partners will be reflected in the plans and the plans will benefit from local knowledge, expertise, and experience. Measures incorporated into the subregional plans in this manner remain consistent with the range-wide objective of protecting, enhancing, and restoring GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Great Basin sub-regional ARMPAs.

Idaho and Southwestern Montana

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The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third category of habitat referred to as Important Habitat Management Areas (IHMA). IHMA are BLM-administered and National Forest System lands that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations. In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance while providing an acceptable additional level of flexibility in IHMA and GHMA since surface disturbance due to development is not as great a threat to habitat in the subregion. The three tiers also serve as the foundation for an adaptive management approaches that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, IHMA will be managed as PHMA to maintain sufficient PHMA to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat, as described in Appendix J of the attached Idaho and Southwestern Montana ARMPA, which was developed by the BLM in concert with the Idaho Department of Fish and Game, Forest Service, and FWS. The Idaho and Southwestern Montana ARMPA also includes additional Required Design Features (RDFs) based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local U.S. Fish and Wildlife Service office. Examples include avoiding building new wire fences within 2 km of occupied leks and placing new, taller structures out of line of sight or at least one kilometer from occupied leks. The BLM will also work with the state of Idaho in setting priorities for the review and processing of grazing permits/leases in SFAs consistent with the methodology recommended by the State of Idaho in its proposed plan for the management of BLM-administered lands in the state.

The decisions affecting Southwestern Montana in the ARMPA complement the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development. Recognizing that the State of Montana efforts are just beginning, the plans include measures to incorporate aspects of the Montana Plan as it is instituted. The BLM plans will switch to a 5% disturbance cap, consistent with the Montana Plan when the process is instituted and being effectively implemented. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if some sage-grouse related management actions can be

adjusted with coordination from the State of Montana and the USFWS to achieve consistent and effective conservation across all lands, regardless of ownership. There is no IHMA in Montana.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the "2014 Coates Maps", developed locally using the best available science, and included "Other Habitat Management Areas", where required design features will be applied at the project level. Decisions for BLM-administered lands in the State of California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Decisions for BLM-administered lands in the State of Nevada incorporate key elements of the State of Nevada Greater Sage-Grouse Conservation Plan (State of Nevada 2014) including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the planning area. This mitigation strategy focuses restoration efforts in the key areas most valuable to the GRSG. The ARMPA adopts a Disturbance Management Protocol (DMP) to provide for a 3% limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, State of Nevada, and FWS. The plan provides for this exception due to the development of strong mitigation tools in Nevada, including the Conservation Credit System. Given the concurrence of the State of Nevada and FWS in each exception, this approach is consistent with conservation objectives. The Disturbance Management Protocol in BLM-administered lands in Nevada was also deemed sufficient such that the Nevada ARMPA does not have density cap, which is required in the three other Great Basin Region ARMPAs.

In coordination with the USFWS, the Nevada ARMPA also allows for an exception to geothermal NSO which is an energy development priority for the state and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (Conservation Plan for Greater Sage-Grouse in Utah) and the State of Wyoming (Executive Orders 2011-05 and 2013-3), which establishes conservation measures for protecting GRSG and also focuses conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the state's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in GHMA because 96% of the breeding GRSG in Utah are within PHMAs where conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and required design features as well as requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates GHMA as open to

wind energy and high voltage transmission ROW development (consistent with the mitigation framework for the ARMPA). The Utah ARMPA also designates GHMA open to ~~as~~ oil and gas development with standard constraints.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Hagen 2011) which establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the Oregon Department of Fish and Wildlife in which disturbance is capped at 1% per decade.

The BLM Oregon plans provide additional flexibility for wind development in PHMA in Harney, Lake, and Malheur counties by allowing for avoidance rather than exclusion within PHMAs that are outside of the SFAs. The BLM provided this flexibility after recognizing the extent of high and medium potential wind areas in these counties that is in PHMAs, the fact that wind energy is excluded in SFAs in these counties, and, after coordination with the USFWS, determining that the more rigorous disturbance cap (in which disturbance is capped at 1% per decade) and adaptive management triggers adopted by the Oregon plan would compensate for the limited wind development likely to occur in these areas. In addition, the plan encourages development of wind energy ROWs outside of PHMA first, or in non-habitat areas within PHMA, before development is permitted in higher value habitat areas. Due to these factors, the BLM finds these limited areas of flexibility for wind development are not inconsistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic areas where habitat enhancement and restoration activities are encouraged, as well as key areas to address the impacts associated with climate change.

For additional information regarding the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs, which provides a crosswalk regarding how the ARMPAs address specific threats to GRSG identified in the COT Report through these state-specific management prescriptions.

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1.8 Decision Rationale (Management Considerations)

The ARMPAs provide a comprehensive and effective conservation strategy for addressing the threats identified by the FWS such that the need for additional protections under the ESA might be avoided. The ARMPAs contain objectives which strive to conserve the GRSG and its habitat on BLM-administered lands across the remaining range of the species.

In combination with the sage-grouse conservation actions taken by the individual states within the remaining range of the bird and separate but connected initiatives to address the threat of rangeland fire to curb the continuing spread of non-native invasive grasses, and to promote conservation measures to benefit the Greater sage-grouse on private lands, the BLM and Forest Service proposed ARMPAs are an essential component of the effort to conserve the GRSG and its habitat and may avoid the need for a listing of the species under ESA. Combined, all of the ARMPAs associated with the BLM's National GRSG Conservation Strategy would affect approximately 66 million acres of the remaining habitat for the species.

The BLM Greater Sage-Grouse Conservation Strategy is built upon the following key concepts:

- **Landscape-level**: The planning effort encompasses the remaining habitat of the GRSG on BLM-administered public lands, covering 10 western states in the Great Basin and Rocky Mountain regions. As such, the strategy provides a coherent framework across the Resource Management Plans to implement landscape-level conservation for GRSG while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple use and sustained yield mandates under FLPMA. The conservation measures included as part of this landscape -level conservation effort are -consistent with the severity of threats, recognizing local ecological conditions, and incorporating existing conservation efforts where they are consistent with the overall objective of conserving the species across its remaining range.
- **Best Available Science** – The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, state agencies, the US Geological Survey, the FWS and other sources. The COT Report provided a "blueprint" for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The BLM National Technical Team (NTT) Report provided additional guidance for addressing the most significant threats to the GRSG. A series of subsequent reports on how to improve efforts to reduce the threats of rangeland fire and invasive species prepared in collaboration with the WAFWA, as well as a report to the Secretary of the Interior entitled "An Integrated Rangeland Fire Management Strategy" also provided crucial guidance in formulating the conservation strategy.
- **Targeted, Multi-Tiered Approach** – The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration efforts to the most important habitat management areas as determined by state and federal sage grouse experts, largely consistent with the Priority Areas for Conservation (PACs) identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as Priority Habitat Management Areas (PHMAs). Within PHMA, the ARMPAs/ARMPs provide an added level of protection to prohibit surface disturbance through the delineation of Sagebrush Focal Areas (SFA), derived from areas identified by the FWS as "strongholds" essential for the species' survival. General Habitat Management Areas (GHMAs), ~~is~~ were identified in the ARMPAs recognize the potential value of habitat areas outside of PACs -- as recommended by the COT -- where surface disturbance is -minimized to provide greater flexibility for land use activities but where disturbance will be mitigated.

- **Coordinated**: The ARMPs and ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, all federally-administered lands essential to the conservation of the GRSG will be managed to achieve this objective through amendments or revisions to their land management plans. The USFWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative**: The ARMPAs reflected extensive input from the relevant states, collaborators, and stakeholders and the public from the outset. The ARMPAs ~~d~~ were developed with the benefit of input from the individual states and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force (SGTF) was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate state and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG consistent with the multiple-use and sustained-yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis and recommendations for GRSG conservation including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through a collaborative effort of state and federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report –which identified threats to GRSG habitat as well as the most important habitat to protect--provided an important framework for development of the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of state and federal scientists, wildlife biologists, ~~and~~ resource managers, and policy advisors~~,~~ was tasked by the Director of the USFWS "with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future."

Commented [CRY26]: These statements about state biologists /scientist is not entirely accurate for Utah.

In addition, the Fire and Invasives Assessment Team (FIAT) Report and the USGS compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and infrastructure on GRSG populations -- *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review*, and the *Integrated Rangeland Fire Management Strategy: Final report to the Secretary* (Manier et al, 2014; DOI 2015b) provided important guidance in the development of critical aspects of the proposed ARMPAs/ARMPs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG experience where consistent with the overall GRSG management objectives.

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The BLM ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs/ARMPs also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate state-developed conservation measures in each of the subregional plans ~~-~~has added

complexity in developing the overall conservation strategy, the body of local- knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the difficult task of implementing the plans upon completion.

In his transmittal letter accompanying the final COT report, FWS Director Dan Ashe reaffirmed his charge, "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. … Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels."

The BLM ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report, ~~and~~ the BLM NTT, and coordination with state and local working groups. The COT Report emphasized the need to avoid or minimize additional disturbance in PACs (which largely coincide with PHMAs in the ARMPAs). As previously noted, the COT stated, "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal." ~~-~~ The COT further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

In order to address the identified threats, and meet the recommendations of the COT, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMA which align closely with PACs identified in the COT Report. Within PHMA, the plans identify SFAs based on the FWS analysis of strongholds for the species based on population density, habitat integrity, and resilience to climate change among other factors. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in wildlife horse and burro populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS which are most important to long-term ecosystem health and species persistence.

PHMA and GHMA boundaries are based on Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH), as represented in the Draft LUPAs/EISs. Consistent with BLM's Instruction Memorandum 2012-044, PPH and PGH are based on data and maps developed through a collaborative effort between the BLM and the respective state wildlife agency. PPH and PGH (now PHMA and GHMA in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty 2010), sage grouse proportionality, density of leks, and key seasonal habitats. PGH (now GHMA) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

Allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMA – from energy, to transmission lines, to

Commented [BQF28]: There are several things wrong with this statment. PPH and PGH were not represented in the DEIS; that was PPMA and PGMA. Further, in Utah the final interations of PHMA and GHMA are not based on the PPH and PGH. PPH was all occupied habitat in Utah because the state and BLM couldn't come to an agreement on which areas were most important. Our PHMA and GHMA is about 96% with the state's prioritization. This is different than what was identified in the DEIS. Between Draft and Final EIS, based on analysis, coordination with the state, and public comments, the BLM Utah adjusted the boundaries of PHMA/GHMA to reflect what we have right now in the ARMPA. Simply put, this statement is wrong for the Utah Sub-Region.

recreation facilities and grazing structures are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. In all instances, whether in PHMA or GHMA, any adverse impacts associated with development would have to be compensated with habitat protection or restoration activities that produce a net conservation benefit for the GRSG. The ARMPAs/ARMPs will also prioritize future oil and gas leasing and development in areas of low conflict with GRSG habitat.

In addition, the ARMPAs include measures to limit surface disturbance in PHMA through the establishment of disturbance limits or "caps" of 3%, density restriction of on average 1 energy facility per 640 acres and lek buffers. These requirements were established in accordance with recommendations contained in the NTT Report. As described in Section 1.6.1, BLM determined the appropriate buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al, 2014).

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in SFAs, then in PHMAs, and finally in areas designated as GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMA or GHMA will be designed to a net conservation gain standard consistent with the recommendation included in the September 2013 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework*. According to the authors, the Framework was prepared …

> "to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse".

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT to …

> "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g. shrub cover, nesting cover)."

The ARMPAs also address the adverse impacts of free-roaming equids (wild horses and burros) on GRSG habitat by prioritizing gathers and removal of wild horses and burros to reach AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has made a considerable investment in concert with

the National Academy of Sciences in new research of methods to reduce wild horse and burro reproduction rates. Through a combination of targeted gathers and the development of an effective agent for reducing future free-roaming equid reproductive rates, over time, this threat to GRSG may be effectively mitigated.

Since the interaction of fire and invasive species represents the greatest threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat that led to Secretarial Order (S.O.) 3336 and subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior*.

http://www.forestsandrangelands.gov/rangeland/documents/IntegratedRangelandFireManagementStrategy_FinalReportMay2015.pdf

In accordance with the S.O. and subsequent rangeland fire management strategy, substantial changes in policy and management direction affecting all aspects of the rangeland fire management program – from better coordination between resource managers and fire management officers; to the identification and prioritization of prevention, suppression, and restoration efforts in SFAs, PHMAs, and GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This effort, and the initiative to fight the spread of non-native invasive species that contributes to higher rangeland fire risk (e.g. cheatgrass) discussed below, has fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

The COT report – and other more recent research and analysis – amplify concern for the contribution of cheatgrass and other invasive species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers (Chambers et al, 2014b) led to the Fire and Invasives Assessment Tool and a subsequent assessment that identified areas of resistance and resilience to fire within SFAs, PHMAs, and GHMAs. Through use of the FIAT assessment/Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss as well as target restoration to those areas important to the species where success is more likely. The BLM is also committed to and accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive species.

Even prior to completion of the FIAT assessment, BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY2014 Omnibus Appropriation, BLM prioritized the funding of treatments and activities within each state that benefit GRSG **(See Figure 1-6)**.

In addition, the Sage Grouse Initiative (SGI) launched by the Natural Resources Conservation Service in 2010 also contributes to the effort to protect and restore important GRSG habitat in the Great Basin states. In collaboration with the states and private landowners on private lands, as well as with the BLM and

USFS on federally-administered public lands, NRCS has worked to reduce the encroachment of pinyon-juniper trees and restore rangeland habitat.

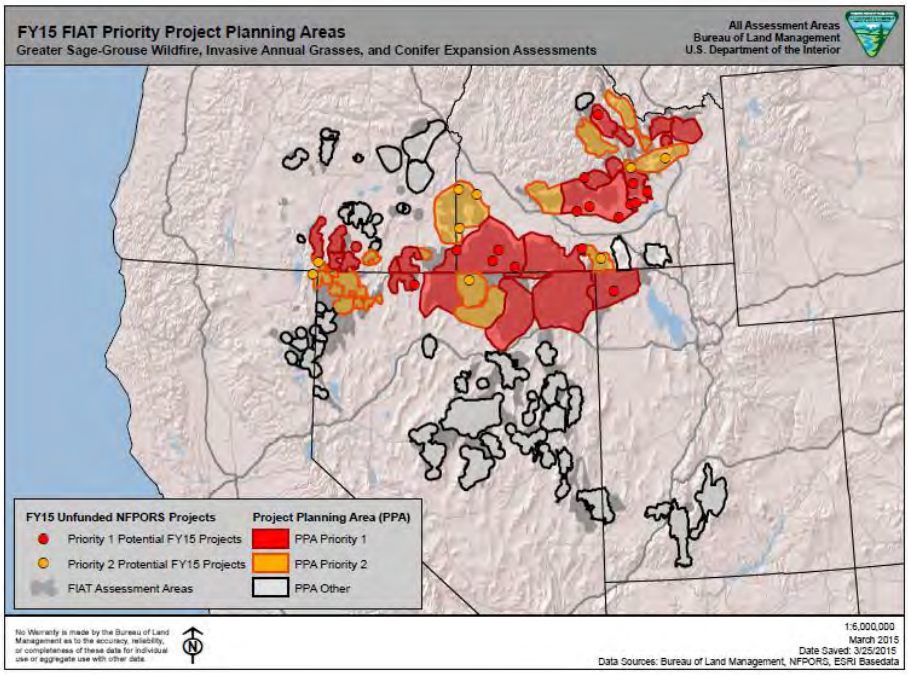

Figure 1-6. FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments.

To further supplement these efforts, the Department has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes and BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. The Department has identified required policy changes to increase the commitment, flexibility and timeframe for use of Emergency Stabilization and Burned Area Restoration (ES & BAR) funding on priority sagebrush-steppe habitats.

Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy,* the BLM and Forest Service conservation strategy places heavy reliance on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs . Monitoring plans will be developed in coordination with relevant state and federal agencies and will incorporate evaluation of GRSG population trends by the states and changes in habitat condition by the federal land management agencies. As the WAFWA report states …

> Monitoring provides the "currency" necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and there, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort.

In addition, the ARMPAs incorporate an adaptive management framework that provides an "early warning system" of "soft triggers" to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes in population levels or habitat conditions occur. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and "hard triggers" are reached, more significant plan-level changes in management actions and land allocations will occur to ensure that more protective measures to conserve the species are in place.

In summary, the ARMPAs emphasize an "avoidance first strategy" consistent with the recommendations in the COT Report by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished through identification of important GRSG habitat areas and then applying allocations that exclude or avoid surface disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, are important to the long-term viability of GRSG. Restoration decisions include specific habitat objectives, and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management Strategy* as well as NRCS' Sage Grouse Initiative (SGI) investments in private landowners' conservation efforts. This strategy reflects a high level of commitment by federal partners to conserve the GRSG and its habitat. These actions on over half of the most important lands for GRSG conservation will serve as an anchor and complement the significant actions being taken by state and local governments as well as private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of reinforcing conservation actions that will go into effect upon completion of the BLM and Forest Service ARMPAs as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for both resource management agencies since 2010 and a long-term commitment to assure the conservation of the species consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape and amplifies the need for collaborative conservation among federal, state, local, and private partners to conserve the GRSG. This paradigm shift is best characterized as follows:

"Land uses, habitat treatments, and anthropogenic disturbances will need to be managed below threshold necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to sage grouse

Commented [CRY29]: Sage-grouse

habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future."

The conservation benefits to the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPAs provide an essential foundation for conserving the GRSG which, in conjunction with the amended Forest Service LRMPs, affect XX percent of the remaining GRSG habitat in the Great Basin Region~~?~~. In conjunction with the [RockyMountain ARMPAs?] and GRSG management initiatives of other federal, state, and local partners, the cumulative benefits of these conservation actions constitute an effective strategy for conserving the GRSG and may avoid the need to list the species as threatened or endangered under the Endangered Species Act..

Commented [BQF30]: Need to attribute this quote.

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2. DECISION

2.1 Summary of the Approved Management Decisions

The decision is hereby made to approve the Great Basin Region Greater Sage-Grouse ARMPAs for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments A, B, C, and D). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs amend the land use plans described in **Sections 1.3** of attachments A, B, C, and D.

The land use decisions conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes), and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective upon signing of this ROD, they generally require additional implementation decision steps before on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 What the Record of Decision and Approved Resource Management Plan Amendments Provide

The ARMPAs include GRSG and GRSG habitat land use plan level management decisions in the form of:

- Goals

- Objectives (Desired Future Conditions)
- Land Use Allocations and Allowable Uses
- Management Actions

Goals are the broad statements of desired outcomes, and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the planning area that are available or not for certain uses and are also used prioritize conservation and restoration management actions. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/ or sale, and what lands are open, closed, or limited to motorized travel (please note that all acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Management actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands.

The ARMPAs' management decisions were crafted to incorporate conservation measures into LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats (see **Section 1.3**).

2.3 What the Record of Decision and Approved Resource Management Plan Amendments Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for travel management decisions in the Idaho and Southwestern Montana ARMPA.

Commented [33]: really? are these implementation level decisions designating routes? was this clear in the PRMP?

Commented [MEM34]: Jon Beck – is this accurate?

The ARMPAs respect valid existing rights.

The ARMPAs do not contain decisions for the mineral estates of lands located in the planning area for lands under the jurisdiction of other Federal agencies such as the Forest Service, or for private or State-owned lands and minerals that are not administered by the BLM. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

- *Statutory requirements.* The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy.* The decision will not change BLM's obligation to conform to current or future National policy.

- *Funding levels and budget allocations*. These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

Commented [35]: except in Idaho for travel management decisions?

Commented [MEM36]: Jon Beck – same comment as above.

2.4 Modifications and Clarifications

During preparation of the ARMPAs for all four sub-regions, minor changes were made to the Proposed RMP Amendments. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency review. Clarifications and corrections made since the Proposed RMP Amendments were published on May 29, 2015 are hereby adopted by this ROD.

Based on internal review, the following modifications/clarifications were made to all of the ARMPAs in the Great Basin. The management actions did not change as a result of these modifications/clarifications.

- The plans were reformatted for consistency across the Great Basin; the order of management actions and the prefixes for the goals, objectives, and management actions were changed in the Great Basin sub-regions in the combined Record of Decision to provide consistency between the Great Basin amendments.
- All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. This is because the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plan Amendment under their planning authorities
- [Clarification - Consistent drop-in language related to habitat mapping changes will be discussed here once final drop-in language is provided.]
- [Clarification - Consistent drop-in language related to Sagebrush Focal Area prioritization for other activities language will be discussed here once final drop-in language is provided. This does not have to be included if the planning area does not have an SFA.]
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions
- As a result of internal BLM reviews, the Greater Sage-Grouse Adaptive Management Strategy in each ARMPS were slightly revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.

- Wildlife Suppression management actions modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.
- *[Clarification – Consistent drop-in language related to the exception language for the three priority transmission projects (clarifying that these priority projects will incorporate Greater Sage-Grouse conservation measures) will be discussed here once final drop-in language is provided.] [If the planning area does not include the Gateway West, Boardman to Hemingway, and TransWest Express, or Gateway South transmission project, you can delete this bullet.]*

Commented [MEM37]: This section will updated once final drop-in language is completed.

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the FEIS in various places was grouped into a stipulation appendix and added it to the ARMPA as Appendix G Stipulations.
- Appendix G Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA was modified to delete the reference to Tables 2 to 7. Tables 2 to 7 were deleted from the FEIS Appendix G before it was made available to the public for protest, but the reference was not deleted in text of the Appendix. This discrepancy was identified during protest resolution and by the Governor during the Governor's Consistency Review. These values will be calculated after the signing of the ROD (see Adaptive Management below).
- Many editorial changes including, deleting repeated numbers, spelling errors, etc, were made when finalizing the ARMPA.

Special Status Species

- Greater Sage-grouse Management Areas MA- 10, third bullet from the PMPA which is now MD SSS 10 in the ARMPA had the following sentence added as an accepted recommendation made by the Governor during the Governor's Consistency Review to clarify management and conservation action prioritization in SFA and:
  "Management and conservation action prioritization will occur at the Conservation Area (CA) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFAs followed by areas of PHMA outside SFAs."
- Deleted the Seasonal Timing Restrictions from Appendix C FEIS to reduce redundancy because these restrictions were already in the Required Design Features Appendix.

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in PHMA, IHMA, and GHMA would only be available for disposal through exchange. This was removed because it

was not consistent with BLM policy and the net conservation gain clause in MD LR-13 will provide assurance that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes such as changing 'should' to 'shall', and 'would' to 'will' to reflect the final decision language.
- Re-categorizing some of the Management Decisions into other common resource programs. For example, all of the Fire and Fuels management decisions are all numbered under FIRE, and are not split into different sub-category names.
- Re-lettering of the critical Appendices, and deletion of those that are no longer applicable for the ARMPA.

Special Status Species

- Added clarity to MD SSS 2 A 3, by describing what energy and mining facilities to which this decision would apply; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A, by including references to valid existing rights and applicable law for the requirement of a 'net conservation gain'.
- Specified in MD SSS 8 that this activity would be coordinated with NDOW or CDFW, and that breeding activity surveys would be for actions involving mineral activities and rights-of-ways.
- Deleted Action PR 4 from the Proposed LUPA because BLM does not manage landfills and transfer stations.

Adaptive Management

- Moved the Adaptive Management Strategy section out of Chapter 2 and made it into Appendix J; moved the Adaptive Management decisions under MD SSS 17 – MD SSS 22.
- Clarified under MD SSS 21 that BLM will coordinate with NDOW, and that the decision was specific to mineral activities and rights-of-way actions.

Fire and Fuels Management

- Deleted 'field offices and districts' from MD FIRE 3, as there will be a multi-layer approach to coordination, including BLM State Offices.
- In Objective FIRE 3, added 'in SFAs first' to provide more emphasis to the SFA over the rest of the PHMA for this action.

- Modified MD FIRE 26 to delete 'Districts', as there will be a multi-layer approach to identifying treatment needs for wildfire and invasive species management across the state.
- Added 'USFWS' as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include, "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to". This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…".
- The following statement was added to LG 21 from the Proposed RMP Amendment which is still is LG 21 in the ARMPA: "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet in width… "or a different width is specified for congressional designated corridors". This is in response to the Lincoln County Conservation Recreation Development Act (2204) which included congressionally designated corridors that were not included in the plan amendment or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this Act.
- Rewording of MD LR 19 to state that the federal and state road easements would continue to be managed as PHMA or GHMA, but the Federal Highway Administration and Nevada Department of Transportation would not be bound by the decisions in the plan amendment.

Travel and Transportation

- Due to confusion that was outlined in protest letters and in the Governor's Consistency Review, MD TTM 2 was clarified that limiting off-highway travel to existing routes in

Commented [MEM38]: Lauren – can you rework this bullet to address Aaron's comment below?

Commented [39]: I don't think this is accurate. See our email exchange on this topic:

I think its an overstatement. It's not that nothing would apply to anything they could possibly do within the ROW, it's that we aren't changing the terms and conditions of that ROW, right? And I think the latter point is covered by the "subject to VER language". So, while I think you could clarify that separately to the cooperators, I'm not sure putting something explicit in there makes sense (and might lead others to question why BLM didn't call out their specific instruments).

PHMAs and GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations".

- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning". This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment", as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning area, the two Mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed LUPA (which are now separate Appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Required Design Features and Best Management Practices

- Appendix C was revised to include the statement that state-implemented conservation measures or protections may be considered as an alternative in the application of RDFs, as appropriate, on a site-specific basis.

Fire and Fuels Management

- Management action WFM 2, from the Proposed RMP Amendment, which is now MD FIRE 2 in the ARMPA, was modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.

Livestock Grazing

- LG/RM 2 from the Proposed RMP Amendment, which is now MD LG 2 in the ARMPA, was modified to provide further clarification that changes in livestock grazing management through grazing authorization would occur only when livestock management practices are determined to not be compatible with meeting or making progress towards achieving habitat objectives and/or Land Health Standards. This modification was recommended by the Governor during the Governor's Consistency Review.
- The following statement was added to LG/RM 15 from the Proposed RMP Amendment which is now MD LG 15 in the ARMPA :"This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."

- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

Lands and Realty

- A typographical error in the socioeconomic analysis of the proposed RMPA was identified during the Protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows:
- Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D,E, F, and the Proposed Plan…" is replaced with: "Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-state providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on terrain. In rural areas, burial of new distribution lines would be more than double the cost of new overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers, infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat."

Commented [MEM40]: Joan and/or Jennifer – can you complete this statement?

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and anthropogenic disturbances. This modification was recommended by the Governor during the Governor's Consistency Review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the proposed RMP/RMP amendment, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMP Amendment, the use of words like "would," "could," "should," and "may" were generally removed or revised to reflect the active management direction of an ARMPA rather than potential management presented when the Proposed RMP Amendment was one of many alternatives the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMP Amendment), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMP Amendment), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog (UPD), a federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is applied to all applicable objectives and management actions, not just the five actions in the Proposed RMP Amendment where this concept and language was already present.
- Throughout the Proposed RMP Amendment there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or state biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during the Governor's Consistency Review.
- The Proposed RMP Amendment introduced the term "biologically significant units" (BSU) for adaptive management and the disturbance cap to provide a consistent approach for managing and monitoring across the GRSG range. In the Utah Sub-Region, the BSU concept is the same as PHMA within population areas. As part of resolving protests, the ARMP was revised to note that "BSUs" are PHMA within population areas. Whenever the term BSU was used, it was replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across state lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMP Amendment, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA management zones when addressing designation of PHMA. This change was made during the Governor's Consistency Review to more closely reflect the management in the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah (2013).
- MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, was revised to include the following text: "The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with

the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language was added based on an accepted recommendation made by the Governor during the Governor's Consistency Review.

- The language of MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, regarding non-habitat areas within PHMA and GHMA was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMP Amendment, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMP Amendment, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual, incremental increases in noise levels.
- The language of MA-GRSG-6 from the Proposed RMP Amendment, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside PHMA/GHMA. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction regarding management of areas outside PHMA/GHMA that have been treated to improve GRSG habitat. The change was necessary to avoid implication of changing allocations or altering PHMA/GHMA boundaries outside a planning process while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

Livestock Grazing

- The language of MA-GRA-6 from the Proposed RMP Amendment, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to align with similar concepts and intent that was present in the livestock grazing sections in GRSG amendments throughout the Great Basin.
- The following statement was added to MA-GRA-18 from the Proposed RMP Amendment, which is now MA-LG-18 in the ARMPA: "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

2.4.2 Protest Resolution

BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest

proposed planning decisions within 30 days from the date the Notice of Availability of the Proposed RMP/Final EIS was published in the Federal Register (May 29, 2015). Below are descriptions of the protest resolution process for each of the four Great Basin Region PRMPAs/FEISs.

The Director concluded that the BLM followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed Land Use Plan Amendments/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed Land Use Plan Amendments/Final EISs, though minor clarifications were made and are summarized in Section 2.4.1. The BLM Director's decisions on the protests are summarized in each of the PRMPAs/FEISs Director's Protest Resolution Reports, which are available on the following BLM website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

2.4.2.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed LUPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty, and
- travel and transportation management.

2.4.2.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed LUPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- Air Quality,
- Climate Change,
- Noise,
- ACECs,
- solid minerals,
- special status species,
- lands with wilderness characteristics,
- lands and realty,
- tribal issues,
- wild horse and burros, and
- travel and transportation management.

2.4.2.3 Oregon

For the Oregon GRSG Proposed LUPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- monitoring,
- ACECs,
- fire and fuels management,
- solid minerals,
- special status species, and

- travel and transportation management.

2.4.2.4 Utah

For the Utah GRSG Proposed LUPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- land use allocations,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- air quality,
- climate change,
- ~~n~~Noise,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty,
- travel and transportation management, and
- reasonable foreseeable development scenarios.

2.4.3 Governor's Consistency Review

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)). The general requirement in FLPMA/planning regulations is to coordinate the land use planning process with plans of other agencies, states, and local governments to the extent consistent with law (see FLPMA s. 202(c)(9) and 1610.3-1(a)); and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with federal law,

or to maximum extent practical) (see 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to state, local, and tribal land use plans and provided meaningful public involvement of the Proposed RMP Amendments/Final EISs.

The BLM is aware that there are specific state laws and local plans relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that BLM's land use plans be consistent with officially-approved state and local plans only if those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Where officially-approved state and local plans or policies and programs conflict with the purposes, policies, and programs of federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved state and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to state or county plans, planning processes, policies, or planning stipulations.

Commented [BQF41]: I know this was cut-and-pasted from our FEIS chapter 5s, but shouldn't this now be changed to past tense, since the consistency review is completed.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors identifying inconsistencies between the BLM's proposed RMP amendments and their state's or local governments' resource-related plans, policies and/or procedures, as well as other concerns that they had with the proposed planning documents. The BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected on August 6, 2015. These Governors were then provided with 30-days to appeal the BLM State Director's decisions to the BLM Director. By September 8, 2015, the BLM Director received appeals from.

Commented [mem42]: Need to update when GCR process is towards completion.

In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications to the ARMPAs were made and are summarized in Section 2.4.1.

3. ALTERNATIVES

3.1 Alternatives Considered

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs in order to meet in the purpose and need of this effort to identify and incorporate appropriate management direction in LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. All management under any of the alternatives complied with federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping, and to maintain or increase GRSG abundance and distribution in the planning area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMP amendment. The goal was met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law there are typically few or no distinctions between alternatives.

3.1.1 Alternative A – No Action Alternative

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction derived from the existing field/district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. This alternative did not include changes that are needed to be made to the existing decisions based on the USFWS 2010 listing petition decision that identified inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B: National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the National Technical Team (NTT) Report. The GRSG National Technical Team (NTT), comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-Grouse Conservation Measures* in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable sage-grouse populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones. The NTT Report proposed conservation measures based on habitat

requirements and other life history aspects of sage-grouse and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. The Report can be accessed at: http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

The BLM's Washington Office Instructional Memorandum (IM) Number 2012-044 directed the sub-regional planning efforts to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in PHMA and avoid development in GHMA, would close PHMA to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals, and would recommend withdrawal from locatable mineral entry in all PHMA. These management actions would reduce surface disturbance in PHMA and would minimize disturbance in GHMA, thereby maintaining GRSG habitat. Management actions for wildfire would focus on suppression in PHMA and GHMA, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices (BMPs) proposed in the NTT report would be included as required design features as part of Alternative B and are listed in Appendix C, Required Design Features (RDFs), of each of the attached ARMPAs.

This alternative was not selected in its entirety as the ARMPAs because the majority of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMA, and few conservation measures in the Report were provided for in GHMA. As a result, this alternative did not provide adequate conservation in GHMA.

Commented [BQF43]: This justification fails to explain why we didn't adopt an O&G closure or ROW exclusion.

3.1.3 Alternative C: Citizen Groups' Recommended Alternative One

Alternative C was based on a citizen groups' recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and was applied to all occupied GRSG habitat (PHMA and GHMA. Alternative C limited commodity development in areas of occupied GRSG habitat, and closed or excluded large portions of the planning area to many land uses. This included all PHMA and GHMA as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and non-energy leasable mineral development, and exclusion areas for right-of-ways. The Utah LUPA/Draft EIS combined this alternative with Alternative F (discussed below).

Commented [CRY44]: For Utah, do we need to mention that we had C1 and C2 alternatives, reduced grazing and closing to grazing?

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D: Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the Preferred Alternative in the Draft EISs, balanced opportunities to use and develop the planning area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while still allowing for anthropogenic disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions based on BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMP Amendments/EISs, this alternative was modified to become the Proposed RMP Amendments and analyzed in the FEISs. The Preferred Alternatives, with slight variations, became the Proposed Plans in the FEISs.

In PHMA under Alternative D, there would be limitation on disturbance in GRSG habitat by excluding wind and solar energy development (except for certain counties in Southeastern Oregon where avoidance is applied), avoiding all other ROW development, applying no surface occupancy stipulations to fluid mineral development, and closing PHMA to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMA under Alternative D, allocations are less stringent, but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMA).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMA and GHMA, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative based on information provided by the State or Governor's offices for inclusion and analysis in the EISs. It incorporates guidance from specific state conservation strategies, if developed or recommendations from the state on management of Federal lands and emphasizes management of GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. This alternative was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a state GRSG conservation plan and under this alternative, reverted back to Alternative A, the no-action alternative.

Commented [BQF45]: In many instances, the BLM had to adjust what was provided to fit BLM language, decision-making constructs, etc. As such, it is better to note this alternative is based on the governor's office submissions and is not them in their entirety.

For Nevada, Alternative E would apply an avoid, minimize, and mitigate strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. Effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed because allocation decisions were not part of the state's plan.

For Oregon, Alternative E contains GRSG conservation guidelines from Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the state plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the state plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats such as recreation, improper livestock grazing, and West Nile virus for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, ~~the planning area includes all occupied GRSG habitat in Utah.~~ Alternative E1 is based on the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah and would apply to all BLM-administered lands in Utah. In alternative E1 conservation measures would be applied to 11 areas that the state identified, called Sage-Grouse Management Areas (SGMAs). Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMAs. Occupied habitat outside of the state-identified SGMAs would not receive new management protection. They would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the state's plans were not consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 – Alternative F: Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMA and GHMA. Alternative F would limit commodity development in areas of occupied GRSG habitat, and would close or designate portions of the planning area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMA. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and wild horse and burro management utilization by 25 percent within PHMA and GHMA. While the Utah Draft EIS did not include an Alternative F, it did create two sub-alternatives under Alternative C for livestock grazing and wild horses and burros to consider and analyze a similar reduction.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 – Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP Amendments/EISs, the BLM developed the Proposed Amendments/Final EISs for managing BLM-administered lands. The Proposed Amendments/Final EISs focused on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the DEISs. The Proposed Plans, with slight variations (as outlined in Section 2.5 of this ROD), became ARMPAs.

3.1.8 Environmentally Preferable Alternative

Council on Environmental Quality (CEQ) regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2(b)). Question 6A of CEQ's 40 most-asked questions regarding CEQ's NEPA regulations defines that term to ordinarily mean the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs is the most environmentally preferable. However, NEPA expresses a continuing policy of the federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA).

Commented [BQF46]: I'd argue this. Our VDDT analysis showed that the alternative that would result in the poorest GRSG habitat at 50 years was Alternative C because of its "passive" vegetation management. Based on this, I really don't think that just because it closes more uses makes it the environmentally preferable alternative. Alt B has most of the same allocations, but it also has more active vegetation management.

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations;
- They did not meet the purpose and need;
- The alternative was already captured within the range of alternative analyzed in the EIS;
- They were already part of an existing plan, policy, or administrative function; or
- They did not fall within the limits of the planning criteria.

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11of each of the sub-regional Proposed Amendments/Final EISs.

Idaho and Southwestern Montana

- USFWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- USFWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative

Utah

- USFWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMA for all Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- Conservation Objectives Team (COT) Report Alternative
- BLM Policies and Regulations Alternative

4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed alternatives.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through Federal Register notices, public formal and informal meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related Web sites. This section documents the outreach efforts that have occurred to date.

4.1 Public Involvement

The scoping period for the National GRSG Planning Strategy, including the four sub-regional planning areas in the Great Basin Region, began with the publication of the NOI in the Federal Register on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012.

A Notice of Availability (NOA) for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMP Amendments/EISs were published in the Federal Register on November 1, 2013. The Oregon Draft RMP Amendment/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Proposed RMP Amendments/FEIS, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the Proposed Plan Amendments. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft EISs' comment periods. Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed Plan Amendments. Public comments resulted in the addition of clarifying text, but did not significantly change Proposed RMP Amendments.

A Notice of Availability (NOA) for the Great Basin Region GRSG Proposed RMP Amendments and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-Regions were released on May 29, 2015. The release of the EPA's NOA initiated a 30 day public protest period and a 60 day governor'' consistency review. Refer to **Section 2.5** for a full description of the protest period and governor's consistency review outcomes.

4.2 Cooperating Agencies

A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into a formal agreement with the lead federal agency to help develop an environmental analysis. Cooperating Agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other federal, state, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal Memorandum of Understanding (MOU) for the National GRSG Planning Strategy with the USFWS and the U.S. Forest Service. In addition, the Great Basin sub-regions also invited local, state, other federal, and tribal representatives to participate as Cooperating Agencies for these RMP Amendments/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 MOUs signed with state agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. Additional information can also be found in Chapter 6 of each of the Proposed Amendments/FEISs. These cooperating agencies divided by sub-region are provided below:

Great Basin Region-Wide
US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana
Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners

Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California
Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration
Washoe County
Washoe Tribe
White Pine County

Oregon
Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District US
Lake County
Malheur County
Natural Resources Conservation Service

Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah
Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emeery County
Garfield County
Grand County
Iron County
Kane County
Lincoln County (WY)
Millarder County
Piute County
Rich County
San Pete County
Sevier County
State of Utah (PLPCO)
State of Wyoming
Sweetwater County (WY)
Sweetwater County Conservation District (WY)
Tooele County
Uinta County (UT and WY)
Uintah County (UT)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

Commented [BQF47]: They never signed their MOU.

4.2 FWS Section 7 Consultation

Consultation with FWS is required under Section 7(c) of the ESA before the start of any BLM project that may affect any federally listed or endangered species or its habitat. These planning processes are considered a major project, and the four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the FEISs. The FWS is a cooperating agency in this planning process. FWS staff participated

in interdisciplinary team meetings and has been provided drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the USFWS prior to the release of the Draft RMP Amendments/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan Amendments "may affect" the species for which this consultation occurred.

Prior to the release of the Proposed Amendments/FEISs, the BLM formally submitted the biological assessments to the USFWS for review. The USFWS evaluated the biological assessments and concurred with the "no affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana, which are appendices to each of these ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah Prairie Dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix K).

4.3 Native American Consultation

In accordance with the National Historic Preservation Act and several other legal authorities (see BLM Manual 8120), and in recognition of the government-to-government relationship between individual tribes and the federal government, the BLM initiated Native American consultation efforts related to preparation of the four Great Basin sub-regional RMP Amendments/EISs. Coordination with Native American tribes occurred throughout the planning process. In December 2011, the BLM sent letters to 65 tribal governments providing initial notification of the RMP Amendments/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation efforts related to the planning process. Tribes have been participating in the RMP Amendments/EISs processes through numerous meetings and through personal BLM contacts.

The Draft RMP Amendments/EISs were provided to the Idaho, Montana, Nevada, California, Oregon, and Utah State Historic Preservation Offices (SHPO) concurrently with its release to the public. The Proposed Plan RMP Amendments/FEISs were also provided to the SHPOs.

5. REFERENCES

Commented [48]: EMPSi will develop.

6. APPROVAL

Land Use Plan Amendment Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Great Basin Region Approved Resource Management Plan (RMP) Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions, as described in this Record of Decision. Notices of the public availability of the Proposed Plan Amendments and related Final Environmental Impact Statements (EIS) were published in the Federal Register on May 29, 2015. in the (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze Director Bureau of Land Management	Date

Secretarial Approval

I hereby approve the land use plan amendment decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Department regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice Schneider Assistant Secretary for Land and Minerals Management Department of the Interior	Date

7. ATTACHMENTS

Appendix A. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix B. Nevada and Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment

Appendix C. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix D. Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

BLM

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:
US Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240
http://www.blm.gov

SEP 18 2015

Dear Reader:

Enclosed are the Bureau of Land Management (BLM) Record of Decision (ROD) and Approved Resource Management Plan Amendments (RMPAs) for the Great Basin Region Greater Sage-Grouse Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah).

The documents are the product of an unprecedented effort to respond to the deteriorating health of the sagebrush landscapes of the American West and the declining population of the Greater Sage-Grouse, a ground-dwelling bird that has been under consideration by the U.S. Fish and Wildlife Service (FWS) for protection under the Endangered Species Act. Based on the best available science and with extensive participation from the public, partners, and stakeholders, these documents, and those published today for the Rocky Mountain Region, serve as the cornerstone of the broader, landscape-level National Greater Sage-Grouse Conservation Strategy (Strategy).

This Strategy responds to the threats identified in the FWS's 2010 "warranted, but precluded" finding and was guided by over a decade of research, analyses, and recommendations for Greater Sage-Grouse conservation, including the FWS Conservation Objectives Team Report and the BLM National Technical Team Report. These underlying Reports were developed through a collaboration of state, Federal, and research scientists with extensive experience in sage-grouse management and research.

The BLM's actions are guided by the Federal Land Policy and Management Act, which requires that RMPs for managing public lands be developed and maintained, and the National Environmental Policy Act, which requires that an environmental impact statement (EIS) be prepared for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the BLM prepared 15 EISs for the associated Draft RMPs and RMPAs, which were published in 2012 and 2013.[1] Each document incorporated analyses and input from the public; Native American tribes; cooperating agencies and other local, state, and Federal agencies and organizations; and BLM resource specialists.

The public had 90 days to comment following publication of the Draft RMPAs and EISs. The BLM received 1,348 unique letters with more than 4,990 substantive comments on all the Great Basin Region Draft documents. The BLM and the U.S. Forest Service reviewed, summarized, and took into consideration these comments when preparing the Proposed RMPAs and Final EISs, which were published May 29, 2015, for a 60-day Governor's consistency review and a 30-day public protest period.

[1] The BLM published one of the 15 Draft EISs – that associated with the Lander RMP Revision – in 2011.

The BLM received consistency review letters from the Governors of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region and has worked closely with these States to address their concerns. Across all of the Proposed RMPAs and their associated EISs in the Great Basin Region, government entities, private citizens, non-governmental organizations, and other stakeholders submitted 133 protest letters. Of those, 124 letters contained valid protest issues, in accordance with 43 Code of Federal Regulations 1610.5-2. The BLM addressed these issues in the Director's Protest Resolution Reports. These Reports are available on the Internet at: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

The Assistant Secretary for Land and Minerals Management of the U.S. Department of the Interior and I have signed the attached ROD, approving the RMPAs. These plans will guide future land and resource management on BLM-administered land in this region to benefit the Greater Sage-Grouse and more than 350 other species of wildlife that depend on healthy sagebrush-steppe landscapes, while maintaining multiple uses, including grazing and recreation. This ROD applies to the BLM plans for the Great Basin Region and applies only to BLM-managed lands and subsurface mineral estate. However, the complete Strategy on BLM- and U.S. Forest Service-administered lands consists of this ROD, the BLM ROD for the Rocky Mountain Region, the BLM ROD for the Lander RMP, [2] and the two Forest Service RODs for each of these regions. Together these five RODs and the underlying plans implement the Strategy across the remaining range of the species.

Copies of the ROD and RMPAs can be obtained from the BLM's National Greater Sage-Grouse website at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends its sincere appreciation to the public; Native American tribal representatives; local, state, and other Federal agencies; and the cooperating agencies, all of whom contributed significantly to the completion of these plans. Your participation informed and improved the land use plans presented here. Together with our partners, we have taken action that ensures a bright future for wildlife, the sagebrush sea, and a thriving economy in the American West. We look forward to working with you to implement the Strategy.

Sincerely,

Neil Kornze
Director

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

[2] The BLM signed the ROD approving the Lander RMP in June 2014

SUMMARY

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse (GRSG) habitat on public lands administered by the Bureau of Land Management (BLM). It is consistent with the BLM's multiple-use and sustained yield mission and the joint objective established by Federal and State leadership through the GRSG Task Force to conserve GRSG habitat on Federal, State, and private land such that additional protections under the Endangered Species Act may be avoided.

In response to a 2010 determination by the US Fish and Wildlife Service (FWS) that the listing of the GRSG under the Endangered Species Act was "warranted, but precluded" by other priorities, the BLM, in coordination with the US Department of Agriculture Forest Service, developed a landscape-level management strategy, based on the best available science, that was targeted, multi-tiered, coordinated, and collaborative. This strategy offers the highest level of protection for GRSG in the most important habitat areas. It addresses the specific threats identified in the 2010 FWS "warranted, but precluded" decision and the FWS 2013 Conservation Objectives Team (COT) Report.

This ROD and Approved Resource Management Plan Amendments (ARMPAs) are for the Great Basin Region GRSG Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. The ARMPAs include GRSG habitat management direction that avoids and minimizes additional disturbance in GRSG habitat management areas. Moreover, they target restoration of and improvements to the most important areas of habitat. Management under the ARMPAs is directed through land use allocations that apply to GRSG habitat. These allocations accomplish the following:

- Eliminate most new surface disturbance in the most highly valued sagebrush ecosystem areas identified as Sagebrush Focal Areas
- Avoid or limit new surface disturbance in Priority Habitat Management Areas, of which Sagebrush Focal Areas are a subset
- Minimize surface disturbance in General Habitat Management Areas

In addition to protective land use allocations in habitat management areas, the ARMPAs include a suite of management actions, such as establishing disturbance limits, GRSG habitat objectives, mitigation

requirements, monitoring protocols, and adaptive management triggers and responses. They also include other conservation measures that apply throughout designated habitat management areas.

The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the species' remaining range in the Great Basin Region and to provide greater certainty that BLM resource management plan decisions in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region. The targeted resource management plan protections presented in this ROD and ARMPAs apply not only to the GRSG and its habitat but also to over 350 wildlife species associated with the sagebrush-steppe ecosystem; this is widely recognized as one of the most imperiled ecosystems in North America. In addition to protecting habitat, reversing the slow degradation of this valuable ecosystem will also benefit local economies and a variety of rangeland uses, including recreation and grazing. This also will safeguard the long-term sustainability, diversity, and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 states in which the ARMPAs apply, including the ARMPAs and ARMPs for the sub-regions in the BLM's Rocky Mountain Region ROD. In combination with additional State and Federal actions underway and in development, the strategy represents an unprecedented coordinated collaboration among Federal land management agencies and the States to manage an entire ecosystem and associated flora and fauna. The goal is to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future." [Dan Ashe, Director, FWS. Transmittal letter to COT Report. 2013]

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ATTACHMENTS

1 Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment
2 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment
3 Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment
4 Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

ACRONYMS AND ABBREVIATIONS

	Full Phrase
AML	appropriate management level
ARMPA	Approved Resource Management Plan Amendment
BLM	Bureau of Land Management
BSU	biologically significant unit
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COT	Conservation Objectives Team
EIS	environmental impact statement
ESA	Endangered Species Act
FIAT	Fire and Invasives Assessment Team (also Fire and Invasives Assessment Tool)
FLPMA	Federal Land Policy and Management Act
FR	*Federal Register*
FWS	United States Fish and Wildlife Service
GHMAs	General Habitat Management Areas
GIS	Geographic Information System
GRSG	Greater Sage-Grouse
IHMAs	Important Habitat Management Areas
IM	instruction memorandum
MOU	memorandum of understanding
MZ	management zone
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NSO	no surface occupancy
NTT	National Technical Team
OHMAs	Other Habitat Management Areas
OHV	off-highway vehicle
PACs	Priority Areas for Conservations
PGH	preliminary general habitat
PHMAs	Priority Habitat Management Areas
PPH	preliminary priority habitat
RDF	required design feature
RMP	resource management plan
RMPA	resource management plan amendment
ROD	Record of Decision
ROW	right-of-way
SFAs	sagebrush focal areas
SHPO	State Historic Preservation Officer
USGS	United States Geological Survey
WAFWA	Western Association of Fish and Wildlife Agencies
WHBs	wild horses and burros

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CHAPTER 1
INTRODUCTION

This Record of Decision (ROD) approves the United States (US) Department of the Interior, Bureau of Land Management's (BLM's) attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-Regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands.

The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA; 43 United States Code [USC], Section 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1600), and other applicable laws. The BLM prepared environmental impact statements (EISs) in compliance with the National Environmental Policy Act (NEPA; 42 USC, Sections 4321-4347), as amended, and the Council on Environmental Quality's (CEQ's) and the US Department of the Interior's regulations for implementing the procedural provisions of NEPA (40 CFR 1500.1 et seq. and 43 CFR 46.01 et seq., respectively).

Throughout the GRSG planning process, the Forest Service has been a cooperating agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed two separate RODs with associated resource management plan amendments under their planning authorities; these are available at http://www.fs.usda.gov/r4/.

This ROD, in conjunction with the ARMPs and ARMPAs approved through the Rocky Mountain ROD, constitutes BLM land use planning decisions to conserve the GRSG and its habitats throughout its remaining range that is administered by the BLM under authority of FLPMA. The efforts of the BLM, in coordination with the Forest Service on National Forest System lands within the remaining range of the species, constitute a coordinated strategy for conserving the GRSG and the sagebrush-steppe ecosystem on most Federal lands on which the species depends. These decisions complement those implemented by Federal agencies through *An Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior*

(US Department of the Interior 2015) and the Sage Grouse Initiative, as well as those implemented by State and local governments, private landowners, and other partners.

1.1 GREAT BASIN REGION PLANNING AREA

The Great Basin Region Planning Area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. (see **Figure 1-1**, Great Basin Region Greater Sage-Grouse Sub-Regions). The BLM prepared a separate EIS for each of these sub-regions, and each sub-region conducted its own planning effort, with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, and areas that share common threats to GRSG and its habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the *Western Association of Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) to delineate management zones (MZs) with similar ecological and biological issues.

The Great Basin Region Planning Area boundaries include all lands regardless of jurisdiction (see **Figure 1-2**, Great Basin Region Planning Area). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, States, local governments, and privately owned lands in the four sub-regions that make up the Great Basin.

The Planning Area also includes other BLM-administered lands that are not identified as habitat management areas for GRSG. The ARMPAs generally do not establish any additional management for these lands outside of GRSG habitat management areas, and they will continue to be managed according to the existing land use plans for these Planning Areas.

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	Nevada/NE California	Idaho/SW Montana	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,597,500**
FWS	805,900	81,400	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other Federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,300**	**48,209,900**	**31,656,200**	**194,208,900**

Source: BLM GIS 2015
Note: Acres have been rounded to the nearest hundred.

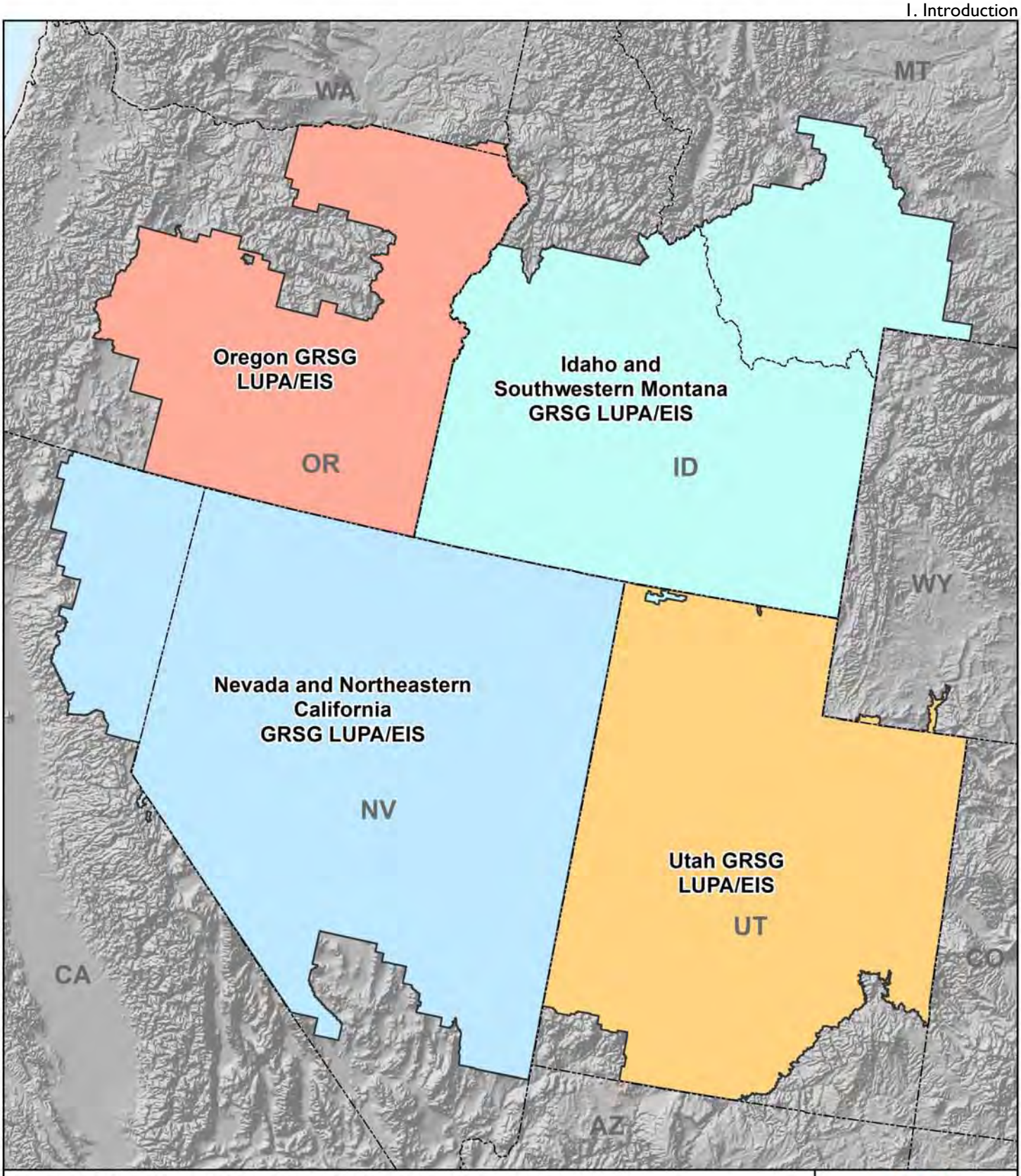

Figure 1-1: Great Basin Region Greater Sage-Grouse Sub-Regions

September 2015

0 25 50 100 Miles

N
W E
S

Map Area

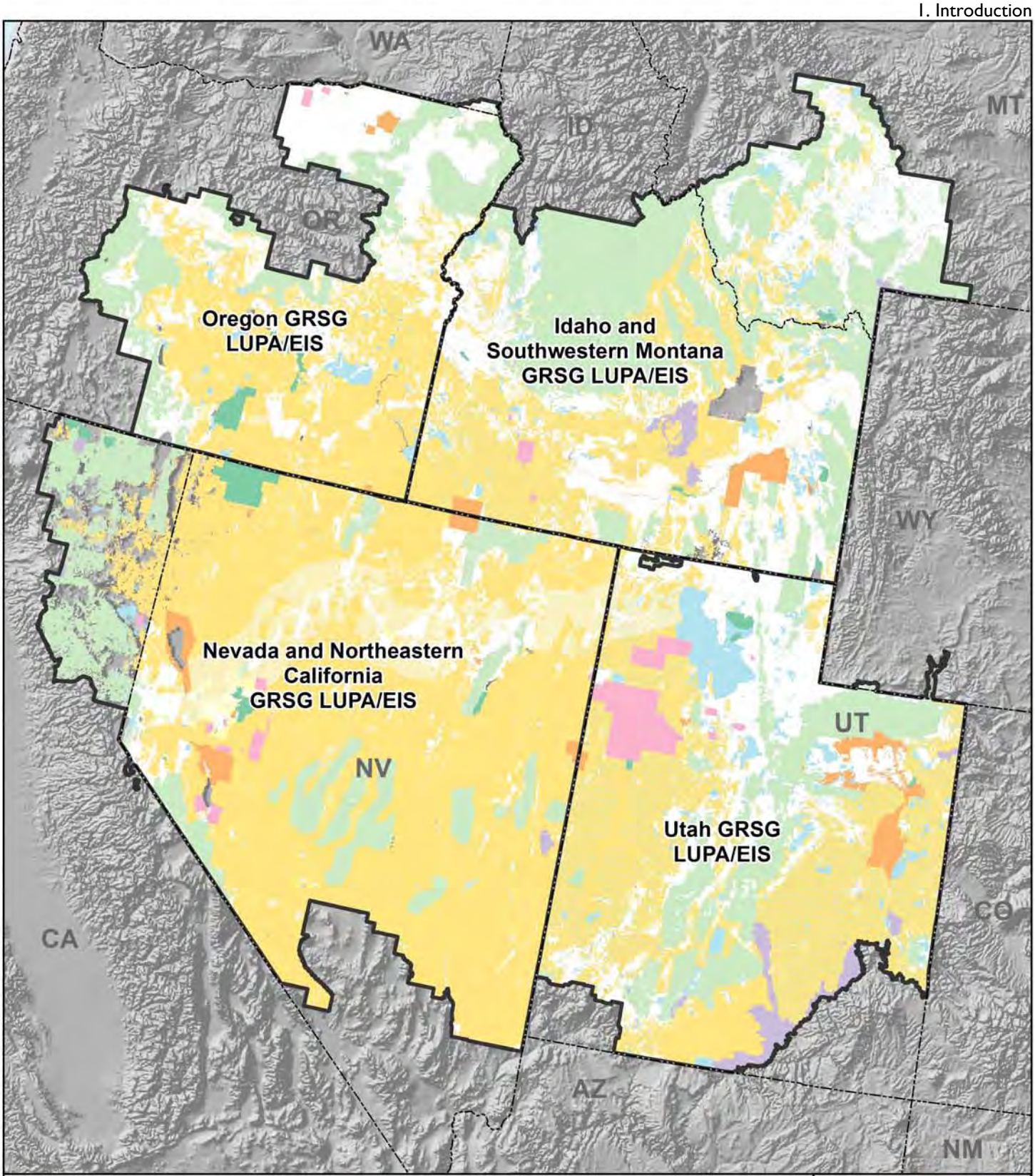

Figure 1-2: Great Basin Region Planning Area

Legend

- Bureau of Land Management (BLM)
- U.S. Forest Service (USFS)
- National Park Service (NPS)
- U.S. Fish and Wildlife Service (USFW)
- Indian Reservation (BIA)
- Bureau of Reclamation (BOR)
- Department of Defense (DOD)
- Other Federal
- State/Local
- Private/Other
- Planning Area Boundary
- State Boundary

N W E S

0 25 50 100 Miles

September 2015

Map Area

The decision area for the Great Basin Region ARMPAs is BLM-administered lands, including split-estate lands where the BLM has subsurface mineral rights in GRSG habitat management areas (see **Figure 1-3**, Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas [BLM-administered]). For a description of these habitat management areas, refer to **Section 1.5**.

The decision areas for the ARMPAs are the surface acres identified in **Table 1-1** that the BLM manages. The decision areas also include subsurface mineral estate that the BLM administers within the ARMPAs Planning Area boundaries.

1.2 EARLY GRSG CONSERVATION EFFORTS

Currently, GRSG occupy an estimated 56 percent of the historically occupied range. The BLM manages most of the GRSG habitat on Federal lands (i.e., the range of GRSG that does not include the Columbia Basin or Bi-State populations). The BLM and other wildlife conservation agencies and organizations have been trying to conserve GRSG habitat for many years; this has provided an important foundation for the GRSG conservation strategy that guides these plans.

The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* (Connelly et al. 2004) was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the US Fish and Wildlife Service (FWS), the Forest Service, the US Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy* (Stiver et al. 2006), with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The strategy outlined the critical need to develop the associations among local, State, provincial, tribal, and Federal agencies, nongovernmental organizations, and individuals to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats they depend on. The catalyst for this was widespread concern for declining populations and reduced distribution of GRSG.

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and to summarize the BLM's ongoing conservation efforts. A product of this investigation was one of the first range-wide maps of GRSG priority habitat, referred to as "key habitat." At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression in GRSG habitat on BLM-administered lands.

An additional outcome of this team's work was signing a memorandum of understanding (MOU) among the WAFWA, the BLM, FWS, and USGS (in the US Department of the Interior), and the Forest Service and Natural Resources Conservation Service (NRCS; in the US Department of Agriculture). The MOU's

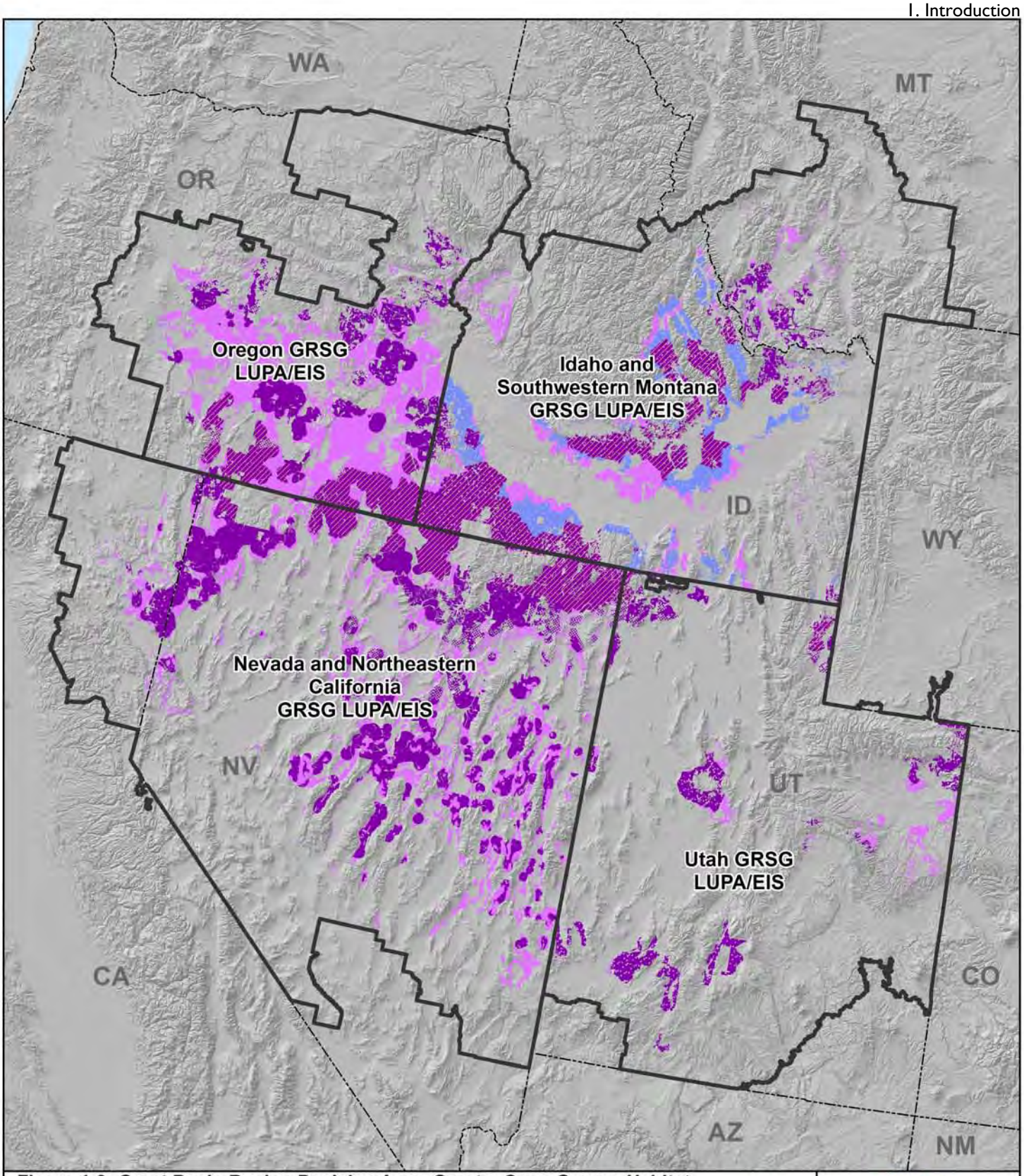

Figure 1-3: Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas (BLM Administered Lands*)

Legend

- Sagebrush Focal Areas (SFAs)
- Priority Habitat Management Areas (PHMAs)
- General Habitat Management Areas (GHMAs)
- Additional Habitat Management Categorizations
- Planning Area Boundary
- State Boundary

*For Subsurface information see the ARMPA

Miles
0 25 50 100

September 2015

Map Area

purpose was to provide for cooperation among the participating State and Federal land managers and wildlife management and science agencies to conserve and manage GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the western US.

In 2010, the BLM commissioned the mapping and modeling of breeding GRSG densities across the West. It convened a conference with State wildlife agencies to coordinate the lek survey data needed for this project. Through an agreement with the FWS, this modeling project mapped known active leks across the West, which served as a starting point for all States to identify priority habitat for the species.

In March 2010, the FWS published its *12-Month Finding for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered* (75 FR 13910, March 23, 2010). In that finding, the FWS concluded that GRSG was "warranted, but precluded" under the Endangered Species Act (ESA). This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

As part of its 2010 finding, the FWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. The FWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 FR 13910, March 23, 2010).

In addition, the FWS found that existing local, State, and Federal regulatory mechanisms were not sufficient to address threats to their habitat. The FWS identified the BLM's resource management plans (RMPs) as the primary regulatory mechanisms. The BLM manages approximately 67 million acres of the remaining habitat for the species (see **Figure 1-3**).

1.3 THREATS TO GRSG IN THE GREAT BASIN REGION

In its 2010 finding, the FWS identified a number of specific threats to GRSG in the Great Basin Region. The primary threats are the widespread present and potential impacts of wildfire, the loss of native habitat to invasive species, and conifer encroachment. Other threats, some of which are more localized, are habitat fragmentation due to human disturbances associated with energy development, mining, infrastructure, recreation, urbanization, and sagebrush elimination, as well as impacts on habitat associated with free-roaming equids (horses and burros) and improper livestock grazing.

In 2011, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The NTT's charge was to identify science-based conservation measures for the GRSG to promote sustainable populations. These measures would be focused on the threats identified in the FWS listing determination (75 *Federal Register* [FR] 13910) in each of the regional WAFWA Sage-Grouse MZs (**Figure 1-4**). The NTT produced *A Report on National Greater Sage-grouse Conservation Measures* (NTT Report; NTT 2011) in which it proposed conservation measures based on habitat and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed for each program area. It also emphasized the importance of standardizing monitoring across the WAFWA GRSG MZs.

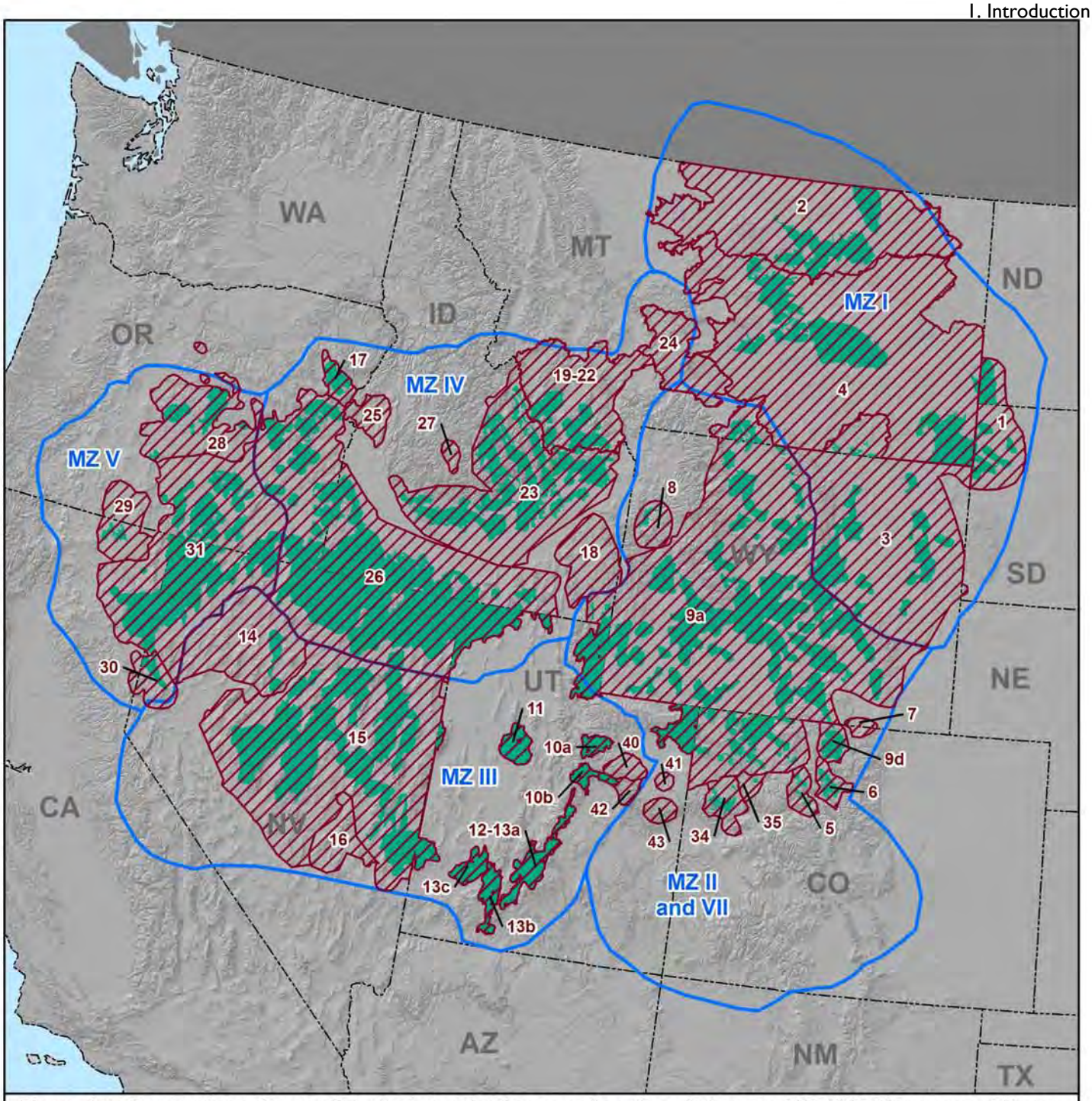

Figure 1-4: Greater Sage-Grouse Priority Areas for Conservation, Populations and WAFWA Management Zones

Legend

- WAFWA Sage-grouse Management Zones
- Greater Sage-grouse Priority Areas for Conservation (PAC)
- WAFWA Revised Sage-Grouse Populations 2015

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September 2015

1	Dakotas	10a	Strawberry Valley	18	E-Central ID	30	Warm Springs Valley NV
2	Northern Montana	10b	Carbon	19-22	SW Montana	31	Western Great Basin
3	Powder River Basin	11	Sheeprock Mountains	23	Snake, Salmon, & Beaverhead	34	Parachute Piceance Roan
4	Yellowstone Watershed	12-13a	Parker Mountain-Emery	24	Belt Mountains MT	35	Meeker - White River
5	Eagle/S Routt CO	13b	Panguitch	25	Weiser ID	40	Anthro Mountain
6	Middle Park CO	13c	Bald Hills	26	Northern Great Basin	41	S White River
7	Laramie WY	14	NW-Interior NV	27	Sawtooth ID	42	W Tavaputs
8	Jackson Hole WY	15	Southern Great Basin	28	Central OR	43	E Tavaputs Plateau
9a	Wyoming Basin	16	Quinn Canyon Range NV	29	Klamath OR/CA		
9d	North Park	17	Baker OR				

In 2012, the FWS, with the support of the Western Governors Association Sage-Grouse Task Force, convened the Conservation Objectives Team (COT), composed of State and Federal representatives. One of the team's tasks was to produce a peer-reviewed report identifying the principal threats to GRSG survival. Another task was to determine the degree to which these threats need to be reduced or ameliorated. The goal was to conserve GRSG so that they would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future.

The COT Report, released in March 2013, also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs . . . is the essential foundation for sage-grouse conservation" (FWS 2013). Finally, the COT Report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2**). The BLM also identified and explained additional threats in the Final EISs that were published with proposed plans on May 29, 2015. **Figure 1-4** identifies the PACs, GRSG populations (and their names), and WAFWA MZs across the West.

A summary of the nature and extent of threats identified in the COT Report for each remaining identified population of GRSG in the Great Basin Region—as highlighted in the 2013 COT Report—is provided in **Table 1-2**.

1.4 National Greater Sage Grouse Conservation Strategy

The BLM recognized the need to incorporate explicit objectives and concrete conservation measures into RMPs[1] to conserve GRSG habitat and provide robust regulatory mechanisms. This was based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a decision on whether to propose this species for listing, In August 2011, the BLM came up with a plan to revise and amend existing RMPs throughout the range of the GRSG. These revised and amended RMPs would incorporate management actions intended to conserve, enhance, and restore GRSG habitat. Separate planning began that would address the conservation needs of the Bi-State GRSG populations in California and Nevada and the Washington State distinct population segment.

The BLM found that additional management direction and specific conservation measures on Federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. This finding was in light of the 2010 "warranted" determination by the FWS, the recommendations of the NTT, and specific threats summarized in the COT Report. The BLM proposed to incorporate the management direction and conservation measures into its RMPs. The goal was to conserve, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA could be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and a Supplemental EIS to incorporate GRSG conservation measures into land use plans across the species' range.

[1] BLM land use plans prepared under the present regulations (see 43 CFR 1601.0-5(n)) are generally known as resource management plans. Some BLM land use plans, including ones predating the present regulations, are referred to by different names, including management framework plans. For purposes of this ROD, the BLM land use plan and resource management plan interchangeably refer to all BLM-administered land use plans.

Table 1-2
Threats to GRSG in the Great Basin Region as identified by the COT

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (Utah)	9b				Y	Y	Y	Y		Y			Y	Y	Utah
Uintah (Utah)	9c				Y	Y	Y	L	Y	Y			Y	Y	Utah
Strawberry Valley (Utah)	10a	Y			Y	Y	Y	Y		Y			Y		Utah
Carbon (Utah)	10b	Y			Y		Y	Y	Y	Y			Y		Utah
Sheeprock Mountains (Utah)	11	Y			Y	L	L	Y	Y	L		Y	L		Utah
Emery (Utah)	12	Y			Y	Y	Y	Y	Y	Y			Y		Utah
Greater Parker Mountain (Utah)	13a				Y	Y	Y			Y			Y		Utah
Panguitch (Utah)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	Utah
Bald Hills (Utah)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Utah
Ibapah (Utah)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		Utah
Hamlin Valley (Utah)	15b	Y			Y	Y	Y			Y		Y	Y		Utah
Box Elder (Utah)	26b			Y	Y	Y	Y	L	Y	Y			Y		Utah
N. Great Basin (Oregon, Idaho, Nevada)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	Idaho/SW Montana, Oregon, Nevada/ California
Baker (Oregon)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	Oregon
Central Oregon (Oregon)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	Oregon
W. Great Basin (Oregon, California, Nevada)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		Oregon, Nevada/ California
Klamath (California)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	Nevada/ California
Northwest Interior (Nevada)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		Nevada/ California
Southern Great Basin (Nevada)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		Nevada/ California
Quinn Canyon Range (Nevada)	16	Y			Y	Y	Y			Y	Y	Y	Y		Nevada/ California

Table 1-2
Threats to GRSG in the Great Basin Region as identified by the COT

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Warm Springs Valley (Nevada)	30	**Y**		**Y**	**Y**	**Y**	**Y**	**Y**		**Y**	**Y**	**Y**	**Y**	**Y**	Nevada/ California
East Central (Idaho)	18	**Y**	L	**Y**	L	**Y**	L	**Y**		**Y**	**Y**		L		Idaho/SW Montana
Snake-Salmon-Beaverhead (Idaho)	23		L	L	**Y**	L	**Y**	**Y**		L	**Y**	**Y**	L		Idaho/SW Montana
Weiser (Idaho)	25	**Y**	L	L	L	L	**Y**	**Y**		L	**Y**		L	L	Idaho/SW Montana
Sawtooth (Idaho)	27	**Y**	L		L	U	L			**Y**	**Y**		L		Idaho/SW Montana
Southwest Montana (Montana)	19-22		L		L	L	**Y**	L	L	L	**Y**		L	L	Idaho/SW Montana

Source: FWS 2013
Threats are characterized as Y = threat is present and widespread, L = threat present but localized, and U = unknown.

The planning associated with the National GRSG Conservation Strategy has been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by the FWS in its 2010 listing decision, along with the WAFWA MZs framework (Stiver et al. 2006). Due to differences in the ecological characteristics of sagebrush across the range of the GRSG, WAFWA delineated MZs I through VII, based primarily on floristic provinces. Vegetation found in an MZ is similar, and GRSG and their habitats in these areas are likely to respond similarly to environmental factors and management actions.

The Great Basin Region is composed of plan amendments in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. This region falls in WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin). The Rocky Mountain Region is composed of BLM planning in Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. (This includes plan revisions and plan amendments.) That region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin), and a portion of VII (Colorado Plateau).

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. The BLM initiated 15 sub-regional planning efforts and associated EISs to analyze the alternatives developed for

each of the Draft and Final RMPAs and ARMPs across the range of the species.[2] These sub-regions are based on the identified threats to GRSG and the WAFWA MZs from the FWS 2010 listing decision, with additional detail on threats to individual populations and sub-regions from the COT Report. In the Rocky Mountain Region, some sub-regions correspond to BLM field and district office boundaries, specifically for planning that incorporates GRSG conservation measures through plan revisions that were that began before the start of the National GRSG Conservation Strategy in December 2011. **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries across the western US.

The BLM used the best available science, including additional review and analysis from the USGS on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered State GRSG conservation strategies where they existed, as well as State recommendations for measures to conserve GRSG on BLM-administered lands, where relevant, in its planning. These are reflected in the approved plans to the extent compatible with GRSG objectives to conserve, enhance, and restore GRSG habitat to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the ARMPAs Address the Identified Threats to the Conservation of GRSG

The 2006 WAFWA *Greater Sage-Grouse Comprehensive Conservation Strategy* stated goal for GRSG management was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations" (Stiver et al. 2006). The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed" (NTT 2011).

In establishing the COT, with the backing of the Sage Grouse Task Force, the FWS Director affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report—reversing negative population trends and achieving a neutral or positive population trend—and emphasized the following:

> The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (Stiver et al. 2006)

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, it stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (FWS 2013). To achieve this, the COT Report recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal" (FWS 2013). The

[2] The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP has been split between the two field offices that make up the Bighorn Basin Planning Area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.

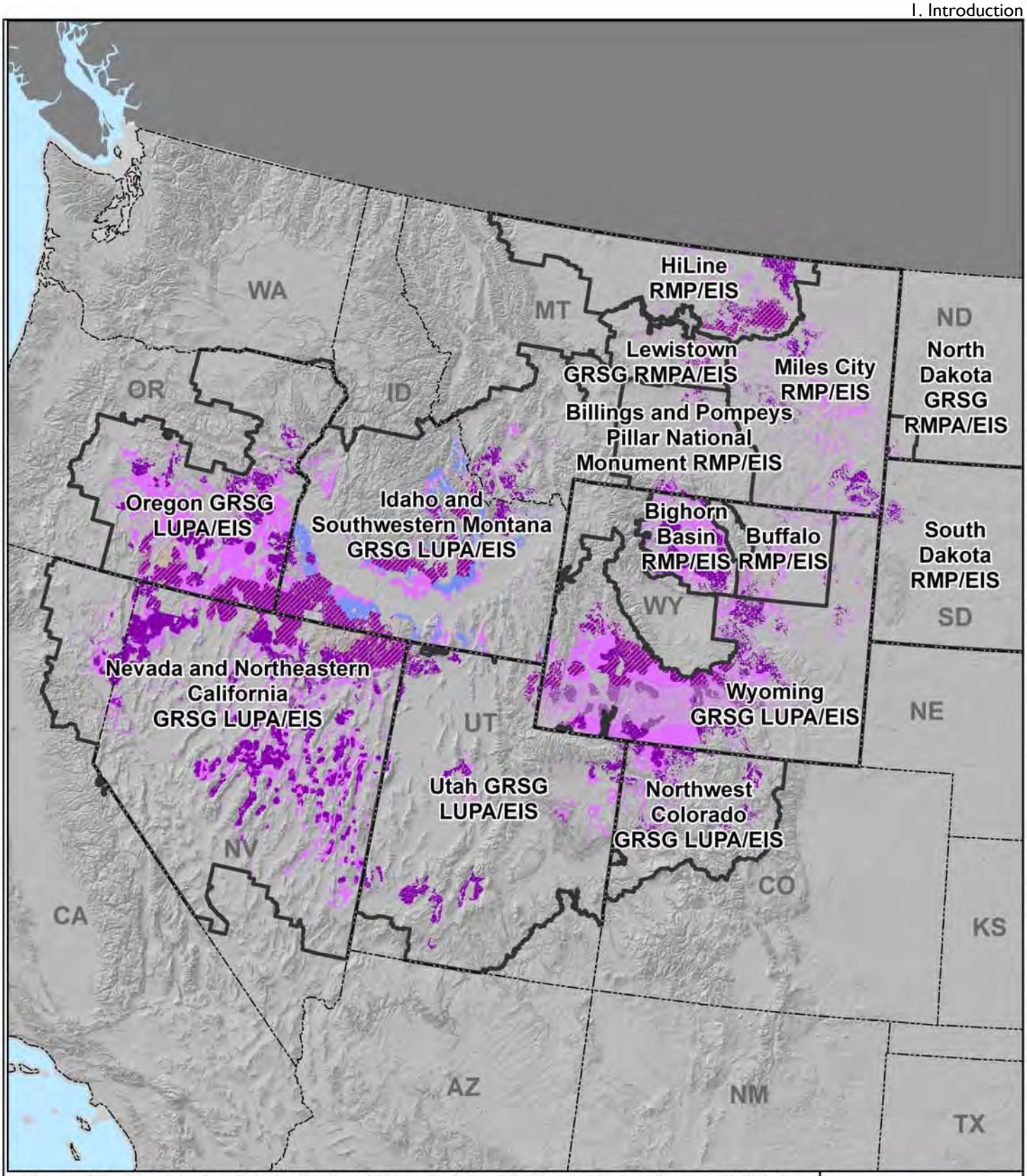

Figure 1-5: Regional and Sub-Regional Boundaries with Greater Sage-Grouse Habitat Management Areas (BLM Administered Lands)

Legend

- Sagebrush Focal Areas (SFAs)
- Priority Habitat Management Areas (PHMAs)
- General Habitat Management Areas (GHMAs)
- Additional Habitat Management Categorizations
- Planning Area Boundary
- State Boundary

*For Subsurface information see the ARMPA

No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

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Map Area

COT Report emphasized an "avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy" (FWS 2013).

The plans were developed to address specific, identified threats to the species in order to conserve GRSG, such that the need to list it under ESA may be avoided. Across ten western states, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 67 million acres of the GRSG's remaining habitat (see **Figure 1-5**). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the FWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, priorities and approaches in each.

In order to protect the most important GRSG habitat areas, planning began with mapping areas of important habitat across the range of the GRSG. In collaboration with State fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). In Utah, all occupied GRSG habitat was identified as PPH. The Draft RMPAs/EISs used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMAs) and General Habitat Management Areas (GHMAs) in the Proposed RMPAs/Final EISs to identify the management decisions that apply to those areas (except for Nevada and Utah). The designated GRSG habitat management areas on BLM-administered lands in the decision area are as follows:

- PHMAs, which largely coincide with PACs identified in the COT Report[3]
- GHMAs
- Other Habitat Management Areas (OHMAs; applicable only to the Nevada and Northeastern California)
- Important Habitat Management Areas (IHMAs, applicable only to Idaho)

Table 1-3 identifies surface acres of PHMAs, GHMAs, OHMAs, and IHMAs in the decision area for the Great Basin Region.

Habitat maps were based initially on State key habitat maps, which identified areas necessary for GRSG conservation. These areas were derived from breeding bird density maps and lek counts, nesting areas, sightings, and habitat distribution data. These data included occupied suitable seasonal habitats, nesting and brood-rearing areas, and connectivity areas or corridors. The BLM used this information to develop PPH and PGH maps and, subsequently, to identify PHMAs and GHMAs, respectively.

The COT Report also used State key habitat maps as a basis for identifying PACs. The COT Report notes that there is substantial overlap between PACs and BLM PPH areas, with the exception of areas in Nevada and Utah (FWS 2013, p. 13). **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries, along with BLM-administered PHMAs and GHMAs across the western US.

[3] Except for PACs in Nevada and Utah, as specified on page 13 of the COT Report; see **Figure 1-4**.

Table 1-3
Surface Acres of PHMAs, GHMAs, OHMAs, and IHMAs in the Decision Area for the Great Basin Region

BLM-Administered Surface Acres	PHMAs	GHMAs	OHMAs	IHMAs
Idaho and Southwestern Montana	4,627,200	2,179,700	0	2,737,600
Utah*	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern California	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015
*41,200 acres of National Forest System lands in the Anthro Mountain area of Utah would be managed as neither PHMAs nor GHMAs. These areas would be identified as "Anthro Mountain." In the Utah ARMPA, these areas are considered split-estate, where the BLM administers the mineral estate.

The BLM-administered surface and Federal mineral estate of each designation (in acres) in the Decision Area for the Great Basin Region are shown in **Table 1-3**; PHMAs, GHMAs, OHMAs, and IHMAs are defined below.

- **PHMA**—BLM-administered lands identified as having the highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the PPH boundaries. PHMAs largely coincide with areas identified as PACs in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report).
- **GHMA**—BLM-administered GRSG habitat that is occupied seasonally or year-round and is outside of PHMAs. It is where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the PGH boundaries.
- **OHMA**—BLM-administered land in Nevada and Northeastern California, identified as unmapped habitat in the Proposed RMP/Final EIS, that is within the Planning Area and contains seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA**—BLM-administered land in Idaho that provides a management buffer for and that connect patches of PHMAs. IHMAs encompass areas of generally moderate to high habitat value habitat or populations but that are not as important as PHMAs. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure 1-3**). Across the Great Basin Region, there are 8,385,280 acres of BLM-administered SFAs. They correspond to the areas identified by the FWS as GRSG "strongholds" and

represent "a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection" (FWS 2014a).

SFAs are areas of highest habitat value for GRSG and are managed to avoid new surface disturbance for the following reasons:

- They contain high-quality sagebrush habitat and the highest breeding bird densities
- They have been identified as essential to conservation and persistence of the species
- They represent a preponderance of current Federal ownership
- In some cases, they are next to protected areas that serve to anchor the conservation importance of the landscape

SFA management is consistent with the recommendations provided by the FWS that these are the areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species" (FWS 2014a).

Remaining habitats in GHMAs and IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important habitats outside of PACs be conserved to the extent possible" (FWS 2013). Thus, land allocations in GHMAs and IHMAs provide for more flexibility for land use activities, while minimizing impacts on existing GRSG leks. This tiered habitat management area framework, associated with the land use plan allocation decisions in the ARMPs and ARMPAs (explained more fully in **Section 1.6** of this ROD) provides a high degree of certainty that the integrity of PHMAs can be maintained through management decisions. This would be done to avoid or minimize additional surface disturbance. At the same time, it would recognize the potential importance of areas outside of PHMAs for maintaining connectivity between highly important habitats and their potential for addressing seasonal habitat needs, such as winter habitat areas not fully incorporated in PHMAs.[4]

Major components of the attached ARMPAs that address the specific threats to GRSG and its habitat, as identified in the FWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report), are listed and summarized in **Table 1-4**.

[4] Recently completed analysis by Crist et al. (2015) highlights the importance of certain key "priority areas" across the species range as well as the importance of connectivity between priority areas as a component of successful GRSG conservation. Generally, these priority areas coincide with PHMAs across the landscape. It is important to note that BLM-administered SFAs also coincide with a number of the areas identified by Crist et al. (2015) as important for maintaining connectivity between the network of conservation areas that are of greatest importance to the integrity of the conservation strategy. To maintain connectivity between PHMAs across the remaining range, requirements were incorporated into the majority of the ARMPAs for lek buffers, consistent with guidance provided by the USGS; mitigation to a net conservation gain; and required design features for projects in GHMAs, as described later in this document. These measures are specifically intended to benefit GRSG in GHMAs by maintaining connectivity and added habitat protection consistent with the Crist et al. (2015) findings.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining, infrastructure, and energy development	• PHMAs—Implement a human disturbance cap of 3 percent within the biologically significant unit (BSU) and proposed project analysis areas in PHMAs (slight variations to this management component in Nevada only). • PHMAs and IHMAs—Apply a disturbance density cap of 1 energy and mining facility per 640 acres (except in Nevada). • IHMAs—Implement the 3 percent disturbance cap. Apply Anthropogenic Disturbance Development Criteria (applicable to Idaho only). • Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply required design features (RDFs) when authorizing actions in GRSG habitat. • Minimize the effects of infrastructure projects, including siting, using the best available science, updated as monitoring information on current infrastructure projects becomes available. • Consider the potential for the development of valid existing rights when authorizing new projects in PHMAs. • When authorizing third-party actions that result in habitat loss and degradation, require and ensure mitigation that provides a net conservation gain to the species.
Energy development—fluid minerals, including geothermal resources	• PHMAs—Open to fluid mineral leasing subject to a no surface occupancy (NSO) stipulation without waiver or modification and with limited exceptions. In SFAs, an NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if certain criteria are met. • IHMAs—Open to fluid mineral leasing, subject to NSO stipulation without waiver or modification and with limited exception (applicable to Idaho only). • GHMAs—Open to fluid mineral leasing, subject to controlled surface use and timing limitation lease stipulations (except in Utah, where some portions of GHMAs are open with standard lease stipulations). • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
Energy development—wind energy	• PHMAs—Exclusion area (not available for wind energy development under any conditions, except in the southeastern counties of Oregon, where portions of PHMAs are avoidance areas).

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	• IHMAs—Avoidance area (may be available for wind energy development with special stipulations; applicable to Idaho only). • GHMAs—Avoidance area (may be available for wind energy development with special stipulations, except in Utah and Idaho, where these areas are open to wind energy development).
Energy development—solar energy	• PHMAs—Exclusion area (not available for solar energy development under any conditions, except in southeastern counties in Oregon, where portions of PHMAs are avoidance areas). • IHMAs—Avoidance area (may be available for solar energy development with special stipulations; applicable to Idaho only). • GHMAs—Exclusion area (not available for solar energy development under any conditions, except in Oregon and Montana, where these areas are avoidance areas for solar energy development, and Idaho, where these areas are open to solar energy development).
Infrastructure—major rights-of-way (ROWs)	• PHMAs—Avoidance area (may be available for major ROWs with special stipulations). • IHMAs—Avoidance area (may be available for major ROWs with special stipulations; applicable to Idaho only). • GHMAs—Avoidance area (may be available for major ROWs with special stipulations, except in Utah, where GHMAs are open).
Infrastructure—minor ROWs	• PHMAs—Avoidance area (may be available for minor ROWs with special stipulations). • IHMAs—Avoidance area (may be available for minor ROWs with special stipulations; applicable to Idaho only).
Mining—locatable minerals	• SFAs—Recommend withdrawal from the Mining Law of 1872.
Mining—nonenergy leasable minerals	• PHMAs—Closed area (not available for nonenergy leasable minerals; however, expansion of existing operations could be considered if the disturbance is within the cap and subject to compensatory mitigation).
Mining—salable minerals	• PHMAs—Closed area (not available for salable minerals), with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met).
Improper livestock grazing	• Prioritize the review and processing of grazing permits and leases in SFAs, followed by PHMAs. • Ensure that the NEPA analysis for renewals and modifications of grazing permits and leases includes specific management thresholds, based on the GRSG habitat objectives table, land health standards, and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs, followed by PHMAs, to ensure compliance with the terms and conditions of grazing permits.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
Free-roaming equid (horses and burros) management	• Prioritize gathers in SFAs, followed by other PHMAs. • Manage herd management areas in GRSG habitat within established appropriate management level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers, and population growth suppression techniques, monitoring, and review and adjust AMLs and preparation of herd management area plans in GRSG habitat.
Range management structures	• Allow range improvements that do not impact GRSG or that provide a conservation benefit to GRSG, such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	• PHMAs and IHMAs—Do not construct new recreation facilities unless required for health and safety purposes or if the construction will result in a net conservation gain to the species. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. • PHMAs and GHMAs—Off-highway vehicle (OHV) use limited to existing routes (routes to be designated through future travel management planning). The Utah ARMPA does retain two areas as open to OHV use in PHMAs.
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. • Restrict the use of prescribed fire for fuel treatments. • Prioritize post-fire treatments in SFAs, other PHMAs, IHMAs, and GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMAs, IHMAs, and GHMAs that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMAs—Maintain all lands capable of producing sagebrush (but no less than 70 percent), with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. • Ensure that all BLM use authorizations contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat, in a manner that considers tribal cultural values.
Agricultural conversion and exurban development	• Retain GRSG habitat in Federal management, unless disposal (including exchanges) of the lands would provide a net conservation gain to GRSG or disposal (including exchanges) of the lands would have no direct or indirect adverse impact on conservation of GRSG.

1.6 KEY COMPONENTS OF THE BLM GRSG CONSERVATION STRATEGY

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG habitat by eliminating or minimizing threats to their habitat identified in the 2010 listing decision and highlighted in the Background and Purpose Section of the COT Report (FWS 2013). Consequently, consistent with guidance contained in the COT and NTT Reports, four essential components of the GRSG conservation strategy were identified, as follows:

- Avoiding or minimizing new and additional surface disturbances
- Improving habitat conditions
- Reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin
- Monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management, as needed

The land allocations and management actions included in the ARMPAs incorporate these components and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Land Use Allocations and Management Actions in SFAs, PHMAs, and GHMAs

The four Great Basin ARMPAs build on the designated habitat management areas described in **Section 1.5** by applying management actions to these areas to avoid and minimize disturbance associated with proposed projects, as described below and shown in **Table 1-4**. Land use plan allocations specify locations within the Planning Area that are available or unavailable for certain uses and also prioritize conservation and restoration management actions applied to habitat management areas.

The COT Report states that "maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (FWS 2013, p. 36). Areas of PHMAs largely coincide with areas identified as PACs in the COT Report. While surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat as rangeland fire and invasive species, the BLM ARMPAs include land allocations and management actions that avoid and minimize surface disturbance in PHMAs for identified threats (e.g., energy, mining, infrastructure, improper grazing, free-roaming horses and burros, recreation and urbanization). These land allocations and management actions are necessary because the location and extent of habitat loss to fire is difficult to predict, and much of the habitat, due to low precipitation in the Great Basin, is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

SFAs—The most restrictive allocations include requirements to avoid and minimize additional disturbance in SFAs, which are a subset of lands within PHMAs, with the highest habitat value for GRSG. Surface disturbance from fluid mineral development is avoided by imposing NSOs, without waiver, modification, or exception. In addition, these areas will be recommended for withdrawal from mineral entry under the Mining Law of 1872, subject to valid existing rights, to address the risk of disturbance due to mining.

PHMAs—In PHMAs outside of SFAs new fluid mineral leasing would be subject to NSOs, with no waivers or modifications. Exceptions would be granted only under two circumstances: if the proposed

action would not have direct, indirect, or cumulative effects on GRSG or its habitat or if the action is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and it would provide a clear conservation gain to GRSG. This is fully consistent with guidance in the NTT Report, which states, "Do not allow new surface occupancy on federal lands within priority habitats" (NTT 2011, p. 23).

Similarly, PHMAs are closed to nonenergy and salable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free-use permits and the expansion of active pits for salable minerals and expansion of nonenergy leasable development under certain conditions. This exception is included because of the importance of these materials to local communities and their limited disturbance, which would be offset by the mitigation requirements.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses the potential disturbance threat from coal development. In Utah, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is deemed unsuitable for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for the purposes of suitability criteria set forth at 43 CFR 3461.5(o)(1).

All PHMAs will be managed as exclusion areas for commercial renewable energy development (solar and wind), with the exception of areas outside of SFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas, with priority placed on locating commercial-scale wind and solar energy development in nonhabitat areas first, that is, outside of PHMAs and GHMAs, before development in PHMAs is approved. New ROWs and development for transmission lines, pipelines, and related infrastructure would be avoided by restricting land use authorizations. In avoidance areas, exceptions would be granted only if it can be demonstrated that adverse impacts would be avoided or that residual impacts would be mitigated.

High voltage transmission lines will generally be avoided in PHMAs. A limited number of priority transmission lines, such as Transwest Express and portions that are collocated with Transwest Express, including Gateway South, Gateway West, and Boardman to Hemingway, have been proposed to expand access to renewable sources of energy and to improve the reliability of the western grid. These projects have been underway for several years and are currently being analyzed under NEPA. As part of the decision-making process for those projects, conservation measures for GRSG are being analyzed in the project-specific NEPA processes, which should achieve a net conservation benefit for GRSG.

New recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat or unless required for health and safety purposes.

In PHMAs, travel is limited to existing routes until new routes are designated through the implementation travel management planning process. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning process.

A 3 percent human disturbance cap in PHMAs has been established in accordance with the recommendations contained in the NTT Report and peer-reviewed literature from the Great Basin

(Knick et al. 2013). Disturbance will be calculated at two scales: first at the BSU scale determined in coordination with the state and second for the proposed project area. BSUs are geographic units of PHMAs that contain relevant and important GRSG habitat. In Oregon, for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of human disturbance caps and in some ARMPAs, the adaptive management habitat triggers.

If the 3 percent human disturbance cap is exceeded on lands (regardless of landownership) in PHMAs in any given BSU, no further discrete human disturbances (subject to valid existing rights) will be permitted on BLM-managed lands in that BSU until restoration of disturbed lands brings the BSU below the cap. If the 3 percent human disturbance cap is exceeded on all lands (regardless of landownership) within a proposed project analysis area in a PHMAs, then the BLM would permit no further human disturbance until disturbance in the area has been reduced to below the cap.

An exception to the 3 percent disturbance cap is provided in designated utility corridors for achieving a net conservation gain to the species. This exception is limited to projects that fulfill the use that the corridors were designated for (e.g., transmission lines and pipelines) and within the designated width of a corridor. This exception will concentrate future ROW surface disturbance in areas of existing disturbance and will avoid new development of infrastructure corridors in PHMAs, which is consistent with guidance in the COT Report. In addition, the Oregon and Nevada/Northeast California ARMPAs include variations to the disturbance cap. Oregon does not allow more than 1 percent new human disturbance per decade, not to exceed 3 percent disturbance at any time. In Nevada, the 3 percent disturbance cap can be exceeded at the BSU or project level provided that the outcome results in a net conservation benefit to the species with the concurrence of the BLM, the Nevada Department of Wildlife, and the FWS in each exception.

In the Dillon Field Office in southwest Montana, the BLM will limit disturbance to 3 percent until the State institutes its Sage Grouse Plan's disturbance calculation method, at which time disturbance will be permitted up to a 5 percent cap. As with the Wyoming Core Area Strategy, this is to recognize the importance of the all-lands/all-disturbances strategy that Montana will institute for GRSG conservation (Montana Office of the Governor Executive Order No. 10-2014; State of Montana 2014). Appendix E of each of the attached ARMPAs includes additional information about the method for calculating human disturbance at the BSU and project scales.

The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage collocating structures to reduce habitat fragmentation in PHMAs. The limit is an average of one facility per 640 acres in PHMAs in a project authorization area. This is consistent with guidance contained in the NTT Report. If the disturbance density in the PHMAs in a proposed project area is, on average, less than 1 facility per 640 acres, the project can proceed through the NEPA analysis, incorporating mitigation measures into an alternative. If the disturbance density in the proposed project area is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or redesigned so facilities are collocated into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The 1 facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

GHMAs—While restrictions on future development in PHMAs are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMAs are intended to allow disturbance

but minimize any adverse effects of disturbance with restrictions on development activities to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for unavoidable impacts will be required for proposed projects in GHMAs, as will the application of the RDFs discussed below.

Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. (See **Table 1-4** for more details on GHMAs management decisions.) Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts on GRSG or its habitat and then compensating for unavoidable impacts on GRSG or its habitat, to a net conservation gain standard for the species. This is consistent with guidance in the COT Report which states: "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur… If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal, state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs" (FWS 2013).

These conservation measures are intended to ensure that areas of GHMAs are protected. GHMAs provide connectivity between PHMAs; may be important seasonal habitats not identified or incorporated into previously mapped areas of PHMAs; or can provide important habitat to replace areas of important habitat lost to fire or human disturbance. This strategy is particularly important given the recent USGS report by Crist et al. (2015), *Range-Wide Network of Priority Aras for Grater Sage-Grouse—A Design for Conserving Connected Distributions or Isolating Individual Zoos*?

For management decisions and allocations associated with IHMAs in Idaho, see **Table 1-4**.

Habitat Protection and Surface Disturbance Measures in PHMAs and GHMAs

The measures below are related to habitat protection and surface disturbance. They will be applied in both PHMAs and GHMAs.

Prioritization Objective—In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs to further limit future surface disturbance and to encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and, as such, protect important habitat and reduce the time and cost associated with oil and gas leasing development. It would do this by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation.

Grazing—While improper livestock grazing can be a threat to GRSG habitat, grazing is not considered a discrete surface-disturbing activity for the purposes of monitoring and calculating disturbance. The plans address grazing management to conserve GRSG and its habitat and are further described in **Section 1.6.2**.

Lek Buffers—In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer distances, as identified in the USGS report, *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al. 2014). Lek buffer distances will be applied at the project-specific level as required conservation measures to address

the impacts on leks identified in the NEPA analysis. The lek buffer distances vary by type of disturbance, such as road, energy development, and infrastructure; justifiable departures may be appropriate, as fully described in Appendix B of the ARMPAs. In both PHMAs and GHMAs, impacts should be avoided first by locating the action outside of the applicable lek buffer-distances, as defined in the ARMPAs. In PHMAs, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed. In GHMAs, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT Report recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions" (FWS 2013).

Required Design Features—RDFs are used for certain activities in all GRSG habitat, including oil and gas development, infrastructure, and other surface-disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts on GRSG and its habitat from threats, such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators. The applicability and overall effectiveness of each RDF, however, cannot be fully assessed until the BLM knows the project level, project location, and design. Because of site-specific circumstances, some RDFs may not apply to some projects, such as when a resource is not present on a given site, or may require slight variations, such as a larger or smaller protective area. In Nevada and Northeastern California, RDFs are also applied to identified OHMAs.

In summary, all forms of new development in PHMAs and GHMAs would either be closed, excluded, avoided, or developed only if the resultant effect were a net conservation gain to the GRSG or its habitat, ensuring that existing habitat would be protected or restored through compensatory mitigation.

1.6.2 Improving Habitat Condition

In addition to prescribing land use allocations and managing resource uses to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

Habitat Management—The ARMPAs contain an overall habitat management objective that "[i]n all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions." To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into land management programs, including wild horses and burros (WHBs), grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives by treating invasive annual grasses and removing encroaching conifers in SFAs, PHMAs, and GHMAs and by restoring degraded landscapes, including those impacted by fires (see **Section 1.6.3**.)

Livestock Grazing—The BLM recognizes that improper grazing can be a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report (FWS 2013) recommends conducting "grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy

sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g., shrub cover, nesting cover)." To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs require incorporating terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritizing reviewing and processing authorizations and field checks of grazing permits, and taking numerous actions to avoid and minimize the impacts of range management structures (see **Table 1-4**).

The BLM will prioritize reviewing and processing grazing authorizations, as well as field checking grazing permits in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMAs, focusing first on riparian and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area; rather it reflects a decision to prioritize resources to ensure that permittees and the BLM manage grazing properly in those areas most important to GRSG. If the BLM were to find that relevant habitat objectives are not being met due to improper grazing, it would work with the permittee to ensure progress toward habitat objectives.

Wild Horses and Burros—To address the localized threat due to negative influences of grazing by free-roaming WHBs, the BLM will focus on maintaining WHB herd management areas in GRSG habitat in established AML ranges. This is to achieve and maintain GRSG habitat objectives. It includes completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending herd management area plans to incorporate GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFAs, then the remainder of PHMAs, and then GHMAs. In SFAs and PHMAs, the BLM will assess and adjust AMLs through the NEPA process within herd management areas when WHBs are identified as a significant factor in not meeting land health standards, even if current AML is not being exceeded.

Mitigation and Net Conservation Benefit—During the implementation of the ARMPAs, and subject to valid existing rights and consistent with applicable law, in authorizing third-party actions that result in GRSG habitat loss and degradation, the BLM will require mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species. This will include accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action.

This standard is consistent with the recommendation in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* (FWS 2014b), which states that mitigation "should be strategically designed to result in net overall positive outcomes for sage-grouse." Mitigation will follow the regulations from the CEQ NEPA regulatory requirements (40 CFR 1508.20; e.g., avoid, minimize, and compensate). It would be implemented on BLM-administered lands in a manner consistent with Department of the Interior guidance for landscape mitigation, pursuant to Secretarial Order 3330. If impacts from BLM management actions and authorized third-party actions result in habitat loss and degradation that remain after avoidance and minimization measures are applied, then compensatory mitigation projects would be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams, based on WAFWA MZs and including representatives from the respective States, the Forest Service, FWS, and NRCS. These Conservation Teams will facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response. They will convene and respond to issues at the appropriate scale and will use existing coordination and management structures to the extent possible.

Climate Change—With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the *Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015) will further these goals and objectives.

The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the Fire Strategy (US Department of the Interior 2015) were designed to identify landscapes of high resistance and resilience based on research by Chambers et al. (2014). Additionally, limiting or eliminating human surface disturbance, especially in the SFAs, would ensure the integrity of the PHMAs and would restore habitat through fuels management, post-fire restoration, and mitigation efforts. Connectivity and availability of sagebrush habitat would increase, thus contributing to increased climate resilience. The SFAs in particular were identified as key areas to conserve as the climate changes. The Oregon ARMPA commits to using climate change science concerning projected changes in species ranges and changes in site capability. This would be used to adjust expected and desired native species compositions as that information becomes available.

As identified by the FWS 2010 listing decision and the COT Report, climate change can impact efforts to conserve the GRSG and its habitat in a number of ways. While several ARMPAs acknowledge the potential impact of climate change on GRSG habitat and conservation, specific strategies to address the impacts of climate change are limited. The BLM and Forest Service, in coordination with the FWS, will continue to assess the potential impacts of climate change on GRSG and its habitat and will develop strategies to mitigate the anticipated effects on GRSG conservation efforts, as necessary and appropriate. Changes to management decisions will require a plan revision or amendment, as appropriate, recognizing the need to ensure that future management direction improves the resilience of habitat areas essential to the conservation of the species.

1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT Report emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency" (FWS 2013). Recent USGS studies by Brooks et al. (2015) and Coates et al. (2015) reinforce the importance of a comprehensive management strategy to prevent and suppress rangeland fires in the western part of GRSG range and to aggressively restore habitat areas impacted by fire.

For this reason, the ARMPAs seek to improve efforts to strategically develop fuel breaks, in collaboration with GRSG biologists. This would be done to reduce potential habitat loss from rangeland fires, accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush, and fight

the spread of cheatgrass and other invasive species that increase the frequency and intensity of rangeland fires. However, prescribed fire will not be used in sagebrush steppe. The exception would be if the NEPA analysis for the burn plan were to provide a clear rationale for why alternative techniques were not selected as a viable option. The analysis also would need to explain how GRSG habitat management goals and objectives would be met by its use and how the COT Report objectives would be met. It would require a risk assessment to address how potential threats to GRSG habitat would be minimized.

Recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers et al. 2014) provides the basis for improved targeting of fire management activities on BLM-administered lands. The BLM, the Forest Service, FWS, and other cooperating agencies agreed to incorporate this approach into the ARMPAs. This information is being used to identify and design projects to change vegetation composition and structure to modify potential fire behavior to improve fire suppression effectiveness and limit fire spread and intensity due to invasive grasses and conifer encroachment. The BLM *Greater Sage Grouse Invasive Wildfire, Annual Grasses and Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification. It was done to determine where conifer removal would benefit important sagebrush habitats.

Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species and to prioritize vegetation treatments for the purpose closest to occupied GRSG habitats and near occupied leks.

In addition to and complementing the fire management measures in the ARMPAs described in this ROD, Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department**" (emphasis added; US Department of the Interior 2015).

Secretarial Order 3336 directed the development of the *Integrated Rangeland Fire Management Strategy* (Strategy) which places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes. It focused on priority GRSG habitat, including that identified by the FIAT for the Great Basin Region, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT Assessments provide critical guidance to conserve, enhance, and restore GRSG habitat consistent with best available science and identify highly resistant and resilient landscapes to target fire management in these most important lands.

A key element of the Strategy is a commitment to address the invasion and expansion of cheatgrass, medusahead rye, and other invasive grasses through expanded efforts to treat impacted acres. Efforts are underway to increase the acreages to be treated with chemical and biological agents to stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion. In addition, recently adopted Department of the Interior guidance will allocate Emergency Stabilization and Burned Area Rehabilitation (ES & BAR) funds on a risk-based approach using historic acres burned to accelerate and expand the restoration of burned lands with native grasses and sagebrush seedlings. The BLM recently announced a Native Seed Strategy to accelerate and expand the production, storage, and allocation of seed for native vegetation and sagebrush. The strategy is to restore and rehabilitate burned areas and accelerate the improvement of the sagebrush ecosystem and habitat for GRSG.

Finally, by issuing a leaders' intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions about firefighting resource allocation in 2015. Additional resources have been allocated and will be targeted at the following:

- Fuel treatments, including invasive species control
- Suppression, by positioning firefighting resources and training additional Rangeland Fire Protection Associations, local volunteer firefighters, and veteran fire fighters
- Restoring habitat in these areas

Firefighting assets (aircraft, firefighters, and related equipment) were positioned in advance of the 2015 fire season to improve capacity and reduce acres of rangelands lost to fire by improving the success of the initial attack. In future years, BLM firefighting assets will be located near PHMAs to limit habitat losses from rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT Report preparers noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective" (FWS 2013). The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats" (NTT 2011).

A range-wide monitoring and evaluation framework will be established and implemented, as described in the Monitoring Framework (Appendix D of each attached ARMPA). This monitoring strategy has two parts, as follows:

- Implementation monitoring (i.e., are decisions being implemented in a timely manner? are actions taken consistent with the plan decisions?)
- Effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals?)

Through effectiveness monitoring, the BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat. This would be to determine if the desired management objectives, such as avoiding and minimizing additional surface disturbance in PHMAs, have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, and size of patches). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by State wildlife agencies and other partners, will allow real or potential habitat changes from both natural events and management actions to be linked to vital rates of GRSG populations. This analysis will enable

managers to identify indicators associated with population change across large landscapes and to lessen the negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Teams (as described in **Section 1.6.2**) will also be used to advise regional monitoring strategies and data analysis, as described in the plans.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored: habitat condition and population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after this ROD executed.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific cause in the decline of populations or habitats, taking into consideration local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the State, FWS, and the BLM to see if the cause can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to prevent tripping a hard trigger, which signals more severe habitat loss or population declines.

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger were tripped, the BLM would implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. If a hard trigger were tripped in a PAC that crosses State boundaries, the WAFWA MZ GRSG Conservation Team would convene to discuss causes and identify potential responses.

In the event that new scientific information becomes available, demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM would immediately assess what further actions may be needed to protect GRSG and its habitat and to ensure that conservation options are not foreclosed. This could include a formal directive, such as an instruction memorandum (IM) or a plan amendment.

1.7 UNIQUE ASPECTS OF THE GREAT BASIN ARMPAS

The ARMPAs and their associated EISs were developed through four planning efforts across the Great Basin Region (as described in **Section 1.1**). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing. In particular, it implemented measures to limit anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and State-specific management approaches.

This flexible landscape approach provided the opportunity to incorporate recommendations resulting from collaboration with the States and local cooperators and from public comments in each Planning Area. The plans and their future implementation are strengthened by the contributions of local partners and their knowledge, expertise, and experience.

Measures incorporated into the plans remain consistent with the range-wide objective of conserving, enhancing, and restoring GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat, such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Great Basin Region's ARMPAs.

Idaho and Southwestern Montana

The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third category of habitat referred to as IHMAs. IHMAs are BLM-administered and National Forest System lands that provide a management buffer for PHMAs and connect patches of PHMAs. IHMAs encompass areas of generally moderate to high conservation value habitat and/or populations.

In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance. It also provides an acceptable additional level of flexibility in IHMAs and GHMAs because surface disturbance due to development is not as great a threat to habitat in the sub-region. The three tiers also are the foundation for an adaptive management approach that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, IHMAs will be managed as PHMAs to maintain sufficient PHMAs to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat. This is described in Appendix E of the attached Idaho and Southwestern Montana ARMPA, which the BLM developed in concert with the Idaho Department of Fish and Game, the Forest Service, and the FWS. The ARMPA also includes additional RDFs based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local FWS office. Examples are avoiding building new wire fences within 2 kilometers of occupied leks and placing new taller structures out of sightlines or at least one kilometer from occupied leks. The BLM will also work with the State of Idaho in setting priorities for reviewing and processing grazing permits and leases in SFAs, consistent with the method recommended by the State of Idaho in its proposed plan for managing BLM-administered lands in the State.

On August 7, 2015, the Sawtooth National Recreation Area and Jerry Peak Wilderness Act was signed into law (House Resolution 1138). In accordance with the Wilderness Act (16 USC, Section 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the BLM in Idaho were designated as Wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness. Approximately 12,430 acres of this Wilderness area is within BLM-administered SFAs. This area will now also be managed as Wilderness consistent with the Wilderness Act. As specified in the Sawtooth National Recreation Area and Jerry Peak Wilderness Act, a wilderness management plan will be developed within five years of the signing of the act and it will outline specific management guidance for the new wilderness area.

This statute also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas and they are no longer subject to management, pursuant to Section 603(c) of the FLPMA. The acres of wilderness study areas released include approximately 71,194 acres of PHMAs, 11,923

acres of IHMAs, and 5,912 acres of GHMAs. The ARMPA decisions for these areas will not change as a result of the release.

Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine County, Custer County, the City of Challis, the City of Clayton, and the City of Stanley. These conveyances include approximately 53 acres of PHMAs, 10 acres of IHMAs, and 828 acres of GHMAs that are reflected in the ARMPA as being administered by the BLM. Once conveyed, these lands will not be subject to the BLM management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

The decisions affecting Southwestern Montana in the ARMPA are consistent with the objectives of the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014; State of Montana 2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development.

The BLM plan will permit the disturbance limit to go from a 3 percent to a 5 percent disturbance cap, consistent with the Montana Plan when the process for implementing that State's disturbance calculation method is instituted and effective. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if additional GRSG-related management actions should be adjusted. This would be coordinated with the State of Montana and the FWS to achieve consistent and effective conservation across all lands, regardless of ownership.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the 2014 Coates Maps, developed locally using the best available science. The ARMPA included OHMAs, where RDFs will be applied at the project level. Decisions for BLM-administered lands in California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration Strategy Final EIS (BLM 2008).

Decisions for BLM-administered lands in Nevada incorporate key elements of the *State of Nevada Greater Sage-Grouse Conservation Plan* (State of Nevada 2014), including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the Planning Area. This mitigation strategy focuses restoration on the key areas most valuable to the GRSG. The ARMPA adopts a disturbance management protocol to provide for a 3 percent limit on disturbance. The exception would be in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, the State of Nevada, and the FWS. The plan provides for this exception due to the development of mitigation tools in Nevada, including the Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014), in collaboration with the FWS.

Furthermore, given the concurrence of the Nevada Department of Wildlife and FWS in each exception, this approach is consistent with conservation objectives. The Nevada ARMPA does not use a disturbance density cap, required in the three other Great Basin Region ARMPAs, in light of the disturbance management protocol for BLM-administered lands in Nevada.

In coordination with the FWS, the Nevada ARMPA also allows for an exception to the geothermal NSO, which is an energy development priority for the State and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (*Conservation Plan for Greater Sage-Grouse in Utah*; Utah Greater Sage-Grouse Working Group 2013) and the State of Wyoming (Executive Orders 2011-5, 2013-3, and 2015-4), which establish conservation measures for protecting GRSG and also focus conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the State's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in GHMAs because 96 percent of the breeding GRSG in Utah are within PHMAs. Here, conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and RDFs, as well as requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates GHMAs as open to wind energy and high voltage transmission ROW development (consistent with the net conservation gain mitigation framework for the ARMPA). The Utah ARMPA also designates GHMAs open to oil and gas development with standard constraints.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (Hagen 2011). This establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the State of Oregon in which disturbance is capped at 1 percent per decade, in addition to the 3 percent cap in BSUs and project analysis areas. The Governor of Oregon has issued an executive order (September 16, 2015) that directs state agencies to implement the Oregon Sage-Grouse Action Plan in coordination with Federal and local partners. The Action Plan, supported by new rules passed by both the Oregon Fish and Wildlife Commission and the Land Conservation and Development Commission, contains strategic direction that aims to align with many elements of the Oregon ARMPA.

The BLM Oregon plans provide additional flexibility for wind development in PHMAs in Harney, Lake, and Malheur Counties by allocating them as avoidance areas (rather than exclusion areas) within PHMAs that are outside of the SFAs. In these counties, priority would be placed on locating commercial-scale wind and solar energy development in nonhabitat areas (i.e., outside of PHMAs and GHMAs) before approving development in PHMAs. The BLM provided this flexibility after recognizing the following:

- The extent of high and medium potential wind areas in PHMAs in these counties
- The fact that wind energy is excluded in SFAs in these counties
- After coordinating with the FWS, determining that the more rigorous disturbance cap of 1 percent per decade and adaptive management triggers adopted by the Oregon plan would compensate for the likely limited wind development in these areas

Due to these factors, the BLM finds these limited areas of flexibility for wind development are consistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic areas where habitat enhancement and restoration are encouraged, as well as other strategic areas to address the impacts associated with climate change.

For additional information on the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs. The tables provide a crosswalk as to how the ARMPAs address specific threats to GRSG identified in the COT Report through these State-specific management prescriptions.

1.8 DECISION RATIONALE

The ARMPAs provide a comprehensive, coordinated, and effective conservation strategy for addressing the threats to the GRSG identified by the FWS such that the need for additional protections under the ESA may be avoided. The ARMPAs strive to conserve GRSG and their habitat on BLM-administered lands across the remaining range of the species. This is consistent with measures identified or recommended in the NTT Report, the COT Report, recent USGS studies, and other relevant research and analysis.

The BLM and Forest Service land use plans are an essential component to conserve the GRSG and its habitat. This is in combination with the GRSG conservation actions taken by the individual States in the remaining range of the species and initiatives to address the threat of rangeland fire, to curb the spread of nonnative invasive grasses, and to promote conservation measures to benefit GRSG on private lands. Combined, all of the ARMPs and ARMPAs associated with the BLM's National GRSG Conservation Strategy, as well as the Forest Service LRMPs, would affect approximately 67 million acres of the remaining habitat for the species.

The BLM GRSG Conservation Strategy is built on the following key concepts:

- **Landscape-level**—The planning effort encompasses the remaining habitat of the GRSG on BLM-administered lands, covering 10 western states in the Great Basin and Rocky Mountain Regions. As such, the strategy provides a coherent framework across the BLM land use plans to implement landscape-level conservation for GRSG, while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple-use and sustained yield mandates under FLPMA. The conservation measures included as part of this landscape-level conservation effort address identified threats to the species, recognizing local ecological conditions and incorporating existing conservation efforts where they are consistent with the overall objective of conserving GRSG across its remaining range.

- **Best available science**—The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, State agencies, the USGS, the FWS, and other sources. The COT Report provided a blueprint for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The NTT Report provided additional guidance for addressing the most significant threats to the GRSG. The concepts set forth in a number of reports prepared by the USGS regarding specific threats to GRSG, habitat connectivity, and related issues are reflected in the land allocation and resource management decisions. Also informing GRSG conservation was a series of reports on how to better reduce the threats of rangeland fire and invasive species, prepared in collaboration with the WAFWA, and a report to the Secretary of the Interior entitled *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015).
- **Targeted, multi-tiered approach**—The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration to the most important habitat management areas, as determined by State and Federal GRSG experts, largely consistent with the PACs identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as PHMAs. Within PHMAs, the ARMPAs provide an added level of protection to eliminate most surface disturbance by delineating SFAs, derived from areas identified by the FWS as strongholds essential for the species' survival. GHMAs recognize the potential value of habitat areas outside of PACs—as recommended by the COT Report—where surface disturbance is minimized, while providing greater flexibility for other land resource uses.
- **Coordinated**—The ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, Federally administered lands essential to the conservation of the GRSG are managed in a coordinated manner. The FWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative**—The ARMPAs reflected extensive input from the relevant States, collaborators, and stakeholders and the public from the outset. The ARMPAs were developed with the benefit of input from the individual States and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate State and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG, consistent with the multiple-use and sustained yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis, and recommendations for GRSG conservation, including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through the collaboration of State and Federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report, which identified threats to GRSG habitat and the most important habitat to protect, provided an important framework for developing the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of State and Federal scientists, wildlife biologists, resource managers, and policy advisors, was tasked by the FWS Director "with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future" (FWS 2013).

In addition, the FIAT Report and the USGS compilation and summary of published scientific studies that evaluate the influence of human activities and infrastructure on GRSG populations (such as *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review* (Manier et al. 2014), and the *Integrated Rangeland Fire Management Strategy: Final report to the Secretary* [US Department of the Interior 2015]) provided important guidance in developing critical aspects of the ARMPAs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG management experience where consistent with the overall GRSG conservation objectives.

The ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate State-developed conservation measures in each of the sub-regional plans has added complexity in developing the overall conservation strategy, the body of local knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the task of implementing the plans on completion.

In his transmittal letter accompanying the final COT Report, the FWS Director reaffirmed his charge. "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. … Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels" (FWS 2013).

The ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report and the NTT Report. As previously noted, the COT Report stated "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT Report preparers recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal." The COT further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy" (FWS 2013).

In order to address the identified threats and meet the recommendations of the COT Report, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect

remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMAs that align closely with PACs identified in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report).

Within PHMAs, the plans identify SFAs, based on the FWS analysis of strongholds for the species; this in turn is based on such factors as population density, habitat integrity, and resilience to climate change. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in WHB populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS and reinforced by recent USGS analysis. These resources are those most important to long-term sagebrush ecosystem health and species persistence.

PHMAs and GHMAs boundaries are based on PPH and PGH (except in Utah, where PPH was derived from occupied habitat). Consistent with the BLM's IM 2012-044, PPH and PGH are based on data and maps developed through a collaboration between the BLM and the respective State wildlife agency. PPH and PGH (PHMAs and GHMAs in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty et al. 2010), GRSG proportionality, lek density, and key seasonal habitats, such as known winter concentration areas. PGH (now GHMAs) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

As discussed in **Section 1.6**, allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMAs—from energy, to transmission lines, to recreation facilities and grazing structures—are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. The ARMPAs will also prioritize future oil and gas leasing and development outside of identified GRSG habitat management areas (i.e., SFAs, PHMAs, and GHMAs) to reduce the potential for future conflict with GRSG.

The ARMPAs include additional measures to limit surface disturbance in PHMAs by establishing lek buffers and disturbance limits or caps and density restrictions (except in Nevada) of, on average, one energy facility per 640 acres. These requirements reflect recommendations in the NTT Report and are consistent with certain State strategies that were already in place before the initiation of the BLM's National GRSG Conservation Strategy. As described in **Section 1.6.1**, the BLM determined the appropriate lek buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG—A Review* (Manier et al. 2014) based on best available science.

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in SFAs, then in PHMAs, and finally in areas designated as GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMAs or GHMAs will be designed to a net conservation gain standard consistent with the recommendation included in the September 2014 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework Version 1.0* (FWS 2014b). According to the authors, the Framework was prepared "…to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information

and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse" (FWS 2014b).

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT to "…conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g., shrub cover, nesting cover)" (FWS 2013).

The ARMPAs also address the adverse impacts of free-roaming WHBs on GRSG habitat by prioritizing gathers and removing WHBs to achieve AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has been working with the National Academy of Sciences to conduct new research of methods to reduce WHB reproduction rates. Through a combination of targeted gathers and the development of an effective agent for controlling future free-roaming WHB reproductive rates, over time, this threat to GRSG may be effectively managed.

Since the interaction of fire and invasive species represents the primary threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department of the Interior took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat. This led to Secretarial Order 3336 and the subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015).

In accordance with Secretarial Order 3336 and subsequent rangeland fire management strategy, substantial changes in policy and management direction have been made and will continue to be made to enhance BLM's ability to manage the threat of rangeland fire. These will affect all aspects of the rangeland fire management program; they will range from better coordination between resource managers and fire management officers to the identification and prioritization of prevention, suppression, and restoration in SFAs, PHMAs, and GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This and the initiative to fight the spread of nonnative invasive species that contribute to higher rangeland fire risk (e.g., cheatgrass) discussed below have fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

The COT Report and other more recent research and analysis amplify concern for the contribution of cheatgrass and other invasive annual species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers et al. (2014) led to the development of the FIAT and a subsequent assessment that identified areas of resistance and resilience to fire in SFAs, PHMAs, and GHMAs. Through use of the FIAT Assessment Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss, and to target restoration at those areas important to the species

where success is more likely. The BLM is also committed to accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive annual species.

Even prior to completion of the FIAT assessment, the BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY 2014 Omnibus Appropriation, the BLM prioritized the funding of treatments and activities within each State that benefit GRSG (see this ROD's **Figure 1-6**, FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments).

To further supplement these efforts, the Department of the Interior has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes. In addition, the BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. In addition, the Department of the Interior has approved policy changes to increase the commitment, flexibility, and time frame for using ES & BAR funding. By adopting a risk-based approach using a rolling average of the acres lost to fire during the previous five fire seasons, ES & BAR funding will be allocated to the BLM to permit an increased focus on restoring priority sagebrush-steppe habitats impacted by fire.

In addition, the Sage Grouse Initiative launched by the NRCS in 2010 also contributes to the effort to protect and restore important GRSG habitat. In collaboration with the States and private landowners on private lands and with the BLM and the Forest Service on Federally administered public lands, the NRCS has worked to reduce the encroachment of pinyon-juniper trees and to restore rangeland habitat on private and BLM-administered lands.

Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy* (Stiver et al. 2006), the BLM and Forest Service conservation strategy relies heavily on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs. Monitoring plans will be developed in coordination with relevant State and Federal agencies and will incorporate evaluation of GRSG population trends by the States and changes in habitat condition by the Federal land management agencies. The WAFWA report states, "Monitoring provides the 'currency' necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and therefore, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort" (Stiver et al. 2006).

In addition, the ARMPAs incorporate an adaptive management framework that provides an early warning system of soft triggers to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes occur in population levels or habitat conditions. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and if hard triggers are reached, the ARMPAs identify measures that will be put in place, including plan-level responses, in an effort to reverse the declines.

In summary, the ARMPAs emphasize an "avoidance first" strategy, consistent with the recommendations in the COT Report, by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished by identifying important GRSG habitat areas, then applying allocations that exclude or avoid surface-disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat.

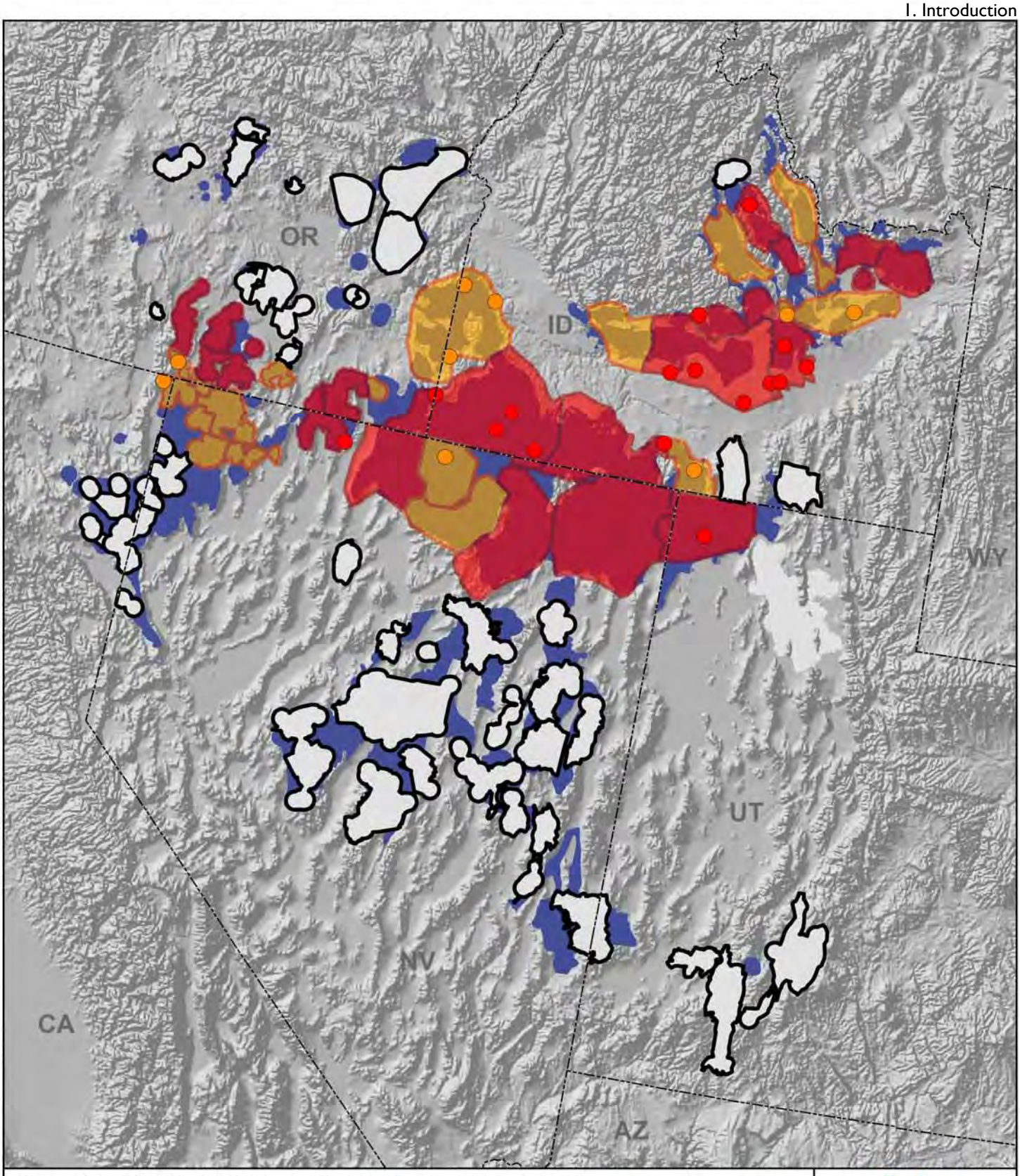

Figure 1-6: FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessment

Legend

- Priority 1 Potential FY15 Projects
- Priority 2 Protential FY15 Projects
- FIAT Assessment Areas
- PPA Priority 1
- PPA Priority 2
- PPA Other
- State Boundary

N, W, E, S

0 25 50 100 Miles

September 2015

Map Area

No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

The plans also include decisions to restore degraded habitat, which, although more difficult and requiring a longer time frame, is important to the long-term conservation of GRSG. Restoration decisions include specific habitat objectives and a priority to treat GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management Strategy* (US Department of the Interior 2015) as well as the NRCS's Sage Grouse Initiative investments in private landowners' conservation efforts.

The GRSG Conservation Strategy reflects a high level of commitment by Federal partners to conserve GRSG and its habitat. The actions on BLM and Forest Service lands, which constitute nearly half of the GRSG habitat in the planning area, will anchor and complement the significant actions being taken by State and local governments and private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of new conservation actions that will go into effect through the BLM ARMPAs, as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for the BLM since 2010 and a long-term commitment to assure the conservation of the species by protecting, restoring, and enhancing GRSG habitat consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape for the BLM and amplifies the need for collaboration among Federal, State, tribal, and private partners to conserve the GRSG, consistent with direction articulated in the NTT report, as follows:

> Land uses, habitat treatments, and anthropogenic disturbances will need to be managed below thresholds necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to GRSG habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future. (NTT 2011, p. 6-7)

The benefits of conserving the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPs and ARMPAs provide an essential foundation for conserving the GRSG. This, in conjunction with the amended Forest Service Land and Resource Management Plans (LRMPs), affects approximately 59 percent of the most important GRSG habitat across the remaining range of the species. In conjunction with similar conservation efforts by other Federal and State agencies, private landowners, and local partners, the BLM National GRSG Conservation Strategy constitutes a historic conservation effort; it will benefit more than 350 species and the sagebrush ecosystem on which they depend. It is through these landscape-level, science-based, collaborative efforts to conserve the imperiled sagebrush ecosystem that conservation of the GRSG and other sagebrush obligate species can best be achieved and the listing of the GRSG under the ESA may be avoided.

1.9 IMPLEMENTATION

Future decisions made in conformance with the ARMPAs serve to continuously and actively implement its provisions.

Immediate Decisions—These decisions are the land use planning decisions that go into effect when the ROD is signed. These include goals, objectives, allowable uses, and management direction, such as the allocation of lands as open or closed for salable mineral sales, lands open with stipulations for oil and gas leasing, and OHV area designations. These decisions require no additional analysis and guide future land management actions and subsequent site-specific implementation decisions in the Planning Area. Proposals for future actions, such as oil and gas leasing, land adjustments, and other allocation-based actions, will be reviewed against these RMP decisions to determine if the proposal is in conformance with the plan.

One-Time Future Decisions—These are the types of decisions that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementing one-time RMP decisions will be based on the following criteria:

- Relative importance of the action to the efficacy of the GRSG conservation strategy
- National BLM management direction regarding plan implementation
- Available resources

General Implementation Schedule of One-Time Decisions—Future Decisions discussed in the attached ARMPAs will be implemented over a period of years, depending on budget and staff availability. After issuing the ROD, the BLM will prepare implementation plans that establish tentative time frames for completing one-time decisions identified in these ARMPAs. These actions require additional site-specific decision-making and analysis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, nondiscretionary workloads, and cooperation by partners and the public. Yearly review of the plan will provide consistent tracking of accomplishments and will provide information that can be used to develop annual budget requests to continue implementation.

1.9.1 Additional Implementation Guidance and Considerations

Instructional Memoranda—Additional instruction and management direction will be necessary to implement certain land allocation decisions and management direction included in the ARMPAs. For example, additional guidance will be provided to clarify how the BLM will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat. IMs and related guidance will be completed by the BLM Washington Office. The BLM shall complete IMs for the following management direction and intends to complete these IMs within 90 days of the RODs: oil and gas leasing and development prioritization and livestock grazing. Other IMs, including monitoring and mitigation, will be developed as necessary. Issuance of this national guidance will supersede any related national and field level guidance currently in effect. Additional national, state, and field level guidance will be developed subsequently as necessary to implement the decisions in the plans.

Map Adjustments, GRSG Seasonal Habitats, and Connectivity—PHMAs were designed to include breeding bird density, GRSG proportionality, density of leks, and key seasonal habitats, such as known winter

concentration areas. GHMAs were designed to include the areas of occupied seasonal, connectivity, or year-round habitat outside of PHMAs. As additional important habitats are identified (e.g., winter habitat and key connectivity areas), the BLM will map and incorporate these habitats for GRSG, consistent with best available science, through subsequent plan maintenance, revision, or amendment, as appropriate. Priority should be given to ensuring that wintering habitat is identified and captured in all changes in habitat maps subsequent to this decision. In the interim, the BLM will use the existing maps included in the ARMPAs for all decisions.

Continued Commitment to Research and Use of Best Available Science—Through implementation of this strategy, new management issues and questions are likely to arise that may warrant additional guidance or study by technical experts, scientists, and researchers. The BLM is committed to continue working with individuals and institutions with expertise in relevant fields in order to ensure that land and resource management affecting conservation of the GRSG and the sagebrush ecosystem continues to be guided by sound peer-reviewed research and the best available science.

Training—Given the nature and complexity of the management direction in these ARMPAs, the BLM, in collaboration with the Forest Service and the FWS, will develop and implement a schedule of training for key functions, actions, and decisions associated with these plans. In this manner, the BLM will seek to better inform its personnel, partners, cooperators, and stakeholders of the changes in management that will result from this new management paradigm.

CHAPTER 2
DECISION

2.1 SUMMARY OF THE APPROVED MANAGEMENT DECISIONS

The decision is hereby made to approve the Great Basin Region GRSG RMPAs for the Great Basin Region GRSG Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments 1 through 4). This ROD serves as the final decision establishing the resource management plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs amend the resource management plans described in Sections 1.1 of attachments 1 through 4.

The RMP decisions include management direction to conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to their habitat. RMP decisions are expressed as goals, objectives (desired outcomes), allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective when this ROD is signed, implementing on-the-ground activities requires additional steps before any of them can begin. The BLM will conduct NEPA analyses, as necessary, for such implementation decisions.

2.2 WHAT THE ROD AND ARMPAS PROVIDE

The ARMPAs include RMP-level management decisions in the form of the following:

- Goals
- Objectives (desired future conditions)
- Land use allocations
- Management decisions and actions

Goals are the broad statements of desired outcomes and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have time frames for achievement.

Land use allocations specify locations in the Planning Area that are available or unavailable for certain uses and are also used to prioritize conservation and restoration management actions. Examples are decisions on the following:

- What lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development
- What lands may be available for disposal via exchange or sale
- What lands are open, closed, or limited to motorized travel

Note that all acreages presented in the ARMPAs are estimations, even when they are presented to the nearest acre.

Management decisions and actions are those provisions that help in meeting the established goals and objectives. They are the measures that will be applied to guide day-to-day activities on public lands, including but not limited to, stipulations, guidelines, BMPs, and RDFs.

The management decisions and actions contained in the ARMPAs (attachments 1 through 4) were crafted to incorporate management decisions into RMPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats.

The EISs conducted for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah ARMPAs sufficiently disclose and analyze all environmental issues associated with mineral leasing on National Forest System lands. The analyses would be relevant should the Forest Service consent to a lease or require consultation before it issues a lease. This would comply with applicable mineral leasing and NEPA regulations and would be subject to further site-specific environmental analysis where applicable.

2.3 WHAT THE ROD AND ARMPAS DO NOT PROVIDE

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for land use plan-level travel management decisions in the Idaho and Southwestern Montana ARMPA.

The ARMPAs do not violate valid existing rights nor contain decisions for the mineral estates that are not administered by the BLM. ARMPA decisions for surface estate only apply to BLM-administered lands. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions are the following:

- *Statutory requirements*—The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy*—The decision will not change the BLM's obligation to conform to current or future national policy.
- *Funding levels and budget allocations*—These are determined annually at the national level and are beyond the control of the State, District, or Field Offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. They generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may be stand-alone decisions. These ARMPAs do not contain implementation decisions. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

2.4 MODIFICATIONS AND CLARIFICATIONS

The ARMPAs in the Great Basin Region include minor modifications and clarifications from the Proposed RMPAs. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency reviews. These modifications and clarifications are hereby adopted by this ROD.

The following modifications and clarifications were made to all of the ARMPAs in the Great Basin Region:

- *ARMPA Formatting*—The plans were reformatted between the proposed and approved RMPA planning stages for consistency across the Great Basin Region. The order of management actions and the prefixes for the goals, objectives, and management actions were changed in the ARMPAs to provide consistency among the amendments and revisions for GRSG goals and objectives.
- *Forest Service References (applicable only to the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah ARMPAs)*—All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. The Forest Service has completed two separate RODs and land and resource management plan amendments under its planning authorities.
- *Fire*—Management actions and decisions were modified to stress that protecting human life is the single overriding priority for fire and fuels management activities.
- *Livestock Grazing*—The statement, "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3," was added to the management action and decision. It reads, "At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks."
- *Glossary*—Numerous glossary definitions were deleted because they were not used or referenced in the ARMPAs. If not already contained in the Proposed RMPA glossaries, the following terms and definitions were added for clarification:
  - **Grazing Relinquishment.** The voluntary and permanent surrender by an existing permittee or lessee, (with concurrence of any base property lienholder), of their priority (preference) to use a livestock forage allocation on public land as well as their permission to use this forage. Relinquishments do not require the BLM's consent or approval. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.

  - **Transfer of Grazing Preference.** The BLM's approval of an application to transfer grazing preference from one party to another or from one base property to another or both. Grazing preference means a superior or priority position against others for the purposes of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee.
  - **Valid Existing Right.** Documented legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include, but are not limited to, fee title ownership, mineral rights, ROWs, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.
  - **Mining Claim.** A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the 1872 Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, mill site, and tunnel site.
  - **Energy or Mining Facility.** Human-constructed assets designed and created to serve a particular function and to afford a particular convenience or service that is affixed to a specific locations, such as oil and gas well pads and associated infrastructure.

- *GRSG Habitat Mapping*—Information was added to the ARMPAs to clarify that when new information becomes available about GRSG habitat, including seasonal habitats, in coordination with the State wildlife agency and FWS, and based on best available scientific information, the BLM may revise the GRSG habitat management area maps and associated management decisions through plan maintenance or plan amendment or revision, as appropriate.
- *Adaptive Management*—The GRSG Adaptive Management Strategy was revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the ROD is signed and then will be analyzed, at a minimum, annually thereafter.
- *Vegetation*—The desired condition for maintaining a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover in SFAs and PHMAs was modified to read as follows: "In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health" (BLM Technical Reference 1734-6; Pellant 2005).
- *GRSG Habitat Objectives*—For clarification purposes, within each of the ARMPA GRSG habitat objectives tables, native bunchgrass was provided as an example of a perennial grass cover and residual grass was added to the perennial grass cover and height objective.
- *Sagebrush Focal Areas*—Examples of the types of vegetation and conservation actions that will be prioritized within SFAs were provided for clarity in the management action and

decision. These examples were land health assessments and WHB management and habitat restoration actions.

- *Required Design Features*—One of the criteria for demonstrating that a variation to an RDF is warranted was modified to include the following statement: "An alternative RDF, a state-implemented conservation measure, or a plan-level protection is determined to provide equal or better protection for GRSG or its habitat."
- *Lands and Realty*—The following management actions and decisions and objectives were clarified:
  - Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
  - Within existing designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site-specific NEPA analysis indicates that a net conservation gain to the species would be achieved. This exception is limited to projects that fulfill the use for which the corridors were designated (e.g., transmission lines and pipelines) and the designated width of a corridor would not be exceeded as a result of any project collocation.
- *Land Tenure*—Management action associated with land disposals was clarified to include land exchanges as a means of disposal.
- *WAFWA GRSG Conservation Team*—Additional clarification was added to ARMPAs related to the WAFWA GRSG Conservation Teams that were identified in the Proposed RMPAs: "WAFWA management zones will be used to facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response, through WAFWA GRSG Conservation Teams. These teams will convene and respond to issues at the appropriate scale and will use existing coordination and management structures to the extent possible."
- *Cheatgrass*—The following management action was included consistent with the purpose and need and objectives of the ARMPAs: "Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species."
- *Valid Existing Rights*—The following management action was added to the ARMPAs: "Consider the likelihood of developing not-yet-constructed surface-disturbing activities, as defined in Table 2 of the Monitoring Framework, under valid existing rights before authorizing new projects in PHMAs."

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the Final EIS in various places was grouped into a stipulation appendix and added to the ARMPA as Appendix G Stipulations.
- Appendix G, Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA, was modified to delete the reference to

Tables 2 to 7. These tables were deleted from the Final EIS Appendix G before it was made available to the public for protest, but the reference was not deleted in the appendix text. This discrepancy was identified during protest resolution and the Governor's consistency review. These values will be calculated after the ROD is signed (see Adaptive Management below).

- Many editorial changes, including deleting repeated numbers and correcting spelling errors, were made when finalizing the ARMPA.
- On August 7, 2015, President Obama signed into law the Sawtooth National Recreation Area and Jerry Peak Wilderness Act (House Resolution 1138). In accordance with the Wilderness Act (16 USC, Section 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the BLM in Idaho, comprising approximately 116,898 acres, were designated as Wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness.

  This bill also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas, and they are no longer subject to Section 603(c) of the FLPMA.

  Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine and Custer Counties and the Cities of Challis, Clayton, and Stanley. These conveyances include approximately 53 acres of PHMAs, 10 acres of IHMAs, and 828 acres of GHMAs that are reflected in the ARMPA as being administered by the BLM. Once conveyed, the BLM will adjust the maps and acres as they appear in the ARMPA through plan maintenance to depict that these lands are not subject to the BLM management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

Special Status Species

- The Seasonal Timing Restrictions from Appendix C of the Final EIS were deleted to reduce redundancy because these restrictions were already in the RDFs appendix.

Livestock Grazing

- Livestock Grazing RM 16 and RM 18, which are now MD LG 15 and MD LG 17 in the ARMPA, had the following sentence added as an accepted recommendation made during the Governor's consistency review to clarify management and conservation action prioritization in SFAs: "Management and conservation action prioritization will occur at the Conservation Area (California) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFAs followed by areas of PHMAs outside SFAs."

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in PHMAs, IHMAs, and GHMAs would be available for disposal only through exchange. This was removed because it was not consistent with BLM policy, and the net conservation gain clause in MD LR-13 would ensure that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes, such as changing should to shall and would to will, to reflect the final decision language.
- Re-categorizing some of the management decisions into other common resource programs. For example, all of the fire and fuels management decisions are numbered under FIRE and are not split into different subcategory names.
- Re-lettering the critical appendices and deleting those that are no longer applicable to the ARMPA.

Special Status Species

- Added clarity to MD SSS 2A 3 by describing the energy and mining facilities where this decision would be applicable; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A by including references to valid existing rights and applicable law for the requirement of a net conservation gain.
- Specified in MD SSS 8 that this activity would be coordinated with the Nevada Department of Wildlife or California Department Fish and Wildlife and that breeding activity surveys would be done for actions involving mineral activities and ROWs.
- Deleted Action PR 4 from the Proposed RMPA because the BLM does not manage landfills and transfer stations.
- Under the Brood-Rearing/Summer category, clarified that the objective of the 7-inch-deep, rooted perennial bunchgrass in upland habitats was only for a 522-foot (200 meter) area around riparian areas and meadows. The additional reference was added for Casazza et al. 2011.
- Footnote #7 was deleted. The original footnote stated that the "specific height requirements needed to meet the objective will be set at the time of habitat assessment framework assessments." This is incorrect because the height requirements will need to be set well in advance of the habitat assessment framework assessments.
- A new footnote was added as footnote #1: "Any one single habitat indicator does not define whether the habitat objective is or is not met. Instead, the preponderance of evidence from all indicators within that seasonal habitat period must be considered when assessing sage-grouse habitat objectives." This addition was for the purpose of clarification.

Adaptive Management

- Clarified under MD SSS 21 that the BLM will coordinate with the Nevada Department of Wildlife and that the decision was specific to mineral activities and ROW actions.

Fire and Fuels Management

- Deleted "Field Offices" and "Districts" from MD FIRE 3, as there will be a multilayered approach to coordination, including BLM State Offices.

- In Objective FIRE 3, added "in SFAs first" to provide more emphasis to the SFAs over the rest of the PHMAs for this action.
- Modified MD FIRE 26 to delete "Districts," as there will be a multilayered approach to identifying treatment needs for wildfire and invasive species management across the State.
- Added "FWS" as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 1 was modified for clarity and to include the fact that the BLM would conduct appropriate consultation, cooperation, and coordination.
- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to." This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock or is being purposefully rested."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…"

Mineral Resources

- Management Decision MR 18 was modified to provide the Barrick Enabling Agreement (March 2015) as an example of appropriate mitigation that can be considered in the future, and the last sentence was removed because it only repeated BLM regulations and is unnecessary.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet wide "or a different width is specified for congressional designated corridors." This is in response to the Lincoln County Conservation Recreation Development Act of 2004, which included congressionally designated corridors that were not included in the plan amendment or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this statute.
- Action LR-LUA 21 from the Proposed Plan was deleted because the Federal Highway Administration and the Nevada Department of Transportation already have valid existing rights associated with their easements and ROWs, and this planning effort would not change the terms and conditions of their existing easements or ROWs. Making this a management action is repetitive and unnecessary.

Travel and Transportation

- Due to confusion that was outlined in protest letters and in the Governor's consistency review, MD TTM 2 was clarified to say that limiting off-highway travel to existing routes in

PHMAs and GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations."

- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning." This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment," as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning Area, the two mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed RMPA (these are now separate appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Lands and Realty

- A typographical error in the socioeconomic analysis of the Proposed RMPA was identified during the protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows: Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D, E, F, and the Proposed Plan…" is replaced with the following:

> Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-State providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on terrain. In rural areas, burial of new distribution lines would be more than double the cost of new

overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers, infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat.

Renewable Energy

- Managed Decision RE-2 was modified to include the statement, "In Harney, Lake, and Malheur Counties, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMAs and GHMAs) before approving development in PHMAs."

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and human disturbances. This modification was recommended during the Governor's consistency review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the Proposed RMPA, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMPA, the words "would," "could," "should," and "may" were generally removed or revised to reflect the *active* management direction of an ARMPA rather than *potential* management presented when the Proposed RMPA was one of many alternatives that the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMPA), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMPA), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog, a Federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is included in all applicable objectives and management actions, not just the five actions in the Proposed RMPA where this concept and language was already present.
- Throughout the Proposed RMPA there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or State biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during his consistency review.
- The Proposed RMPA introduced the term biologically significant unit (BSU) for adaptive management and the disturbance cap to provide a consistent approach for managing and

monitoring across the GRSG range. In the Utah Sub-Region, the boundaries of the BSUs follow the population area boundaries within PHMAs. As part of resolving protests, the ARMPA was revised to note that BSUs are PHMAs within population areas. Whenever the term BSU was used, it was replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across State lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMPA, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA MZs when addressing designation of PHMAs. This change was made during the Governor's consistency review to more closely reflect the management in the State of Utah's Conservation Plan for GRSG in Utah (2013).
- MA-GRSG-1 from the Proposed RMPA, which is now MA-SSS-1 in the ARMPA was revised to include the following text: "The BLM will apply these goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language was added based on an accepted recommendation made by the Governor during the Governor's consistency review.
- The language of MA-GRSG-1 from the Proposed RMPA, which is now MA-SSS-1 in the ARMPA, regarding nonhabitat areas within PHMAs and GHMAs was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMPA, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMPA, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual incremental increases in noise levels.
- The language of MA-GRSG-6 from the Proposed RMPA, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside PHMAs/GHMAs. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction for managing areas outside PHMAs and GHMAs that have been treated to improve GRSG habitat. The change was necessary to avoid the implication of changing allocations or altering PHMA and GHMA boundaries outside a planning process, while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

Livestock Grazing

- The language of MA-GRA-6 from the Proposed RMPA, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to

align with similar concepts and intent in the livestock grazing sections in GRSG amendments throughout the Great Basin.

2.5 PROTEST RESOLUTION

The BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by the BLM's planning decisions to protest proposed planning decisions within 30 days of when the notice of availability of the Proposed RMP/Final EIS was published in the *Federal Register* (May 29, 2015).

The BLM Director concluded that the BLM had followed all applicable laws, regulations, and policies and had considered all relevant resource information and public input in developing the Proposed RMPAs/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The Director resolved the protests without making significant changes to the Proposed RMPAs/Final EISs, though minor clarifications were made and are summarized in **Section 2.4**. The Director's decisions on the protests are summarized in each of the Proposed RMPAs/Final EISs Director's Protest Resolution Reports, which are available on the following BLM website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Below are descriptions of the protest resolution process for each of the four Great Basin Region Proposed RMPAs/Final EISs.

2.5.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed RMPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Areas of critical environmental concern
- Fire and fuels management
- Fluid minerals
- Solid minerals

- Special status species
- Lands and realty
- Travel and transportation management

2.5.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed RMPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed as they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise
- Areas of critical environmental concern
- Solid minerals
- Special status species
- Lands with wilderness characteristics
- Lands and realty
- Tribal issues
- WHBs
- Travel and transportation management

2.5.3 Oregon

For the Oregon GRSG Proposed RMPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as

they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Monitoring
- Areas of critical environmental concern
- Fire and fuels management
- Solid minerals
- Special status species
- Travel and transportation management

2.5.4 Utah

For the Utah GRSG Proposed RMPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- Land use allocations
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise
- Areas of critical environmental concern
- Fire and fuels management

- Fluid minerals
- Solid minerals
- Special status species
- Lands and realty
- Travel and transportation management
- Reasonable foreseeable development scenarios

2.6 GOVERNOR'S CONSISTENCY REVIEW

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, State and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)).

The general requirement in FLPMA and planning regulations is to coordinate the resource management planning process with plans of other agencies, States, and local governments to the extent consistent with law (see FLPMA Section 202(c)(9) and 43 CFR 1610.3-1(a)) and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with Federal law or to the maximum extent practical; see 43 CFR 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to State, local, and tribal land use plans and provided meaningful public involvement throughout the development of the Proposed RMPAs/Final EISs.

The BLM is aware that there are specific State laws and local plans relevant to aspects of public land management that are separate and independent of Federal law. However, the BLM is bound by Federal law; as a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that the BLM's RMPs be consistent with officially approved State and local plans only if those plans are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands.

Where officially approved State and local plans or policies and programs conflict with the purposes, policies, and programs of Federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially approved State and local policies and programs (as opposed to plans), this consistency provision applies only to the maximum extent practical. While county and Federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the Federal agency planning process is not bound by or subject to State or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors, asserting inconsistencies between the BLM's Proposed RMPAs and their State's or local governments' resource-related plans, policies, and procedures, as well as other concerns that they had with the proposed planning documents.

On August 6, 2015, the BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected. These Governors were then given 30 days to appeal the BLM State Director's decisions to the BLM Director. On September 8, 2015, the BLM Director received appeals from the Governors of Idaho and Nevada; on September 11, 2015, the BLM Director received an appeal from the Governor of Utah. The BLM Director reviewed these appeals and rejected the recommendations of the Governors of Idaho, Nevada, and Utah by letters dated September 16, 2015, before this ROD was issued. The BLM Director's response to these appeals will also be published in the *Federal Register* after this ROD is issued.

In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications were made and are summarized in **Section 2.4**.

CHAPTER 3
ALTERNATIVES

3.1 ALTERNATIVES CONSIDERED

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs. Their intent was to meet purpose and need of this effort; namely, to identify and incorporate appropriate management direction in ARMPAs to conserve, enhance, and restore GRSG habitat. This would be accomplished by reducing, eliminating, or minimizing threats to GRSG habitat.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping and to maintain or increase GRSG abundance and distribution in the Planning Area. While the resource management plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions, constituting a separate RMPA. The goal was met to varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law, there are typically few or no distinctions between alternatives.

3.1.1 Alternative A—No Action Alternative

Alternative A meets the CEQ requirement that a no action alternative be considered. This alternative continues current management direction derived from the existing field and district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities as mineral leasing and development,

recreation, utility corridor construction, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria for identifying site-specific use levels for implementation activities.

This alternative was not selected for the ARMPAs because it did not meet the purpose and need of this plan amendment. Moreover, it did not include necessary changes to existing decisions based on the FWS 2010 listing decision, which identified the inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative also did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B—National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the NTT Report. The GRSG NTT, comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-grouse Conservation Measures* in December 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA MZs. The NTT Report preparers proposed conservation measures based on habitat requirements and other life history aspects of GRSG. It described the scientific basis for the conservation measures proposed within each program area. The report also provided a discussion and emphasized the importance of standardizing monitoring across the WAFWA MZs.

The BLM's Washington Office IM 2012-044 directed the sub-regional planning to analyze the conservation measures developed by the NTT, as appropriate, through the resource management planning process and NEPA.

Alternative B would exclude ROW development in PHMAs and would avoid development in GHMAs. It would close PHMAs to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals and would recommend withdrawal from locatable mineral entry in all PHMAs. These management actions would reduce surface disturbance in PHMAs and would minimize disturbance in GHMAs, thereby maintaining GRSG habitat.

Management actions for wildfire would focus on suppression in PHMAs and GHMAs, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue, with similar impacts under Alternative B as under Alternative A. The BMPs proposed in the NTT Report would be included as RDFs as part of Alternative B and are listed in Appendix C, Required Design Features, of each of the attached ARMPAs.

Alternative B was not selected in its entirety as the ARMPAs because most of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMAs, and few conservation measures in the report were provided for in GHMAs. As a result, this alternative did not provide adequate conservation in GHMAs.

3.1.3 Alternative C—Citizen Groups' Recommended Alternative One

Alternative C was based on an alternative recommended by citizen groups. This alternative emphasizes improving and protecting GRSG habitat and was applied to all occupied GRSG habitat (PHMAs and

GHMAs). Alternative C limited commodity development in areas of occupied GRSG habitat and closed or excluded large portions of the Planning Area to many land uses. This included all PHMAs and GHMAs as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and nonenergy leasable mineral development, and exclusion areas for ROWs. The Utah Draft RMPA/EIS combined this alternative with Alternative F (discussed below) and included two sub-alternatives under Alternative C for a reduction in livestock grazing and WHB management.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMAs and GHMAs to such an extent that it did not adequately accommodate local needs, customs, and culture. Also, it included proposed actions that are not necessary for GRSG conservation. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D—Draft RMP Amendments' Preferred Alternative

Alternative D was identified as the preferred alternative in the Draft EISs. This alternative balanced opportunities to use and develop the Planning Area, as well as conserving, maintaining, and enhancing GRSG and its habitat. Protective measures were applied to GRSG habitat, while allowing for human disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions, based on the BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMPAs/EISs, this alternative was modified to become the Proposed RMPAs and was analyzed in the Final EISs. The preferred alternatives, with slight variations, became the proposed plans in the Final EISs.

In PHMAs under Alternative D, disturbance in GRSG habitat would be limited by excluding wind and solar energy development (except for certain counties in Southeastern Oregon, where avoidance is applied), avoiding most ROW development (subject to certain conditions), applying NSO stipulations to fluid mineral development, and closing PHMAs to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMAs under Alternative D, allocations are less stringent but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMAs).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMAs and GHMAs, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative based on information provided by the State or Governor's offices for inclusion and analysis in the EISs. In many instances, the BLM had to adjust what was provided by the States and Governors to fit such requirements as BLM language and decision-making constructs. This alternative incorporates guidance from specific State conservation strategies, if developed, or

recommendations from the State for managing Federal lands. It emphasizes managing GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. Alternative E was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a State GRSG conservation plan and, under this alternative, reverted back to Alternative A, the No Action alternative.

For Nevada, Alternative E would apply an "avoid, minimize, and mitigate" strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. The effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed. This is because the State's plan does not contain land use plan-level allocation decisions, such as ROW exclusion and avoidance areas; it relies largely on the avoid, minimize, and mitigate strategy at the project level.

The FWS March 2010 "warranted, but precluded" ESA listing decision identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism. The BLM believes Alternative E did not incorporate adequate regulatory mechanisms into the existing plan to meet its purpose and need to conserve, enhance, and restore GRSG and its habitat; therefore, the BLM did not select Alternative E as the ARMPA.

For Oregon, Alternative E contains GRSG conservation guidelines from *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat*. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the State plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the State plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats, such as recreation, improper livestock grazing, and West Nile virus, for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, Alternative E1 is based on the State of Utah's *Conservation Plan for Greater Sage-Grouse in Utah* (Utah Greater Sage-Grouse Working Group 2013) and would apply to all BLM-administered lands in Utah. In Alternative E1 conservation measures would be applied to 11 State-identified areas, called Sage-Grouse Management Areas. Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on State or Federally managed lands within any particular GRSG management area; occupied habitat outside of these areas would not receive new management protection and would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the State's plans were not consistent with the purposes, policies, and programs of Federal laws and regulations

applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 Alternative F—Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMAs and GHMAs. Alternative F would limit commodity development in areas of occupied GRSG habitat and would close or designate portions of the Planning Area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMAs. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and WHB management use by 25 percent within PHMAs and GHMAs. While the Utah Draft EIS did not include an Alternative F, it did create two sub-alternatives under Alternative C for livestock grazing and WHBs to consider and analyze a similar reduction.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMAs and GHMAs to such an extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMPAs/EISs, the BLM developed the Proposed Plan Amendments/Final EISs for managing BLM-administered lands. In these documents, the BLM focused on addressing public comments, while continuing to meet its legal and regulatory mandates.

The Proposed Plan Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the Draft EISs. The Proposed Plan Amendments, with slight variations (as outlined in **Section 2.4** of this ROD), became ARMPAs. The BLM adopted the Proposed Plan Amendments as the ARMPAs because they also balance resource protections with resource uses to protect resources, while achieving sustainable resource development.

3.1.8 Environmentally Preferable Alternative

CEQ regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2(b)). Question 6A of CEQ's *40 Most-Asked Questions* regarding CEQ's NEPA regulations (46 FR 18026) defines that term to ordinarily mean the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMPAs/Final EISs, is the most environmentally preferable. However, Section 101 of NEPA expresses a continuing policy of the Federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." FLPMA Section 302 requires the BLM to manage public lands for multiple-use and sustained yield, and Section 102(12) of FLPMA declares a policy of the United States that "the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and

Minerals Policy Act of 1970 (84 Stat. 1876, 30 USC, Section 21a) as it pertains to the public lands." For these reasons, Alternative C was not selected (in its entirety) as the sub-regional ARMPAs.

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations
- They did not meet the purpose and need
- The alternative was already captured within the range of alternative analyzed in the EIS
- They were already part of an existing plan, policy, or administrative function
- They did not fall within the limits of the planning criteria

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11 of each of the sub-regional Proposed RMPAs/Final EISs.

Idaho and Southwestern Montana

- FWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMAs or GHMAs to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMAs or GHMAs to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- FWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMAs or GHMAs to OHV Use Alternative

Utah

- FWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative

- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMAs for All Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- COT Report Alternative
- BLM Policies and Regulations Alternative

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CHAPTER 4
PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

BLM resource management planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures for implementing NEPA, as well as specific BLM planning and NEPA policies. NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed management.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through *Federal Register* notices, formal and informal public meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related websites.

This section documents the outreach efforts that have occurred to date. For more plan-specific information related to the public involvement, consultation, and coordination processes that the BLM conducted, please refer to Chapter 3 of the attached ARMPAs.

4.1 PUBLIC INVOLVEMENT

The scoping period for the National GRSG Planning Strategy began with the publication of the Notice of Intent in the *Federal Register* on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012 (BLM and Forest Service 2012).

Notices of Availability for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMPAs/EISs were published in the *Federal Register* on November 1, 2013. The Oregon Draft RMPA/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Draft RMPAs/EISs, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMPAs/EISs were considered and incorporated, as appropriate, into the Proposed Plan Amendments/Final EISs. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the Draft RMPAs/EISs' comment periods. Comments on the Draft RMPAs/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the proposed plan amendments. Public comments resulted in the addition of clarifying text but did not significantly change the Proposed RMPAs.

On May 29, 2015, the BLM released an NOA for all of the Great Basin Region GRSG Proposed RMPAs/Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-regions. The release of the NOA initiated a 30-day public protest period and a 60-day Governor's consistency review. Refer to **Sections 2.5** and **2.6** for a full description of the protest period and Governor's consistency review outcomes.

4.2 COOPERATING AGENCIES

A cooperating agency is any Federal, State, or local government agency or Native American tribe that enters into a formal agreement with the lead Federal agency to help develop an environmental analysis. Cooperating agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are as follows:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other Federal, State, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal MOU for the National GRSG Planning Strategy with the FWS and the Forest Service. In addition, the Great Basin sub-regions also invited local, State, other Federal, and tribal representatives to participate as cooperating agencies for these RMPAs/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 signed with State agencies, 55 signed with counties, and 5 signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outline their respective roles and responsibilities in the planning and NEPA processes. Additional information can be found in Chapter 6 of each of the Proposed Amendments/Final EISs. These cooperating agencies divided by sub-region are provided below.

Great Basin Region-Wide

US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana

Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California

Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration

Washoe County
Washoe Tribe
White Pine County

Oregon

Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah

Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emery County
Garfield County
Grand County
Iron County
Kane County
Lincoln County (Wyoming)
Millard County
Rich County
Sanpete County
Sevier County
State of Utah (PLPCO)
State of Wyoming
Sweetwater County (Wyoming)
Sweetwater County Conservation District (Wyoming)
Tooele County
Uinta County (Wyoming)
Uintah County (Utah)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

4.3 FWS SECTION 7 CONSULTATION

Under Section 7 of the ESA, Federal agencies must consult with the FWS when an action the agency carries out, funds, or authorizes *may affect* a listed endangered or threatened species or its designated critical habitat. The four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the Final EISs. (The FWS is a cooperating agency in this planning process.) FWS staff participated in interdisciplinary team meetings and have been provided with drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the FWS, before the release of the Draft RMPAs/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan amendments "may affect" the species for which this consultation occurred.

Before the release of the Proposed Amendments/Final EISs, the BLM formally submitted the biological assessments to the FWS for review on whether the plans would affect a Federally listed, proposed, or candidate species. The FWS evaluated the biological assessments and concurred with either a "no effect" or "may affect, but not likely to adversely affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana; these memoranda are appendices to each of the ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah prairie dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix J).

4.4 NATIVE AMERICAN AND STATE HISTORIC PRESERVATION OFFICE CONSULTATION

In recognition of the government-to-government relationship between individual tribes and the Federal government, the BLM initiated Native American consultation in preparation of the four Great Basin sub-regional RMPAs/EISs. The BLM coordinated with Native American tribes throughout the planning process. In December 2011, the BLM sent letters to 65 tribal governments. The letters provided initial notification of the RMPAs/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation related to the planning process. Tribes have been participating in the RMPAs/EISs processes through numerous meetings and through personal BLM contacts, and in some cases, as cooperating agencies.

As part of the NEPA scoping and consultation process, the BLM notified the Idaho, Montana, Nevada, California, and Oregon State Historic Preservation Officers (SHPOs) of the opportunities to comment on the planning and NEPA documents prepared for these efforts, as they relate to historic properties in the Planning Areas and the land use plan decisions included in the ARMPAs. The BLM sought information about historic properties in consideration of land use planning decisions in accordance with the National Programmatic Agreement between the BLM, Advisory Council on Historic Preservation, National Conference of SHPOs, and the Idaho, Montana, and Oregon State Protocol Agreement between the BLM and these SHPOs. If the BLM received comments and information from SHPOs and tribes, then it considered and incorporated that information into the Proposed RMPAs/Final EISs and the ARMPAs.

The BLM has met its obligations under Section 106 of the National Historic Preservation Act, 54 USC, Section 306108, as outlined in the National Programmatic Agreement and the State protocols. The BLM will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American tribes, and other interested parties. This is consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant State protocols or, where applicable, the Section 106 regulations.

For the Utah ARMPA, the BLM completed consultation with the Utah SHPO, in accordance with 36 CFR Part 800. In July 2015, the BLM submitted a formal letter, concluding that the land use plan amendments would not adversely affect cultural properties and seeking input and concurrence on those findings. The BLM received a concurrence letter from the Utah SHPO on July 30, 2015. It will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American tribes, and other interested parties. This is consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant State protocols and programmatic agreements, or where applicable, the Section 106 regulations.

CHAPTER 5
REFERENCES

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CHAPTER 6
APPROVAL

Land Use Plan Decisions

It is the decision of the Bureau of Land Management to approve the Great Basin Region Resource Management Plan Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana Sub-regions, as described in this Record of Decision. The Proposed Plan Amendments and related Final Environmental Impact Statements were published on May 29, 2015, in the *Federal Register* (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze
Director
Bureau of Land Management

Date: Sept. 21, 2015

Approval

I hereby approve the land use plan decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 1610.5-2(b) and 43 CFR 4.410(a)(3), it is not subject to appeal under Departmental regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice M. Schneider
Assistant Secretary
Land and Minerals Management

Date: 9-21-15

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ATTACHMENTS

The following approved resource management plan amendments are included in this Record of Decision and are bound as separate documents.

Attachment 1: Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 2: Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 3: Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 4: Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

Sarah Crump

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, September 02, 2015 2:22 PM
To: nvca sagegrouse
Subject: Fwd: Correct Numbers For ROD
Attachments: Document4.docx

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Wed, Jul 1, 2015 at 8:47 AM
Subject: Correct Numbers For ROD
To: Matthew Magaletti <mmagalet@blm.gov>

Matt –

Here are the final perfect numbers for the ROD Table!!!!

L

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Table X
Land Management in the Great Basin Planning Area

Surface Land Management	NV/NE CA	ID/SW MT	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,975,500**
USFWS	805,900	81,400	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,200**	**48,209,900**	**31,656,200**	**194,208,900**

Source: BLM GIS 2015

Sarah Crump

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Tuesday, September 08, 2015 11:54 AM
To: nvca sagegrouse
Subject: Fwd: Great Basin ROD NOA Materials
Attachments: GB Region Amendments ROD BP_7.17.15.docx; GB Region Amendments ROD FRN_ 7.17.15.doc

---------- Forwarded message ----------
From: **Magaletti, Matthew** <mmagalet@blm.gov>
Date: Sun, Jul 19, 2015 at 2:16 PM
Subject: Great Basin ROD NOA Materials
To: Joan Suther <jsuther@blm.gov>, Jennifer Fleuret <jfleuret@blm.gov>, Lauren Mermejo <lmermejo@blm.gov>, Jonathan Beck <jmbeck@blm.gov>, Quincy Bahr <qfbahr@blm.gov>

Hello Everyone,

Attached for your quick review are the NOA materials that I pulled together for the GRSG Great Basin Region NOA for the RODs and ARMPAs. As you will see, the information has been significantly summarized to accommodate all 4 planning efforts. If you could simply look over the materials for any fatal flaws and send me back comments or adjustments by Tuesday, I would be greatly appreciative.

Thanks,

--
Matthew Magaletti
Planning and Environmental Analyst
Bureau of Land Management, WO-210
(202) 912-7085

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Draft Deliberative Document – Not for Distribution

Briefing Paper

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah.

1. State Offices

California, Idaho, Nevada, Montana, Oregon, and Utah

2. What is the title of this notice?

Notice of Availability of the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah.

3. What are the key issues raised by the underlying decision documents for this notice?

Based on comments received during the National Environmental Policy Act (NEPA) process the following planning issues have been identified:

- General (Process/Policy)
- Lands and Realty
- Livestock Grazing
- Minerals and Energy
- Predation
- Recreation and Visitor Services
- Greater sage grouse
- Socioeconomic
- Special Management Area Designations
- Special Status Species (Including Greater Sage-Grouse)
- Travel and Access Management
- Vegetation
- Wildland Fire Management
- Wildlife and Fisheries

The BLM has authority on BLM-managed surface and Federal minerals under the Federal Land Policy Management Act (FLPMA) of 1976 for multiple use management.

4. Who are the primary users affected by or parties interested in the underlying decision or actions? What are their concerns?

All public land users and local communities in the four planning areas (which spans across the states of California, Idaho, Montana, Nevada, Oregon, Utah and a small portion of Wyoming) will be affected by and interested in the decisions in this Record of Decision (ROD) and

Approved Resource Management Plan Amendments (ARMPAs). The Environmental Impact Statements (EISs) analysis areas included approximately 194.0 million acres of BLM, Forest Service, National Park Service, U.S. Bureau of Reclamation, State, local and private lands located in the four Great Basin planning areas.

The BLM administers approximately 90 million acres across all four planning areas. Cooperating agencies include counties, conservation districts, State agencies, and Federal agencies. The NEPA timeline follows:

Scoping

- Dec. 9, 2011: Notice of Intent published in the Federal Register
- Spring-Summer 2012: Update alternatives based on the National Greater Sage-Grouse Strategy
- Fall-Winter 2012: Assess updated alternatives
- Jan.-Feb. 2012: Public open house meetings were held across California, Idaho, Montana, Nevada, Oregon and Utah
- May 2012: National GRSG Planning Strategy Scoping Summary Report was released.

Notice of Availability of Draft LUPA/EISs

- Nov. 1, 2013 – Idaho/Southwestern Montana Draft LUP Amendment/EIS Notice of Availability published in the Federal Register
- Nov. 26, 2013 – Oregon Draft LUP Amendment/EIS Notice of Availability published in the Federal Register
- Nov. 1, 2013 – Nevada/ Northeastern California Draft LUP Amendment/EIS Notice of Availability published in the Federal Register
- Nov. 1, 2013 – Utah Draft LUP Amendment/EIS Notice of Availability published in the Federal Register

The BLM received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft EISs' comment periods.

Notice of Availability of Proposed LUPAs/Final EISs

- May 29, 2015 – Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Notice of Availability published in the Federal Register, initiating the 30-day protest periods and 60-day Governor's consistency reviews.

The BLM received a total 133 timely and valid protest submissions across on all four Proposed LUPAs/Final EISs. All protests have been resolved and/or dismissed.

The BLM also received notifications of inconsistencies and recommendations as to how to resolve them during the Governor's consistency review period from the States of Idaho, Montana, Nevada, Oregon, and Utah. The BLM also received a concurrence letter of consistency from the State of California. On August 5, 2015, the BLM State Directors from Idaho, Montana, Nevada, Oregon, and Utah sent notification letters to their respective States as to whether they accepted or rejected their recommendations for consistency. The States were then given thirty

days to appeal the State Directors' decisions. The States of Idaho, Montana, Nevada and Utah appealed the BLM State Directors' decisions. The BLM Director affirmed the BLM State Directors' decisions to reject these recommendations as they did not provide for a reasonable balance between the national interest and the State's interest. The Director communicated his decisions in the Federal Register on September 14, 2015.

Commented [mem1]: This is only placeholder language and does not reflect the status of the protest or Governor's consistency review process.

5. Is tribal consultation appropriate under E.O. 13175 or other authorities? Will the proposed action potentially impact tribes or tribal lands, or generate their interest. If so, what consultation or other communication/outreach has been conducted?

The BLM initiated consultation with the tribes for this planning effort in December 2011. The BLM performed consultation with the tribes in accordance with the National Environmental Policy Act, the National Historic Preservation Act, the FLPMA, the American Indian Religious Freedom Act, Executive Order 13007 on Indian Sacred Sites, and Executive Order 13084 on Consultation and Coordination with Indian Tribal Governments.

6. Will this notice be controversial?

Yes. The planning efforts have received significant interest since the NOI was published in 2011. The BLM conducted several meetings with cooperating agencies on each of the four Greater Sage-Grouse Amendments since initiating the NEPA process. These groups expressed a broad range of opinions throughout the process. The ARMPAs and ARMPs include various levels of stipulations to fluid mineral leasing, right-of-way exclusion and avoidance areas, surface disturbance caps, and recommendations for locatable mineral withdrawals in certain planning areas. During the DEIS comment period, the BLM and the Forest Service conducted 29 public meetings across California, Idaho, Montana, Nevada, Oregon and Utah.

The BLM also received a total 133 timely and valid protest submissions across all four Proposed LUPAs/Final EISs. All protests have been resolved and/or dismissed.

7. What will the underlying decision or action change? (Summarize changes to policy, management practices, allowable uses, differences between draft EIS and final EIS, etc.).

The ROD and ARMPAs will amend the following Resource Management Plans (RMPs):

California
- Alturas RMP (2008)
- Eagle Lake RMP (2008)
- Surprise RMP (2008)

Idaho
- Birds of Prey NCA RMP (2008)
- Bruneau RMP revision (and existing 1983 Bruneau MFP)
- Challis RMP (1999)
- Craters of the Moon NM RMP (2006)

- Four Rivers RMP revision (and existing 1988 Cascade and 1983 Kuna and Bruneau MFPs)
- Jarbidge RMP revision (and existing 1987 Jarbidge RMP)
- Lemhi RMP (1987)
- Owyhee RMP (1999)
- Pocatello RMP revision Shoshone-Burley RMP revision (and existing 1980 Bennett Hills/Timmerman Hills, 1985 Cassia, 1975 Magic, 1985 Monument, 1981 Sun Valley, and 1982 Twin Falls MFPs/RMPs)
- Upper Snake RMP revision (and existing 1983 Big Lost, 1985 Medicine Lodge, 1981 Big Desert, and 1981 Little Lost-Birch Creek MFPs/RMPs)
- Boise NF, ID 2003 Boise NF Plan
- Curlew National Grassland Management Plan (2002) (FS)
- Caribou National Forest Revised Forest Plan (2003) (FS)
- Caribou-Targhee NF, ID 1997 Targhee NF Plan
- Salmon-Challis NF, ID 1987 Challis NF Plan
- Salmon-Challis NF, ID 1988 Salmon NF Plan
- Sawtooth National Forest Revised Forest Plan (2003) (FS)

Montana

- Dillon RMP (2006)
- Beaverhead-Deerlodge NF, MT 2009 Beaverhead-Deerlodge National Forest (NF) Plan

Nevada

- Battle Mountain RMP revision (and existing 1997 Tonopah and 1986 Shoshone-Eureka RMPs)
- Black Rock Desert-High Rock Canyon NCA RMP (2004)
- Carson City RMP revision (and existing 2001 Carson City Consolidated RMP)
- Elko RMP (1987)
- Ely RMP (2008)
- Wells RMP (1985)
- Winnemucca RMP revision (and existing 1982 Paradise-Denio MFP and 1982 Sonoma-Gerlach RMP)
- Humboldt National Forest LRMP (1986)
- Toiyabe National Forest LRMP (1986)

Oregon

- Andrews RMP (2005)
- Baker RMP revision (and existing 1989 Baker RMP)
- Brothers-LaPine RMP (1989)
- Lakeview RMP amendment (and existing 2003 Lakeview RMP)
- Southeastern Oregon RMP amendment (and existing 2003 Southeastern Oregon RMP)
- Steens RMP (2005)
- Three Rivers RMP (1992)
- Upper Deschutes RMP (2005)

Utah

- Box Elder RMP (1986)
- Cedar/Beaver/Garfield/ Antimony RMP (1986)
- Grand Staircase-Escalante National Monument Management Plan (2000)
- House Range RMP (1987)
- Kanab RMP (2008)
- Park City Management Framework Plan (MFP) (1975)
- Pinyon MFP (1978)
- Pony Express RMP (1990)
- Price RMP (2008)
- Randolph MFP (1980)
- Richfield RMP (2008)
- Salt Lake District Isolated Tracts Planning Analysis (1985)
- Vernal RMP (2008)
- Warm Springs RMP (1987)
- Dixie National Forest LRMP (1986)
- Fishlake National Forest LRMP (1986)
- Uinta National Forest Revised Forest Plan (2003)
- Wasatch-Cache National Forest Revised Forest Plan (2003)
- Ashley National Forest LRMP (1986)
- Manti-La Sal National Forest LRMP (1986)

This ROD and ARMPAs include land use allocations that limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMA), while minimizing disturbance in General Habitat Management Areas (GHMA). In addition to establishing protective land use allocations, the ARMPAs implement a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, as well as other conservation measures throughout the range. The cumulative effect of these conservation measures work in concert to protect, improve, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

8. Will this notice need Communications Materials, e.g., a press release, or a Communications Plan? If so, enclose these materials with the notice package submitted.

A press release and state-wide communication plans are being developed and will be approved separately. This notice will also reference the bureau wide communication plan for the National Greater Sage Grouse Planning Strategy.

9. What are the reasons for the timing of the notice and the consequence, if any, of delaying or canceling the release?

The timing of this notice is critical in order to give the U.S. Fish and Wildlife Service time to review and consider new regulatory mechanisms contained in these amendments when considering their listing decision for Greater Sage-Grouse. Delaying or canceling the release would directly affect the BLM's ability to stay on schedule.

BLM policy/regulation is to issue a notice of availability (NOA) for a ROD and ARMPAs.

Publication of the NOA must be closely coordinated with the Environmental Protection Agency's (EPA) weekly publication of their list of FEIS documents.

10. How has this action been analyzed under the National Environmental Policy Act (NEPA)?

The Notice of Intent for these planning efforts and associated NEPA documents was published on December 9, 2011 and cooperating agencies were active in alternative development. Internal and cooperating agency comments were received and evaluated. Public meetings were held for the DEISs. Comments on the Draft LUPAs/EISs received from the public, cooperators, and internal BLM review were considered and incorporated as appropriate into the proposed plan amendments.

The ROD and ARMPAs were prepared by the BLM in accordance with BLM planning regulations and guidance under the authority of FLPMA and the BLM's Land Use Planning Handbook, H-1601-1. The BLM developed EISs associated with the RMP Amendments to meet the requirements of the NEPA and the Council on Environmental Quality regulations.

11. Is there any additional pertinent, descriptive information that reviewers need to know or would increase understanding?

All four of the Great Basin sub-regional EISs for these ARMPAs are part of a total of 15 separate EISs that comprise the BLM's National Greater Sage-Grouse Planning Strategy. This notice will be released at the same time as the Rocky Mountain Region's NOA for release of that ROD and ARMPAs/ARMPs.

The Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah GRSG Draft LUPAs/EISs and Proposed LUPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities. Management decisions within the ARMPAs apply only to BLM-administered lands.

12. List the names and positions of the people who have prepared, reviewed, and approved the notice and the underlying decisions and documents.

The notice was prepared by Matthew Magaletti, Planning and Environmental Analyst and reviewed by:

Bureau of Land Management

Jon Beck, GRSG Planning Lead, Idaho State Office
Joan Suther, GRSG Planning Lead, Oregon State Office
Lauren Mermejo, GRSG Planning Lead, Nevada State Office
Quincy Bahr, GRSG Planning Lead, Utah State Office
Amy Lueders, Acting Assistant Director, Resources & Planning

13. Authorizing signature of State Office or Center Budget Officer, or Washington Office Resource Advisor certifying that the cost code on the Federal Register notice is accurate and valid.

(LLWO2100000 L11100000.DQ0000.LXSISGST0000)

_____
(signature)

_____
(print name and date)

4310-22-P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLWO2100000 L11100000.DR0000.LXSISGST0000]

Notice of Availability of the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana; Nevada and Northeastern California; Oregon; and Utah.

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of Availability.

SUMMARY: The Bureau of Land Management (BLM) announces the availability of the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. The Secretary of Interior signed the ROD on September 18, 2015, which constitutes the final decision of the BLM and makes the ARMPAs effective immediately.

ADDRESSES: Copies of the ROD and ARMPAs are available upon request and are also available for public inspection at the addresses listed in the "SUPPLEMENTARY INFORMATION" section. Interested persons may also review the ROD and ARMPAs on the internet at http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

FOR FURTHER INFORMATION CONTACT: For the Idaho and Southwestern Montana GRSG ARMPA: Jonathan Beck, BLM Idaho State Office GRSG Planning Lead,

telephone 208-373-4070; address 1387 South Vinnell Way, Boise ID 83709; email jmbeck@blm.gov.

For the Nevada and Northeastern California GRSG ARMPA: Lauren Mermejo, BLM Nevada State Office GRSG Project Lead, telephone 775-861-6580; address 1340 Financial Boulevard., Reno NV, 89502; email lmermejo@blm.gov.

For the Oregon GRSG ARMPA: Joan Suther, BLM Oregon State Office GRSG Planning Lead, telephone 541-573-4445; address BLM Burns District, 28910 Hwy 20, West Hines, OR, 97738; email jsuther@blm.gov.

For the Utah GRSG ARMPA: Quincy Bahr, BLM Utah State Office GRSG Project Lead, telephone 801-539-4122; address 440 West 200 South, Suite 500, Salt Lake City, UT 84101-1345; email qfbahr@blm.gov.

Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 to contact the above individuals during normal business hours. The FIRS is available 24 hours a day, 7 days a week, to leave a message or question with the above individual. You will receive a reply during normal business hours.

SUPPLEMENTARY INFORMATION: This Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah were developed through a collaborative planning process in order to incorporate land use plan level conservation measures into existing BLM land use plans to conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. The ROD and ARMPAs include land use allocations that limit or eliminate new surface disturbance in GRSG Priority Habitat Management Areas (PHMA), while

minimizing disturbance in GRSG General Habitat Management Areas (GHMA). In addition to establishing protective land use allocations, the ARMPAs implement a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, as well as other conservation measures throughout the range. The cumulative effect of these conservation measures work in concert to protect, improve, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The ROD and ARMPAs amend the following BLM Resource Management Plans (RMPs) and Management Framework Plans (MFPs), as amended:

California

- Alturas RMP (2008)
- Eagle Lake RMP (2008)
- Surprise RMP (2008)

Idaho

- Birds of Prey NCA RMP (2008)
- Bruneau RMP revision (and existing 1983 Bruneau MFP)
- Challis RMP (1999)
- Craters of the Moon NM RMP (2006)
- Four Rivers RMP revision (and existing 1988 Cascade RMP and 1983 Kuna and Bruneau MFPs)
- Jarbidge RMP revision (and existing 1987 Jarbidge RMP)
- Lemhi RMP (1987)

- Owyhee RMP (1999)
- Pocatello RMP revision
- Shoshone-Burley RMP revision (and existing 1980 Bennett Hills/Timmerman Hills, 1985 Cassia, 1975 Magic, 1985 Monument, 1981 Sun Valley, and 1982 Twin Falls MFPs/RMPs)
- Upper Snake RMP revision (and existing 1983 Big Lost, 1985 Medicine Lodge, 1981 Big Desert, and 1981 Little Lost-Birch Creek MFPs/RMPs)
- Boise National Forest, LRMP (2003)
- Curlew National Grassland Management Plan, LRMP (2002)
- Caribou National Forest, Revised LRMP (2003)
- Caribou-Targhee National Forest, Targhee National Forest LRMP (1997)
- Salmon-Challis National Forest, Challis National Forest LRMP (1987)
- Salmon-Challis National Forest, Salmon National Forest LRMP (1988)
- Sawtooth National Forest, Revised LRMP (2003)

Montana

- Dillon RMP (2006)
- Beaverhead-Deerlodge National Forest, LRMP (2009)

Nevada

- Battle Mountain RMP revision (and existing 1997 Tonopah and 1986 Shoshone-Eureka RMPs)
- Black Rock Desert-High Rock Canyon NCA RMP (2004)
- Carson City RMP revision (and existing 2001 Carson City Consolidated RMP)
- Elko RMP (1987)

- Ely RMP (2008)
- Wells RMP (1985)
- Winnemucca RMP revision (and existing 1982 Paradise-Denio MFP and 1982 Sonoma-Gerlach RMP)
- Humboldt National Forest, LRMP (1986)
- Toiyabe National Forest, LRMP (1986)

Oregon

- Andrews RMP (2005)
- Baker RMP revision (and existing 1989 Baker RMP)
- Brothers-LaPine RMP (1989)
- Lakeview RMP amendment (and existing 2003 Lakeview RMP)
- Southeastern Oregon RMP amendment (and existing 2003 Southeastern Oregon RMP)
- Steens RMP (2005)
- Three Rivers RMP (1992)
- Upper Deschutes RMP (2005)

Utah

- Box Elder RMP (1986)
- Cedar/Beaver/Garfield/ Antimony RMP (1986)
- Grand Staircase-Escalante National Monument Management Plan (2000)
- House Range RMP (1987)
- Kanab RMP (2008)
- Park City MFP (1975)

- Pinyon MFP (1978)
- Pony Express RMP (1990)
- Price RMP (2008)
- Randolph MFP (1980)
- Richfield RMP (2008)
- Salt Lake District Isolated Tracts Planning Analysis (1985)
- Vernal RMP (2008)
- Warm Springs RMP (1987)
- Dixie National Forest, LRMP (1986)
- Fishlake National Forest, LRMP (1986)
- Uinta National Forest, Revised LRMP (2003)
- Wasatch-Cache National Forest, Revised LRMP (2003)
- Ashley National Forest, LRMP (1986)
- Manti-La Sal National Forest, LRMP (1986)

The Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft Land Use Plan Amendments (LUPAs)/Draft Environmental Impact Statements (EISs) and Proposed LUPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities. Management decisions within the ROD and ARMPAs apply only to BLM-administered lands. Across all four sub-regions in the Great Basin Region, the ROD and ARMPAs amend existing land use plan decisions on a total of approximately 90 million BLM-administred surface acres.

A Notice of Availability (NOA) for the Great Basin Region GRSG proposed LUPAs and final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah sub-regions was published in the Federal Register on May 29, 2015, which initiated a 30-day protest period and a 60-day Governor's consistency review period.

The BLM received a total 133 timely and valid protest submissions across all four Proposed LUPAs/Final EISs. All protests have been resolved and/or dismissed. For a full description of the issues raised during the protest period and how they were addressed, please refer to the Director's Protest Resolution Reports for all four ARMPAs, which are available at the following website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

The BLM received notifications of inconsistencies and recommendations as to how to resolve them during the Governor's consistency review period from the States of Idaho, Montana, Nevada, Oregon, and Utah. The BLM also received a concurrence letter of consistency from the State of California. On August 5, 2015, the BLM State Directors from Idaho, Montana, Nevada, Oregon, and Utah sent notification letters to their respective States as to whether they accepted or rejected their recommendations for consistency. The States were then given thirty days to appeal the State Directors' decisions. The States of Idaho, Montana, Nevada and Utah appealed the BLM State Directors' decisions. The BLM Director affirmed the BLM State Directors' decisions to reject these recommendations as they did not provide for a reasonable balance between the

national interest and the State's interest. The Director communicated his decisions in the Federal Register on September 14, 2015.

As a result of the Governors' consistency reviews and resolving protest issues, only minor modifications were made in preparing the Approved RMP. These modifications provided further clarification of some of the decisions.

The preferred alternatives as described in the proposed land use plan amendments were selected in the ROD and ARMPAs, with some minor clarifications based on protests and Governors' consistency reviews.

Copies of the Idaho and Southwestern Montana GRSG ROD and ARMPA are available upon request from the offices' field/district manager or state director described below, or are available for public inspection at:

- BLM Idaho State Office, 1387 S. Vinnell Way, Boise ID 83709
- BLM Boise District Office, 3948 Development Avenue, Boise, ID 83705
- BLM Owyhee Field Office, 20 First Avenue West, Marsing, ID 83639
- BLM Idaho Falls District Office, 1405 Hollipark Drive, Idaho Falls, ID 83401
- BLM Salmon Field Office, 1206 South Challis Street, Salmon, ID 83467
- BLM Challis Field Office, 1151 Blue Mountain Road, Challis, ID 83226
- BLM Pocatello Field Office, 4350 Cliffs Drive, Pocatello, ID 83204
- BLM Twin Falls District Office, 2536 Kimberly Road, Twin Falls, ID 83301
- BLM Shoshone Field Office, 400 West F Street, Shoshone, ID 83352
- BLM Burley Field Office, 15 East 200 South, Burley, ID 83318
- BLM Coeur d' Alene District Office, 3815 Schreiber Way, Coeur d'Alene, ID 83815

- BLM Cottonwood Field Office, 1 Butte Drive, Cottonwood, ID 83522
- BLM Montana State Office, 5001 Southgate Drive, Billings, MT 59101
- BLM Butte District Office, 106 North Parkmont, Butte, MT 59701
- BLM Dillon Field Office, 1005 Selway Drive., Dillon, MT 59725-9431

Copies of the Nevada and Northeastern California GRSG ROD and ARMPA are available upon request from the offices' field/district manager or state director described below, or are available for public inspection at:

- BLM Nevada State Office, 1340 Financial Boulevard., Reno, NV, 89502
- BLM Winnemucca District Office, 5100 E. Winnemucca Boulevard., Winnemucca, NV, 89445
- BLM Ely District Office, 702 North Industrial Way, Ely, NV, 89301
- BLM Elko District Office, 3900 E. Idaho Street, Elko, NV, 89801
- BLM Carson City District Office, 5665 Morgan Mill Road, Carson City, NV, 89701
- BLM Battle Mountain District Office, 50 Bastian Road, Battle Mountain, NV, 89820
- BLM California State Office, 2800 Cottage Way, Suite W-1623, Sacramento, CA, 95825
- BLM Alturas Field Office, 708 W. 12th Street, Alturas, CA, 96101
- BLM Eagle Lake Field Office, 2950 Riverside Drive, Susanville, CA, 96130
- BLM Surprise Field Office, 602 Cressler Street, Cedarville, CA, 96104

Copies of the Oregon GRSG ROD and ARMPA are available upon request from the offices' field/district manager or state director described below, or are available for public inspection at:

- BLM Oregon State Office, 1220 S.W. 3rd Avenue, Portland, OR 97204
- BLM Baker Resource Area Office, 3100 H Street, Baker City, OR 97814
- BLM Burns District Office, 28910 Highway 20 West, Hines, OR 97738
- BLM Lakeview District Office, 1301 S. G Street, Lakeview, OR 97630
- BLM Prineville District Office, 3050 N.E. 3rd Street, Prineville, OR 97754
- BLM Vale District Office, 100 Oregon Street., Vale, OR 97918

Copies of the Utah GRSG ROD and ARMPA are available upon request from the offices' field/district manager or state director described below, or are available for public inspection at:

- BLM Utah State Office, 440 West 200 South, Suite 500, Salt Lake City, UT, 84101
- BLM Cedar City Field Office, 176 East D.L. Sargent Drive, Cedar City, UT 84721
- BLM Fillmore Field Office, 95 East 500 North, Fillmore, UT 84631
- BLM Kanab Field Office and Grand Staircase-Escalante National Monument, 669 South Highway 89A, Kanab, UT 84741
- BLM Price Field Office, 125 South 600 West, Price, UT 84501
- BLM Richfield Field Office, 150 East 900 North, Richfield, UT 84701
- BLM Salt Lake Field Office, 2370 S. Decker Lake Boulevard., West Valley City, UT 84119
- BLM Vernal Field Office, 170 South 500 East, Vernal, UT 84078

_____

Amy Lueders

Acting Assistant Director, Renewable Resources & Planning

AUTHORITY: 36 CFR 219.59, 40 CFR 1506.6, 40 CFR 1506.10, 43 CFR 1610.2;
43 CFR 1610.5

From: Mermejo, Lauren [lmermejo@blm.gov]
Sent: Wednesday, September 02, 2015 12:56 PM
To: nvca sagegrouse
Subject: Fwd: maps

---------- Forwarded message ----------
From: **Mermejo, Lauren** <lmermejo@blm.gov>
Date: Tue, Jun 23, 2015 at 11:31 AM
Subject: maps
To: Matthew Magaletti <mmagalet@blm.gov>

Suggested path forward for maps for the RODs and ARMPs (As):

- The RODs will include three consistent GRSG habitat management maps per regional ROD (these will be inset into the documents as figures) that will be populated by the NOC. These will include:
    - Figure 1: Greater Sage-Grouse Planning Strategy Boundaries
    - Figure 2: Greater Sage-Grouse Great Basin Sub-regional Boundaries with PHMA and GHMA (Planning Area - identified across all land ownership types).
    - Figure 3: Greater Sage-Grouse Great Basin Sub-regional Boundaries with PHMA and GHMA (Decision Area - BLM administered lands only).
- The Approved RMP Amendments and Approved RMP GRSG Habitat Management section (revisions) will include two GRSG habitat management maps for each sub-region (similar to what was depicted in the Executive Summaries of the PRMPs):
    - Figure 1: Greater Sage-Grouse Habitat Management Areas – X Sub-region (Planning Area - identified across all land ownership types).
    - Figure 2: Greater Sage-Grouse Habitat Management Areas – X Sub-region (Decision Area - BLM administered lands only).
    - All of the amendments will use a template to develop maps depicting the allocation decisions in the ARMPA (approximately 13 maps per sub-region).
        - Due to the complexity of the revisions, this will be a difficult task and the revisions will use their own unique templates depicting allocations across their planning area for all program areas.

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Sarah Crump

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Tuesday, September 01, 2015 11:21 AM
To: nvca sagegrouse
Subject: Fwd: Next Week in Reno
Attachments: DRAFT ROD_Great Basin Region_6.18.15.docx; AMENDMENTS_Approved RMPA Template_6_17_15.docx; REVISIONS_Approved RMP Outline and GRSG Habitat Management Template_6_15_15.docx

---------- Forwarded message ----------
From: **Magaletti, Matthew** <mmagalet@blm.gov>
Date: Thu, Jun 18, 2015 at 10:17 AM
Subject: Next Week in Reno
To: Lauren Mermejo <lmermejo@blm.gov>
Cc: Stephanie Carman <scarman@blm.gov>

Hello Lauren,

I hope you made it back to Reno after your long adventure across the State! Attached is where I left off with the Great Basin ROD template. I made it down to section 2.5.3. If you have time tomorrow, think about how we should populate section 1.3 and how we plan to structure sections 3-6.

Attached are the ARMPA (amendments) template and the ARMP (revisions) outline and GRSG Habitat Management section template I populated and shared with the planners yesterday.

Below is a schedule for next week - let me know what you think.

Tuesday 6/23

-Address all PMs issues with ARMPA templates that the planners provide us by COB Monday.

-Finalize Forest Service mapping issues sideboards

-Populate the Great Basin ROD Template

Wednesday 6/24

-Finish populating the Great Basin ROD Template

-If we have a final ROD strategy for the Rockies – begin structuring RM ROD.

Thursday 6/25 (AM)

-Finalize Great Basin ROD Template and structuring RM ROD.

Look forward to seeing you and have a great weekend!

--
Matthew Magaletti
Planning and Environmental Analyst
Bureau of Land Management, WO-210
(202) 912-7085

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-regions (Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana)

Prepared by:

U.S. Department of Interior
Bureau of Land Management

2015

Commented [MEM1]: Handbook required us to include a office location and list of cooperating agencies on the cover sheet/introductory materials. Is this really needed?

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WO/XX/XX-XX+XXX

[Insert letter head]

Commented [MEM2]: Should this come from the Department or BLM WO?

In Reply Refer To:
In Reply, Refer to:
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-regions (Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana). The ROD approves the four Great Basin Region RMP amendments, which are part of fifteen other sub-regional RMP amendments and revisions associated with the National Greater Sage-Grouse Planning Strategy that was initiated in December 2011. These RMP amendments will provide a set of management decisions focused on specific conservation measures across the range of the Greater Sage-Grouse. Science-based decision-making and collaboration with the USFWS, the U.S. Forest Service, and state and local partners were fundamental during the development of these RMP amendments. The land use plan decisions within these approved RMP amendments address threats to Greater Sage-grouse identified by state fish and wildlife agencies, the BLM National Technical Team, and the USFWS in the context of its listing decision and the Conservation Objectives Team (COT) report.

The Federal Land Policy Management Act (FLPMA) requires the development and maintenance, and, as appropriate, the revision of land use plans for public lands. The National Environmental Policy Act (NEPA) requires Federal agencies to prepare an Environmental Impact Statement (EIS) for major Federal actions that could significantly affect the environment. In fulfillment of these requirements, the Draft RMP Amendments/Draft EISs incorporating analysis and input provided by the public; local, State, and other Federal agencies and organizations; Native American tribes; Cooperating Agencies, and BLM personnel was published in the fall of 2013. The 90-day public comment periods ensued, with over 4,990 substantive comments1,348 submitted. These comments were reviewed, summarized and considered in preparing the Proposed RMP amendments/Final EISs.

The Proposed RMP Amendments/Final EISs were made available on May 29, 2015 for a 30-day protest period. X letters were received. Protest issues are addressed in the Protest Summary Report, available on line at: http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html. After much consideration, the BLM now approves the Proposed RMP amendments as the land use planning documents that will guide Greater Sage-Grouse habitat management for the next 20 years.

Copies of the ROD and RMP Amendments can be obtained from the BLM's National Greater Sage-Grouse webpage at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the extensive public involvement and the involvement of groups, organizations, cooperating agencies; local, State, and other Federal agencies; and Native American tribal representatives who contributed to the completion of this RMP.

This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the approved RMP amendments becomes implemented and monitored.

Sincerely,
Director
Bureau of Land Management

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

Executive Summary

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the United States (US) Department of the Interior (DOI), Bureau of Land Management (BLM) to develop and periodically revise or amend its resource management plans (RMPs), which guide management of BLM-administered lands. The Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-regions (Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana) provides a layered management approach that offers the highest level of protection for Greater Sage-Grouse in the most valuable habitat. Land use allocations in the approved RMP amendments would limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMA), while minimizing disturbance in General Habitat Management Areas (GHMA). In addition to establishing protective land use allocations, the approved RMP amendments would implement a suite of management tools, such as disturbance limits, GRSG habitat objectives and monitoring, mitigation approaches, adaptive management triggers and responses, and other protective measures throughout the range. These overlapping and reinforcing conservation measures would work in concert to improve and restore GRSG habitat condition and provide consistency in how the BLM manages activities in Greater Sage-Grouse habitat in the Great Basin Region.

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List of Tables

[Develop once there is a final draft]

List of Figures

[Develop once there is a final draft]

List of Acronyms

[Develop once there is a final draft]

1. INTRODUCTION

This Record of Decision (ROD) approves the Bureau of Land Management's (BLM) attached Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-regions (Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana). This ROD and the approved RMP amendments provide a set of management decisions focused on specific conservation measures across the Great Basin Region, which consists of over half of the Greater Sage-Grouse range. The BLM prepared the approved RMP amendments under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.) and other applicable laws. The BLM prepared an EISs in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA), and BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1601 et seq.).

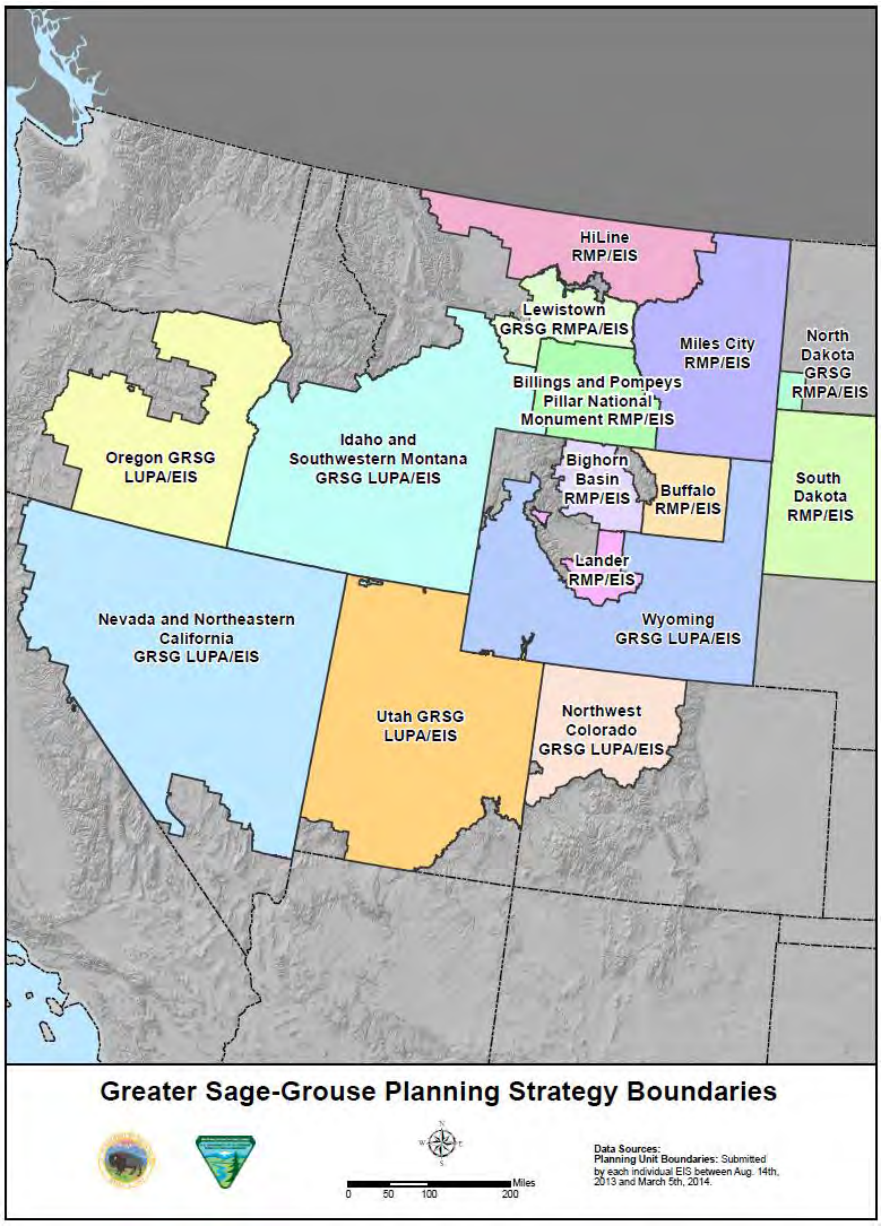
1.1 National Greater Sage-Grouse Planning Strategy (Rationale for Approving the Resource Management Plan Amendments)

Commented [MEM3]: Is this appropriate – I feel as though the content here (which I pulled from the consistent executive summaries) provides the rationale as to why we are approving the amendments.

In March 2010, the US Fish and Wildlife Service (USFWS) published their 12-Month Finding for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered (75 Federal Register 13910, March 23, 2010). In that finding, the USFWS concluded that GRSG was "warranted, but precluded" for listing as a threatened or endangered species. A warranted, but precluded determination is one of three results that may occur after a petition is filed by the public to list a species under the Endangered Species Act (ESA). This finding indicates that immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, a species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

The USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 Federal Register 13910, March 23, 2010). The USFWS identified the principal regulatory mechanisms for the BLM and Forest Service as conservation measures in LUPs.

Consistent with the National Greater Sage-Grouse Planning Strategy (which was initiated in December 2011),the BLM as the lead agency, together with the Forest Service as a cooperating agency, prepared 15 environmental impact statements (EISs), with associated plan amendments and revisions. These documents provide a set of management alternatives focused on specific conservation measures across the range of the GRSG (see **Figure 1**, Greater Sage-Grouse Planning Strategy Boundaries).


HiLine
RMP/EIS
Lewistown
GRSG RMPA/EIS
Miles City
RMP/EIS
North
Dakota
GRSG
RMPA/EIS
Billings and Pompeys
Pillar National
Monument RMP/EIS
Oregon GRSG
LUPA/EIS
Idaho and
Southwestern Montana
GRSG LUPA/EIS
Bighorn
Basin
RMP/EIS
Buffalo
RMP/EIS
South
Dakota
RMP/EIS
Lander
RMP/EIS
Nevada and Northeastern
California
GRSG LUPA/EIS
Wyoming
GRSG LUPA/EIS
Utah GRSG
LUPA/EIS
Northwest
Colorado
GRSG LUPA/EIS
Greater Sage-Grouse Planning Strategy Boundaries
Miles
0 50 100 200
Data Sources:
Planning Unit Boundaries: Submitted
by each individual EIS between Aug. 14th,
2013 and March 5th, 2014.

Science-based decision-making and collaboration with state and local partners are fundamental to the Greater Sage-Grouse Planning Strategy. The 15 GRSG LUP/EISs address threats to GRSG identified by state fish and wildlife agencies, the BLM National Technical Team, and the USFWS in the context of its listing decision and the Conservation Objectives Team (COT) report. The COT report was prepared by wildlife biologists from state and federal agencies and provides a blueprint for the overall conservation approach set forth in the BLM and Forest Service GRSG LUP/EISs. Additional science-based reviews by the US Geological Survey and related scientific literature provided further guidance on specific issues that arose in developing the final BLM and Forest Service GRSG LUP/EISs.

Where consistent with conservation objectives, the BLM adopted unique state and stakeholder developed approaches and priorities within the approved RMP amendments. In 2011, Secretary of the Interior Ken Salazar sent letters to each of the sage-grouse state governors asking for a report and recommendations on how to best move forward with a multi-state conservation sage-grouse plan. Most states across the range provided state conservation plans that were part of the range of alternatives analyzed in the Final EISs. Components of these state conservation plans were used to develop the approved RMP amendments.

In addition, the Western Governors Association Sage Grouse Task Force was developed in 2011 to identify and implement high priority conservation actions and integrate ongoing actions necessary to preclude the need for the sage-grouse to be listed under the ESA. This group, which includes designees from the 11 western states where GRSG is found as well as representatives from USFWS, BLM, Natural Resources Conservation Service, Forest Service, US Geological Survey, and Department of the Interior, played an integral role throughout this land use planning process.

[Per Sarah Greenberger's recommendation, we need to discuss further the desire to incorporate state developed approaches and priorities balanced with the need for an effective conservation strategy (reference to the Salazar invitation). We also need to capture some of the major differences between the plans and why those differences exist.]

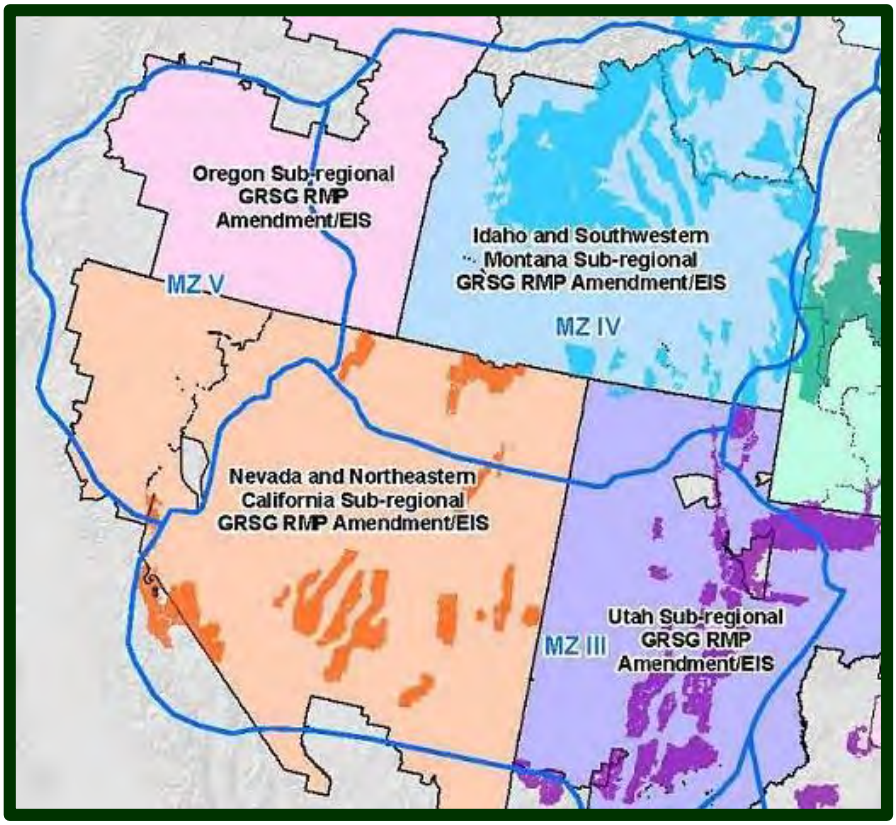
Commented [MEM4]: Let me know if I captured Sarah's request accurately above. I am not sure how to capture the major differences between the plans and why the differences exists. Do you all think this is appropriate for the ROD an if so, where should we put it? Maybe the "What the ROD provides" section?

1.2 Great Basin Region Planning Area

The Great Basin Region is composed of four sub-regions, which includes the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions (see **Figure 2**, Greater Sage-Grouse Great Basin Sub-regional Boundaries). Four separate National Environmental Policy Act (NEPA) analyses were conducted separately for each sub-region. These sub-regional boundaries were generally developed based on the identified threats to the GRSG and the Western Association of Fish and Wildlife Agencies (WAFWA) Management Zones. Seven WAFWA Management Zones across the west were delineated in the *WAWFA 2006 Greater Sage-Grouse Comprehensive Strategy.* These large polygons were based on similar sage-grouse populations and sub-populations identified within seven floristic provinces.

The Great Basin Region consists of WAFWA Management Zones III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin). The USFWS has identified a number of threats in this region, focusing on the present and widespread threats of wildfire, loss of native habitat to invasive species, and habitat fragmentation.

[Insert discussion of the Great Basin Region Planning Area and threats present and widespread in the region. Work with NOC to produce map of the Great Basin Region, depicting sub-regional boundaries. (1 page)]



1.3 Great Basin Region Greater Sage-Grouse Conservation Summary

[Focus the discussion on the 5 factor analysis made in the USFWS listing determination and how the plans cumulatively address the factors presented in the 2010 listing decision. This is how section IV of the Landscape Report was formulated. (1-2 page)]

2. DECISION

2.1 Summary of the Approved Management Decisions

The decision is hereby made to approve the Great Basin Region Greater Sage-Grouse Approved RMP Amendments, which include the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana Greater Sage-Grouse Approved RMP Amendments (attachments A, B, C, and D).

The decisions included in this ROD and attached Approved RMP Amendments amend the land use plans described in Sections 1.1 of attachments A, B, C, and D. This ROD and Approved RMP Amendments become effective on the date this ROD is signed. The BLM prepared the Approved RMP Amendments under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.) and other applicable laws. The BLM prepared EISs in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA), and BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1601 et seq.).

The land use decisions provide appropriate conservation measures to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals, objectives (desired outcomes), allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the RMPs (and amendments) are final and effective upon signing of this ROD, they generally require additional implementation decision steps before on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 What the Record of Decision and Approved Resource Management Plan Amendments Provide

The ARMPA Amendments include management decisions in the form of:

- Goals
- Objectives (Desired Future Conditions)
- Land Use Allocations
- Management Actions

Goals are the broad statements of desired outcomes, and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the planning area that are available or not for certain uses. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/ or sale, and what lands are open, closed, or limited to motorized travel (please note that all acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Management actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands, including but not limited to stipulations, guidelines, best management practices (BMPs), and required design features.

The primary ARMPA management decisions were crafted to alleviate identified threats to Greater Sage-grouse and their habitats. This included management actions that:

- Manage resources to protect and enhance sagebrush habitats and the Greater Sage-grouse species.
- Manage uses to protect and prevent damage to public land resources in sagebrush habitats, and to enhance those resources where feasible.
- Identify fire management actions to protect and promote healthy sagebrush habitats coupled with seasonal needs of Greater Sage-grouse.
- Allocate resource restrictions to designated Greater Sage-Grouse Priority and General Habitat Management Areas (as well as Important Habitat Management Areas in the Idaho and Southwestern Montana Greater Sage-Grouse ARMPA and Opportunity Habitat Management Areas in the Nevada and Northeastern California Greater Sage-Grouse ARMPA).

Commented [MEM5]: This can certainly be expanded. Do you think we could include an allocation table here comparing the four sub-regions?

This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPA and is effective on the date it is signed. No further administrative remedies are available for these land use plan decisions."

2.3 What the Record of Decision and Approved Resource Management Plan Amendments Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of lands identified as having occupied Greater Sage-grouse habitats.

The ARMPAs do not affect valid existing rights.

The ARMPAs do not contain decisions for the mineral estates of lands located in the planning area for lands under the jurisdiction of other Federal agencies such as the Forest Service, or for private or State-owned lands and minerals. ARMPA decisions for surface estate only apply to BLM managed lands, even where these private or state lands are shown on a map included in the RMP.

In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

Statutory requirements. The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.

National policy. The decision will not change BLM's obligation to conform with current or future National policy.

Funding levels and budget allocations. These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location that take action to implement land use plan decisions. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. This RMP does not contain implementation decisions. Future activity-level plans will address the implementation of the RMP. Implementation

decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

2.5 Modifications and Clarifications

2.5.1 Modifications and Clarifications by Sub-region

During preparation of the ARMPAs for all four sub-regions, minor changes were made to the Proposed RMPs to correct errors and to clarify decisions. Clarifications and corrections made since the Proposed RMPs were published on May 29, 2015 and hereby adopted by this ROD and ARMPAs are discussed below by sub-region.

Modifications and Clarifications Applicable to all Sub-Regions

Nevada and Northeastern California

Oregon

Utah

Idaho and Southwestern Montana

Commented [MEM6]: Need to populate once we have a clear idea as to what changes will need to be made. Will need to work with the planners.

2.5.2 Protest Resolution

BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest proposed planning decisions within 30 days from the date the Notice of Availability of the Proposed RMPA/Final EIS was published in the Federal Register (May 29, 2015). Below are descriptions of the protest resolution process for each of the four sub-regional PRMPAs/FEISs.

These decisions are final for the Department of the Interior. With the exception of the granted protest issues, the Director concluded that the BLM followed the applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed Land Use Plan Amendments/Final EISs. Each protesting party will be notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed Land Use Plan Amendments/Final EISs, though minor clarifications were made and are summarized in Section 2.5.1.

Nevada and Northeastern California

Commented [MEM7]: Will need to populate the "X" areas towards the end of the protest resolution process (end of July).

For the Nevada and Northeaster California GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Nevada and Northeastern California Sub-Regional GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following

BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Oregon

For the Oregon GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Oregon GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Utah

For the Utah GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Utah GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed Land Use Plan Amendment/Final EIS, the BLM Director received X letters of protest within the protest period. Of these, X protesting parties had standing and included valid protest issues. Valid protest issues submitted included: X. Of those issues, the BLM granted in part X protest regarding X. The BLM Director's decisions on the protests are summarized in the "Director's Protest Resolution Report, Idaho and Southwestern Montana GRSG Proposed RMP Amendment/Final EIS," released on X and available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

2.5.3 Governors Consistency Review

[Brief overview of the GCR process, if/how the BLM modified the ARMPAs based on the Governor's recommendations or a description as to why the BLM dismissed the Governor's recommendations (1 page)].

3. ALTERNATIVES CONSIDERED

3.1 No Action Alternative

[A paragraph that describes the current management alternative (1 paragraph).]

3.2 Environmentally Preferred Alternatives Considered in all Sub-Regions

[Include a paragraph describing the NTT and citizen based alternatives that were considered across all four sub-regions, and provide rationale as to why they were not selected as the ARMPA. (2 paragraphs)]

3.3 Alternatives Considered and Specific to Individual Separate Sub-regions

[This section would include four sub-sections for each plan and will include separate paragraphs (extracted from the executive summaries from the FEISs) for each of the unique alternatives considered for each sub-region). (1 page)]

4. MANAGEMENT CONSIDERATIONS

[Identify and discuss all such factors including any essential considerations of national policy which were balanced by the DOI in making its decision to approve the ARMPAs and state how those considerations entered into its decision. (1/2 page)]

5. MITIGATION MEASURES

All practical means to avoid or minimize environmental harm are encompassed in the attached Approved Resource Management Plan Amendments and associated appendices. Mitigation measures, including the application of required design features have been identified.

[Summarize the additional mitigation framework commitments being made as part of this planning effort. (1 paragraph)]

6. PLAN MONITORING

[Summarize the monitoring strategy, emphasizing the process for effectiveness and implementation monitoring. (1-2 paragraphs)]

7. CONSULTATION AND COORDINATION

[Initiate section with the national level cooperators (Forest Service and FWS) and then include subsections for each of the 4 ARMPAs to talk about cooperating agencies, Section 7 consultation, and tribal consultation. (1-2 pages)]

8. APPROVAL

Land Use Plan Amendment Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Great Basin Region Approved Resource Management Plan (RMP) Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions, as described in this Record of Decision. The Proposed Plan Amendments and related Final Environmental Impact Statements (EIS) were published on May 29, 2015, in the Federal Register (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze Director Bureau of Land Management	Date

Secretarial Approval

I hereby approve the land use plan amendments decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Department regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Sally Jewell Secretary Department of the Interior	Date

9. ATTACHMENTS

Appendix A. Nevada and Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment

1. Introduction
- 1.1 Sub-regional GRSG Planning/Conservation Strategy
- 1.2 Description of the Planning Area
- 1.3 Purpose and Need
- 1.4 Planning Criteria

2. Approved Resource Management Plan Amendment
- 2.1 Approved Resource Management Plan Amendment Instructions
- 2.2 Goals, Objectives, and Management Decisions Overview

3. Consultation, Coordination, and Public Involvement
- 3.1 Consultation and Coordination
- 3.2 Public Involvement

4. Plan Implementation
- 4.1 Implementing the Plan
- 4.2 Maintaining the Plan
- 4.3 Changing the Plan
- 4.4 Plan Evaluation and Monitoring

5. State Director Recommendation for Approval

6. Glossary

Appendices
- Appendix A – Approved RMP Amendment Maps
- Appendix B – Buffers
- Appendix C – Required Design Features
- Appendix E – Monitoring Framework 28
- Appendix F – Disturbance
- Appendix G – Mitigation
- Appendix H – Stipulations
- Appendix I – FIAT
- Appendix J – ARMPA Relationship with Other Policies, Plans, and Programs

Appendix B. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix C. Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix D. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Nevada and Northeastern California
Greater Sage-Grouse Approved Resource Management Plan Amendment

Prepared by
U.S. Department of Interior
Bureau of Land Management
Nevada State Office

2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/NV/XX/XX-XX+XXX

Dear Reader Letter

[This will be signed by the State Director – template forthcoming which will be signed, scanned, and inserted here.]

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List of Tables

[Develop once there is a final draft]

List of Figures

[Develop once there is a final draft]

List of Acronyms

[Develop once there is a final draft]

Things to know about populating the Approved RMP Amendments

1. You will need to modify the highlighted text in the template to meet your sub-region's specifications.

2. Ensure to utilize the abbreviations and numbering structure provided for your goals, objectives, and management decisions.

3. Maintain the format of the template (more than likely, we will have a contractor finalize the format, 508 compliance check, and consolidate the documents with the ROD).

4. If your sub-region included Forest Service units ensure your maps, acre figures, tables, and text no longer include these units.

5. The map placed in APRMPA (and not within an appendix) should reflect the map that was inserted into the Executive Summary of the PRMPA.

6. At this point, please use the abbreviation "ARMPA" when referencing the Approved Resource Management Plan Amendment.

7. Do not change the section numbers in the template. The Regional ROD will be referencing these.

1. Introduction

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the US Department of the Interior (DOI), Bureau of Land Management (BLM) to develop and periodically revise or amend its resource management plans (RMPs), which guide management of BLM-administered lands.

This Approved Resource Management Plan Amendment (ARMPA) is the result of the March 2010 US Fish and Wildlife Service (USFWS) 12-Month Finding for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered (75 Federal Register 13910, March 23, 2010; USFWS 2010a). In that finding, the USFWS concluded that the Greater Sage-Grouse (GRSG) was "warranted, but precluded" for listing as a threatened or endangered species.

The USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. The USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (USFWS 2010a). The USFWS identified the principal regulatory mechanisms for the BLM as conservation measures in resource management plans (RMPs).

1.1 Description of the Nevada and Northeastern California Sub-Regional Planning Area

The ARMPA planning area boundary included all lands regardless of jurisdiction. The planning area included the entire GRSG Nevada and Northeastern California Sub-region, which is one of four separate sub-regions in the Great Basin Region and one of fifteen sub-regions that made up the range of the

National GRSG Planning Strategy. **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, states, local governments, and lands that are privately owned.

The planning area includes other BLM-administered lands that are not allocated as habitat management areas for GRSG. The ARMPA does not establish any additional management for these lands; these lands will be managed according to the existing, underlying land use plan for the area.

The decision area for this ARMPA is BLM-administered lands in GRSG habitats, including surface and split-estate lands with BLM subsurface mineral rights. Any decisions in the ARMPA would apply only to BLM-administered lands, including split-estate lands within GRSG habitat management areas (the decision area). These decisions are limited to providing land use planning direction specific to conserving GRSG and its habitat.

GRSG habitat on BLM-administered lands in the decision area consists of lands allocated as Priority Habitat Management Areas (PHMA), General Habitat Management Areas (GHMA), and Other Habitat Management Areas (OHMA) (see **Figure 1-1** and **Table 1-2**).

PHMA, GHMA, and OHMA are defined as follows:

- PHMA— BLM-administered lands identified as having the highest value to maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA are derived from and generally follow the Preliminary Priority Habitat boundaries identified in the Draft LUPA/EIS. Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report.
- GHMA— BLM-administered lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMA are derived from and generally follow the Preliminary General Habitat boundaries identified in the Draft LUPA/EIS.
- OHMA —BLM-administered lands identified as unmapped habitat in the Draft LUPA/EIS that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.

The ARMPA also identifies specific Sagebrush Focal Areas, which are a subset of PHMA. The SFA were derived from GRSG stronghold areas described in a USFWS memorandum to the BLM and Forest Service titled Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes (USFWS 2014). The memorandum and associated maps provided by the USFWS identify areas that represent recognized strongholds for GRSG that have been noted and referenced as having the highest densities of GRSG and other criteria important for the persistence of the species. *[Exclude if the sub-regional planning area does not contain SFAs*].

PHMA, GHMA, and OHMA on BLM-administered lands in the decision area fall within 16 counties in Northern Nevada and portions of 5 counties in Northeastern California (see **Table 1-3**). The habitat management areas also span across 5 BLM Nevada district offices, 3 BLM California field offices, and portions of the Idaho BLM Jarbidge and Bruneau Field Offices that fall within the Nevada state line (see **Table 1-4**).

The Battle Mountain, Carson City, Elko, Ely, and Winnemucca BLM District Offices in Nevada and the Alturas, Eagle Lake, and Surprise BLM Field Offices in California administer the 11 pertinent RMPs being amended by this ARMPA. The following BLM RMPs are hereby amended to incorporate appropriate GRSG conservation measures:

California RMPs

- Alturas RMP (BLM 2008a)
- Eagle Lake RMP (BLM 2008b)
- Surprise RMP (BLM 2008c)

Nevada RMPs

- Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area RMP (BLM 2004a)
- Carson City Consolidated RMP (BLM 2001a)
- Elko RMP (BLM 1987a)
- Ely RMP (BLM 2008d)
- Winnemucca RMP (BLM 2015)
- Shoshone-Eureka RMP (BLM 1986a)
- Tonopah RMP (BLM 1997a)
- Wells RMP (BLM 1985a)

Table 1
Land Management in the Planning Area

Surface Land Management	Total Surface Land Management Acres
BLM	45,359,000
Forest Service	9,719,900
Private	11,857,800
Bureau of Indian Affairs (tribal)	922,000
USFWS	805,900
Other	326,100
State	195,600
National Park Service	160,100
Other federal	3,200
Bureau of Reclamation	431,200
Local government	17,800
Department of Defense	402,000
Total acres	**70,200,600**

Source: BLM and Forest Service GIS 2013

Table 2
Acres PHMA, GHMA and OHMA in the Decision Area for the ARMPA

Surface Land Management	PHMA	GHMA	OHMA
BLM	9,309,700	5,720,600	5,876,600

Source: BLM GIS 2015

Table 3
Acres of GRSG Habitat by County in the Decision Area (BLM Lands only)

County Name [1]	ARMPA			
	PHMA [2]	GHMA	OHMA	TOTAL
Churchill	78,200	78,200	171,500	324,600
Elko	995,800	995,800	1,000,600	5,470,800
Eureka	531,300	531,300	371,000	1,540,400
Humboldt	661,600	661,600	715,400	2,507,300
Lander	612,500	612,500	591,300	1,989,500
Lassen	278,800	278,800	283,700	895,600
Lincoln	464,000	464,000	376,400	991,800
Lyon	600	600	1,400	2,000
Mineral	-	-	5,800	5,800
Modoc	93,400	93,400	64,800	215,100
Nye	266,800	266,800	770,700	1,354,400
Pershing	168,800	168,800	502,200	735,200
Plumas	-	-	1,800	1,800
Sierra	300	300	200	500
Storey	300	300	700	1,000
Washoe	466,500	466,500	305,700	2,060,700
White Pine	1,101,900	1,101,900	713,600	2,810,400
Grand Total	5,720,800	5,720,800	5,876,800	20,906,900

Source: BLM GIS 2015

[1]The following counties in the planning area do not contain mapped GRSG habitat: Carson City, Douglas, Esmeralda, and Siskiyou.

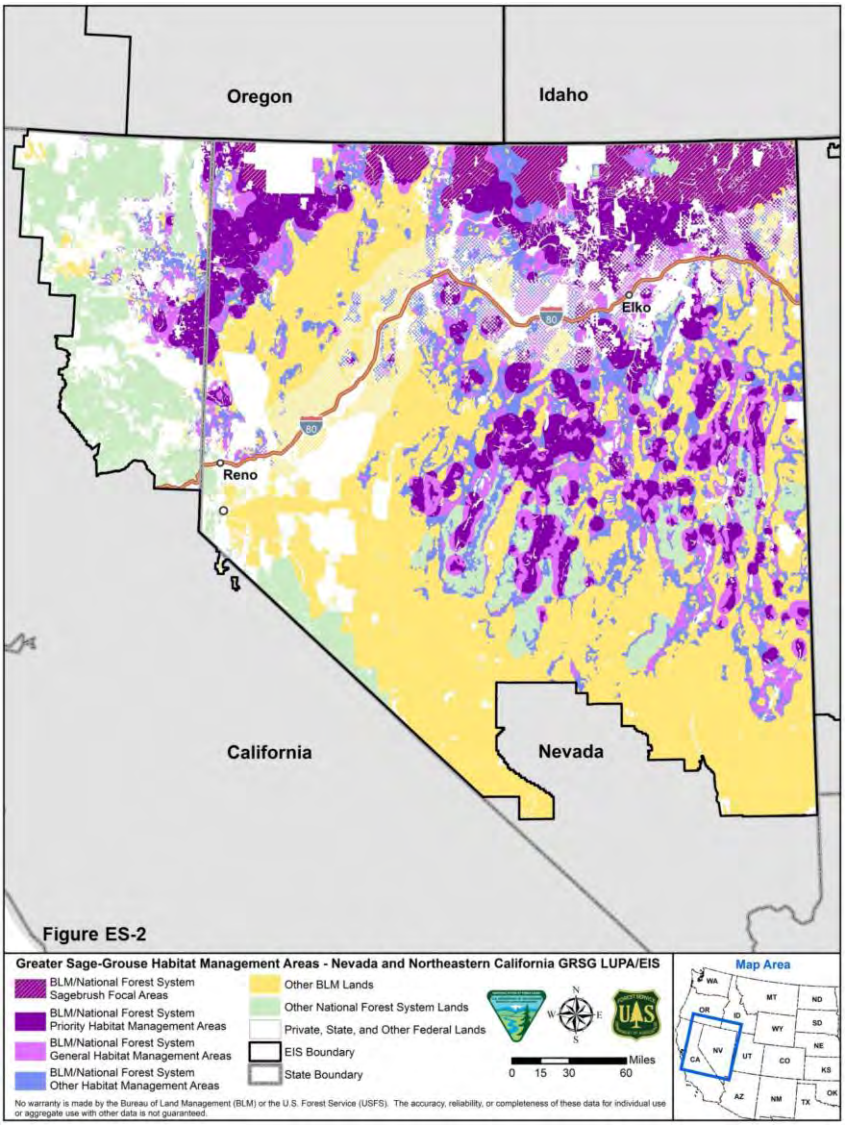
[2]PHMA acres in the proposed plan include 2,797,400 acres in Elko, Humboldt and Washoe Counties associated with SFAs.

Table 4
Acres of GRSG Habitat by BLM District/Field Office in the Decision Area (BLM Lands only)

BLM Office	ARMPA			
	PHMA[1]	GHMA	OHMA	TOTAL
Alturas Field Office	12,200	127,700	178,000	317,900
Battle Mountain District Office	1,549,600	1,014,300	1,163,600	3,727,500
Carson City District Office	115,000	231,100	309,400	655,500
Eagle Lake Field Office	474,300	242,800	147,700	864,800
Elko District Office	3,586,900	1,203,600	1,152,500	5,943,000
Ely District Office	1,176,000	1,741,800	1,486,200	4,404,000
Jarbidge Field Office [2]	32,700	10,000	900	43,600
Bruneau Field Office [2]	7,700	0	300	8,000
Surprise Field Office	862,500	215,400	100,400	1,178,300
Winnemucca District Office	1,492,800	933,900	1,337,600	3,764,300
Total Acres	**9,309,700**	**5,720,600**	**5,876,600**	**20,906,900**

Source: BLM GIS 2015
[1] Includes 2,797,400 acres of SFAs in Surprise Field Office, Winnemucca District Office and Elko District Office.
[2] Only that part of the Idaho BLM Jarbidge and Bruneau Field Offices that falls in the Nevada state line.

[Map is only a placeholder. Provide map from PRMPA Executive Summary]



1.2 Purpose and Need

The purpose for this ARMPA is to identify and incorporate appropriate conservation measures to conserve, enhance, and restore GRSG habitat by reducing, minimizing, or eliminating threats to that habitat. The BLM considered such measures in the context of the multiple-use and sustained yield

mandates of FLPMA. The major threats identified by the USFWS in the March 2010 listing decision that apply to the Nevada and Northeastern California Sub-region include:

- Wildfire—loss of large areas of GRSG habitat due to wildfire
- Invasive species—conversion of GRSG habitat to cheatgrass- dominated plant communities
- Conifer invasion—encroachment of pinyon or juniper into GRSG habitat
- Infrastructure—fragmentation of GRSG habitat due to development, such as rights-of-way and renewable energy development
- Grazing—loss of habitat components due to improper livestock grazing
- Wild horses and burros—loss of habitat components due to excessive grazing
- Hard rock mining—fragmentation of GRSG habitat due to mineral exploration and development
- Fluid mineral development—fragmentation of GRSG habitat due to mineral exploration and development
- Human uses—fragmentation of GRSG habitat or modification of GRSG behavior due to human presence and activities
- Climate change–fragmentation of GRSG habitat due to climate stress
- Grazing—Loss of habitat components due to improper livestock, wild horse and burro, and large wildlife use
- Hard rock (locatable minerals) mining—Fragmentation of GRSG habitat due to mineral exploration and development
- Oil, gas, and geothermal development—Fragmentation of GRSG habitat due to fluid mineral exploration and development
- Human uses—Fragmentation of GRSG habitat and/or modification of GRSG behavior.

This ARMPA was needed to respond to the USFWS's March 2010 "warranted, but precluded" ESA listing petition decision (75 Federal Register 13910, March 23, 2010). The USFWS identified inadequacy of regulatory mechanisms as a significant factor in its finding on the petition to list the GRSG. In its listing decision, the USFWS noted that changes in management of GRSG habitats are necessary to avoid the continued decline of GRSG populations. Changes in land allocations and conservation measures in the BLM's land use plans provide a means to implement regulatory mechanisms to address the inadequacy identified by the USFWS.

1.3 Nevada and Northeastern California Sub-regional GRSG Conservation Summary

Commented [MEM1]: Planners – Do you think it is a good idea to include an allocation table in this section identifying the acres of PHMA and GHMA (IHMA and OHMA) that are open/closed/avoided/excluded by program area?

The ARMPA represents the BLM's approach for applying conservation measures to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. The ARMPA addressed threats to GRSG and its habitat identified by the USFWS in the March 2010 listing decision. These threats apply to the Nevada and Northeastern California sub-regional planning area as well as those threats described in the USFWS's Conservation Objectives Team (COT) report (see **Table 5**).

[Replace Table 5 based on the sub-region's key components which may be consistent with those provided. If consistent, please use narrative provided for consistency purposes. This table should already be provided in your PRMPA's Executive Summary and inserted here.]

Table 5
Key Components of the Nevada and Northeastern California GRSG ARMPA
Addressing COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Nevada and Northeastern California ARMPA
All threats	• Implement the Adaptive Management Plan, which allows for more restrictive land use allocations and management actions to be implemented if habitat or population hard triggers are met. • Require and ensure mitigation that provides a net conservation gain to GRSG. • Monitor implementation and effectiveness of conservation measures in GRSG habitats according to the Habitat Assessment Framework. • Apply buffers necessary based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat. • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
All development threats, including mining, infrastructure, and energy development.	• PHMA: Implement the Disturbance Management Protocol (DMP) in Nevada. The DMP provides an anthropogenic disturbance cap of 3% within the Biologically Significant Unit (BSU) and proposed project analysis areas, except in situations where a biological analysis indicates a net conservation gain to the species. In California, impose the 3% disturbance cap with no exceptions.
Energy development—fluid minerals, including geothermal resources	• PHMA: Open to fluid mineral leasing subject to No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exception. In SFAs, NSO without waiver, modification, or exception. • GHMA: Open to fluid mineral leasing subject to Controlled Surface Use (CSU) and Timing Limitation (TL) stipulations.
Energy development—wind energy	• PHMA: Exclusion area (not available for wind energy development under any conditions) • GHMA: Avoidance area (may be available for wind energy development with special stipulations)
Energy development—solar energy	• PHMA: Exclusion area (not available for solar energy development under any conditions) • GHMA: Exclusion area (not available for solar energy development under any conditions)
Infrastructure—major ROWs	• PHMA: Avoidance area (may be available for major ROWs with special stipulations) • GHMA: Avoidance area (may be available for major ROWs with special stipulations)
Infrastructure—minor ROWs	• PHMA: Avoidance area (may be available for minor ROWs with special stipulations)

Table 5
Key Components of the Nevada and Northeastern California GRSG ARMPA
Addressing COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Nevada and Northeastern California ARMPA
Mining—locatable minerals	• SFA: Recommend withdrawal from the Mining Law of 1872
Mining—nonenergy leasable minerals	• PHMA: Closed area (not available for nonenergy leasable minerals)
Mining—salable minerals	• PHMA: Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)
Mining—coal	• *Not applicable in the Nevada and Northeastern California sub-regional planning area.*
Livestock grazing	• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs followed by PHMA to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid management	• Manage Herd Management Areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of Herd Management Area Plans in GRSG habitat.
Range management structures	• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas subject to valid existing rights.
Recreation	• PHMA: Do not construct new recreation facilities. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain.
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. • Protection of GRSG habitat should receive high consideration, along with other high values, when positioning resources. (Forest Service only) • Prioritize post-fire treatments in PHMA and GHMA.

Table 5
Key Components of the Nevada and Northeastern California GRSG ARMPA
Addressing COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Nevada and Northeastern California ARMPA
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMA and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMA: Maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. • All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural conversion and exurban development	• GRSG habitat will be retained in federal management.

The ARMPA will conserve, enhance, and restore GRSG habitat. The ARMPA applies the following summarized management decisions, subject to valid existing rights, to other uses and resources, such as:

- Providing a framework for prioritizing areas in PHMA and GHMA for wildfire, invasive annual grass, and conifer treatments
- Managing areas as ROW avoidance or exclusion for certain types of lands and realty uses, requiring specific design features, and implementing the Disturbance Management Protocol
- Adjusting grazing practices as necessary, based on GRSG habitat objectives, Land Health Standards, and ecological site potential
- Applying no surface occupancy stipulations, with limited exceptions, to fluid mineral development in PHMA and closing PHMA to nonenergy leasable development and mineral material sales

The ARMPA also establishes screening criteria and conditions for new anthropogenic activities in PHMA and GHMA to ensure a net conservation gain to GRSG. The ARMPA would reduce habitat disturbance and fragmentation through limitations on surface-disturbing activities, while addressing changes in resource condition and use through monitoring and adaptive management.

The ARMPA adopts key elements of the State of Nevada Greater Sage-Grouse Conservation Plan (State of Nevada 2014) and the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) by establishing conservation measures and focusing restoration efforts in the same key areas most valuable to the GRSG.

For a full description of the BLM's ARMPA, see **Section 2**.

1.4 Planning Criteria

Planning criteria are based on appropriate laws, regulations, BLM manual and handbook sections, and policy directives. It is also based on public participation and coordination with cooperating agencies, other federal agencies and state and local governments, and Native American tribes. Planning criteria are the standards, rules, and factors used as a framework to resolve issues and develop alternatives. Planning criteria are prepared to ensure decision-making is tailored to the issues and to ensure that the BLM avoid unnecessary data collection and analysis. Preliminary planning criteria were included in the Draft RMPA/Draft EIS and were further refined for the Proposed RMPA/Final EIS.

Planning criteria carried forward for this ARMPA are as follows *[planners modify as appropriate]*:

- The BLM used the WAFWA Conservation Assessment of GRSG and Sagebrush Habitats (Connelly et al. 2004; Coates and D. J. Delehanty 2004, 2008, 2010) and any other appropriate resources to identify GRSG habitat requirements and required design features.
- The ARMPA is consistent with the BLM's National GRSG Conservation Strategy.
- The ARMPA complies with BLM direction, such as FLPMA, NEPA, and CEQ regulations at 40 CFR, Parts 1500-1508; DOI regulations at 43 CFR, Parts 4 and 1600; the BLM H-1601-1 Land Use Planning Handbook, "Appendix C: Program-Specific and Resource-Specific Decision Guidance Requirements" for affected resource programs (BLM 2005a); the 2008 BLM NEPA Handbook (H-1790-1; BLM 2008e); and all other applicable BLM policies and guidance.
- The ARMPA is limited to providing direction specific to conserving GRSG species and habitats.
- The BLM considered land allocations and prescriptive standards to conserve GRSG and its habitat, as well as objectives and management actions to restore, enhance, and improve GRSG habitat.
- The ARMPA recognizes valid existing rights.
- The ARMPA addresses BLM-administered land in GRSG habitats, including surface and split-estate lands with BLM subsurface mineral rights. Any decisions in the ARMPA apply only to BLM-administered lands.
- The BLM used a collaborative and multi-jurisdictional approach, where appropriate, to determine the desired future condition of BLM-administered lands for conserving GRSG and their habitats.
- As described by law and policy, the BLM ensured that conservation measures are as consistent as possible with other planning jurisdictions within the planning area boundaries.
- The BLM considered a range of reasonable alternatives, including appropriate management prescriptions that focus on the relative values of resources, while contributing to the conservation of the GRSG and GRSG habitat.
- The BLM addressed socioeconomic impacts of the alternatives. Socioeconomic analysis used such tools as the input-output quantitative models IMPLAN and the National Renewable Energy Laboratory's Jobs and Economic Development Impact model (JEDI) for renewable energy analysis, where quantitative data is available.
- The BLM used the best available scientific information, research, technologies, and results of inventory, monitoring, and coordination to inform appropriate local and regional management strategies that will enhance or restore GRSG habitats.
- The BLM is consistent with the objectives in BLM Manual 6840 which are to: 1) preserve the ecosystem upon which species depend, and 2) initiate proactive conservation measures that minimize listing of the species under the ESA.
- Management of GRSG habitat that intersects with designated Wilderness Areas on BLM-administered lands are guided by BLM Manual 6340 Management of Designated Wilderness

Areas (BLM 2012b). Land use allocations made for GRSG are consistent with BLM Manual 6340 and other laws, regulations, and policies related to wilderness area management.

- Management of GRSG habitat that intersects with National Conservation Areas (NCAs) on BLM-administered lands are guided by BLM Manual 6220, Management of National Conservation Areas (BLM 2012c). Land use allocations made for GRSG are consistent with BLM Manual 6220 and other laws, regulations, and policies related to NCA management.
- Management of GRSG habitat that intersects with eligible, suitable, or designated Wild and Scenic Rivers (WSR) are guided by BLM Manual 6400, Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, Planning, and Management (BLM 2012d). Land use allocations made for GRSG are consistent with BLM Manual 6400 and other laws, regulations, and policies related to WSR management.
- Management of GRSG habitat that intersects with National Historic Trails (NHT) or trails under study for possible designation (study trails) are guided by BLM Manual 6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (BLM 2012e). Land use allocations made for GRSG are consistent with BLM Manual 6280 and other laws, regulations, and policies related to NHT management.
- Management of GRSG habitat that intersects with Lands with Wilderness Characteristics on BLM-administered lands are guided by BLM Manuals 6310 and 6320, Conducting Wilderness Characteristics Inventory on BLM Lands and Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process (BLM 2012f, 2012g). Land use allocations made for GRSG are consistent with BLM Manuals 6310 and 6320 and other laws, regulations, and policies related to Lands with Wilderness Characteristics management.
- Management of GRSG habitat that intersects with wilderness study areas (WSAs) on Public lands administered by the BLM are guided by the Manual 6330, Management of Wilderness Study Areas. Land use allocations made for WSAs are consistent with the Manual 6330 and with other laws, regulations, and policies related to WSA management.
- For BLM-administered lands, all activities and uses in GRSG habitats have followed existing land health standards. Standards and guidelines (S&G) for livestock grazing and other programs that have developed S&Gs are applicable to all alternatives for BLM-administered lands. For National Forest System lands, all activities in GRSG habitat will achieve the GRSG habitat objectives.
- The BLM has consulted with Native American tribes to identify sites, areas, and objects important to their cultural and religious heritage in GRSG habitats.
- The BLM has coordinated and communicated with state, local, and tribal governments to ensure that the BLM considered providing pertinent plans, sought to resolve inconsistencies between state, local, and tribal plans, and provided ample opportunities for state, local, and tribal governments to comment on the development of amendments.
- The ARMPA has incorporated the principles of adaptive management.
- Reasonable Foreseeable Development (RFD) Scenarios and planning for fluid minerals follow the BLM Handbook H-1624-1 and current fluid minerals manual guidance (oil and gas, coal-bed methane, oil shale) and geothermal resources (BLM 1990a).
- Data used in developing the ARMPA are consistent with the principles of the Information Quality Act of 2000 (Public Law [PL] 106-554, Section 515); state data was used as the basis for PHMA and GHMA identification.
- State fish and wildlife agencies' GRSG data and expertise have been considered in making management determinations on BLM-administered lands.
- Where more restrictive land use allocations or decisions are made in existing RMPs, those more restrictive land use allocations or decisions will remain in effect and will not be amended by this LUPA.

2. Approved Resource Management Plan Amendment

This Approved Plan Amendment is now the baseline plan for management for Greater Sage-grouse in NE California and Nevada in the following District Offices: Battle Mountain, Carson City, Elko, Ely, and Winnemucca in Nevada, and the Northern California District in California. The Approved RMP adopts the management described in Proposed Plan and presented in the Nevada/NE California Greater Sage-grouse Resource Management Plan Amendment and Final Environmental Impact Statement (2015), with adjustments as described in the *Notice of Modifications and Clarifications Made to the Approved RMP* section of the ROD.

In the event there are inconsistencies or discrepancies between previously Approved RMPs and this Approved RMP Amendment, the decisions contained in this Approved RMP Amendment will be followed. The BLM will continue to tier to statewide, national, and programmatic EISs and other NEPA and planning documents, as well as consider and apply Required Design Features or other management protocols contained in other planning documents after appropriate site-specific analysis.

All future resource authorizations and actions in GRSG habitat will conform to, or be consistent with the decisions contained in this Approved RMP Amendment. All existing operations and activities authorized under permits, contracts, cooperative agreements or other authorizations will be modified, as necessary, to conform with this plan amendment within a reasonable timeframe. However, this plan amendment does not repeal valid existing rights on public lands. A valid existing right is a claim or authorization that takes precedence over the decisions developed in this plan. If such authorizations come up for review and can be modified, they will also be brought into conformance with this plan amendment.

While the Final EIS for the Nevada/NE California GRSG Amendment constitutes compliance with NEPA for the broad-scale decisions made in this Approved RMP Amendment, the BLM will continue to prepare

2.1 Approved Resource Management Plan Amendment Instructions

This ARMPA is now the baseline plan for management for Greater Sage-grouse in NE California and Nevada in the following District Offices: Battle Mountain, Carson City, Elko, Ely, and Winnemucca in Nevada, and the Northern California District in California. The ARMPA adopts the management described in the Nevada/NE California Greater Sage-grouse Proposed Resource Management Plan Amendment and Final Environmental Impact Statement (2015), with adjustments as described in the *Notice of Modifications and Clarifications Made to the Approved RMP Amendment* section of the ROD.

In the event there are inconsistencies or discrepancies between previously Approved RMPs and this ARMPA, the decisions contained in this ARMPA will be followed. The BLM will continue to tier to statewide, national, and programmatic EISs and other NEPA and planning documents, as well as consider and apply Required Design Features or other management protocols contained in other planning documents after appropriate site-specific analysis.

All future resource authorizations and actions in GRSG habitat will conform to, or be consistent with the decisions contained in this ARMPA. All existing operations and activities authorized under permits, contracts, cooperative agreements or other authorizations will be modified, as necessary, to conform to this plan amendment within a reasonable timeframe. However, this ARMPA does not repeal valid existing rights on public lands. A valid existing right is a claim or authorization that takes precedence over the decisions developed in this plan. If such authorizations come up for review and can be modified, they will also be brought into conformance with this plan amendment.

While the Final EIS for the Nevada/NE California Proposed GRSG RMP Amendment constitutes compliance with NEPA for the broad-scale decisions made in this ARMPA, the BLM will continue to prepare Environmental Assessments (EAs) and Environmental Impacts Statements (EISs) where appropriate as part of implementation level planning and decision-making.

2.2 Goals, Objectives, and Management Decisions

This section of the ARMPA presents the goals, objectives, land use allocations, and management actions established for protecting and preserving Greater Sage-grouse and its habitat on public lands managed by the BLM in Nevada and northeast California. These management decisions are presented by program area. Not all types of decisions were identified for each program. A *Monitoring Framework* is also included (in Appendix X) to describe how the program decisions will be tracked to ensure implementation.

This section is organized by program area beginning with the Special Status Species (SS) program, which identifies specific goals, objectives, and management actions for Greater Sage-grouse and its habitat. For ease of identification into the future, each program area has identified abbreviations (see below) for these program areas and each decision in that program is numbered in coordination with the abbreviation:

- Special Status Species – **(SSS)**
- Vegetation—**(VEG)**
    - Sagebrush Steppe
    - Conifer Encroachment
    - Invasive Species
    - Riparian and Wetlands
- Fire and Fuels Management—**(FIRE)**
    - Pre-Suppression
    - Suppression
    - Fuels Management
    - Post-Fire Management
- Livestock Grazing –**(LG)**
- Wild Horses and Burros – (**WHB)**
- Minerals – **(MR)**
    - Leasable Minerals
    - Locatable Minerals
    - Saleable Minerals
    - Non-Energy Leasable Minerals
    - Coal
- Renewable Energy (Wind and Solar) – **(RE)**
- Lands and Realty – (**LR)**
    - Utility Corridors and Communication Sites
    - Land Use Authorizations
    - Land Tenure
    - Recommended Withdrawals
- Recreation—**(REC)**
- Travel and Transportation – **(TTM)**
- Cultural Resources—**(CUL)**

- Air Quality— **(AQ)**
- Soil Resources—**(SL)**
- Water Resources — **(WR)**
- Visual Resources—**(VRM)**
- Wildlife and Fish—**(WF)**

Commented [MEM2]: Planners - Are these abbreviations ok? Please remember, while you may want to use the exact abbreviations and numbering structure for your effort, we need to all be consistent. If you have recommendations, please ensure they can be carried forward for all 8 amendments.

Special Status Species (SSS)

Goal SSS 1: Conserve, enhance, and restore the sagebrush ecosystem upon which GRSG populations depend in an effort to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners.

Objective SSS 1: Manage land resource uses to meet GRSG habitat objectives, as described in **Table 2-2.** The habitat objectives would be used to evaluate management actions that are proposed in GRSG habitat. Managing for habitat objectives would ensure that habitat conditions are maintained if they are currently meeting objectives or if habitat conditions move toward these objectives in the event that current conditions do not meet these objectives.

The habitat objectives in **Table 2-2** summarize the characteristics that research has found represent the seasonal habitat needs for GRSG. The specific seasonal components identified in the Table were adjusted based on local science and monitoring data to define the range of characteristics used in this sub-region. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by GRSG. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the GRSG habitat assessment to be used during land health evaluations (see **Appendix X**). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use (Stiver et. al 2015, in press).

Table 2-2

Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
GENERAL/LANDSCAPE-LEVEL			
All life stages	Rangeland health assessments	Meeting all standards[1]	
Cover (nesting)	Seasonal habitat needed	>65% of the landscape in sagebrush cover	Aldridge and Boyce 2007

Table 2-2

Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
	Annual grasses	<%5	Blomberg et al. 2012
Security (nesting)	Conifer encroachment	<3% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50% cover)	Casazza et al. 2011 USGS (in prep A)
Cover and food (winter)	Conifer encroachment	<5% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50%)	USGS (in prep A) USGS (in prep B)
	Sagebrush extent	>85% sagebrush land cover	USGS (in prep A) Doherty et al. 2008
LEK (Seasonal Use Period: March 1 to May 15)			
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover	Blomberg et al. 2012 Connelly et al. 2000 Stiver et al. 2015 (in press) HAF
Security[2]	Pinyon or juniper cover	<3% landscape cover within .6 mile of leks	Connelly et al. 2000 (modified) Stiver et al. 2015 (in press) HAF Baruch-Mordo et al. 2013
	Proximity of tall structures[3]	Use Manier et al. 2014- Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles	Coates et al. 2013 Manier et al. 2014
NESTING (Seasonal Use Period: April 1 to June 30)			
Cover	Sagebrush cover	≥20%	Kolada et al. 2009a, 2009b
	Residual and live perennial grass cover	≥10% if shrub cover is <25%[4]	Coates et al. 2013 Coates and Delehanty 2010 Kolada et al. 2009a, 2009b
	Annual grass cover	<5%	Lockyer et al. (in press)
	Total shrub cover	≥30%	Coates and Delehanty 2010 Kolada et al. 2009a Lockyer et al. (in press)
	Perennial grass height	Provide overhead and lateral concealment from predators[7]	Connelly et al. 2000, 2003 Hagen et al. 2007; Stiver et. al. 2015 (in press) HAF
Security[2]	Proximity of tall structures[3] (3 feet [1 meter] above shrub)	Use Manier et al. 2014, Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles	Coates et al. 2013 Gibson et al. 2013 Manier et al. 2014
BROOD-REARING/SUMMER (Seasonal Use Period: May 15 to September 15; Early: May 15 to June 15; Late: June 15 to September 15)			
UPLAND HABITATS			
Cover	Sagebrush cover	10 to 25%	Connelly et al. 2000
	Perennial grass Cover and forbs	>15% combined perennial grass and forb cover	Connelly et al. 2000 Hagen et al. 2007

Table 2-2

Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
	Deep rooted perennial bunchgrass	7 inches[5, 6]	Hagen et al. 2007
Cover and food	Perennial forb cover	≥5% arid ≥15% mesic	Casazza et al. 2011 Lockyer et al. (in press)
RIPARIAN/MEADOW HABITATS			
Cover and food	Riparian areas/meadows	PFC	Dickard et al. 2014 Prichard et al. 1998, 1999 Stiver et al. 2015 (in press) HAF
Security	Upland and riparian perennial forb availability and understory species richness	• Preferred forbs are common with several species present[5] • High species richness (all plants)	Stiver et al. 2015 (in press) HAF
	Riparian area/meadow interspersion with adjacent sagebrush	Has adjacent sagebrush cover	Casazza et al. 2011 Stiver et al. 2015 (in press) HAF
WINTER (Seasonal Use Period: November 1 to February 28)			
Cover and Food	Sagebrush cover	≥10% above snow depth	Connelly et al. 2000 USGS (in prep C)
	Sagebrush height	>9.8 inches above snow depth	Connelly et al. 2000 USGS (in prep C)

[1]Upland standards are based on indicators for cover, including litter, live vegetation, and rock, appropriate to the ecological potential of the site.
[2] Applicable to Phase I and Phase II pinyon and/or juniper.
[3] Does not include fences.
[4]In addition, if upland rangeland health standards are being met.
[5]Relative to ecological site potential.
[6] In drought years, 4-inch perennial bunchgrass height with greater than 20 percent measurements exceeding 5 inches in dry years.
[7]Specific height requirements needed to meet the objective will be set at the time of HAF assessments.

Objective SSS 2: Maintain or improve connectivity between, to, and in PHMAs and GHMAs to promote movement and genetic diversity for GRSG population persistence and expansion.

Objective SSS 3: Identify and implement GRSG conservation actions that can augment, enhance, or integrate program conservation measures established in agency and state land use and policy plans.

Objective SSS 4: In PHMAs and GHMAs, apply the concept of "avoid, minimize, and compensatory mitigation" for all human disturbance not already excluded or closed, so as to avoid adverse effects on GRSG and its habitat. The first priority would be to avoid new disturbance; where this is not feasible, the second priority would be to minimize and mitigate any new disturbance (**Appendix X**).

Management Decisions (MD):

MD SSS-1: In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat:[1]

A. First priority—locate project/activity outside PHMAs and GHMAs

B. Second priority—if the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG

    1. In non-habitat, ensure the project/activity would not create a barrier to movement or connectivity between seasonal habitats and populations

C. Third priority—collocate the project/activity next to or in the footprint of existing infrastructure

MD SSS-2: In PHMAs, the following conditions would be met in order to minimize and mitigate any effects on GRSG and its habitat from the project/activity:[2]

A. Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSUs; total PHMA area associated with a GRSG population area) and 2) in a proposed project analysis area. See **Appendix X** (Disturbance Cap Guidance) for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area, as follows:

    1. If the 3 percent human disturbance cap is exceeded on all lands (regardless of ownership) in PHMAs in any given BSU, then no further discrete human disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, and valid existing rights) will be permitted, by BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap (see Nevada exception under MD SSS 2 a. 3. **Appendix X**).
    2. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, valid existing rights; see Nevada exception under MD SSS 2 a. 3. **Appendix X**).
        a. For BLM land in the state of Nevada only, the following disturbance management protocol (DMP) is intended to provide for a 3 percent limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species.

        b. Such discretionary activities that would cause disturbances in excess of 3 percent at the project or BSU scale (see **Appendix X**) would be prohibited, unless a technical team described below determines that new or site-specific information indicates the project could be modified to result in a net conservation gain at the BSU level. Factors considered by the team will include GRSG abundance and trends, habitat amount and quality, extent of project disturbance, location and density of existing disturbance, project design options and other biological factors.

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[2]The conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, with the exceptions of seasonal restrictions and noise.

c. Any exceptions to the 3 percent disturbance limitation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the NDOW, the USFWS, and the BLM unanimously find that the proposed action satisfies the conditions stated in the above paragraph. Such finding shall initially be made by the technical team, which consists of a field biologist or other GRSG experts from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the BLM State Director, USFWS State Ecological Services Director and NDOW Director for final resolution. In the event their finding is not unanimous, the exception will not be granted (**Appendix X**).

3. For BLM land in the state of California only, subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.

B. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) would result in an overall net conservation gain to GRSG (see **Appendix X**).

C. Authorized/permitted activities are implemented by adhering to the RDFs described in **Appendix X**, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.

2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.

3. A specific RDF will provide no additional protection to GRSG or its habitat.

D. In management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File-Report 2014-1239 (Manier et al. 2014), in accordance with **Appendix X**.

E. Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:

1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30

a. Lek—March 1 to May 15

b. Lek hourly restrictions—6 p.m. to 9 a.m.

c. Nesting—April 1 to June 30

2. Brood-rearing habitat from May 15 to September 15
    a. Early—May 15 to June 15
    b. Late—June 15 to September 15
3. Winter habitat from November 1 to February 28

The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW and CDFW, in order to better protect GRSG and its habitat.

F. Authorizations and permits would limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See **Appendix X**, Summary of Noise-Monitoring Recommendations.

MD SSS 3: In GHMAs, the following conditions would be met in order to minimize and mitigate any effects on GRSG or its habitat from the project/activity:[3]

A. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs would result in an overall net conservation gain to GRSG (see **Appendix X**, Mitigation Framework).

B. Authorized/permitted activities are implemented adhering to the RDFs described in **Appendix X**, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

    1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
    2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.
    3. A specific RDF will provide no additional protection to GRSG or its habitat.

C. In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File Report 2014-1239 (Manier et.al 2014]), in accordance with **Appendix X**.

D. Seasonal restrictions would be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:

    1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30

[3]The conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, with exceptions for seasonal restrictions and noise.

a. Lek—March 1 to May 15

b. Lek hourly restrictions—6 p.m. to 9 a.m.

c. Nesting—April 1 to June 30

2. Brood-rearing habitat from May 15 to September 15

a. Early—May 15 to June 15

b. Late—June 15 to September 15

3. Winter habitat from November 1 to February 28

The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW and CDFW, in order to better protect GRSG and its habitat.

E. Authorizations and permits would limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See **Appendix X**, Summary of Noise-Monitoring Recommendations.

MD SSS 4: In OHMAs, authorized/permitted activities are implemented adhering to the RDFs described in **Appendix X,** consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

A. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.

B. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.

C. A specific RDF will provide no additional protection to GRSG or its habitat.

MD SSS 5: Designate SFAs, as shown on **Figure 2-5** (2,797,400 acres). SFAs will be managed as PHMAs, with the following additional management:

A. Recommended for withdrawal from the General Mining Act of 1872, subject to valid existing rights

B. Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing

C. Prioritized for management and conservation actions in these areas, including review of livestock grazing permits/leases (see LG actions below)

MD SSS 6: Cooperate with federal and state agencies, universities, and other organizations to establish and maintain a GRSG telemetry database.

MD SSS 7: Work with project proponents to limit project-related noise, seasonally or annually (see Actions SSS 2 and SSS 3), in GRSG habitat where it would be expected to reduce functionality of

habitats that support associated GRSG populations. Support the establishment of ambient baseline noise levels for leks in PHMAs and GHMAs.

As additional noise-related research and information emerge, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize the potential for noise impacts on GRSG populations.

MD SSS 8: For any surface-disturbing activities proposed in PHMAs and GHMAs, the proponent will use the services of a qualified biologist approved by the BLM to conduct surveys for GRSG breeding activity during the GRSG breeding season before project activities begin. The surveys must encompass all suitable GRSG habitats within a minimum of 4 miles of the proposed activities. Surveys will be conducted following protocols established by state fish and wildlife agencies during planning operations and during project activities. GRSG seasonal habitat delineations will also be required within a minimum of 4 miles of project activities.

MD SSS 9a: In Nevada only, the BLM would consult with the Sagebrush Ecosystem Technical Team (SETT) for application of the "avoid, minimize, and compensatory mitigation" strategy and the Conservation Credit System developed by the Nevada Natural Heritage Program and the SETT (2014a, 2014b) or other applicable mitigation system such as outlined in Appendix I. This would be to ensure that a net conservation gain of GRSG habitat occurs due to human disturbances in PHMAs and GHMAs (see **Appendix X**) on all agency-authorized activities. The specifics of the coordination will be identified in a MOU between the agencies.

MD SSS 9b: In California only, the BLM would follow the BLM mitigation strategy outlined in **Appendix I**.

MD SSS 10: Site-specific NEPA analysis on use authorizations would include project level adaptive management responses to address changed conditions in GRSG habitat and population trends, when necessary or as new data becomes available (see **Section 2.7.1**, Adaptive Management Plan).

[Continue format and numbering structure for the remainder of the program area goals, objectives, and management decisions.]

3. Consultation, Coordination, and Public Involvement

The BLM land use planning activities are conducted in accordance with NEPA requirements, CEQ regulations, and Department of the Interior and BLM policies and procedures implementing NEPA. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in, and throughout, the planning process. Public involvement and agency consultation and coordination, which have been at the heart of the planning process leading to this ARMPA, were achieved through Federal Register notices, public and informal meetings, individual contacts, media releases, planning bulletins, and the Nevada GRSG website (http://www.blm.gov/co/st/en/BLM_Programs/wildlife/sage-grouse.html).

3.1 Consultation and Coordination

The BLM collaborated with numerous agencies, municipalities, and tribes throughout the preparation of this ARMPA. The BLM outreach efforts and collaboration with cooperating agencies are described in Section 5.3 of the Proposed RMP and Final EIS. Nine agencies (Humboldt County, City of Winnemucca, Washoe County, Pershing County, NDOW, N-2 Grazing Board, NDOA, Bureau of Reclamation, and USFWS) accepted the offer to participate in the BLM planning process as cooperating agencies. The BLM formally invited the cooperating agencies to participate in developing the alternatives for the RMPA and EIS and to provide data and other information related to their agency responsibilities, goals, mandates, and expertise.

Section 7 Consolation

In accordance with Section 7 of the Endangered Species Act of 1973 (ESA), as amended, BLM requested a species list from USFWS of any federally listed, federally proposed, or current federal candidate species that may be present in the RMP planning area on February 8, 2005. Updated species lists were requested on August 27, 2007, March 25, 2010, and January 26, 2012. The most recent list (USFWS 2012) can be found in Appendix X. The BLM initiated formal consultation with the USFWS under Section 7 of the ESA on March 9, 2012. Formal Section 7 consultation was completed on July 27, 2012, when the USFWS provided a Biological Opinion.

Native American Consultation

In accordance with FLPMA and BLM guidance, the BLM engaged in consultation with Native American representatives for the RMPA planning process. Coordination with Native American tribes occurred throughout the planning process. All Native American tribes and organizations with interests in the planning area were contacted by mail and encouraged to be cooperating agencies. Tribes have been participating in the RMPA/EIS process through meetings and other contacts. A request for a consultation meeting and copies of the RMP were sent to the following tribes and reservations on July 12, 2010: Battle Mountain Band, Burns Paiute Tribe, Cedarville Rancheria, Confederate Tribes of Warm Springs, Fallon Paiute Shoshone Paiute Tribe, Fort Bidwell Tribe, Fort McDermitt Paiute and Shoshone Tribe, Klamath Indian Tribe, Lovelock Paiute Tribe, Pit River Tribe, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, Shoshone-Bannock Tribes, Shoshone-Paiute Tribes of Duck Valley, Summit Lake Paiute Tribe, Walker River Paiute Tribe, Washoe Tribe, Winnemucca Indian Colony, Yerrington Paiute Tribe, and Yomba Reservation. A copy was also sent to the Inter-Tribal Council of Nevada.

Consultation meetings to discuss the RMP occurred with the Fort McDermitt Paiute and Shoshone Tribe in September and December 2012, and Summit lake Paiute Tribe in October 2012. Other tribes declined or did not respond to BLM requests for consultation on the RMP. An additional Native American consultation meeting was held in July 2012.

3.2 Public Involvement

The public involvement process, consultation, and coordination conducted for the RMP are described in Chapter 5 of the Proposed RMP and Final EIS. As required by regulation, public scoping meetings were conducted following the publication of the Notice of Intent to prepare an EIS in the Federal Register on December 9, 2011.

A Notice of Availability (NOA) for the Draft RMPA/EIS was published in the Federal Register on November 27, 2013. The NOA initiated a 90-day public comment period. The BLM held public comment open houses for the Draft RMPA/EIS on Monday, July 26 in Winnemucca, Tuesday, July 27 in Lovelock, Wednesday, July 28 in Gerlach, and Friday, July 29 in Reno. All meetings were from 5:00 to 7:00 PM. The comments received on the Draft RMPA and EIS and BLM's responses were summarized in Appendix X of the Proposed RMP and Final EIS.

The NOA for the Proposed RMP and Final EIS was published on May 29, 2015 initiating a 30 day public protest period and a 60 day Governors Consistency review period. The 30-day protest period ended on June 29, 2015. Eleven protest letters were received.

4. Plan Implementation

4.1 Implementing the Plan

Plan implementation is a continuous and active process. Decisions presented as Management Decisions of this Approved RMP Amendment are of three types: Immediate, One-Time, and Long-Term.

Immediate Decisions: These decisions go into effect upon signature of the ROD and ARMPA. These include decisions such as the allocation of lands as open or closed for saleable mineral sales, open with stipulations for oil and gas leasing, and OHV designations. Immediate decisions require no additional analysis and provide the framework for any subsequent activities proposed in the planning area. Proposals for actions such as oil and gas leasing, land adjustments, and other allocation-based actions will be reviewed against these decisions/allocations to determine if the proposal is in conformance with the plan amendment.

One-Time Decisions: These types of decisions include those that are implemented after additional site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development travel management plans. One-time decisions usually require additional analysis and are prioritized as part of the BLM budget process. Priorities for implementation of "one-time" RMP decisions will be based on several criteria, including:

- Current and projected resource needs and demands
- National and Statewide BLM management direction and program emphasis and
- Funding

Long-Term Guidance/Life of Plan Direction: These decisions include the goals, objectives, and management actions established by the plan amendment that are applied during site-specific analyses and activity planning. This guidance is applied whether the action is initiated by the BLM or by a non-BLM project proponent. Long- term guidance and plan direction is incorporated into BLM management as implementation level planning and project analysis occurs (for example, as a result of the watershed assessment process or receipt of a land use application).

General Implementation Schedule of "One-Time" Actions: Decisions in this plan amendment will be implemented over a period of years depending on budget and staff availability. After issuing the ROD/ARMPA, BLM will prepare an implementation plan that establishes tentative timeframes for competition of "one-time" actions identified in the ARMPA. Most of these actions require additional

analysis and site specific activity planning. This schedule does not include the decisions which are effective immediately upon approval of the plan amendment (usually allocations), or the actions which describe the ongoing management that will be incorporated and applied as site-specific proposals are analyzed on an ongoing basis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, changing program priorities, non-discretionary workloads, and cooperation by partners and external publics. Yearly review of the plan amendment will provide consistent tracking of accomplishments and provide information that can be used to develop annual budget requests to continue implementation.

4.2 Maintaining the Plan

Land use plan decisions and supporting information can be maintained to reflect minor changes in data, but maintenance is limited to refining, documenting, and/or clarifying previously approved decisions. Some examples of maintenance actions include:

- Correcting minor data, typographical, mapping, or tabular data errors
- Refining baseline information as a result of new inventory data (e.g., changing the boundary of an archaeological district, refining the known habitat of special status species or big game crucial winter ranges, or adjusting the boundary of a fire management unit based on updated fire regime condition class inventory, fire occurrence, monitoring data, and/or demographic changes)
- Applying an existing oil and gas lease stipulation to a new area prior to the lease sale based on new inventory data (e.g., apply an existing protective stipulation for sage-grouse to a newly discovered sage-grouse lek.)

The BLM expects that new information gathered from field inventories and assessments, research, other agency studies, and other sources will update baseline data and/or support new management techniques, best management practices, and scientific principles. Where monitoring shows land use plan actions or best management practices are not effective, minor modifications or adjustments may occur without amendment or revision of the plan amendment as long as assumptions and impacts disclosed in the analysis remain valid and broad-scale goals and objectives are not changed.

Plan maintenance will be documented in supporting records. Plan maintenance does not require formal public involvement, interagency coordination, or the NEPA analysis required for making new land use plan decisions.

4.3 Changing the Plan

The ARMPA may be changed, should conditions warrant, through a plan amendment or plan revision process. A plan amendment may become necessary if major changes are needed or to consider a proposal or action that is not in conformance with the plan. The results of monitoring, evaluation of new data, or policy changes and changing public needs might also provide the impetus for an amendment. Generally, an amendment is issue-specific. If several areas of the plan become outdated or otherwise obsolete, a plan revision may become necessary. Plan amendments and revisions are accomplished with public input and the appropriate level of environmental analysis conducted according to the Council on Environmental Policy procedure for implementation of the National Environmental Policy Act.

4.4 Plan Evaluation and Monitoring

Evaluation is a process in which the plan and monitoring data are reviewed to see if management goals and objectives are being met and if management direction is sound. Land use plan evaluations determine if decisions are being implemented, whether mitigation measures are satisfactory, whether there are significant changes in the related plans of other entities, whether there is new data of significance to the plan, and if decisions should be changed through amendment or revision. Monitoring data gathered over time is examined and used to draw conclusions on whether management actions are meeting stated objectives, and if not, why. Conclusions are then used to make recommendations on whether to continue current management or to identify what changes need to be made in management practices to meet objectives.

BLM will use land use plan evaluations to determine if the decisions in the RMP Amendment, supported by the accompanying NEPA analysis, are still valid in light of new information and monitoring data. Evaluations will follow the protocols established by the BLM Land Use Planning Handbook (H-1601-1) or other appropriate guidance in effect at the time the evaluation is initiated. The Monitoring Framework for this ARMPA can be found in Appendix X.

5. State Director Recommendation for Approval

We hereby recommend for approval this resource management plan amendment.

John F. Ruhs, Acting Nevada State Director	Date
James G. Kenna, California State Director	Date

6. Glossary

[Insert glossary from the Proposed Amendment, removing any unnecessary terms that are not contained in this ARMPA].

Appendices

Commented [MEM3]: Planners - These are the following appendices I believe are appropriate for attaching to the ARMPA. Are there any others that you believe would assist the field/district with implementing these plans?

Appendix A – Approved RMP Amendment Maps

Appendix B – Buffers

Appendix C – Required Design Features

Appendix E – Monitoring Framework

Appendix F – Disturbance

Appendix G – Mitigation

Appendix H – Stipulations

Appendix I – FIAT

Appendix J – ARMPA Relationship with Other Policies, Plans, and Programs

Appendix G – Implementation Appendix

Buffalo Field Office
Approved Resource Management Plan

Prepared by
U.S. Department of Interior
Bureau of Land Management
Buffalo Field Office, Wyoming

2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WY/XX/XX-XX+XXX

Dear Reader Letter (signed by the State Director – template forthcoming which will be signed, scanned, and inserted here)

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List of Tables

[Develop once there is a final draft]

List of Figures

[Develop once there is a final draft]

List of Acronyms

[Develop once there is a final draft]

1. Introduction

[Enter content specific to your planning effort].

1.1 Description of the Planning Area

[Enter content specific to your planning effort].

1.3 Purpose and Need

[Enter content specific to your planning effort].

1.4 Planning Criteria

[Enter content specific to your planning effort].

2. Approved Resource Management Plan for Greater Sage-Grouse Habitat

2.1 Description of GRSG Habitat Management Areas

The decision area for GRSG habitat management within this ARMP is BLM-administered lands in GRSG habitat management areas, including surface and split-estate lands with BLM subsurface mineral rights. GRSG habitat on BLM-administered lands in the decision area consists of lands allocated as Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) (see and **Table X-X, Table X-X, Table X-X, and Figure X-X**).

PHMA and GHMA are defined as follows:

- PHMA— BLM-administered lands identified as having the highest value to maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA are derived from and generally follow the Preliminary Priority Habitat boundaries identified in the Draft LUPA/EIS. Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report. These areas are consistent with Core Habitat Areas, per version 3 of the State of Wyoming Executive Order (EO) Greater Sage-grouse Core Area of Protection (WY EO 2010-4) (Wyoming Office of the Governor 2010).
- GHMA — BLM-administered lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMA are derived from and generally follow the Preliminary General Habitat boundaries identified in the Draft LUPA/EIS. These areas are consistent with Non-Core Habitat Areas, per version 3 of the State of Wyoming Executive Order (EO) Greater Sage-grouse Core Area of Protection (WY EO 2010-4) (Wyoming Office of the Governor 2010).

Table X-X
Acres PHMA and GHMA in the Decision Area for the ARMP

Surface Land Management	PHMA	GHMA
BLM	9,309,700	5,720,600

Source: BLM GIS 2015

Commented [MEM1]: These acre figures are not for Buffalo and would need to be modified.

Table X-X
Acres of GRSG Habitat by County in the Decision Area (BLM Lands only)

County Name [1]	ARMPA		
	PHMA	GHMA	TOTAL
Churchill	78,200	78,200	324,600
Elko	995,800	995,800	5,470,800
Eureka	531,300	531,300	1,540,400
Humboldt	661,600	661,600	2,507,300
Lander	612,500	612,500	1,989,500
Lassen	278,800	278,800	895,600
Lincoln	464,000	464,000	991,800
Lyon	600	600	2,000
Mineral	-	-	5,800
Modoc	93,400	93,400	215,100
Nye	266,800	266,800	1,354,400
Pershing	168,800	168,800	735,200
Plumas	-	-	1,800
Sierra	300	300	500
Storey	300	300	1,000
Washoe	466,500	466,500	2,060,700

Table X-X
Acres of GRSG Habitat by County in the Decision Area (BLM Lands only)

County Name [1]	ARMPA		
	PHMA	GHMA	TOTAL
White Pine	1,101,900	1,101,900	2,810,400
Grand Total	5,720,800	5,720,800	20,906,900

Source: BLM GIS 2015

[1]The following counties in the planning area do not contain mapped GRSG habitat: Carson City, Douglas, Esmeralda, and Siskiyou.

[2]PHMA acres in the proposed plan include 2,797,400 acres in Elko, Humboldt and Washoe Counties associated with SFAs.

Table 1-1
Acres of GRSG Habitat by BLM District/Field Office in the Decision Area

BLM Office	ARMP		
	PHMA[1]	GHMA	TOTAL
Alturas Field Office	12,200	127,700	317,900
Battle Mountain District Office	1,549,600	1,014,300	3,727,500
Carson City District Office	115,000	231,100	655,500
Eagle Lake Field Office	474,300	242,800	864,800
Elko District Office	3,586,900	1,203,600	5,943,000
Ely District Office	1,176,000	1,741,800	4,404,000
Jarbidge Field Office [2]	32,700	10,000	43,600
Bruneau Field Office [2]	7,700	0	8,000
Surprise Field Office	862,500	215,400	1,178,300
Winnemucca District Office	1,492,800	933,900	1,337,600

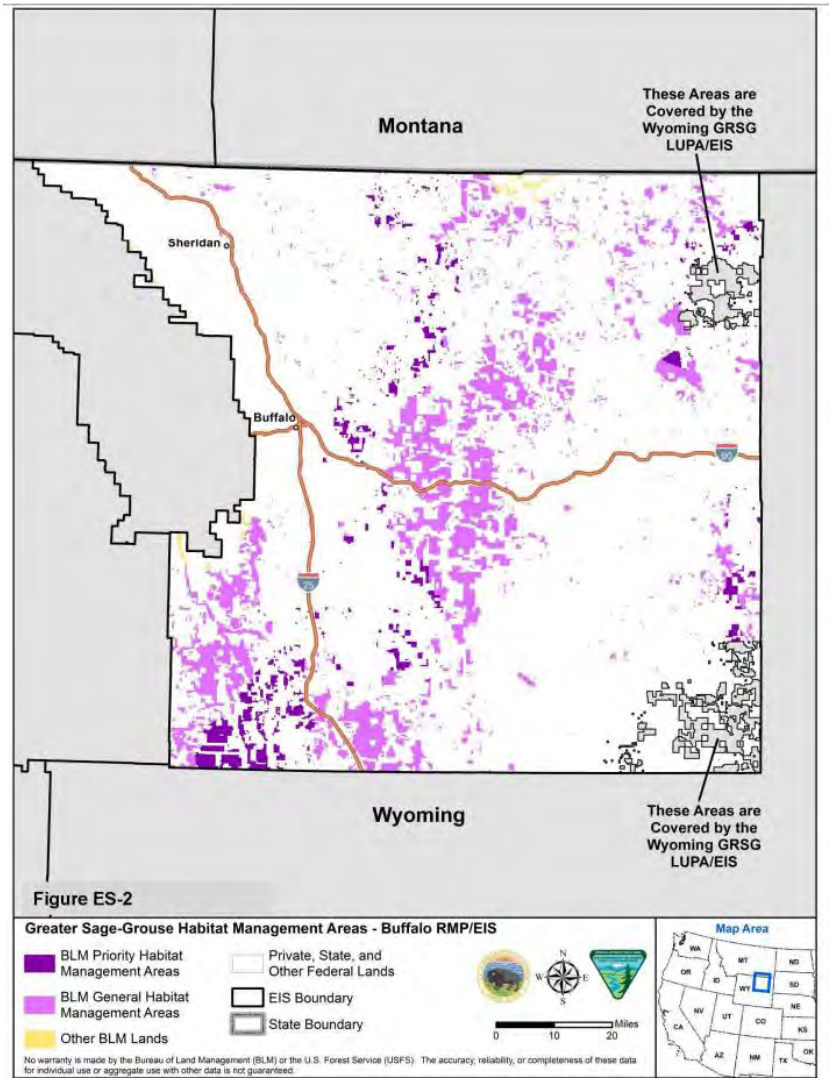
Total Acres	**9,309,700**	**5,720,600**	**5,876,600**

Source: BLM GIS 2015

[1] Includes 2,797,400 acres of SFAs in Surprise Field Office, Winnemucca District Office and Elko District Office.

[2] Only that part of the Idaho BLM Jarbidge and Bruneau Field Offices that falls in the Nevada state line.

Commented [MEM2]: Map is only a placeholder, but I recommend we use the map from the PRMP Executive Summary, since the Department provided it for us.



2.2 Buffalo Sub-Regional GRSG Conservation Strategy

The ARMP's GRSG Habitat Management approach represents the BLM's strategy for applying conservation measures to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. The ARMP addressed threats to GRSG and its habitat identified by the USFWS in the March 2010 listing decision. These threats apply to the Buffalo sub-regional planning area as well as those threats described in the USFWS's Conservation Objectives Team (COT) report (see **Table X**).

The ARMP will maintain and enhance GRSG populations and habitat. The ARMP benefits GRSG populations by eliminating disturbance near leks and other key areas. It establishes conditions, subject to valid existing rights, for new anthropogenic activities to ensure a net conservation gain to GRSG in PHMA. The ARMP also reduces habitat disturbance and fragmentation through limitations on surface-disturbing activities, while addressing changes in resource condition and use through monitoring and adaptive management. The ARMP provides a framework for prioritizing areas in PHMA for wildfire, invasive annual grass, and conifer treatments, which will maintain and enhance GRSG habitat.

The ARMP's Greater Sage-Grouse Habitat Management approach was built upon the foundation for GRSG management established by and complementary to the Governor's Executive Order 2011-05, Greater Sage Grouse Core Area Protection (Core Area Strategy) (Wyoming Office of the Governor 2011) by establishing similar conservation measures and focusing restoration efforts in the same key areas most valuable to GRSG.

[Update Table X based on the sub-region's key components which may be consistent with those provided. If consistent, please use narrative provided for consistency purposes.]

Table X
Key Components of the Buffalo ARMP Addressing COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Buffalo ARMP
All Threats	• Implement the Adaptive Management Plan, which provides regulatory assurance that unintended negative impacts to GRSG habitat will be addressed before consequences become severe or irreversible. • PHMA: Require and ensure mitigation that provides a net conservation gain to GRSG. • Monitor implementation and effectiveness of conservation measures in GRSG habitats according to the Habitat Assessment Framework. • Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat. • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
All development threats, including mining, infrastructure, and energy development	• PHMA: Implement an anthropogenic disturbance cap of 5% at the project-area scale. • PHMA: Implement a density cap of an average of 1 energy and mining facility per 640 acres. • PHMA: Surface occupancy and surface-disturbing activities would be

Table X
Key Components of the Buffalo ARMP Addressing COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Buffalo ARMP
	prohibited on or within a 0.6-mile radius of the perimeter of occupied GRSG leks. • GHMA: Surface occupancy and surface-disturbing activities would be prohibited on or within a 0.25-mile radius of the perimeter of occupied GRSG leks.
Energy Development—Fluid Minerals	• PHMA: Open to fluid mineral leasing subject to No Surface Occupancy (NSO) stipulation within 0.6 miles of an occupied lek, and Timing Limitation (TL) stipulation from March 15 to June 30. • GHMA: Open to fluid mineral leasing subject to NSO within 0.25 miles of an occupied lek and TL stipulations.
Energy Development—Wind Energy	• PHMA: Avoidance area (may be available for wind energy development with special stipulations)
Infrastructure – major Rights-of-Way (ROW)	• PHMA: Avoidance area (may be available for major ROWs with special stipulations)
Infrastructure – minor ROWs	• PHMA: Avoidance area (may be available for minor ROWs with special stipulations)
Mining—locatable minerals	• Apply RDFs to locatable minerals consistent with applicable law.
Mining—coal	• PHMA is essential habitat for GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
Livestock Grazing	• Prioritize the review and processing of grazing permits/leases in PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards, and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in PHMA to ensure compliance with the terms and conditions of grazing permits.
Free-Roaming Equid Management	• Update Herd Management Area plans to include GRSG objectives.
Range Management Structures	• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats.
Recreation	• PHMA: Do not construct new recreation facilities.
Fire	• PHMA: Prioritize suppression immediately after life and property to conserve the habitat. • GHMA: Prioritize suppression where wildfires threaten PHMA.

Table X
Key Components of the Buffalo ARMP Addressing COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Buffalo ARMP
Nonnative, Invasive Plants Species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMA and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush Removal	• PHMA: Maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. • All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or Juniper Expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural Conversion and Ex-Urban Development	• Retain the majority of PHMA in federal management.

2.3 Goals, Objectives, and Management Decisions for GRSG Habitat

This section of the ARMP presents the goals, objectives, land use allocations, and management actions established for protecting and preserving Greater Sage-grouse and its habitat on public lands managed by the BLM in the Buffalo sub-regional planning area. A *Monitoring Framework* is also included (in Appendix X) to describe how the program decisions will be tracked to ensure implementation.

Many of these goals, objectives, and management actions identified in this section can also be found in Section X of this ARMP for other resources and/or program areas (e.g., Physical Resources) and have been consolidated in this section to depict how the agency will manage GRSG habitat. For this reason, the goals, objectives, and management actions in this section are not paginated and still retain the title/record number as they are presented in Section X.

These GRSG Habitat Management goals, objectives, and management decisions have been approved through the GRSG Rocky Mountain Region Record of Decision.

[Insert the goals, objectives, and management actions as they were presented in the GRSG Habitat Management section of the PRMP.]

2.5 State Director Recommendation for Approval

I hereby recommend for approval the Buffalo resource management plan Greater Sage-Grouse habitat management goals, objectives, and decisions.

Mary Jo Rugwell, Acting Wyoming State Director

Date

3. Approved Resource Management Plan

2.1 Approved Resource Management Plan Instructions

[Enter content specific to your planning effort].

2.2 Goals, Objectives, and Management Decisions

[Enter content specific to your planning effort].

4. Consultation, Coordination, and Public Involvement

[Enter content specific to your planning effort].

4.1 Consultation and Coordination

[Enter content specific to your planning effort].

4.2 Public Involvement

[Enter content specific to your planning effort].

5. Plan Implementation

5.1 Implementing the Plan

[Enter content specific to your planning effort].

5.2 Maintaining the Plan

5.3 Changing the Plan

[Enter content specific to your planning effort].

5.4 Plan Evaluation and Monitoring

[Enter content specific to your planning effort].

6. Glossary

[Enter content specific to your planning effort].

Appendices

Appendix A – Approved RMP Amendment Maps

Appendix B – Buffers

Appendix C – Required Design Features

Appendix E – Monitoring Framework

Appendix F – Disturbance

Appendix G – Mitigation

Appendix H – Stipulations

Appendix I – FIAT

Appendix J – ARMPA Relationship with Other Policies, Plans, and Programs

Appendix G – Implementation Appendix

Commented [MEM3]: This list of appendices is replicated from the amendment's template and the revisions will of course include additional appendices.

Commented [MEM4]: Will revisions have to separate those out that are specific to GRSG?

GBR_PUB_14406.4g

Dear Reader:

Enclosed are the Bureau of Land Management (BLM) Record of Decision (ROD) and Approved Resource Management Plan Amendments (RMPAs) for the Great Basin Region Greater Sage-Grouse Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah).

The documents are the product of an unprecedented effort to respond to the deteriorating health of the sagebrush landscapes of the American West and the declining population of the Greater Sage-Grouse, a ground-dwelling bird that has been under consideration by the U.S. Fish and Wildlife Service (FWS) for protection under the Endangered Species Act. Based on the best available science and with extensive participation from the public, partners, and stakeholders, these documents, and those published today for the Rocky Mountain Region, serve as the cornerstone of the broader, landscape-level National Greater Sage-Grouse Conservation Strategy (Strategy).

This Strategy responds to the threats identified in the FWS's 2010 "warranted, but precluded" finding and was guided by over a decade of research, analyses, and recommendations for Greater Sage-Grouse conservation, including the FWS Conservation Objectives Team Report and the BLM National Technical Team Report. These underlying Reports were developed through a collaboration of state, Federal, and research scientists with extensive experience in sage-grouse management and research.

The BLM's actions are guided by the Federal Land Policy and Management Act, which requires that RMPs for managing public lands be developed and maintained, and the National Environmental Policy Act, which requires that an environmental impact statement (EIS) be prepared for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the BLM prepared 15 EISs for the associated Draft RMPs and RMPAs, which were published in 2012 and 2013.[1] Each document incorporated analyses and input from the public; Native American tribes; cooperating agencies and other local, state, and Federal agencies and organizations; and BLM resource specialists.

The public had 90 days to comment following publication of the Draft RMPAs and EISs. The BLM received 1,348 unique letters with more than 4,990 substantive comments on all the Great Basin Region Draft documents. The BLM and the U.S. Forest Service reviewed, summarized, and took into consideration these comments when preparing the Proposed RMPAs and Final EISs, which were published May 29, 2015, for a 60-day Governor's consistency review and a 30-day public protest period.

[1] The BLM signed a fifth ROD approving the Lander RMP in June 2014, which is also a component of the Strategy.

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The BLM received consistency review letters from the Governors of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region and has worked closely with these States to address their concerns. Across all of the Proposed RMPAs and their associated EISs in the Great Basin Region, government entities, private citizens, non-governmental organizations, and other stakeholders submitted 133 protest letters. Of those, 124 letters contained valid protest issues, in accordance with 43 Code of Federal Regulations 1610.5-2. The BLM addressed these issues in the Director's Protest Resolution Reports. These Reports are available on the Internet at: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

The Assistant Secretary for Land and Minerals Management of the U.S. Department of the Interior and I have signed the attached ROD, approving the RMPAs. These plans will guide future land and resource management on BLM-administered land in this region to benefit the Greater Sage-Grouse and more than 350 other species of wildlife that depend on healthy sagebrush-steppe landscapes, while maintaining multiple uses, including grazing and recreation.

This ROD applies to the BLM plans for the Great Basin Region and applies only to BLM-managed lands and subsurface mineral estate. However, the complete Strategy on BLM- and U.S. Forest Service-administered lands consists of this ROD, the BLM ROD for the Rocky ~~Mountain Region~~Mountain Region, the BLM ROD for the Lander RMP, and the two Forest Service RODs for each of these regions. Together these ~~four~~ five RODs and the underlying plans implement the Strategy across the remaining range of the species.

Copies of the ROD and RMPAs can be obtained from the BLM's National Greater Sage-Grouse website at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends its sincere appreciation to the public; Native American tribal representatives; local, state, and other Federal agencies; and the cooperating agencies, all of whom contributed significantly to the completion of these plans. Your participation informed and improved the ~~decision and~~ land use plans presented here. Together with our partners, we have taken action that ensures a bright future for wildlife, the sagebrush ~~landscape~~sea, and a thriving economy in the American West.

We look forward to working with you to implement the Strategy.

Sincerely,

Neil Kornze
Director

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments and Approved Resource Management Plans

4310-22-P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLWO2100000 L11100000.DR0000.LXSISGST0000]

Notice of Availability of the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana; Nevada and Northeastern California; Oregon; and Utah.

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of Availability.

SUMMARY: The Bureau of Land Management (BLM) announces the availability of the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. The Assistant Secretary for Land and Minerals Management of the U.S. Department of the Interior signed the ROD.

ADDRESSES: Copies of the ROD and ARMPAs are available upon request and are also available for public inspection at the addresses listed in the "SUPPLEMENTARY INFORMATION" section. Interested persons may also review the ROD and ARMPAs on the internet at http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

FOR FURTHER INFORMATION CONTACT: For the Idaho and Southwestern Montana GRSG ARMPA: Jonathan Beck, BLM Idaho State Office GRSG Planning Lead,

telephone 208-373-4070; address 1387 South Vinnell Way, Boise ID 83709; email jmbeck@blm.gov.

For the Nevada and Northeastern California GRSG ARMPA: Lauren Mermejo, BLM Nevada State Office GRSG Project Lead, telephone 775-861-6580; address 1340 Financial Boulevard, Reno NV, 89502; email lmermejo@blm.gov.

For the Oregon GRSG ARMPA: Joan Suther, BLM Oregon/Washington State Office GRSG Planning Lead, telephone 541-573-4445; address BLM Burns District, 28910 Hwy 20 West, Hines, OR, 97738; email jsuther@blm.gov.

For the Utah GRSG ARMPA: Quincy Bahr, BLM Utah State Office GRSG Project Lead, telephone 801-539-4122; address 440 West 200 South, Suite 500, Salt Lake City, UT 84101-1345; email qfbahr@blm.gov.

Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 to contact the above individuals during normal business hours. The FIRS is available 24 hours a day, 7 days a week, to leave a message or question with the above individual. You will receive a reply during normal business hours.

SUPPLEMENTARY INFORMATION: This ROD and the ARMPAs for the Great Basin Region GRSG sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah were developed through a collaborative planning process in order to incorporate land use plan level measures into existing BLM land use plans to protect, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat in the context of the BLM's multiple-use and sustained yield mission under FLPMA.

The ARMPAs approved by the ROD include land use allocations that limit or eliminate new surface disturbance in GRSG Priority Habitat Management Areas (PHMA), while minimizing disturbance in GRSG General Habitat Management Areas (GHMA). The Idaho and Southwestern Montana ARMPA also includes Important Habitat Management Areas (IHMA) in Idaho, where management provides a buffer for PHMAs and connects patches of PHMAs. IHMAs encompass areas of generally moderate to high value habitat and/or populations, but that are not as important as PHMAs. The Nevada and Northeastern California ARMPA also includes Other Habitat Management Areas (OHMA), which is unmapped habitat that contains seasonal or connectivity habitat areas. BLM management of these areas is limited to the application of required design features (RDFs) for certain authorizations when applicable.

In addition to establishing protective land use allocations, the ARMPAs implement a suite of management decisions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, as well as other conservation measures throughout the range.

The cumulative effect of these measures is to protect, improve, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat will lead to conservation of the GRSG and other species associated with the sagebrush ecosystem in the region.

The ARMPAs approved by the ROD amend the following BLM Resource Management Plans (RMPs) and Management Framework Plans (MFPs), completed in the year indicated:

California

- Alturas RMP (2008)
- Eagle Lake RMP (2008)
- Surprise RMP (2008)

Idaho

- Bennett Hills/Timmerman Hills MFP (1980)
- Big Desert MFP (1981)
- Big Lost MFP (1983)
- Bruneau MFP (1983)
- Cassia RMP (1985)
- Cascade RMP (1988)
- Challis RMP (1999)
- Craters of the Moon National Monument RMP (2006)
- Kuna (1983)
- Jarbidge RMP (2015)
- Lemhi RMP (1987)
- Little Lost-Birch Creek MFP (1981)
- Magic MFP (1975)
- Monument RMP (1985)
- Medicine Lodge RMP (1985)
- Owyhee RMP (1999)
- Pocatello RMP (2012)
- Snake River Birds of Prey National Conservation Area RMP (2008)

- Sun Valley MFP (1981)
- Twin Falls MFP (1982)

Montana

- Dillon RMP (2006)

Nevada

- Black Rock Desert-High Rock Canyon NCA RMP (2004)
- Carson City Consolidated RMP (2001)
- Elko RMP (1987)
- Ely RMP (2008)
- Shoshone-Eureka RMP (1986)
- Tonopah RMP (1997)
- Wells RMP (1985)
- Winnemucca RMP (2015)

Oregon

- Andrews RMP (2005)
- Baker RMP (1989)
- Brothers-LaPine RMP (1989)
- Lakeview RMP (2003)
- Southeastern Oregon RMP (2003)
- Steens RMP (2005)
- Three Rivers RMP (1992)
- Upper Deschutes RMP (2005)

Utah

- Box Elder RMP (1986)
- Cedar/Beaver/Garfield/ Antimony RMP (1986)
- Grand Staircase-Escalante National Monument Management Plan (2000)
- House Range RMP (1987)
- Kanab RMP (2008)
- Park City MFP (1975)
- Pinyon MFP (1978)
- Pony Express RMP (1990)
- Price RMP (2008)
- Randolph MFP (1980)
- Richfield RMP (2008)
- Salt Lake District Isolated Tracts Planning Analysis (1985)
- Vernal RMP (2008)
- Warm Springs RMP (1987)

The Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft Land Use Plan Amendments (LUPAs)/Draft Environmental Impact Statements (EISs) and Proposed LUPAs/Final EISs included proposed GRSG management direction for National Forest System lands. However, the U.S. Forest Service (USFS) has completed a separate ROD and Land and Resource Management Plans under USFS planning authorities. Management decisions within the ROD and ARMPAs apply only to BLM-administered lands.

Across all four sub-regions in the Great Basin Region, the ROD and ARMPAs amend existing land use plan decisions on a total of approximately 90 million BLM-administered surface acres.

A Notice of Availability (NOA) for the Great Basin Region GRSG Proposed LUPAs and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah sub-regions was published in the Federal Register on May 29, 2015, which initiated a 30-day protest period and a 60-day Governor's consistency review period.

The BLM received 133 timely and valid protest submissions across all four Great Basin Proposed LUPAs/Final EISs. All protests have been resolved and/or dismissed. For a full description of the issues raised during the protest period and how they were addressed, please refer to the Director's Protest Resolution Reports for all four ARMPAs, which are available at the following website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

The BLM received notifications of inconsistencies and recommendations as to how to resolve them during the Governor's consistency review period from the States of Idaho, Montana, Nevada, Oregon, and Utah. The BLM also received a concurrence letter of consistency from the State of California. On August 6, 2015, the BLM State Directors for Idaho, Montana, Nevada, Oregon, and Utah sent notification letters to their respective States as to whether they accepted or rejected their recommendations for consistency. The States were then given thirty days to appeal the State Directors' decisions. The States of Idaho, Nevada, and Utah appealed the BLM State Directors' decisions. The BLM

Director affirmed the State Directors' decisions on these recommendations as the recommendations did not provide the balance required by 43 CFR 1610.3-2(e). The Director communicated his decisions on the appeals in writing to the Governors concurrently with the release of the RODS.

The Proposed LUPAs/Final EISs were selected in the ROD as the ARMPAs, with some minor modifications and clarifications based on protests received, the Governors' consistency reviews, and internal agency deliberations.

Copies of the Idaho and Southwestern Montana GRSG ROD and ARMPA are available upon request and are available for public inspection at:

- BLM Idaho State Office, 1387 S. Vinnell Way, Boise ID 83709;
- BLM Boise District Office, 3948 Development Avenue, Boise, ID 83705;
- BLM Owyhee Field Office, 20 First Avenue West, Marsing, ID 83639;
- BLM Idaho Falls District Office, 1405 Hollipark Drive, Idaho Falls, ID 83401;
- BLM Salmon Field Office, 1206 South Challis Street, Salmon, ID 83467;
- BLM Challis Field Office, 1151 Blue Mountain Road, Challis, ID 83226;
- BLM Pocatello Field Office, 4350 Cliffs Drive, Pocatello, ID 83204;
- BLM Twin Falls District Office, 2536 Kimberly Road, Twin Falls, ID 83301;
- BLM Shoshone Field Office, 400 West F Street, Shoshone, ID 83352;
- BLM Burley Field Office, 15 East 200 South, Burley, ID 83318;
- BLM Coeur d'Alene District Office, 3815 Schreiber Way, Coeur d'Alene, ID 83815;
- BLM Cottonwood Field Office, 1 Butte Drive, Cottonwood, ID 83522;
- BLM Montana State Office, 5001 Southgate Drive, Billings, MT 59101;

- BLM Butte District Office, 106 North Parkmont, Butte, MT 59701; and
- BLM Dillon Field Office, 1005 Selway Drive, Dillon, MT 59725-9431.

Copies of the Nevada and Northeastern California GRSG ROD and ARMPA are available upon request and are available for public inspection at:

- BLM Nevada State Office, 1340 Financial Boulevard, Reno, NV, 89502;
- BLM Winnemucca District Office, 5100 E. Winnemucca Boulevard, Winnemucca, NV, 89445;
- BLM Ely District Office, 702 North Industrial Way, Ely, NV, 89301;
- BLM Elko District Office, 3900 E. Idaho Street, Elko, NV, 89801;
- BLM Carson City District Office, 5665 Morgan Mill Road, Carson City, NV, 89701;
- BLM Battle Mountain District Office, 50 Bastian Road, Battle Mountain, NV, 89820;
- BLM California State Office, 2800 Cottage Way, Suite W-1623, Sacramento, CA, 95825;
- BLM Alturas Field Office, 708 W. 12th Street, Alturas, CA, 96101;
- BLM Eagle Lake Field Office, 2950 Riverside Drive, Susanville, CA, 96130; and
- BLM Surprise Field Office, 602 Cressler Street, Cedarville, CA, 96104.

Copies of the Oregon GRSG ROD and ARMPA are available upon request and are available for public inspection at:

- BLM Oregon State Office, 1220 S.W. 3rd Avenue, Portland, OR 97204;
- BLM Baker Resource Area Office, 3100 H Street, Baker City, OR 97814;
- BLM Burns District Office, 28910 Highway 20 West, Hines, OR 97738;

- BLM Lakeview District Office, 1301 S. G Street, Lakeview, OR 97630;
- BLM Prineville District Office, 3050 N.E. 3rd Street, Prineville, OR 97754; and
- BLM Vale District Office, 100 Oregon Street, Vale, OR 97918.

Copies of the Utah GRSG ROD and ARMPA are available upon request and are available for public inspection at:

- BLM Utah State Office, 440 West 200 South, Suite 500, Salt Lake City, UT, 84101;
- BLM Cedar City Field Office, 176 East D.L. Sargent Drive, Cedar City, UT 84721;
- BLM Fillmore Field Office, 95 East 500 North, Fillmore, UT 84631;
- BLM Kanab Field Office and Grand Staircase-Escalante National Monument, 669 South Highway 89A, Kanab, UT 84741;
- BLM Price Field Office, 125 South 600 West, Price, UT 84501;
- BLM Richfield Field Office, 150 East 900 North, Richfield, UT 84701;
- BLM Salt Lake Field Office, 2370 S. Decker Lake Boulevard, West Valley City, UT 84119; and

- BLM Vernal Field Office, 170 South 500 East, Vernal, UT 84078.

_____

Amy Lueders

Acting Assistant Director, Renewable Resources & Planning

AUTHORITY: 36 CFR 219.59, 40 CFR 1506.6, 40 CFR 1506.10, 43 CFR 1610.2;
43 CFR 1610.5

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BLM

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-~~r~~Regions of

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:
US Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

MISSION STATEMENT

The BLM manages more than 245 million acres of public land, the most of any Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western states, including Alaska. The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's mission is to manage and conserve the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield. In Fiscal Year 2014, the BLM generated $5.2 billion in receipts from public lands.

~~The BLM manages more than 245 million acres of public land, the most of any Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The BLM also administers 700 million acres of subsurface mineral estate throughout the nation. The BLM's mission is to manage and conserve the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield. In Fiscal Year 2014, the BLM generated $5.2 billion in receipts from public lands.~~

~~[insert document number]~~

[Insert BLM WO Letterhead]

In Reply Refer To:
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-~~r~~Regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah).

This ROD approves the four Great Basin Region ARMPAs, which are part of the National ~~Greater Sage-Grouse~~GRSG Conservation Strategy that was initiated on December 11, 2011. The Bureau of Land Management (BLM) initiated the conservation strategy in response to the US Fish and Wildlife Service's (FWS's) March 2010 "warranted, but precluded" Endangered Species Act listing petition decision. In this decision, the FWS identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. ~~RMP~~ Resource management plan (RMP) conservation measures were identified as the BLM's principal regulatory mechanism.

Combined, the BLM and the Forest Service administer approximately 62 percent of the GRSG habitat across the remaining range of the species. The National GRSG Conservation Strategy has been coordinated under two administrative planning regions across this landscape: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats ~~identified by~~that the FWS identified in the 2010 listing decision, along with the Western Association of Fish and Wildlife Agencies' ~~m~~Management ~~z~~Zones framework (Stiver et al. 2006; see **Figure 1-4**, ~~GRSG~~ Greater Sage-Grouse Priority Areas for Conservation, Populations, and WAFWA Management Zones, of this ROD).

Range-wide, the BLM prepared 15 environmental impact statements (EISs), with associated proposed ~~RMP~~ land use plan amendments and revisions in the Rocky Mountain and Great Basin regions. The Forest Service was involved in the development of five EISs: two in the Rocky Mountain Region and three in the Great Basin. Each agency prepared two RODs: one for the approval of ~~ARMPAs and Approved Resource Management Plans (ARMPs)~~land use plan revisions or amendments in each of the regions covered by the GRSG Conservation Strategy.~~;~~ ~~t~~Thus, the BLM and the Forest Service prepared a total of four RODs to implement the Federal GRSG conservation plans across the remaining range of the species.

This ROD applies to the BLM ARMPAs in the Great Basin Region. However, the complete strategy for GRSG conservation on BLM-administered and National Forest System~~ervice administered~~ lands across the remaining range of the species consists of this ROD (and associated plans), in conjunction with the BLM ROD for the ~~Great Basin~~Rocky Mountain Region and the two Forest Service RODs, one for each region.

The BLM's ARMPAs provide a landscape-level, science-based, coordinated, collaborative strategy for addressing threats to GRSG and its habitat. This strategy was designed to address ~~issues~~ threats identified in the FWS's 2010 "warranted, but precluded" decision. In addition, the strategy was guided by over a decade of research, analyses, and recommendations for GRSG conservation, including the Conservation Objectives Team Report and the BLM National Technical Team Report. These reports were developed through a collaboration of ~~State~~ state and Federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, the US Geological Survey, the Forest Service, and ~~State~~ state and other partners were fundamental to developing these ARMPAs.

It is important to note that this ROD and these ARMPAs apply only to BLM-administered lands, including BLM-administered subsurface mineral estate. Throughout the GRSG planning process, the ~~FWS~~ Forest Service has been a cooperating agency on the Idaho and Southwestern Montana, the Nevada and Northeastern California, and the Utah planning efforts.

These Draft RMPAs/EISs and Proposed RMPAs/Final EISs for the Great Basin sub-regions included proposed GRSG management direction for National Forest System lands in Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah. As noted above, the Forest Service has completed two separate RODs and associated land and resource management plan amendments under its planning authorities.

The Federal Land Policy and Management Act requires ~~the~~ that resource management plans for managing public lands be developed~~ment~~ and maintained,~~enance~~ and, as appropriate,~~ the~~ revised~~ion of land use plans for managing public lands~~. The National Environmental Policy Act requires Federal agencies to prepare an EIS for major Federal actions significantly affecting the quality of the human environment. In fulfilling these requirements, the Draft RMP-A~~mendment~~s/EISs were published in the fall of 2013. They incorporated analysis and input provided by the following:

- The public
- Local, State, and other Federal agencies and organizations
- Native American tribes
- Cooperating agencies
- BLM resource specialists

Ninety-day public comment periods ensued, with more than 4,990 substantive comments from 1,348 unique letters submitted on all four ~~sub-regional~~Great Basin Region Draft RMPAs/EISs~~ in the Great Basin Region~~. The BLM and Forest Service reviewed, summarized, and took into consideration these comments when preparing the Proposed RMPAs~~ and RMPs~~/Final EISs.

The Proposed RMPAs/Final EISs were made available on May 29, 2015, for a 60-day Governor's consistency review and 30-day protest period. The BLM received consistency review letters from governors of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region. The BLM has worked closely with these States to address their concerns and to resolve inconsistencies where possible. Across all four sub-regions in the Great Basin Region, 133 protest submission letters were received from government entities, private citizens, nongovernmental organizations, and other stakeholders; 124 of these submissions contained valid protest issues, pursuant to 43 ~~CFR, Part~~CFRCode of Federal Regulations 1610.5-2, and were addressed in the Director's Protest Resolution Reports. These reports are available on the Internet at http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

The BLM Director and the Assistant Secretary, Land and Minerals Management, now approve the attached ~~A~~RMPAs as the land use plans that will guide future land and resource management within GRSG habitat in the Great Basin Region for the life of the plan amendments. The ARMPAs will benefit GRSG and over 350 other species of wildlife that depend on healthy sagebrush-steppe landscapes, ~~and will provide other~~ while maintaining multiple uses, including grazing and recreation.

Copies of the ROD and ARMPAs can be obtained from the BLM's National Greater Sage-Grouse internet website, http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the extensive public involvement and the involvement of groups, organizations, cooperating agencies; ~~,~~ local, State, and other Federal agencies, and Native American tribal representatives~~, and the cooperating agencies, all of~~ who~~m~~ contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented.

Sincerely,

Neil Kornze
BLM Director

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

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SUMMARY

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse (GRSG) habitat on public lands administered by the Bureau of Land Management (BLM). ~~This effort~~It is consistent with the BLM's multiple-use and sustained ~~-~~yield mission and the joint objective established by Federal and State leadership through the ~~Greater Sage-Grouse~~GRSG Task Force to conserve GRSG habitat on Federal, State, and private land such that additional protections under the Endangered Species Act ~~(ESA) can~~may be avoided.

In response to a 2010 determination by the US Fish and Wildlife Service (FWS) that the listing of the GRSG under the Endangered Species Act ~~ESA~~ was "warranted, but precluded" by other priorities, the BLM, in coordination with the US Department of Agriculture Forest Service ~~(Forest Service),~~ developed a landscape-level management strategy, based on the best available science, that was targeted, multi-tiered, coordinated, and collaborative. This strategy offers the highest level of protection for GRSG in the most important habitat areas. ~~to~~It addresses the specific threats identified in the 2010 FWS "warranted, but precluded" decision and the FWS 2013 Conservation Objectives Team (COT) Report.

This ROD and Approved Resource Management Plan Amendments (ARMPAs) are for the Great Basin Region GRSG Sub-~~r~~Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. They include GRSG habitat management direction that avoids and minimizes additional disturbance in GRSG habitat management areas. Moreover, they target restoration of and improvements to the most important areas of habitat. Management ~~in~~ under the ARMPAs is directed through land use allocations that apply to GRSG habitat. These allocations accomplish the following:

- Eliminate most new surface disturbance in the most highly valued sagebrush ecosystem areas identified as Sagebrush Focal Areas
- Avoid or limit new surface disturbance in Priority Habitat Management Areas, of which Sagebrush Focal Areas are a subset
- Minimize surface disturbance in General Habitat Management Areas

In addition to protective land use allocations in habitat management areas, the ARMPAs include a suite of management actions, such as establishing disturbance limits, GRSG habitat objectives, mitigation

requirements, monitoring protocols, and adaptive management triggers and responses. They also include other conservation measures that apply throughout designated habitat management areas. The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the remaining range of the species in the Great Basin and to provide greater certainty that BLM resource management plan decisions in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The targeted land use plan protections presented in this ROD and ARMPAs not only protect the GRSG and its habitat but also over 350 wildlife species associated with the sagebrush-steppe ecosystem. This is widely recognized as one of the most imperiled ecosystems in North America. In addition to protecting habitat, reversing the slow degradation of this valuable ecosystem will also benefit local economies and a variety of rangeland uses, including recreation and grazing. This also will safeguard the long-term sustainability, diversity, and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 States in which the ARMPAs in the Great Basin and the plans in the Rocky Mountain Region apply. In combination with additional State and Federal actions underway and in development, the strategy represents an unprecedented coordinated collaboration among Federal land management agencies and the States to manage an entire ecosystem and associated flora and fauna. The goal is to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future." [Dan Ashe. Transmittal letter to COT Report. 2013].

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2 Nevada And Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment
3 Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment
4 Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

ACRONYMS AND ABBREVIATIONS

	Full Phrase
AML	appropriate management level
ARMPA	Approved Resource Management Plan Amendment
BLM	Bureau of Land Management
BSU	biologically significant unit
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COT	Conservation Objectives Team
EIS	environmental impact statement
ESA	Endangered Species Act
FIAT	Fire and Invasives Assessment Team (also Fire and Invasives Assessment Tool)
FLPMA	Federal Land Policy and Management Act
FR	*Federal Register*
FWS	United States Fish and Wildlife Service
~~GHMA~~GHMAs	General Habitat Management Areas
GRSG	Greater Sage-Grouse
~~IHMA~~IHMAs	Important Habitat Management Areas
IM	instruction memorandum
MOU	memorandum of understanding
MZ	management zone
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NSO	no surface occupancy
NTT	National Technical Team
~~OHMA~~OHMAs	Other Habitat Management Areas
OHV	off-highway vehicle
PACs	Priority Areas for Conservations
PGH	preliminary general habitat
~~PHMA~~PHMAs	Priority Habitat Management Areas
PPH	preliminary priority habitat
RDF	required design feature
RMP	resource management plan
RMPA	resource management plan amendment
ROD	Record of Decision
ROW	right-of-way
SFAs	sagebrush focal areas
SHPO	State Historic Preservation Officer~~s~~
USGS	United States Geological Survey
WAFWA	Western Association of Fish and Wildlife Agencies
WHBs	wild horse~~(s)~~ and burro~~(s)~~

1. INTRODUCTION

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CHAPTER 1
INTRODUCTION

This Record of Decision (ROD) approves the United States (US) Department of the Interior, Bureau of Land Management's (BLM's) attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-~~r~~Regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands.

The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA; 43 United States Code [USC], Section 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR]~~,~~ Part 1600~~1 et seq.~~), and other applicable laws. The BLM prepared environmental impact statements (EISs) in compliance with the National Environmental Policy Act (NEPA; 42 USC, Sections 4321-4347), as amended, and the Council on Environmental Quality's (CEQ's) and the US Department of the Interior's regulations for implementing the procedural provisions of NEPA (40 ~~CFR, Part~~CFR 1500.1 et seq. and 43 ~~CFR, Part~~CFR 46.01 et seq., respectively).

Throughout the GRSG planning process, the Forest Service has been a cooperating agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed two separate RODs with associated resource management plan amendments under their planning authorities, which are available at http://www.fs.usda.gov/r4/.

This ROD, in conjunction with the ARMPs and ARMPAs approved through the Rocky Mountain ROD, constitute BLM land use planning decisions to conserve the GRSG and its habitats throughout its remaining range that is administered by the BLM under authority of FLPMA. The efforts of the BLM, in coordination with the Forest Service on National Forest System lands within the remaining range of the species, constitute~~s~~ a coordinated strategy for conserving the GRSG and the sagebrush-steppe ecosystem on most Federal lands ~~that~~ on which the species depends ~~on~~. These decisions complement those implemented by Federal agencies through *An Integrated Rangeland Fire Strategy: Final Report to the*

Secretary of the Interior (US Department of the Interior 2015) and the Sage Grouse Initiative, as well as those implemented by State and local governments, private landowners, and other partners.

1.1 GREAT BASIN REGION PLANNING AREA

The Great Basin Region Planning Area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah.(see **Figure 1-1**, Great Basin Region Greater Sage-Grouse Sub-rRegions). The BLM prepared a separate EIS for each of these sub-regions, and each sub-region conducted its own planning effort, with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, and areas that share common threats to GRSG and its habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the *Western Association of Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) to delineate management zones (MZs) with similar ecological and biological issues.

The Great Basin Region Planning Area boundaries include all lands regardless of jurisdiction (see **Figure 1-2**, Great Basin Region Planning Area). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, States, local governments, and privately owned lands in the four sub-regions that make up the Great Basin. The Planning Area also includes other BLM-administered lands that are not identified as habitat management areas for GRSG. The ARMPAs generally do not establish any additional management for these lands outside of GRSG habitat management areas, and they will continue to be managed according to the existing land use plans for these Planning Areas.

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	Nevada/NE California	Idaho/SW Montana	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,597,500**
FWS	805,900	81,400	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other Federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,300**	**48,209,900**	**31,656,200**	**194,208,900**

Source: BLM GIS 2015
Note: Acres have been rounded to the nearest hundredth.

Figure 1-1
Great Basin Region Greater Sage-Grouse Sub-~~r~~Regions

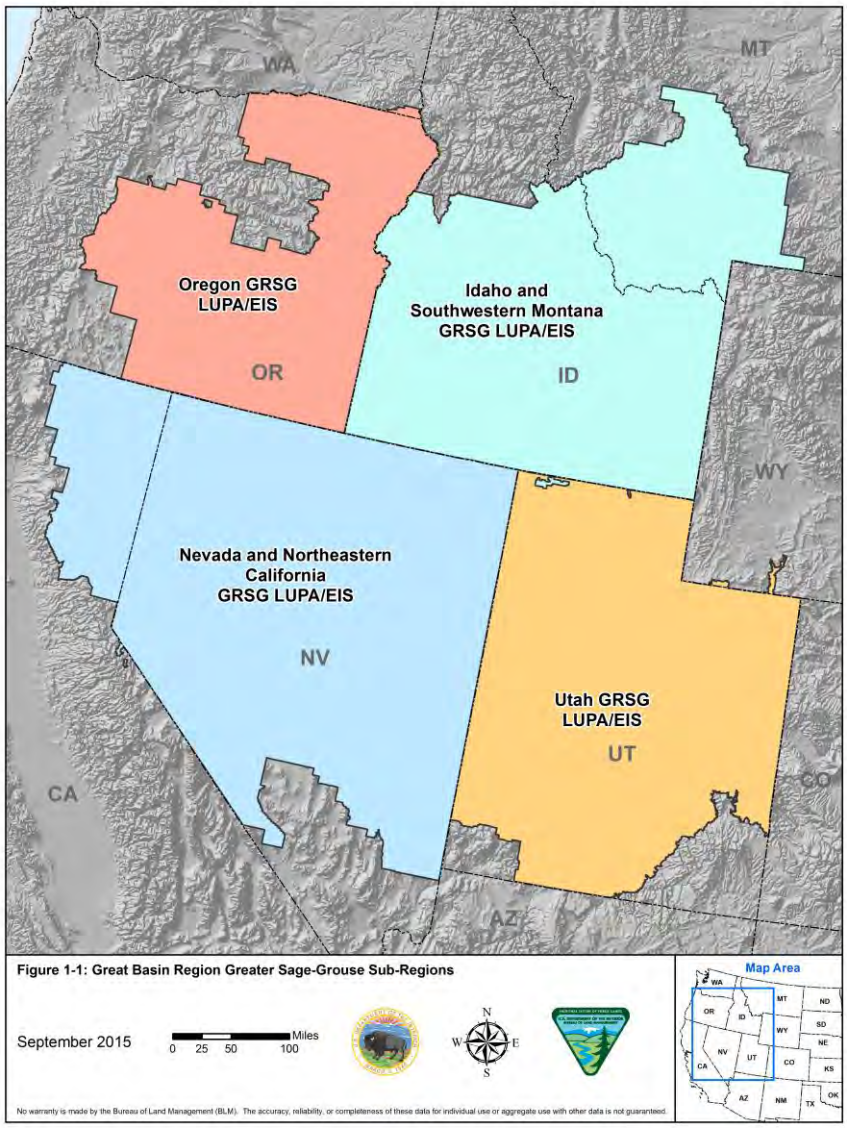
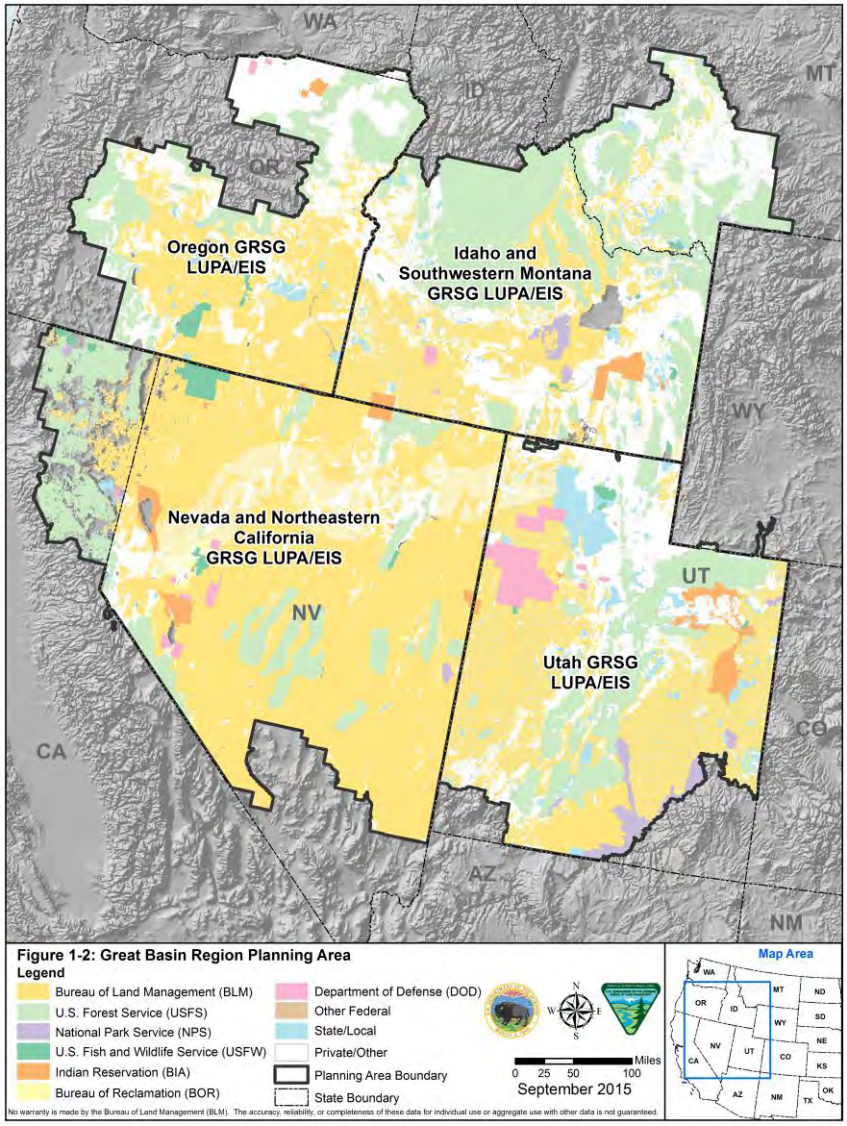


Figure 1-2
Great Basin Region Planning Area



The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure 1-3**, Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas [BLM-administered]), including surface and split-estate lands where the BLM has subsurface mineral rights. For a description of these habitat management areas, refer to **Section 1.5**.

1.2 Early GRSG Conservation Efforts

Currently, GRSG occupy an estimated 56 percent of the historically occupied range. The BLM manages most of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State populations). The BLM and other wildlife conservation agencies and organizations have been conserving GRSG habitat for many years. This provides an important foundation for the GRSG conservation strategy that guides these plans.

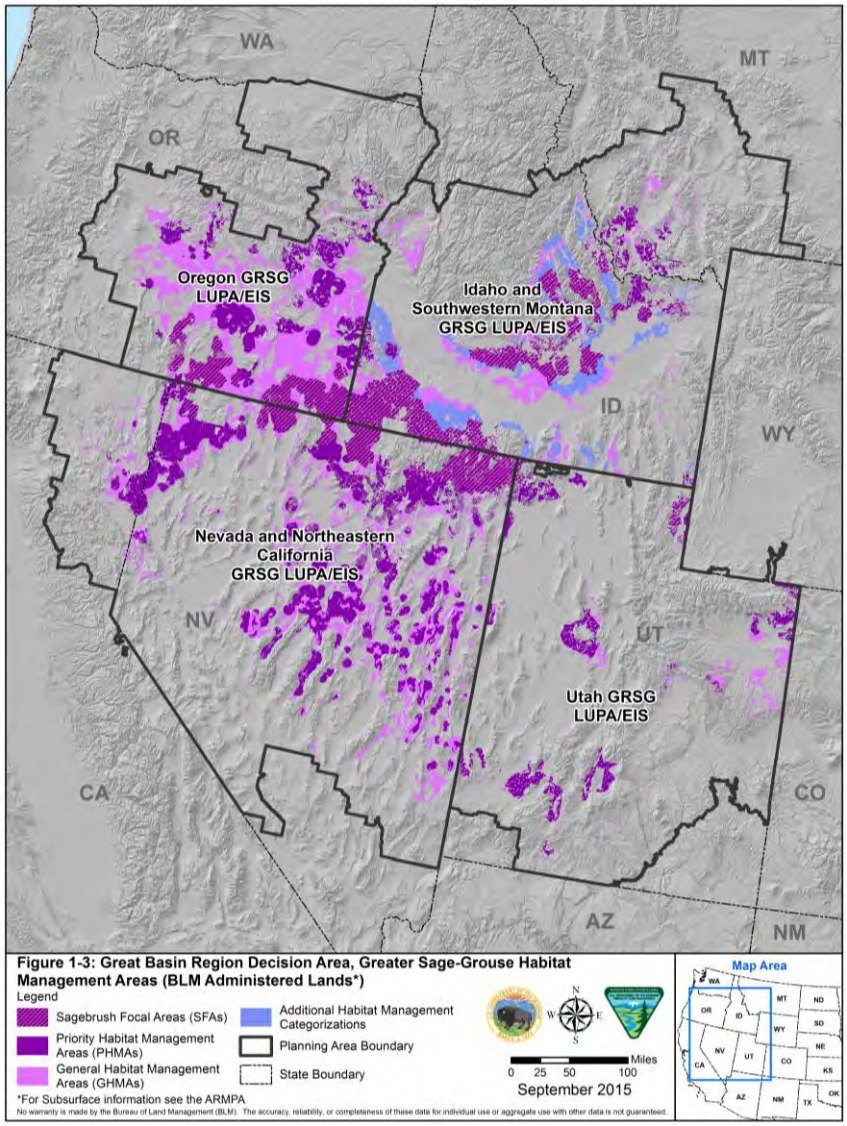
The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* (Connelly et al. 2004) was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the US Fish and Wildlife Service (FWS), the Forest Service, the US Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy* (Stiver et al. 2006), with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The strategy outlined the critical need to develop the associations among local, State, provincial, tribal, and Federal agencies, nongovernmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats that they depend on. The catalyst for this was widespread concern for declining populations and reduced distribution of GRSG.

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and to summarize the BLM's ongoing conservation efforts. A product of this investigation was one of the first range-wide priority habitat maps for GRSG that referred to "key habitat." At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression in GRSG habitat on BLM lands. An additional outcome of this team was the signing of a memorandum of understanding (MOU) by the WAFWA, the BLM, FWS, USGS in the US Department of the Interior, and the Forest Service and Natural Resources Conservation Service (NRCS) in the US Department of Agriculture. The MOU's purpose was to provide for cooperation among the participating State and Federal land managers and wildlife management and science agencies to conserve and manage GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the western United States.

Figure 1-3
Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas (BLM-administered Lands)



In 2010, the BLM commissioned a project to map and model breeding bird densities of GRSG across the West. It convened a conference with State wildlife agencies to coordinate the lek survey data needed for this project. Through an agreement with the FWS, this modeling project mapped known active leks across the West. This served as a standard starting point for all States to identify priority habitat for the species.

In March 2010, the FWS published its *12-Month Finding for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered* (75 FR 13910, March 23, 2010). In that finding, the FWS concluded that GRSG was "warranted, but precluded" under the Endangered Species Act (ESA). This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

As part of its 2010 finding, the FWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. The FWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 FR 13910, March 23, 2010). In addition, the FWS found that existing local, State, and Federal regulatory mechanisms were not sufficient to address threats to the habitat. The FWS has identified for the BLM its resource management plans (RMPs) as the primary regulatory mechanisms; the BLM manages approximately 66 million acres of the remaining habitat for the species (see **Figure 1-4**, GRSG Priority Areas for Conservation, Populations, and WAFWA Management Zones).

1.3 THREATS TO GRSG IN THE GREAT BASIN REGION

In its 2010 finding, the FWS identified a number of specific threats to GRSG in the Great Basin Region. The primary threats are the widespread present and potential impacts of wildfire, the loss of native habitat to invasive species, and conifer encroachment. Other threats, some of which are more localized, are habitat fragmentation due to human disturbances associated with energy development, mining, infrastructure, recreation, urbanization, and sagebrush elimination, as well as impacts on habitat associated with free-roaming equids (horses and burros) and improper livestock grazing.

In 2011, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 *Federal Register* [FR] 13910) in each of the regional WAFWA Sage-Grouse MZs (**Figure 1-4**). The NTT produced *A Report on National Greater Sage-grouse Conservation Measures* (NTT Report; NTT 2011) in which it proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. It also emphasized the importance of standardizing monitoring across the WAFWA GRSG MZs.

In 2012, the FWS, with the support of the Western Governors Association Sage-Grouse Task Force, convened the Conservation Objectives Team (COT), composed of State and Federal representatives. One of the team's tasks was to produce a peer-reviewed report identifying the principal threats to

GRSG survival. Another task was to determine the degree to which these threats need to be reduced or lessened to conserve the GRSG so it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT Report, released in March 2013, also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs . . . is the essential foundation for sage-grouse conservation" (FWS 2013). Finally, the COT Report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2**). The BLM also identified and explained additional threats in the Final EISs that were published with proposed plans on May 29, 2015. **Figure 1-4** identifies the PACs, GRSG populations (and their names), and WAFWA MZs across the West.

A summary of the nature and extent of threats identified in the COT Report for each remaining identified population of GRSG in the Great Basin Region—as highlighted in the 2013 COT Report—is provided in **Table 1-2**.

1.4 National Greater Sage Grouse Conservation Strategy

~~Based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a decision on whether to propose this species for listing,~~ The BLM recognized the need to incorporate explicit objectives and concrete conservation measures into RMPs[1] to conserve GRSG habitat and provide robust regulatory mechanisms. This was based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a decision on whether to propose this species for listing. In August~~,~~ 2011, the BLM ~~chartered~~ charted a plan to revise and amend existing RMPs throughout the range of the GRSG. The intent was to incorporate management actions ~~intended~~ to conserve, enhance, and restore the species and the habitat ~~on which~~on which it depends. Separate planning ~~efforts were initiated~~began that would ~~to~~ address the conservation needs of the Bi-State ~~Bi State~~ populations in California and Nevada~~,~~ and the Washington State distinct population segment.

~~In light of the 2010 "warranted" determination by the FWS, the recommendations of the NTT, and specific threats summarized in the COT Report,~~ The BLM found that additional management direction and specific conservation measures on Federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. This finding was in light of the 2010 "warranted" determination by the FWS, the recommendations of the NTT, and specific threats summarized in the COT Report. The BLM proposed to incorporate the management direction and conservation measures into ~~the BLM's~~its land use plans. The goals of incorporating these specific measures into BLM land use plans ~~is~~ are to conserve, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA may be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and a Supplemental EIS to incorporate GRSG conservation measures into land use plans across the range of the species.

[1] BLM land use plans prepared under the present regulations (see 43 ~~CFR, Part~~CFR 1601.0-5[n]) are generally known as resource management plans. Some BLM land use plans, including ones predating the present regulations, are referred to by different names, including management framework plans. For purposes of this ROD, the BLM and Forest Service ~~use~~ land use plan and resource management plan interchangeably ~~to~~ refer to all BLM-administered land use plans.

The planning ~~efforts~~ associated with the National GRSG Conservation Strategy ~~have~~ has been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by the FWS in ~~the~~ its 2010 listing decision, along with the WAFWA MZs framework (Stiver et al. 2006). Due to differences in the

Figure 1-4
~~GRSG~~ Greater Sage-Grouse Priority Areas for Conservation, Populations, and WAFWA Management Zones

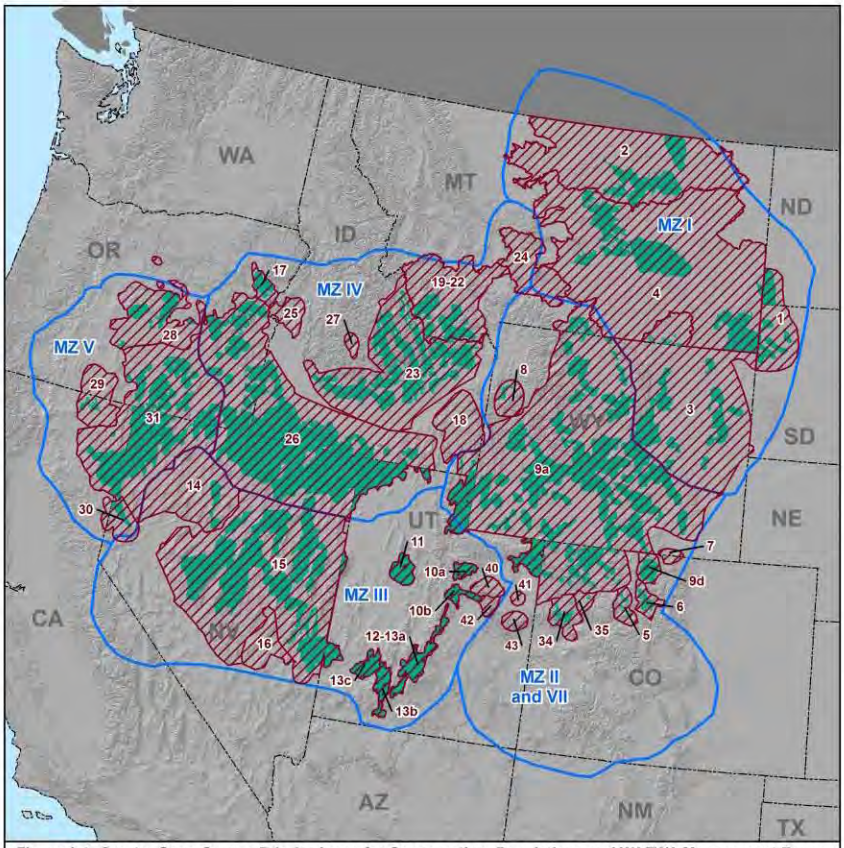


Figure 1-4: Greater Sage-Grouse Priority Areas for Conservation, Populations and WAFWA Management Zones

Legend

- WAFWA Sage-grouse Management Zones
- Greater Sage-grouse Priority Areas for Conservation (PAC)
- WAFWA Revised Sage-Grouse Populations 2015

Miles 0 50 100

September 2015

1	Dakotas	10a	Strawberry Valley	18	E-Central ID	30	Warm Springs Valley NV
2	Northern Montana	10b	Carbon	19-22	SW Montana	31	Western Great Basin
3	Powder River Basin	11	Sheeprock Mountains	23	Snake, Salmon, & Beaverhead	34	Parachute Piceance Roan
4	Yellowstone Watershed	12-13a	Parker Mountain-Emery			35	Meeker - White River
5	Eagle/S Routt CO	13b	Panguitch	24	Belt Mountains MT	40	Anthro Mountain
6	Middle Park CO	13c	Bald Hills	25	Weiser ID	41	S White River
7	Laramie WY	14	NW-Interior NV	26	Northern Great Basin	42	W Tavaputs
8	Jackson Hole WY	15	Southern Great Basin	27	Sawtooth ID	43	E Tavaputs Plateau
9a	Wyoming Basin	16	Quinn Canyon Range NV	28	Central OR		
9d	North Park	17	Baker OR	29	Klamath OR/CA		

Table 1-2
Threats to GRSG in the Great Basin Region as identified by the COT

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (Utah)	9b				Y	Y	Y	Y		Y			Y	Y	Utah
Uintah (Utah)	9c				Y	Y	Y	L	Y	Y			Y	Y	Utah
Strawberry Valley (Utah)	10a	Y			Y	Y	Y	Y		Y			Y		Utah
Carbon (Utah)	10b	Y			Y		Y	Y	Y	Y			Y		Utah
Sheeprock Mountains (Utah)	11	Y			Y	L	L	Y	Y	L		Y	L		Utah
Emery (Utah)	12	Y			Y	Y	Y	Y	Y	Y			Y		Utah
Greater Parker Mountain (Utah)	13a				Y	Y	Y			Y			Y		Utah
Panguitch (Utah)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	Utah
Bald Hills (Utah)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Utah
Ibapah (Utah)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		Utah
Hamlin Valley (Utah)	15b	Y			Y	Y	Y			Y		Y	Y		Utah
Box Elder (Utah)	26b			Y	Y	Y	Y	L	Y	Y			Y		Utah
N. Great Basin (Oregon, Idaho, Nevada)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	Idaho/SW Montana, Oregon, Nevada/California
Baker (Oregon)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	Oregon
Central Oregon (Oregon)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	Oregon
W. Great Basin (Oregon, California, Nevada)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		Oregon, Nevada/California
Klamath (California)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	Nevada/California
Northwest Interior (Nevada)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		Nevada/California
Southern Great Basin (Nevada)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		Nevada/California
Quinn Canyon Range (Nevada)	16	Y			Y	Y	Y			Y	Y	Y	Y		Nevada/California
Warm Springs Valley (Nevada)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Nevada/California

Table 1-2
Threats to GRSG in the Great Basin Region as identified by the COT

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
East Central (Idaho)	18	**Y**	L	**Y**	L	**Y**	L	**Y**		**Y**	**Y**		L		Idaho/SW Montana
Snake-Salmon-Beaverhead (Idaho)	23		L	L	**Y**	L	**Y**	**Y**		L	**Y**	**Y**	L		Idaho/SW Montana
Weiser (Idaho)	25	**Y**	L	L	L	L	**Y**	**Y**		L	**Y**		L	L	Idaho/SW Montana
Sawtooth (Idaho)	27	**Y**	L		L	U	L			**Y**	**Y**		L		Idaho/SW Montana
Southwest Montana (Montana)	19-22		L		L	L	**Y**	L	L	L	**Y**		L	L	Idaho/SW Montana

Source: FWS 2013
Threats are characterized as Y = threat is present and widespread, L = threat present but localized, and U = unknown.

ecological characteristics of sagebrush across the range of the GRSG, WAFWA delineated seven MZs (MZs I- to VII) based primarily on floristic provinces. Vegetation found within an MZ is similar, and GRSG and their habitats within these areas are likely to respond similarly to environmental factors and management actions.

The Rocky Mountain Region is ~~comprised~~ composed of BLM planning efforts ~~(which includes~~, including plan revisions and plan amendments,~~)~~ in ~~the states of~~ Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin) and a portion of VII (Colorado Plateau). The Great Basin Region is ~~comprised~~ composed of planning efforts (plan amendments) in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. That region falls within WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. ~~A total of 15~~The BLM began sub-regional planning efforts and associated EISs ~~were initiated~~ to analyze the alternatives developed for each of the Draft and Final RMPAs and ARMPs across the range of the species.[2] These sub-regions are based on the identified threats to ~~the~~ GRSG and the WAFWA MZs from the FWS 2010

[2] The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP has been split between the two field offices that make up the Bighorn Basin Planning Area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.

listing decision, with additional detail ~~regarding~~ on threats to individual populations and sub-regions from the FWS COT Report.

In the Rocky Mountain Region, some sub-regions correspond to BLM field~~/~~ and district office boundaries, specifically for planning ~~efforts~~ that ~~are~~ incorporat~~esing~~ GRSG conservation measures through plan revisions that were ~~initiated prior to~~that began before the start of the National GRSG Conservation Strategy in December 2011. **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries across the ~~Western~~ western United States.

The BLM used the best available science, including additional review and analysis from the USGS on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered State GRSG conservation strategies where they existed, as well as State recommendations for measures to conserve GRSG on BLM-administered lands, where relevant, in ~~the~~ its planning ~~effort~~. These are reflected in the approved plans to the extent compatible with GRSG ~~conservation~~ objectives to conserve, enhance, and restore GRSG habitat to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the ARMPAs Address the Identified Threats to the Conservation of GRSG

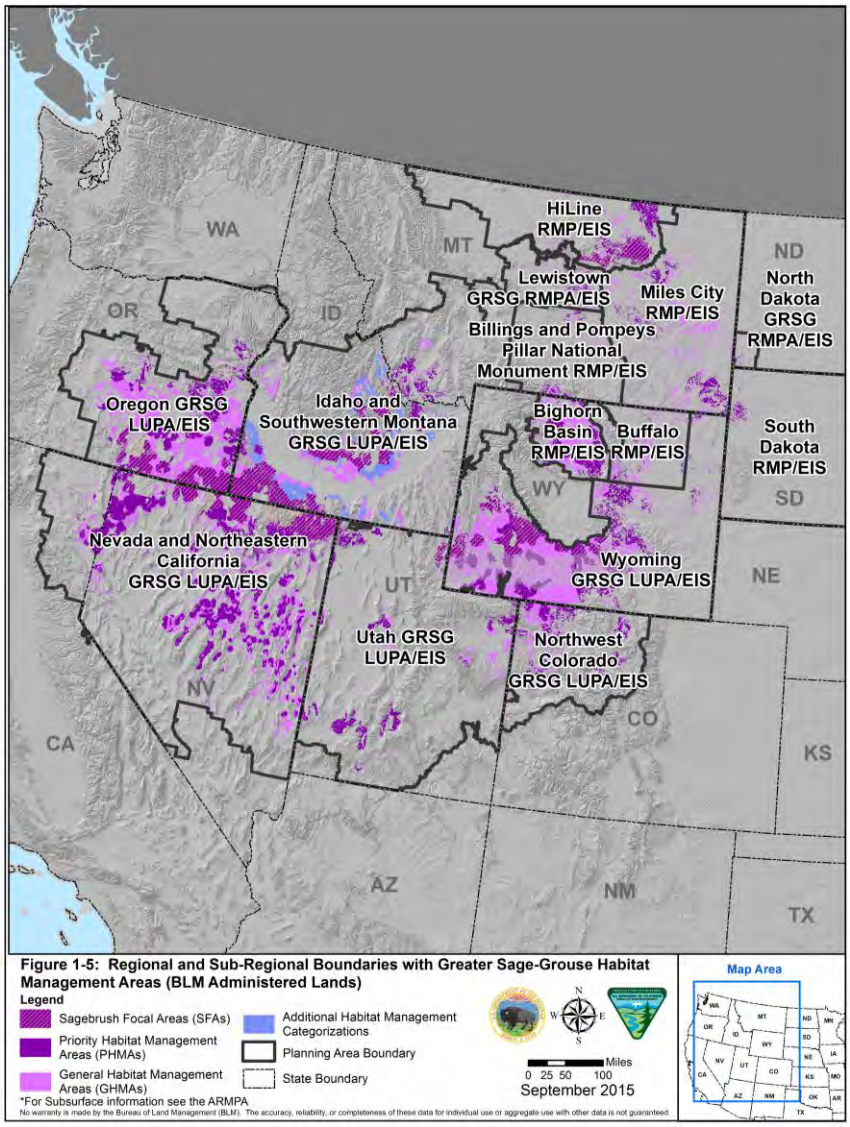
The 2006 WAFWA *Greater Sage-Grouse Comprehensive Conservation Strategy* stated goal for managing~~ement of the~~ GRSG was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations" (Stiver et al. 2006). The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed" (NTT 2011).

In establishing the COT Report, with the backing of the Sage Grouse Task Force, the FWS Director affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report~~———~~reversing negative population trends and achieving a neutral or positive population trend~~———~~and emphasized the following:

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (Stiver et al. 2006)"

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT Report stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (FWS 2013). To achieve this, the COT Report recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal" (FWS 2013). The COT Report emphasized an "avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy" (FWS 2013).

Figure 1-5
Regional and Sub-~~r~~Regional Boundaries with ~~PHMA~~PHMAs and GRSG Habitat Management Areas (BLM-Administered Lands)



The plans were developed to address specific, identified threats to the species in order to conserve GRSG such that the need to list the species under ESA may be avoided. Across ten western states, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 66 million acres of the remaining habitat for the species (see **Figure 1-5**). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the FWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, priorities and approaches in each.

In order to protect the most important GRSG habitat areas, ~~the~~ planning ~~effort~~ began with mapping areas of important habitat across the GRSG's range ~~of the GRSG~~. In collaboration with State fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). In Utah, all occupied GRSG habitat was identified as PPH. The draft land use plans used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (~~PHMA~~PHMAs) and General Habitat Management Areas (~~GHMA~~GHMAs) in the Proposed RMPAs/Final EISs to identify the management decisions ~~which~~ that apply to those areas (except for Nevada and Utah).

The designated GRSG Habitat Management Areas on BLM-administered lands in the decision area ~~include:~~are ~~PHMA~~PHMAs, which largely coincide with PACs identified in the COT Report ~~(except for PACs in Nevada and Utah, as specified on page 13 of the COT Report; see **Figure 1-4**)~~;[3] ~~GHMA~~GHMAs; Other Habitat Management Areas (~~OHMA~~OHMAs, applicable only to the Nevada and Northeastern California); and Important Habitat Management Areas (~~IHMA~~IHMAs, applicable only to Idaho). **Table 1-3** identifies surface acres of ~~PHMA~~PHMAs, ~~GHMA~~GHMAs, ~~OHMA~~OHMAs, and ~~IHMA~~IHMAs in the decision area for the Great Basin Region.

Habitat maps were based initially on State key habitat maps, which identified areas necessary for GRSG conservation. These areas were derived from ~~various data sources including~~ breeding bird density maps and lek counts, nesting areas, sightings, and habitat distribution data. These data included ~~including~~ occupied suitable seasonal habitats, nesting and brood-rearing areas, and connectivity areas or corridors. The BLM used this information ~~served to as the basis for the~~ development ~~of BLM~~ PPH and PGH maps and, subsequently, ~~for the~~to identify~~ication of~~ ~~PHMA~~PHMAs and ~~GHMA~~GHMAs, respectively.

The COT Report preparers also used State key habitat maps as a basis for identifying PACs. The COT Report notes that there is substantial overlap between PACs and BLM PPH areas, with the exception of areas in Nevada and Utah (FWS 2013, p. 13). **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries, along with BLM-administered ~~PHMA~~PHMAs and ~~GHMA~~GHMAs across the ~~Western~~ western United States.

The BLM-administered surface and Federal mineral estate of each designation (in acres) in the Decision Area for the Great Basin Region are shown in **Table~~s~~ 1-3**:. ~~PHMA~~PHMAs, ~~GHMA~~GHMAs, ~~OHMA~~OHMAs, and ~~IHMA~~IHMAs are defined below.

[3] Except for PACs in Nevada and Utah, as specified on page 13 of the COT Report; see **Figure 1-4**

- **~~PHMA~~PHMA**—BLM-administered land~~s~~ identified as having the highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for ~~PHMA~~PHMAs are derived from and generally follow the PPH boundaries. Areas of ~~PHMA~~PHMAs largely coincide with areas identified as PACs in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report).

Table 1-3
Surface Acres of ~~PHMA~~PHMAs, ~~GHMA~~GHMAs, ~~OHMA~~OHMAs, and ~~IHMA~~IHMAs in the Decision Area for the Great Basin Region

BLM-Administered Surface Acres	~~PHMA~~PHMAs	~~GHMA~~GHMAs	~~OHMA~~OHMAs	~~IHMA~~IHMAs
Idaho and Southwestern Montana	4,627,200	2,179,700	0	2,737,600
Utah*	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern California	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

*41,200 acres of National Forest System lands in the Anthro Mountain area of Utah would be managed as neither ~~PHMA~~PHMAs nor ~~GHMA~~GHMAs. These areas would be identified as "Occupied – Anthro Mountain." In the Utah ARMPA, these areas are considered split-estate, where the BLM administers the mineral estate.

- **~~GHMA~~GHMA**—BLM-administered ~~lands~~GRSG habitat that ~~are~~ is occupied seasonally or year-round and is ~~habitat~~ outside of ~~PHMA~~PHMAs~~.~~. It is where some special management would apply to sustain GRSG populations. The boundaries and management strategies for ~~GHMA~~GHMAs are derived from and generally follow the PGH boundaries.
- **~~OHMA~~OHMA**—BLM-administered land~~s~~ in Nevada and Northeastern California~~,~~ identified as unmapped habitat in the Proposed RMP/Final EIS, that ~~are~~ is within the Planning Area and contains seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as ~~OHMA~~OHMAs.
- **~~IHMA~~IHMA**—BLM-administered land~~s~~ in Idaho that provides a management buffer for ~~PHMA~~ and that connect patches of ~~PHMA~~PHMAs. ~~IHMA~~IHMAs encompass~~es~~ areas of generally moderate to high habitat value habitat ~~and/~~or populations~~,~~ but that are not as important as ~~PHMA~~PHMAs. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

The ARMPAs also identify Sagebrush Focal Areas (~~SFA~~SFAs) on a portion of the landscape~~. SFA~~; they are a subset of ~~PHMA~~PHMAs (see **Figure 1-3**). Across the Great Basin Region, there are 8,385,280 acres of ~~BLM administered~~BLM-administered ~~SFA~~SFAs. ~~SFA~~They correspond to the areas identified by the FWS as GRSG "strongholds" and ~~which~~ represent "a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection" (FWS 2014a).

~~SFA~~SFAs are areas of highest habitat value for GRSG and are managed to avoid new surface disturbance~~, given that~~ for the following reasons:

- They contain high-quality sagebrush habitat and the~~;~~ highest breeding bird densities~~;~~
- They have been identified as essential to conservation and persistence of the species~~;~~
- They represent a preponderance of current Federal ownership ~~and,~~
- In some cases, they are ~~adjacent~~ next to protected areas that serve to anchor the conservation importance of the landscape~~.~~

SFA management is consistent with the recommendations provided by the FWS that these are the areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species" (FWS 2014a).

Remaining habitats in ~~GHMA~~GHMAs and ~~IHMA~~IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important habitats outside of PACs be conserved to the extent possible" (FWS 2013). Thus, land allocations in ~~GHMA~~GHMAs and ~~IHMA~~IHMAs provide for more flexibility for land use activities, while minimizing impacts on existing GRSG leks.

Major components of the attached ARMPAs that address the specific threats to GRSG and its habitat, as identified in the FWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report), are listed and summarized in **Table 1-4**.

This tiered habitat management area framework, associated with the land use plan allocation decisions in the ARMPs and ARMPAs (explained more fully in **Section 1.6.2** of this ROD) ~~in the ARMPs and ARMPAs~~ provides a high degree of certainty that the integrity of ~~PHMA~~PHMAs can be maintained through management decisions. This would be done to avoid or minimize additional surface disturbance~~, while~~. At the same time, it would recognize~~ing~~ the potential importance of areas outside of ~~PHMA~~PHMAs for maintaining connectivity between highly~~-~~ important habitats and their potential for addressing seasonal habitat needs ~~(e.g., such as~~ winter habitat areas not fully incorporated in ~~PHMA~~PHMAs~~)~~.[4]

[4] An~~recently completed~~ analysis by Crist et al. (2015) highlights the importance of certain key "priority areas" across the species' range ~~as well as~~and the importance of connectivity between priority areas as a component of successful GRSG conservation. Generally, these priority areas coincide with ~~PHMA~~PHMAs across the landscape. It is important to note that BLM-administered ~~SFA~~SFAs also coincide with a number of the areas identified by Crist et al. (2015) as important for maintaining connectivity between the network of conservation areas, essential ~~PHMA~~PHMAs, that are of greatest importance to the integrity of the conservation strategy. In addition, to maintain connectivity between ~~PHMA~~PHMAs across the remaining range, requirements were incorporated into ~~the majority~~most of the ARMPAs for the application of lek buffers. This is~~,~~ consistent with guidance provided by the USGS~~,~~ mitigation to a net conservation gain~~,~~ and the use of required design features for projects in ~~GHMA~~GHMAs, described later in this document. These measures are specifically intended to provide benefits for GRSG in ~~GHMA~~GHMAs that can provide added connectivity and habitat protection consistent with the Crist et al. (2015) findings.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining, infrastructure, and energy development	• ~~PHMA~~PHMAs—Implement a human disturbance cap of 3 percent within the biologically significant unit (BSU) and proposed project analysis areas in ~~PHMA~~PHMAs (slight variations to this management component in Nevada only). • ~~PHMA~~PHMAs and ~~IHMA~~IHMAs—Apply a disturbance density cap of 1 energy and mining facility per 640 acres (except in Nevada). • ~~IHMA~~IHMAs—Implement the 3 percent disturbance cap. Apply Anthropogenic Disturbance Development Criteria (applicable to Idaho only). • Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply required design features (RDFs) when authorizing actions in GRSG habitat. • Minimize the effects of infrastructure projects, including siting, using the best available science, updated as monitoring information on current infrastructure projects becomes available. • Consider the potential for the development of valid existing rights when authorizing new projects in ~~PHMA~~PHMAs. • When authorizing third-party actions that result in habitat loss and degradation, require and ensure mitigation that provides a net conservation gain to the species.
Energy development—fluid minerals, including geothermal resources	• ~~PHMA~~PHMAs—Open to fluid mineral leasing subject to a no surface occupancy (NSO) stipulation without waiver or modification and with limited exceptions. In ~~SFA~~SFAs, an NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the ~~PHMA~~PHMAs outside of ~~SFA~~SFAs, geothermal projects may be considered for authorization if certain criteria are met. • ~~IHMA~~IHMAs—Open to fluid mineral leasing, subject to NSO stipulation without waiver or modification and with limited exception (applicable to Idaho only). • ~~GHMA~~GHMAs—Open to fluid mineral leasing, subject to controlled surface use and timing limitation lease stipulations (except in Utah, where some portions of ~~GHMA~~GHMAs are open with standard lease stipulations). • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
Energy development—wind energy	• ~~PHMA~~PHMAs—Exclusion area (not available for wind energy development under any conditions, except in the southeastern counties of Oregon, where portions of ~~PHMA~~PHMAs are avoidance areas). • ~~IHMA~~IHMAs—Avoidance area (may be available for wind energy development with special stipulations; applicable to Idaho only). • ~~GHMA~~GHMAs—Avoidance area (may be available for wind energy development with special stipulations, except in Utah and Idaho, where these areas are open to wind energy development).
Energy development—solar energy	• ~~PHMA~~PHMAs—Exclusion area (not available for solar energy development under any conditions, except in southeastern counties in Oregon, where portions of ~~PHMA~~PHMAs are avoidance areas). • ~~IHMA~~IHMAs—Avoidance area (may be available for solar energy development with special stipulations; applicable to Idaho only). • ~~GHMA~~GHMAs—Exclusion area (not available for solar energy development under any conditions, except in Oregon and Montana, where these areas are avoidance areas for solar energy development, and Idaho, where these areas are open to solar energy development).
Infrastructure—major rights-of-way (ROWs)	• ~~PHMA~~PHMAs—Avoidance area (may be available for major ROWs with special stipulations). • ~~IHMA~~IHMAs—Avoidance area (may be available for major ROWs with special stipulations; applicable to Idaho only). • ~~GHMA~~GHMAs—Avoidance area (may be available for major ROWs with special stipulations, except in Utah, where ~~GHMA~~GHMAs is open).
Infrastructure—minor ROWs	• ~~PHMA~~PHMAs—Avoidance area (may be available for minor ROWs with special stipulations). • ~~IHMA~~IHMAs—Avoidance area (may be available for minor ROWs with special stipulations; applicable to Idaho only).
Mining—locatable minerals	• ~~SFA~~SFAs—Recommend withdrawal from the Mining Law of 1872.
Mining—nonenergy leasable minerals	• ~~PHMA~~PHMAs—Closed area (not available for nonenergy leasable minerals; however, expansion of existing operations could be considered if the disturbance is within the cap and subject to compensatory mitigation).
Mining—salable minerals	• ~~PHMA~~PHMAs—Closed area (not available for salable minerals), with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met).
Improper livestock grazing	• Prioritize the review and processing of grazing permits and leases in ~~SFA~~SFAs, followed by ~~PHMA~~PHMAs. • Ensure that the NEPA analysis for renewals and modifications of grazing permits and leases includes specific management thresholds, based on the GRSG habitat objectives table, land health standards, and ecological site potential, to allow adjustments to grazing that have already been subjected

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	to NEPA analysis. • Prioritize field checks in ~~SFA~~SFAs, followed by ~~PHMA~~PHMAs, to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid (horses and burros) management	• Prioritize gathers in ~~SFA~~SFAs, followed by other ~~PHMA~~PHMAs. • Manage herd management areas in GRSG habitat within established appropriate management level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers, and population growth suppression techniques, monitoring, and review and adjust AMLs and preparation of herd management area plans in GRSG habitat.
Range management structures	• Allow range improvements that do not impact GRSG or that provide a conservation benefit to GRSG, such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	• ~~PHMA~~PHMAs and ~~IHMA~~IHMAs—Do not construct new recreation facilities unless required for health and safety purposes or if the construction will result in a net conservation gain to the species. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. • ~~PHMA~~PHMAs and ~~GHMA~~GHMAs—Off-highway vehicle (OHV) use limited to existing routes (routes to be designated through future travel management planning). The Utah ARMPA does retain two areas as open to OHV use in ~~PHMA~~PHMAs.
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. • Restrict the use of prescribed fire for fuel treatments. • Prioritize post-fire treatments in ~~SFA~~SFAs, other ~~PHMA~~PHMAs, ~~IHMA~~IHMAs, and ~~GHMA~~GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in ~~PHMA~~PHMAs, ~~IHMA~~IHMAs, and ~~GHMA~~GHMAs that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• ~~PHMA~~PHMAs—Maintain all lands capable of producing sagebrush (but no less than 70 percent), with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. • Ensure that all BLM use authorizations contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and juniper	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
expansion	GRSG habitat, in a manner that considers tribal cultural values.
Agricultural conversion and exurban development	• Retain GRSG habitat in Federal management, unless disposal (including exchanges) of the lands would provide a net conservation gain to GRSG or disposal (including exchanges) of the lands would have no direct or indirect adverse impact on conservation of GRSG.

1.6 KEY COMPONENTS OF THE BLM GRSG CONSERVATION STRATEGY

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG and their habitat by eliminating or minimizing threats to GRSG habitat identified in the 2010 listing decision and highlighted in the "Background and Purpose" Section of the COT Report (FWS 2013). Consequently, consistent with guidance contained in the COT and NTT Reports, the BLM identified the following essential components of the GRSG conservation strategy ~~were identified~~:

- Avoiding or minimizing new and additional surface disturbances
- Improving habitat conditions
- Reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin
- Monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management as needed

The land allocations and management actions included in the ARMPAs incorporate these components and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Land Use Allocations and Management Actions in ~~SFA~~SFAs, ~~PHMA~~PHMAs, and ~~GHMA~~GHMAs

The four Great Basin ARMPAs build on the designated habitat management areas described in **Section 1.5** by applying management actions to these areas to avoid and minimize disturbance associated with proposed projects, as described below and shown in **Table 1-4**. Land use plan allocations specify locations within the Planning Area that are available or unavailable for certain uses and also prioritize conservation and restoration management actions applied to habitat management areas.

The COT Report states that "maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (FWS 2013, p. 36). Areas of ~~PHMA~~PHMAs largely coincide with areas identified as PACs in the COT Report. While surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat as rangeland fire and invasive species, the BLM ARMPAs include land allocations and management actions that avoid and minimize surface disturbance in ~~PHMA~~PHMAs for identified threats (e.g., energy, mining, infrastructure, improper grazing, free-roaming ~~equids~~horses and burros, recreation and urbanization). These land allocations and

management actions are necessary because the location and extent of habitat loss to fire is difficult to predict, and much of the habitat, due to low precipitation in the Great Basin, is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

SFAs—The most restrictive allocations include requirements to avoid and minimize additional disturbance in SFASFAs, which are a subset of lands within PHMAPHMAs, with the highest habitat value for GRSG. Surface disturbance from fluid mineral development is avoided by imposing NSOs, without waiver, modification, or exception. In addition, these areas will be recommended for withdrawal to address the risk of disturbance due to mining.

PHMAPHMAs—In PHMAPHMAs outside of SFASFAs new fluid mineral leasing would be subject to NSOs, with no waivers or modifications. Exceptions would be granted only under two circumstances: if the proposed action would not have direct, indirect, or cumulative effects on GRSG or its habitat; or, if the action is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and it would provide a clear conservation gain to GRSG. This is fully consistent with guidance in the NTT Report, which states, "Do not allow new surface occupancy on federal lands within priority habitats" (NTT 2011, p. 23).

Similarly, PHMAPHMAs is are closed to nonenergy and salable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free-use permits and the expansion of existing active pits for salable minerals and expansion of existing nonenergy leasable development under certain conditions. This exception is included because of the importance of these materials to local communities and their limited disturbance, which will would be offset by the mitigation requirements.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses the potential disturbance threat from coal development. In Utah, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is deemed "unsuitable" for all or certain coal mining methods, pursuant to 43 CFR, Part CFR 3461.5. PHMAPHMAs is are essential habitat for maintaining GRSG for the purposes of the suitability criteria set forth at 43 CFR, Part CFR 3461.5(o)(1).

All PHMAPHMAs will be managed as exclusion areas for commercial renewable energy development (solar and wind), with the exception of areas outside of SFASFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas, with priority placed on locating commercial-scale wind and solar energy development in non-habitat areas first (i.e., that is, outside of PHMAPHMAs and GHMAGHMAs), before approving development in PHMAPHMAs is approved. New ROWs and development for transmission lines, pipelines, and related infrastructure would be avoided through by restrictingons on land use authorizations. In avoidance areas, exceptions would only be granted only if it can be demonstrated that adverse impacts will would be avoided or that residual impacts will would be mitigated.

High voltage transmission lines will be avoided in PHMAPHMAs. A limited number of priority transmission lines (Transwest Express and portions that are collocated with Transwest Express) of Gateway South, Gateway West, and Boardman to Hemingway), have been proposed to expand access to renewable sources of energy and to improve the reliability of the western grid. These projects have

been underway for several years, and are currently being analyzed under separate authorization processes. As part of the decision-making process for those projects, conservation measures for GRSG are being analyzed in the project-specific NEPA processes, which should achieve a net conservation benefit for GRSG.

New recreation facilities would not be authorized in ~~PHMA~~PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat~~,~~ or~~,~~ unless required for health and safety purposes.

In ~~PHMA~~PHMAs, travel is limited to existing routes until new routes are designated through the implementation travel management planning process. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning process~~es~~.

A 3 percent human disturbance cap in ~~PHMA~~PHMAs has been established in accordance with the recommendations contained in the NTT Report~~,~~ and peer-reviewed literature from the Great Basin (Knick 2013). Disturbance will be calculated at two scales: first at ~~a~~ the BSU scale determined in coordination with the state and second~~,~~ for the proposed project area. BSUs are geographic units of ~~PHMA~~PHMAs that contain relevant and important GRSG habitat. In Oregon, for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of human disturbance caps and in some ARMPAs, the adaptive management habitat triggers.

If the 3 percent human disturbance cap is exceeded on lands (regardless of landownership) ~~with~~in ~~PHMA~~PHMAs in any given BSU, no further discrete human disturbances (subject to valid existing rights) will be permitted on BLM-managed lands ~~within PHMA~~ in that BSU until restoration of disturbed lands brings the BSU below the cap. If the 3 percent human disturbance cap is exceeded on all lands (regardless of landownership) within a proposed project analysis area in a ~~PHMA~~PHMAs, then the BLM would permit no further human disturbance ~~will be permitted by BLM~~ until disturbance in the ~~proposed project analysis~~ area has been reduced to ~~maintain the area under~~below the cap.

An exception to the 3 percent disturbance cap is provided in designated utility corridors for ~~purposes of~~ achieving a net conservation gain to the species. This exception is limited to projects ~~which~~ that fulfill the use ~~for which~~that the corridors were designated for (e.g., transmission lines and pipelines) and within the designated width of a corridor. This exception will concentrate future ROW surface disturbance in areas of existing disturbance and will avoid new development of infrastructure corridors in ~~PHMA~~PHMAs, which is consistent with guidance in the COT Report. In addition, the Oregon and Nevada/Northeast California ARMPAs include variations to the disturbance cap.~~:~~ Oregon does not allow more than 1 percent new human disturbance per decade, not to exceed 3 percent disturbance at any time. In Nevada, ~~permit exceedances of~~ the 3 percent disturbance cap can be exceeded at the BSU ~~and/~~or ~~the~~ project level ~~can occur~~ provided that the outcome results in a net conservation benefit to the species with the concurrence of the BLM, the Nevada Department of Wildlife, and the FWS in each exception.

In the its Dillon Field Office in southwest Montana ~~(the BLM's Dillon Field Office)~~, the BLM will limit disturbance to 3 percent until the State institutes its~~State of Montana's~~ Sage Grouse Plan's disturbance calculation method~~ology is instituted and is in effect,~~ at which time disturbance will be permitted up to a 5 percent cap. ~~This is to recognize,~~ As with the Wyoming Core Area Strategy, this is to recognize the importance of the all-lands/~~-~~all-disturbances strategy that Montana will institute for GRSG conservation

(Montana Office of the Governor Executive Order No. 10-2014; State of Montana 2014). Appendix E of each of the attached ARMPAs includes additional information about the method~~ology~~ for calculating human disturbance at the BSU and project scales.

~~Additional information about the methodology for calculating human disturbance can be found in Appendix E of each of the attached ARMPAs.~~

The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage collocating~~on of~~ structures to reduce habitat fragmentation in ~~PHMA~~PHMAs. The limit is an average of one facility per 640 acres in ~~PHMA~~PHMAs in a project authorization area~~;~~. This is consistent with guidance contained in the NTT Report. If the disturbance density in the ~~PHMA~~PHMAs in a proposed project area is, on average, less than 1 facility per 640 acres, the project can proceed through the NEPA analysis, incorporating mitigation measures into an alternative. If the disturbance density in the proposed project area is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or redesigned so facilities are collocated into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The ~~one~~ 1 facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

~~*GHMA*~~*GHMAs*—While restrictions on future development in ~~PHMA~~PHMAs are intended to avoid or minimize additional surface disturbance, restrictions on development in ~~GHMA~~GHMAs are intended to allow disturbance but minimize any adverse effects of disturbance with restrictions on development activities to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for unavoidable impacts will be required for proposed projects in ~~GHMA~~GHMAs, as will the application of the RDFs discussed below.

Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. (see **Table 1-4** for more details on ~~GHMA~~GHMAs management decisions.) Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts on GRSG or its habitat and then compensating for unavoidable impacts on GRSG or its habitat, to a net conservation gain standard for the species. This is consistent with guidance in the COT Report which states: "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur… If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal~~–~~, state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs" (FWS 2013).

These conservation measures are intended to ensure that areas of ~~GHMA~~GHMAs that can provide connectivity between ~~PHMA~~PHMAs~~;~~ may be important seasonal habitats not identified or incorporated into previously mapped areas of ~~PHMA~~PHMAs ~~;~~ or that they can provide important habitat to replace areas of important habitat lost to fire or human disturbance~~ are protected~~. This strategy is particularly important given the recent USGS report by Crist et al. (2015), *Range-Wide Network of Priority Aras for Grater Sage-Grouse~~—~~—A Design for Conserving Connected Distributions or Isolating Individual Zoos*? For management decisions and allocations associated with ~~IHMA~~IHMAs in Idaho, see **Table 1-4**.

Habitat Protection and ~~/~~Surface Disturbance Measures in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs

The ~~following~~ measures below are related to habitat protection and surface disturbance. They will be applied in both ~~PHMA~~PHMAs and ~~GHMA~~GHMAs.

Prioritization Objective—In addition to allocations that limit disturbance in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs, the ARMPAs prioritize oil and gas leasing and development outside of identified ~~PHMA~~PHMAs~~,~~ and ~~GHMA~~GHMAs to further limit future surface disturbance and to encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and, as such, to reduce the time and cost associated with oil and gas leasing development. It would do this by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasinges~~s~~ the need for compensatory mitigation.

Grazing—While improper livestock grazing can be a threat to GRSG habitat, grazing is not considered a discrete surface-~~-~~disturbing activity for ~~purposes of~~ monitoring and calculating disturbance. The plans address grazing management ~~for the~~to conserv~~e~~ation ~~of~~ GRSG and its habitat and is further described in **Section 1.6.2**.

Lek Buffers—In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer~~-~~ distances, as identified in the USGS report, *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al. 2014). Lek buffer distances will be applied at the project-~~-~~specific level as required conservation measures to address the impacts on leks ~~as~~ identified in the NEPA analysis. The lek buffer distances vary by type of disturbance ~~(~~, such as road, energy development, and infrastructure~~, etc.) and~~; justifiable departures may be appropriate, as fully described in Appendix B of the ARMPAs. In both ~~PHMA~~PHMAs and ~~GHMA~~GHMAs, impacts should be avoided first by locating the action outside of the applicable lek buffer-distance~~(s)~~, as defined in the ARMPAs. In ~~PHMA~~PHMAs, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed. In ~~GHMA~~GHMAs, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT Report recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions" (FWS 2013).

Required Design Features—RDFs are ~~required~~ used for certain activities in all GRSG habitat, including oil and gas development, infrastructure, and other surface-~~-~~disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts on GRSG and its habitat from threats ~~(~~, such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators~~)~~. The applicability and overall effectiveness of each RDF, however, cannot be fully assessed until the BLM knows the project level, project location, and design ~~are known~~. Because of site-specific circumstances, some RDFs may not apply to some projects ~~(e.g.~~, such as when a resource is not present on a given site) ~~and/~~or may require slight variations ~~(e.g.~~, such as a larger or smaller protective area~~)~~. In Nevada and Northeastern California, RDFs are also applied to ~~their~~ identified ~~OHMA~~OHMAs.

In summary, all forms of new development in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs would either be closed, excluded, avoided, or developed only if the resultant effect ~~is~~ were a net conservation gain to the GRSG

or its habitat, ensuring that existing habitat would be protected and providing opportunities~~,~~ through compensatory mitigation.

1.6.2 Improving Habitat Condition

In addition to prescribing land use allocations and managing resource uses ~~in order~~ to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

Habitat Management—The ARMPAs contain an overall habitat management objective that "[i]n all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, ~~or as~~ consistent with specific ecological site conditions." To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into land management programs, including wild horses and burros (WHBs), grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives ~~through treatment of~~by treating invasive annual grasses and ~~the~~ removing~~al of~~ encroaching conifers in ~~SFA~~SFAs, ~~PHMA~~PHMAs, and ~~GHMA~~GHMAs~~,~~ and by ~~restoration of~~restoring degraded landscapes, including those impacted by fires ~~events~~ (see **Section 1.6.3**.)

Livestock Grazing—The BLM recognizes that improper grazing can be a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report (FWS 2013) recommend~~sation for grazing states,~~ "[c]onducting "grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)." ~~(FWS 2013).~~ To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs ~~include~~ require~~ments for the incorporation of~~ incorporating terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritizing~~e the~~ reviewing and processing ~~of~~ authorizations and field checks of grazing permits, and taking~~e~~ numerous actions to avoid and minimize the impacts of range management structures (see **Table 1-4**).

The BLM will prioritize reviewing~~s~~ and processing ~~of~~ grazing authorizations, as well as field checking~~s of~~ grazing permits in the habitat that is most important to GRSG populations: first in ~~SFA~~SFAs, then ~~PHMA~~PHMAs, followed by ~~GHMA~~GHMAs, focusing first on riparian and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area~~, but;~~ rather it reflects a decision to prioritize resources to ensure that permittees and the BLM manage grazing properly in those areas most important to GRSG. If the BLM were to find~~s~~ that relevant habitat objectives are not being met due to improper grazing, ~~the BLM will~~ it would work with the permittee to ensure progress toward~~s~~ habitat objectives.

Wild Horses and Burros—To address the localized threat due to negative influences of grazing by free-roaming ~~equids (~~WHBs~~)~~, the BLM will focus on maintaining WHB herd management areas in GRSG

habitat ~~with~~in established AML ranges. This is to achieve and maintain GRSG habitat objectives~~, including~~. It includes completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending herd management area plans to incorporate GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in ~~SFA~~SFAs, then the remainder of ~~PHMA~~PHMAs, and then ~~GHMA~~GHMAs. In ~~SFA~~SFAs and ~~PHMA~~PHMAs, the BLM will assess and adjust AMLs through the NEPA process within herd management areas when WHBs are identified as a significant ~~causal~~ factor in not meeting land health standards, even if current AML is not being exceeded.

Mitigation and Net Conservation Benefit—During the implementation of the ARMPAs, and~~,~~ consistent with valid existing rights and applicable law, in authorizing third-~~-~~party actions that result in GRSG habitat loss and degradation, the BLM will require ~~and ensure~~ mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species. This will includ~~ing~~e accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action.

This standard is consistent with the recommendation ~~included~~ in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* (FWS 2014b), which states that mitigation "should be strategically designed to result in net overall positive outcomes for sage-grouse." Mitigation will follow the regulations from the CEQ NEPA regulatory requirements (40 ~~CFR, Part~~ CFR 1508.20; e.g., avoid, minimize, and compensate)~~ and~~. It would be implemented on BLM-~~managed~~ administered lands in a manner consistent with Department~~al~~ of the Interior guidance for landscape mitigation, pursuant to Secretarial Order (S.O.) 3330. If impacts from BLM management actions and authorized third-~~-~~party actions result in habitat loss and degradation that remain after ~~applying~~ avoidance and minimization measures are applied~~(i.e. residual impacts)~~, then compensatory mitigation projects ~~will~~ would be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams, based on WAFWA MZs and~~,~~ including ~~members~~ representatives from the respective States, the Forest Service, FWS, and NRCS. These Conservation Teams will facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response. They~~se Teams~~ will convene and respond to issues at the appropriate scale~~,~~ and will ~~utilize~~ use existing coordination and management structures to the extent possible.

Climate Change~~—~~: With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the ~~*Integrated Rangeland Fire Management Strategy*~~*Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015) will further these goals and objectives.

Field Code Changed

The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the ~~Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior~~Fire Strategy (US Department of the Interior 2015) were designed to identify landscapes of high resistance and resilience based on research by Chambers ~~(Chambers~~ et al. (2014). Additionally, ~~by~~

limiting or eliminating human surface disturbance, especially in the ~~SFA~~SFAs, would ensur~~eing~~ the integrity of the ~~PHMA~~PHMAs~~,~~ and would restor~~eing~~ habitat through fuels management, post-fire restoration, and mitigation efforts.~~,~~ Connectivity and availability of sagebrush habitat ~~will~~ would increase, thus contributing to increased climate resilience. The ~~SFA~~SFAs in particular~~,~~ were identified as key areas to conserve as the climate changes. The Oregon ARMPA commits to usinge climate change science concerning projected changes in species ranges and changes in site capability. This would be used to adjust expected and desired native species compositions as that information becomes available.

As identified by the FWS 2010 listing decision and the COT Report, climate change can impact efforts to conserve the GRSG and its habitat in a number of ways. While several ARMPAs acknowledge the potential impact of climate change on GRSG habitat and conservation ~~efforts~~, specific strategies to address the impacts of climate change are limited. The BLM and Forest Service, in coordination with the FWS, will continue to assess the potential impacts of climate change on GRSG and its habitat and will develop strategies to mitigate the anticipated effects on GRSG conservation efforts, as necessary and appropriate. Changes to management decisions will require a plan revision or amendment, as appropriate, recognizing the need to ensure that future management direction improves the resilience of habitat areas essential to the conservation of the species.

1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT Report emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency" (FWS 2013). Recent USGS studies by Brooks et al. (2015) and Coates et al. (2015) reinforce the importance of a comprehensive management strategy to prevent and suppress rangeland fires in the western part of ~~the~~ GRSG range ~~of the GRSG,~~ and to ~~act~~ aggressively ~~to~~ restore habitat areas impacted by fire.

For this reason, the ARMPAs seek to improve efforts to strategically~~,~~ develop fuel breaks, in collaboration with GRSG biologists. This would be done to reduce potential habitat loss from rangeland fires, accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush, and fight the spread of cheatgrass and other invasive species that increase the frequency and intensity of rangeland fires. However, prescribed fire will not be used in sagebrush steppe. The exception ~~under the following conditions:~~would be if the NEPA analysis for the burn plan were to provide~~s~~ a clear rationale for why alternative techniques were not selected as a viable option~~,~~. The analysis also would need to explain how GRSG habitat management goals and objectives would be met by its use and~~,~~ how the COT Report objectives would be ~~addressed and~~ met~~, and~~. It would require a risk assessment ~~is prepared~~ to address how potential threats to GRSG habitat would be minimized.

Recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers et al. 2014) provides the basis for improved targeting of fire management activities on BLM-administered lands. The BLM, the Forest Service, FWS, and other cooperating agencies agreed to incorporate this approach into the ARMPAs. This information is being used to identify and design projects to change vegetation composition and~~/or~~ structure to modify potential fire behavior ~~for the purpose of improving~~to improve fire suppression effectiveness and limit~~ing~~ fire spread and intensity due to invasive grasses and conifer encroachment. The BLM *Greater Sage Grouse Invasive Annual Grasses and Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification. It was done to determine where conifer removal would benefit important sagebrush habitats.

Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species~~,~~ and to prioritize vegetation treatments for the purpose closest to occupied GRSG habitats and near occupied leks.

In addition to and complementing the fire management measures in the ARMPAs described in this ROD, ~~Secretarial. Order. 33360~~Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department**" (emphasis added; US Department of the Interior 2015).

Field Code Changed

Secretarial Order 3336 directed the development of the *Integrated Rangeland Fire Management Strategy* (Strategy) which places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes~~, with~~. It ~~a~~ focused on priority GRSG habitat, including ~~those~~ that identified by the FIAT for the Great Basin Region, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT Assessments provide a critical guidance to ~~protect, maintain, and enhance~~conserve, enhance, and restore GRSG habitat consistent with best available science and identify highly resistant and resilient landscapes to target fire management ~~activities to~~in these most important lands.

A key element of the Strategy is a commitment to address the invasion and expansion of cheatgrass, medusahead rye, and other invasive grasses through expanded efforts to treat impacted acres. Efforts are underway to increase the acreages to be treated with chemical and biological agents to ~~kill and~~ stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion. In addition, recently adopted Department of the Interior~~al~~ guidance will allocate Emergency Stabilization and Burned Area Rehabilitation (ES&BAR) funds on a risk-based approach using historic acres burned to accelerate and expand the ~~efforts to~~ restoratione of burned lands~~ impacted by fire~~ with native grasses and sagebrush seedlings. The BLM recently announced a Native Seed Strategy to accelerate and expand ~~efforts to~~the productione, storagee, and allocatione of ~~native~~ seed for native vegetation and sagebrush. The strategy is to restore and rehabilitate burned areas ~~to~~ and accelerate ~~efforts to~~the improvement of ~~the health of~~ the sagebrush ecosystem and habitat for GRSG.

Finally, ~~through the issuance of~~by issuing a leaders' intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions ~~with regard to the allocation of~~about firefighting ~~resources~~ resource allocation ~~for firefighting~~ in 2015. Additional resources have been allocated and will be targeted ~~to~~ at the following:

- Fuel treatments ~~(~~, including invasive species control~~),~~
- Suppression, ~~(through the prepositioning of~~by positioning fire-fighting resources and ~~the~~ training ~~of~~ additional Rangeland Fire Protection Associations, local volunteer firefighters, and veteran fire fighters~~), and~~
- Restoring habitat ~~restoration~~ in these areas~~.~~

Firefighting assets (aircraft, firefighters, and related equipment) were ~~re~~positioned in advance of the 2015 fire season to improve capacity ~~to~~ and reduce acres of rangelands lost to fire by improving the success of the initial attack. In future years, BLM firefighting assets will be located near ~~PHMA~~PHMAs to limit habitat losses ~~due to~~from rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT Report preparers noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective" (FWS 2013). The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats" (NTT 2011).

A range-wide monitoring and evaluation framework will be established and implemented, as described in the Monitoring Framework (Appendix D of each attached ARMPA). This monitoring strategy has two parts, as follows: ~~(1)~~

- Implementation monitoring (i.e., are decisions being implemented in a timely manner~~,~~? are actions taken consistent with the plan decisions?)~~, and (2)~~
- Effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals?)~~.~~

Through effectiveness monitoring, the BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat. This would be to determine if the desired management objectives ~~(e.g., ~~such as avoiding and minimizing additional surface disturbance in ~~PHMA~~PHMAs~~)~~, have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, and size of patches~~, etc.~~). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by State wildlife agencies and other partners, will allow ~~linking~~ real or potential habitat changes ~~(~~from both natural events and management actions~~)~~ to be linked to vital rates of GRSG populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ~~ameliorate~~ lessen the negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Teams (as described in **Section 1.6.2**) will also be used to advise regional monitoring strategies and data analysis, as described in the plans.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored~~—~~: habitat condition and~~/or~~ population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after ~~the issuance or signature of~~ this ROD is signed and issued.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific causeal factor in the decline of populations or habitats, with taking into consideration of local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the State, FWS, and the BLM to see if the causeal factor can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude prevent tripping a hard trigger, which signals more severe habitat loss or population declines.

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger is were tripped, the BLM will would implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. If a hard trigger is were tripped in a PAC that crosses State boundaries, the WAFWA MZ GRSG Conservation Team will would convene to discuss causes and identify potential responses.

In the event that new scientific information becomes available, demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM will would immediately assess what further actions may be needed to protect GRSG and its habitat and to ensure that conservation options are not foreclosed. This could include a formal directive, such as an instruction memorandum (IM) or a plan amendment.

1.7 Unique Aspects of the Great Basin ARMPAs

The ARMPAs and their associated EISs were developed through four planning efforts across the Great Basin Region (as described in **Section 1.1**). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing., In particular, it implementeding measures to limit human anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and State-specific management approaches.

This flexible landscape approach provided the opportunity to incorporate recommendations resulting from collaboration with the States and local cooperators as well asand from public comments in each Planning Area. The plans and their future implementation are strengthened by the contributions of local partners and their knowledge, expertise, and experience.

Measures incorporated into the plans remain consistent with the range-wide objective of conserving, enhancing, and restoring GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat, such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Great Basin Region's ARMPAs.

Idaho and Southwestern Montana

The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third

category of habitat referred to as ~~IHMA~~IHMAs. ~~IHMA~~IHMAs are BLM-administered and National Forest System lands that provide a management buffer for ~~PHMA~~PHMAs and connect patches of ~~PHMA~~PHMAs. ~~IHMA~~IHMAs encompasses areas of generally moderate to high conservation value habitat and/or populations.

In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance ~~while~~. It also provides~~ing~~ an acceptable additional level of flexibility in ~~IHMA~~IHMAs and ~~GHMA~~GHMAs ~~since~~ because surface disturbance due to development is not as great a threat to habitat in the sub-region. The three tiers also ~~serve as~~are the foundation for an adaptive management approach~~es~~ that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, ~~IHMA~~IHMAs will be managed as ~~PHMA~~PHMAs to maintain sufficient ~~PHMA~~PHMAs to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat~~, as~~. This is described in Appendix E of the attached Idaho and Southwestern Montana ARMPA, which ~~was~~ the BLM developed ~~by the BLM~~ in concert with the Idaho Department of Fish and Game, the Forest Service, and the FWS. The ~~Idaho and Southwestern Montana~~ ARMPA also includes additional RDFs based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local FWS office. Examples are avoiding building new wire fences within 2 kilometers of occupied leks and placing new~~,~~ taller structures out of sightline~~s of sight~~ or at least one kilometer from occupied leks. The BLM will also work with the State of Idaho in setting priorities for ~~the~~ reviewing and processing ~~of~~ grazing permits and ~~/~~leases in ~~SFA~~SFAs, consistent with the method~~ology~~ recommended by the State of Idaho in its proposed plan for ~~the~~ managingement ~~of~~ BLM-administered lands in the State.

On August 7, 2015, the Sawtooth National Recreation Area and Jerry Peak Wilderness Act ~~(House Resolution 1138)~~ was signed into law (House Resolution 1138). In accordance with the Wilderness Act (16 USC, Section 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the BLM in Idaho~~,~~ were designated as Wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness. Approximately 12,430 acres of this Wilderness area is within BLM-administered ~~SFA~~SFAs. This area will now also be managed as Wilderness consistent with the Wilderness Act. As specified in the Sawtooth National Recreation Area and Jerry Peak Wilderness Act, a wilderness management plan will be developed within five years of the signing of the act and it will outline specific management guidance for the new wilderness area.

This act also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas and they are no longer subject to management, pursuant to Section 603(c) of the FLPMA. The acres of wilderness study areas released include approximately 71,194 acres of ~~PHMA~~PHMAs, 11,923 acres of ~~IHMA~~IHMAs, and 5,912 acres of ~~GHMA~~GHMAs. The ARMPA decisions for these areas will not change as a result of the release.

Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine County, Custer County, the City of Challis, the City of Clayton, and the City of Stanley. These conveyances include approximately 53 acres of ~~PHMA~~PHMAs, 10 acres of ~~IHMA~~IHMAs, and 828 acres of ~~GHMA~~GHMAs that are reflected in the ARMPA as being administered

by the BLM. Once conveyed, these lands will not be subject to the BLM management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

The decisions affecting Southwestern Montana in the ARMPA are consistent with the objectives of the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014; State of Montana 2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development.

The BLM plan will permit the disturbance limit to go from a 3 percent to a 5 percent disturbance cap, consistent with the Montana Plan when the process for implementing ~~their~~ that State's disturbance calculation method~~ology~~ is instituted and effective. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if additional GRSG-~~-~~related management actions should be adjusted ~~with coordination~~. This would be coordinated with ~~from~~ the State of Montana and the FWS to achieve consistent and effective conservation across all lands, regardless of ownership.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the ~~"~~2014 Coates Maps,~~"~~ developed locally using the best available science. The ARMPA~~, and~~ included ~~OHMA~~OHMAs, where RDFs will be applied at the project level. Decisions for BLM-administered lands in ~~the State of~~ California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration Final EIS (BLM 2008).

Decisions for BLM-administered lands in Nevada incorporate key elements of the *State of Nevada Greater Sage-Grouse Conservation Plan* (State of Nevada 2014), including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the Planning Area. This mitigation strategy focuses restoration ~~efforts in~~on the key areas most valuable to the GRSG. The ARMPA adopts a disturbance management protocol to provide for a 3 percent limit~~ation~~ on disturbance~~,~~. The exception would be in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, the State of Nevada, and the FWS. The plan provides for this exception due to the development of mitigation tools in Nevada, including the Conservation Credit System, in collaboration with the FWS.

Furthermore, given the concurrence of the Nevada Department of Wildlife and FWS in each exception, this approach is consistent with conservation objectives. The Nevada ARMPA does not use a disturbance density cap, required in the three other Great Basin Region ARMPAs, in light of the disturbance management protocol ~~in~~ for BLM-administered lands in Nevada.

In coordination with the FWS, the Nevada ARMPA also allows for an exception to the geothermal NSO, which is an energy development priority for the State and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (*Conservation Plan for Greater Sage-Grouse in Utah*; Utah Greater Sage-Grouse Working Group 2013) and the State of Wyoming (Executive Orders 2011-5, 2013-3, and 2015-4), which establish~~es~~ conservation measures for protecting GRSG and also focus~~es~~ conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the State's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in ~~GHMA~~GHMAs because 96 percent of the breeding GRSG in Utah are within ~~PHMA~~PHMAs. Here, ~~where~~ conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and RDFs, as well as requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates ~~GHMA~~GHMAs as open to wind energy and high voltage transmission ROW development (consistent with the net- conservation- gain mitigation framework for the ARMPA). The Utah ARMPA also designates ~~GHMA~~GHMAs open to oil and gas development with standard constraints.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (Hagen 2011) ~~which~~. This establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the State of Oregon in which disturbance is capped at 1 percent per decade, in addition to the 3 percent cap in BSUs and project analysis areas.

The BLM Oregon plans provide additional flexibility for wind development in ~~PHMA~~PHMAs in Harney, Lake, and Malheur Counties by allocating them as avoidance areas (rather than exclusion areas) within ~~PHMA~~PHMAs that are outside of the ~~SFA~~SFAs. In ~~Harney, Lake and Malheur~~these counties, priority would be placed on locating commercial- scale wind and solar energy development in non-habitat areas ~~first~~ (i.e., outside of ~~PHMA~~PHMAs and ~~GHMA~~GHMAs) before approving development in ~~PHMA~~PHMAs. The BLM provided this flexibility after recognizing the following:

- The extent of high and medium potential wind areas ~~in these counties that is~~ in ~~PHMA~~PHMAs in these counties~~,~~
- The fact that wind energy is excluded in ~~SFA~~SFAs in these counties~~, and,~~
- After coordinati~~n~~g~~on~~ with the FWS, determining that the more rigorous disturbance cap ~~(in which disturbance is capped at~~ of 1 percent per decade~~)~~ and adaptive management triggers adopted by the Oregon plan would compensate for the likely limited wind development ~~likely to occur~~ in these areas~~.~~

Due to these factors, the BLM finds these limited areas of flexibility for wind development are consistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic

areas where habitat enhancement and restoration ~~activities~~ are encouraged, as well as other strategic areas to address the impacts associated with climate change.

For additional information ~~regarding~~ on the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs~~, which~~. The tables provide~~s~~ a crosswalk ~~regarding~~ as to how the ARMPAs address specific threats to GRSG identified in the COT Report through these State-specific management prescriptions.

1.8 DECISION RATIONALE

The ARMPAs provide a comprehensive, coordinated, and effective conservation strategy for addressing the threats identified by the FWS such that the need for additional protections under the ESA may be avoided. The ARMPAs contain objectives ~~which strive~~ to conserve ~~the~~ GRSG and ~~its~~ their habitat on BLM-administered lands across the remaining range of the species. This is consistent with measures identified or recommended in the NTT Report, the COT Report, recent USGS studies, and other relevant research and analysis.

~~In combination with the GRSG conservation actions taken by the individual States within the remaining range of the species and initiatives to address the threat of rangeland fire to curb the spread of non-native invasive grasses, and to promote conservation measures to benefit GRSG on private lands,~~ The BLM- and Forest ~~Service~~ Service-proposed ARMPAs are an essential component ~~of the effort~~ to conserve the GRSG and its habitat. This is in combination with the GRSG conservation actions taken by the individual States in the remaining range of the species and initiatives to address the threat of rangeland fire to curb the spread of nonnative invasive grasses and to promote conservation measures to benefit GRSG on private lands. Combined, all of the ARMPAs associated with the BLM's National GRSG Conservation Strategy would affect approximately 66 million acres of the remaining habitat for the species.

The BLM GRSG Conservation Strategy is built on the following key concepts:

- **Landscape-level—**The planning effort encompasses the remaining habitat of the GRSG on BLM-administered ~~public~~ lands, covering 10 western states in the Great Basin and Rocky Mountain regions. As such, the strategy provides a coherent framework across the BLM ARMPAs to implement landscape-level conservation for GRSG, while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's ~~multiple use and sustained yield~~multiple-use and sustained -yield mandates under FLPMA. The conservation measures included as part of this landscape-level conservation effort address identified threats to the species, recognizing local ecological conditions~~,~~ and incorporating existing conservation efforts where they are consistent with the overall objective of conserving GRSG across its remaining range.
- **Best available science—**The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, State agencies, the USGS, the FWS, and other sources. The COT Report provided a ~~"~~blueprint~~"~~ for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The NTT Report provided additional guidance for addressing the most significant threats to the GRSG.

The concepts set forth in a number of reports prepared by the USGS regarding specific threats to GRSG, habitat connectivity, and related issues are reflected in the land allocation and resource management decisions. In addition, a series of reports on how to ~~improve efforts to~~better reduce the threats of rangeland fire and invasive species were prepared in collaboration with the WAFWA~~, as well as~~. That and a report to the Secretary of the Interior entitled *An Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior* ~~also~~ informed the GRSG conservation (US Department of the Interior 2015).

- **Targeted, multi-tiered approach—**The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration ~~efforts~~ to the most important habitat management areas as determined by State and Federal GRSG experts. These were~~,~~ largely consistent with the PACs identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as ~~PHMA~~PHMAs~~,~~ within ~~PHMA~~,which the ARMPAs provide an added level of protection to eliminate most surface disturbance. They accomplish this by ~~through the~~ delineation~~on of~~ ~~SFA~~SFAs, derived from areas identified by the FWS as ~~"~~"strongholds~~"~~ essential for the species' survival. ~~GHMA~~GHMAs~~,~~ recognize the potential value of habitat areas outside of PACs~~,—~~ as recommended by the COT Report~~—~~, where surface disturbance is minimized, while providing greater flexibility for other land resource uses.
- **Coordinated—**The ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, Federally~~-~~administered lands essential to the conservation of the GRSG are managed in a coordinated manner. The FWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative—**The ARMPAs reflected extensive input from the relevant States, collaborators, and stakeholders and the public from the outset. The ARMPAs were developed with the benefit of input from the individual States and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force ~~(SGTF)~~ was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate State and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG consistent with the multiple-use and sustained ~~-~~yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis, and recommendations for GRSG conservation, including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through ~~a~~ the collaborati~~onve effort~~ of State and Federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report, which identified threats to GRSG habitat ~~as well as~~ and the most important habitat to protect~~,~~ provided an important framework for develop~~ingment of~~ the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of State and Federal scientists, wildlife biologists, resource managers, and policy advisors, was tasked by the FWS Director ~~of the FWS~~ "with

development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future" (FWS 2013).

In addition, the FIAT Report and the USGS compilation and summary of published scientific studies that evaluate the influence of human activities and infrastructure on GRSG populations (*Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review* [Manier et al. 2014], and the *Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior* [US Department of the Interior 2015]) provided important guidance in ~~the~~ developing~~ment of~~ critical aspects of the ARMPAs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG management experience where consistent with the overall GRSG conservation objectives.

The BLM ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate State-developed conservation measures in each of the sub-regional plans has added complexity in developing the overall conservation strategy, the body of local knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the task of implementing the plans ~~up~~on completion.

In his transmittal letter accompanying the final COT Report, the FWS Director reaffirmed his charge. "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. … ~~. . .~~Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels" (FWS 2013).

The ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report~~,~~ and the NTT Report. As previously noted, the COT Report stated~~,~~ "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT Report preparers recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal." They ~~COT~~ further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy" (FWS 2013).

In order to address the identified threats and meet the recommendations of the COT Report, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify ~~PHMA~~PHMAs ~~which~~ that align closely with PACs identified in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report). Within ~~PHMA~~PHMAs, the plans identify

~~SFA~~SFAs based on the FWS analysis of strongholds for the species based on population density, habitat integrity, and resilience to climate change among other factors. The ~~SFA~~SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. ~~SFA~~SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in WHB populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS ~~(~~and reinforced by recent USGS analysis~~) which~~. These resources are those most important to long-term sagebrush ecosystem health and species persistence.

~~PHMA~~PHMAs and ~~GHMA~~GHMAs boundaries are based on PPH and PGH (except in Utah, where PPH was derived from occupied habitat). Consistent with the BLM's IM 2012-044, PPH and PGH are based on data and maps developed through a collaborati~~ve effort~~ between the BLM and the respective State wildlife agency. PPH and PGH (~~PHMA~~PHMAs and ~~GHMA~~GHMAs in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty et al. 2010), GRSG proportionality, lek density ~~of leks~~, and key seasonal habitats, such as known winter concentration areas. PGH (now ~~GHMA~~GHMAs) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

As discussed in **Section 1.6**, allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in ~~PHMA~~PHMAs ~~–~~ from energy, to transmission lines, to recreation facilities and grazing structures ~~–~~ are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. The ARMPAs will also prioritize future oil and gas leasing and development outside of identified GRSG habitat management areas (i.e., ~~SFA~~SFAs, ~~PHMA~~PHMAs, and ~~GHMA~~GHMAs) to reduce the potential for future conflict with GRSG.

The ARMPAs include additional measures to limit surface disturbance in ~~PHMA~~PHMAs ~~through the establishment of~~by establishing lek buffers and disturbance limits or caps and density restrictions (except in Nevada) of on average 1 energy facility per 640 acres~~, as well as lek buffers~~. These requirements reflect recommendations ~~contained~~ in the NTT Report and are consistent with certain State strategies that were already in place before the initiation of the BLM's National GRSG Conservation Strategy. As described in **Section 1.6.1**, the BLM determined the appropriate lek buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG ~~–~~ A Review* (Manier et al. 2014) based on best available science.

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in ~~SFA~~SFAs, then in ~~PHMA~~PHMAs, and finally in areas designated as ~~GHMA~~GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in ~~PHMA~~PHMAs or ~~GHMA~~GHMAs will be designed to a net conservation gain standard consistent with the recommendation included in the September 2014 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework Version 1.0* (FWS 2014b). According to the authors, the Framework was prepared ~~…~~

> "to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation

objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse" (FWS 2014b).

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT Report to " . . . conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g. shrub cover, nesting cover)" (FWS 2013).

The ARMPAs also address the adverse impacts of free-roaming ~~equids (~~WHBs~~)~~ on GRSG habitat by prioritizing gathers and removing~~al of~~ WHBs to achieve AMLs in ~~SFA~~SFAs, ~~PHMA~~PHMAs, and ~~GHMA~~GHMAs (in that order). The BLM has been working with the National Academy of Sciences to conduct new research of methods to reduce WHB reproduction rates. Through a combination of targeted gathers and the development of an effective agent for controlling future free-roaming ~~equid~~ WHB reproductive rates, over time, this threat to GRSG may be effectively managed.

Since the interaction of fire and invasive species represents the primary threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department of the Interior took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat~~ that~~. This led to ~~S.ecretarial O.rder 3330~~Secretarial Order 3336~~6~~ and the subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015).

Field Code Changed

In accordance with ~~the~~ Secretarial Order 3336 and subsequent rangeland fire management strategy, substantial changes in policy and management direction~~ affecting all aspects of the rangeland fire management program~~ have been made and will continue to be made to enhance BLM's ability to manage the threat of rangeland fire. These will affect all aspects of the rangeland fire management program~~—~~; they will range from better coordination between resource managers and fire management officers~~,~~ to the identification and prioritization of prevention, suppression, and restoration ~~efforts~~ in ~~SFA~~SFAs, ~~PHMA~~PHMAs, and ~~GHMA~~GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This~~ effort,~~ and the initiative to fight the spread of ~~non-native~~nonnative invasive species that contribute~~s~~ to higher rangeland fire risk (e.g., cheatgrass) discussed below~~, has~~ have fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

The COT Report~~,~~ and other more recent research and analysis~~,~~ amplify concern for the contribution of cheatgrass and other invasive annual species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers ~~(Chambers~~ et al. (2014) led to the development of the FIAT and a subsequent assessment that identified areas of resistance and resilience to fire ~~with~~in ~~SFA~~SFAs, ~~PHMA~~PHMAs, and ~~GHMA~~GHMAs. Through use of the FIAT Assessment~~/~~ Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss~~ as well as~~, and to target restoration

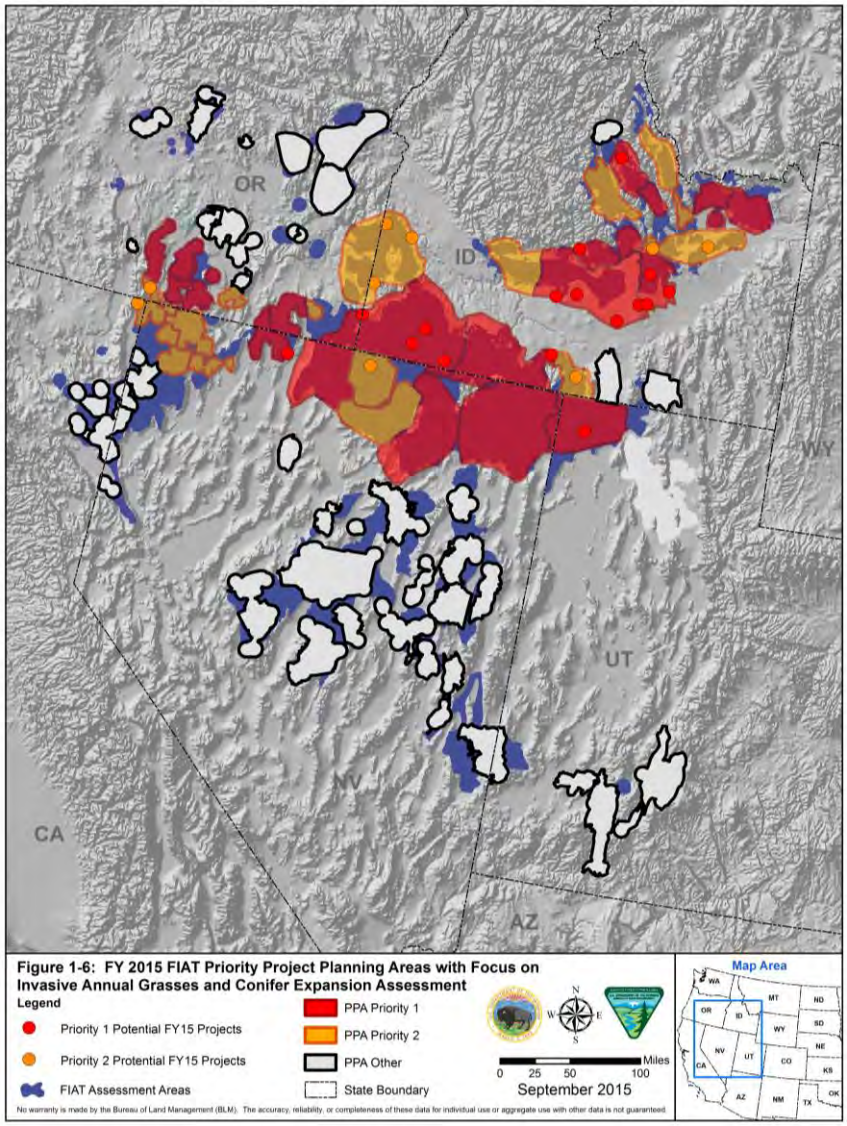
~~to~~ at those areas important to the species where success is more likely. The BLM is also committed to ~~and~~ accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive annual species.

Even prior to completion of the FIAT assessment, the BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY 2014 Omnibus Appropriation, the BLM prioritized the funding of treatments and activities within each State that benefit GRSG (see this ROD' **Figure 1-6**, FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments).

To further supplement these efforts, among other things, the Department of the Interior has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes, and the BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. In addition, the Department of the Interior has approved policy changes to increase the commitment, flexibility, and time frame for using ~~e of Emergency Stabilization and Burned Area Rehabilitation~~ES&BAR funding. ~~Through adoption of~~By adopting a risk-based approach using a rolling average of the acres lost to fire during the previous five fire seasons, ES&BAR~~Emergency Stabilization and Burned Area Rehabilitation~~ funding will be allocated to the BLM to permit ~~and~~ an increased focus on the restoration of priority sagebrush-steppe habitats impacted by fire.

In addition, the Sage Grouse Initiative launched by the NRCS in 2010 also contributes to the effort to protect and restore important GRSG habitat. In collaboration with the States and private landowners on private lands~~, as well as~~ and with the BLM and the Forest Service on Federally- administered public lands, the NRCS has worked to reduce the encroachment of pinyon-juniper trees and to restore rangeland habitat on private and BLM-administered lands.

Figure 1-6
FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments



Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy* (Stiver et al. 2006), the BLM and Forest Service conservation strategy ~~places~~ relies heavily ~~reliance~~ on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs. Monitoring plans will be developed in coordination with relevant State and Federal agencies and will incorporate evaluation of GRSG population trends by the States and changes in habitat condition by the Federal land management agencies. ~~As~~ The WAFWA report states,

> "Monitoring provides the "currency" necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and therefore, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort" (Stiver et al. 2006).

In addition, the ARMPAs incorporate an adaptive management framework that provides an early warning system of soft triggers to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes occur in population levels or habitat conditions ~~occur~~. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and if hard triggers are reached, the ARMPAs identify measures that will be put in place, including plan-level responses, in an effort to reverse the declines.

In summary, the ARMPAs emphasize an "avoidance first" strategy, consistent with the recommendations in the COT Report, by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is ~~accomplished through identification of~~done by identifying important GRSG habitat areas ~~and~~, then applying allocations that exclude or avoid ~~surface disturbing~~surface-disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which, although more difficult and requiring a longer time frame, ~~are~~ is important to the long-term conservation of GRSG.

Commented [rv1]: Editor's note: The singular verb "is" is correct; the subject of the clause is the prepositional phrase "to restore degraded habitat." It isn't the decisions that are important to GRSG conservation, it's restoring degraded habitat.

Restoration decisions include specific habitat objectives~~,~~ and making it a priority ~~on~~ to treat~~ing~~ GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by ~~Secretarial Order 3336~~0Secretarial Order 3336~~0~~ and the *Integrated Rangeland Fire Management Strategy* (US Department of the Interior 2015) as well as the NRCS's Sage Grouse Initiative investments in private landowners' conservation efforts. This strategy reflects a high level of commitment by Federal partners to conserve ~~the~~ GRSG and its habitat. The actions on Federal lands, which constitute nearly two-thirds of the most important lands for GRSG conservation, will anchor and complement the significant actions being taken by State and local governments ~~as well as~~and private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of new conservation actions that will go into effect through the BLM ARMPAs, as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for the BLM since 2010 and a long-term commitment to assure the conservation of the species by protecting, restoring, and enhancing GRSG habitat, consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new ~~paradigm~~ model for~~in~~ the BLM in managing the sagebrush landscape. It ~~for the BLM and~~ amplifies the need for collaboration among Federal, State, tribal, and private partners to conserve the GRSG, which is consistent with direction articulated in the NTT Report, as follows:

> "Land uses, habitat treatments, and ~~human~~ anthropogenic disturbances will need to be managed below thresholds necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to GRSG habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future" (NTT 2011, p. 6-7).

The ~~conservation~~ benefits ~~to~~ of conserving the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPs and ARMPAs provide an essential foundation for conserving the GRSG ~~which~~. This, in conjunction with the amended Forest Service ~~l~~Land and ~~r~~Resource ~~m~~Management ~~p~~Plans (LRMPs), affects nearly two-thirds of GRSG habitat across the remaining range of the species. In conjunction with similar conservation efforts by other Federal and State agencies, private landowners, and local partners, the BLM National GRSG Conservation Strategy constitutes ~~an~~ a historic conservation effort ~~that~~; it will benefit more than 350 species and the sagebrush ecosystem ~~that~~ on which they depend ~~on~~. It is through these landscape-level, science-based, collaborations to conserve the imperiled sagebrush ecosystem that conservation of the GRSG and other sagebrush obligate species can best be achieved and the listing of the GRSG under the ESA may be avoided.

1.9 IMPLEMENTATION

Future decisions made in conformance with the ~~ARMPs and~~ ARMPAs serve to continuously and actively implement its provisions. Management decisions can be characterized as *immediate* or *one-time future* decisions.

Immediate Decisions—These decisions are the land use planning decisions that go into effect when the ROD is signed. These include goals, objectives, allowable uses, and management direction, such as the allocation of lands as open or closed for salable mineral sales, lands open with stipulations for oil and gas leasing, and OHV area designations. These decisions require no additional analysis and guide future land management actions and subsequent site-specific implementation decisions in the Planning Area. Proposals for future actions, such as oil and gas leasing, land adjustments, and other allocation-based actions, will be reviewed against these RMP decisions to determine if the proposal is in conformance with the plan.

One-Time Future Decisions—These are the types of decisions that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementing one-time RMP decisions will be based on the following criteria:

- Relative importance of the action to the efficacy of the GRSG conservation strategy

- National BLM management direction regarding plan implementation
- Available resources

General Implementation Schedule of One-Time Decisions—Future Decisions discussed in the attached ARMPAs will be implemented over a period of years, depending on budget and staff availability. After issuing the ROD, the BLM will prepare implementation plans that establish tentative time frames for completing one-time decisions identified in these ~~ARMPs and~~ ARMPAs. These actions require additional site-specific decision-making and analysis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, changing program priorities, nondiscretionary workloads, and cooperation by partners and external publics. Yearly review of the plan will provide consistent tracking of accomplishments and will provide information that can be used to develop annual budget requests to continue implementation.~~Future management decisions made in conformance with the ARMPAs can be characterized as *immediate* or *one time future* decisions.~~

~~*Immediate decisions*—These decisions are the land use planning decisions that go into effect when the ROD is signed. These include goals, objectives, allowable uses, and management direction, such as the allocation of lands as open or closed for salable mineral sales, lands open with stipulations for oil and gas leasing, and OHV area designations. These decisions require no additional analysis and guide future land management actions and subsequent site-specific implementation decisions in the Planning Area. Proposals for future actions, such as oil and gas leasing, land adjustments, and other allocation-based actions, will be reviewed against these RMP decisions to determine if the proposal is in conformance with the plan.~~

~~*One time future decisions*—These are the types of decisions that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementing one-time RMP decisions will be based on the following criteria:~~

- ~~Relative importance of the action to the efficacy of the GRSG conservation strategy~~
- ~~National BLM management direction regarding plan implementation~~
- ~~Available resources~~

~~*General Implementation Schedule of "One-Time" Decisions:* Future Decisions discussed in the attached ARMPAs will be implemented over a period of years, depending on budget and staff availability. After issuing the ROD, the BLM will prepare implementation plans that establish tentative timeframes for completing one-time decisions identified in these ARMPAs. These actions require additional site-specific decision-making and analysis.~~

~~This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, nondiscretionary workloads, and cooperation by partners and external publics. Yearly review of the plan~~

~~will provide consistent tracking of accomplishments and will provide information that can be used to develop annual budget requests to continue implementation.~~

1.9.1 Additional Implementation Guidance and Considerations

Instructional Memoranda—Additional instruction and management direction will be necessary to implement certain land allocation decisions and management direction included in the ARMPAs ~~and ARMPs~~. For example, additional guidance will be provided to clarify how the BLM will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat. IMs and related guidance will be completed by The BLM Washington Office. The BLM will complete IMs for the following management direction with the intent of completing these IMs within 90 days of the RODs: oil and gas leasing and development prioritization and livestock grazing. Other IMs, including monitoring and mitigation, will be developed as necessary. Issuance of this national guidance will supersede any related national and field level guidance currently in effect. Additional national, ~~S~~state, and field level guidance will be developed as necessary to implement the decisions in the plans.

Map ~~a~~Adjustments and GRSG Seasonal Habitats—PHMAs were designed to include breeding bird density, GRSG proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas. GHMAs ~~was~~were designed to include the areas of occupied seasonal, connectivity, or year-round habitat outside of PHMAs. As additional important habitats are identified (e.g., winter habitat and key connectivity areas), the BLM will map and incorporate these habitats for GRSG, consistent with best available science, through subsequent plan maintenance, revision, or amendment, as appropriate. Priority should be given to ensuring that wintering habitat is identified and captured in all changes in habitat maps subsequent to this decision. In the interim, the BLM will use the existing maps for all decisions.

Continued Commitment to Research and Use of Best Available Science—Through implementation of this strategy, new management issues and questions are likely to arise that may warrant additional guidance or study by technical experts, scientists, and researchers. The BLM is committed to continue working with individuals and institutions with expertise in relevant fields in order to ensure that land and resource management affecting conservation of the GRSG and the sagebrush ecosystem continues to be guided by sound peer-reviewed research and the best available science.

Training—Given the nature and complexity of the management direction in these ~~ARMPs and~~ ARMPAs, the BLM, in collaboration with the Forest Service and the FWS, will develop and implement a schedule of training for key functions, actions, and decisions associated with these plans. In this manner, the BLM will seek to better inform its personnel, partners, cooperators, and stakeholders of the changes in management that will result from this new management model.~~*Instructional Memoranda*—Additional instruction and management direction will be necessary to implement certain land allocation decisions and direction included in the ARMPAs. For example, additional guidance will be provided to clarify how the Bureau will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat. IMs and related guidance will be completed by the BLM Washington office. The BLM shall complete IMs for the following management direction with the intent of completing these IMs within 90 days of the RODs: oil and gas leasing and development prioritization and livestock grazing. Other IMs, including, monitoring, and mitigation, will be developed as necessary. Issuance of this national guidance will supersede any related national and field level guidance currently in effect. Additional national, State and field level guidance will be developed as necessary to implement the decisions in the plans.~~

~~*Map Adjustment, GRSG Seasonal Habitats, and Connectivity*—PHMA was designed to include breeding bird density, GRSG proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas, and GHMA was designed to include the areas of occupied seasonal, connectivity, or year-round habitat outside of PHMA. As additional important habitats are identified (e.g., winter habitat and key connectivity areas), the BLM will map and incorporate these habitats for GRSG, consistent with best available science, through subsequent plan maintenance, revision, or amendment, as appropriate. Priority should be given to ensuring that wintering habitat is identified and captured in all changes in habitat maps subsequent to this decision. In the interim, the BLM will use the existing maps for all decisions.~~

~~*Continued Commitment to Research and Use of Best Available Science:*—By implementing this strategy, new management issues and questions are likely to arise that may warrant additional guidance or study by technical experts, scientists, and researchers. The BLM is committed to continue to work with individuals and institutions with expertise in relevant fields in order to ensure that land and resource management affecting conservation of the GRSG and the sagebrush ecosystem continues to be guided by sound, peer-reviewed research and the best available science.~~

~~*Training*—Given the nature and complexity of the management direction in these ARMPAs, the BLM, in collaboration with the Forest Service and the FWS, will develop and implement a schedule of trainings for key functions, actions, and decisions associated with these plans. In this manner, the BLM will seek to better inform its personnel, partners, cooperators, and stakeholders of the changes in management that will result from this new management paradigm.~~

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2. DECISION

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CHAPTER 2
DECISION

2.1 SUMMARY OF THE APPROVED MANAGEMENT DECISIONS

The decision is hereby made to approve the Great Basin Region GRSG ARMPAs for the Great Basin Region GRSG Sub-~~r~~Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments 1 through 4). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs amend the land use plans described in Sections 1.1 of attachments 1 through 4.

The land use decisions conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes)~~,~~ and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective ~~upon signing of~~when this ROD is signed, implement~~ingation of~~ on-the-ground activities requires additional steps before any ~~on-the-ground activities~~of them can begin. The BLM will conduct~~Subsequent~~ NEPA ~~analysis~~ analyses~~will be conducted~~, as necessary, for such implementation decisions.

2.2 WHAT THE ROD AND ARMPAS PROVIDE

The ARMPAs include GRSG and GRSG habitat land use plan~~-~~-level management decisions in the form of the following:

- Goals
- Objectives (desired future conditions)
- Land use allocations and allowable uses
- Management actions

Goals are the broad statements of desired outcomes and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have ~~timeframe~~time frames for achievement.

Land use allocations specify locations ~~with~~in the Planning Area that are available or ~~not~~ unavailable for certain uses and are also used to prioritize conservation and restoration management actions. ~~These include~~Examples are decisions ~~such as~~on the following:

- ~~-~~What lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development~~.~~
- What lands may be available for disposal via exchange ~~and/~~or sale~~, and~~
- What lands are open, closed, or limited to motorized travel

Note that ~~-~~all acreages presented in the approved plans are estimations, even when they are presented to the nearest acre~~)~~.

Management decisions~~/~~ and actions ~~include~~ are those provisions that help in meeting the established goals and objectives ~~and include~~. They are the measures that will be applied to guide day-to-day activities on public lands, including but not limited to, stipulations, guidelines, best management practices, and RDFs.

The ARMPAs' management decisions were crafted to incorporate conservation measures into RMPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats (see **Section 1.3**).

The EISs conducted for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Amendments sufficiently disclose and analyze all environmental issues associated with mineral leasing on Forest Service-administered lands~~, should~~. The issues would be relevant should the Forest Service ~~-~~consent ~~be provided by~~ to a lease or require consultation ~~be required with the Forest Service~~ before it issues~~ing~~ a lease~~, in~~. This would ~~-~~comply~~iance~~ with applicable mineral leasing and NEPA regulations and would be subject to further site-specific environmental analysis where applicable.

Commented [rv2]: I needed to recast this run-on, passive voice sentence, which required me to name the subject. The context indicated that it is the Forest Service. If this is wrong, the author needs to rewrite it for clarity.

2.3 What the ROD and ARMPAs Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for land use plan~~-~~-level travel management ~~area~~ decisions in the Idaho and Southwestern Montana ARMPA.

The ARMPAs do not violate valid existing rights~~.~~

~~The ARMPAs do not~~ nor contain decisions for the mineral estates that are not administered by the BLM. ARMPA decisions for surface estate only apply to BLM ~~managed~~-administered lands. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions ~~include~~are the following:

- *Statutory requirements*~~—~~The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.

- *National policy*—The decision will not change the BLM's obligation to conform to current or future national policy.
- *Funding levels and budget allocations*—These are determined annually at the national level and are beyond the control of the State/District of or Field Offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisionsThey generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist asbe stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

2.4 MODIFICATIONS AND CLARIFICATIONS

The ARMPAs in the Great Basin Region include minor modifications and clarifications to the Proposed RMPAs. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency reviews. These modifications and clarifications are hereby adopted by this ROD.

The following modifications and /clarifications were made to all of the ARMPAs in the Great Basin Region:.

- *ARMPA Formatting*—The plans were reformatted between the Proposed RMPA and ARMPA planning stages for consistency across the Great Basin Region;. The order of management actions and the prefixes for the goals, objectives, and management actions were changed in the ARMPAs to provide consistency among the amendments and revisions for GRSG goals and objectives.
- *Forest Service References (applicable only to the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah ARMPAs)*—All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. The Forest Service has completed two separate RODs and land and resource management plan amendments under their its planning authorities.
- *Fire*—Management actions and /decisions were modified to stress that the protectingon of human life is the single, overriding priority for fire and fuels management activities.
- *Livestock Grazing*—The following statement, "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR, Part 4110.2-3," was added to the management action/ and decision which. It reads, "At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks."
- *Glossary*—Numerous glossary definitions were deleted due to the fact thatbecause they terms were not used/ or referenced in the ARMPAs. If not already contained in the

Proposed RMPAs' glossariesy, the following terms and definitions were added to the glossary for clarification:

- **Grazing Relinquishment.:** The voluntary and permanent surrender by an existing permittee or lessee, (with concurrence of any base property lienholder[s]), of their priority (preference) to use a livestock forage allocation on public land as well as their permission to use this forage. Relinquishments do not require the consent or approval by of the BLM. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.
- **Transfer of Grazing Preference.:** The BLM's approval of an application to transfer grazing preference from one party to another or from one base property to another, or both. Grazing preference means a superior or priority position against others for the purposes of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee.
- **Valid Existing Right.:** Documented, legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include, but are not limited to, fee title ownership, mineral rights, ROWs, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.
- **Mining Claim.:** A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the 1872 Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, mill site, and tunnel site.
- **Energy or Mining Facility.:** Human--constructed assets designed and created to serve a particular function and to afford a particular convenience or service that is affixed to a specific locations, such as oil and gas well pads and associated infrastructure.

- *GRSG Habitat Mapping*—Information was added to the ARMPAs to specify that when new information becomes available about GRSG habitat, including seasonal habitats, in coordination with the State wildlife agency and FWS, and based on best available scientific information, the BLM may revise the GRSG habitat management area maps and associated management decisions through plan maintenance or plan amendment/ or revision, as appropriate.
- *Adaptive Management*—The GRSG Adaptive Management Strategy was revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the ROD is signeding of the ROD and then at a minimum, will be analyzed, at a minimum, annually thereafter.
- *Vegetation*—The desired condition for maintaining a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover in SFASFAs and PHMAPHMAs was modified to read as follows: "In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent

sagebrush canopy cover, ~~or as~~ consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health" (BLM Tech Ref 1734-6; Pellant 2005).

- *GRSG Habitat Objectives*—For clarification purposes, within each of the ARMPA GRSG habitat objectives tables, native bunchgrass~~es~~ was provided as an example of a perennial grass cover and ~~the inclusion of~~ residual grass~~es~~ was added to the perennial grass cover and height objective.
- *Sagebrush Focal Areas*—Examples of the types of vegetation and conservation actions that will be prioritized within ~~SFA~~SFAs were provided for clarity in the management action~~/~~ and decision. These examples ~~include~~ were land health assessments and WHB management and habitat restoration actions.
- *Required Design Features*—One of the criteria for demonstrating that a variation to an RDF is warranted was modified to include the following statement~~:~~: "An alternative RDF, a state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat."
- *Lands and Realty*—The following management actions~~/~~ and decisions and objectives were clarified:
  - Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
  - Within existing designated utility corridors, the 3 percent disturbance cap may be exceeded at the project ~~-~~scale if the site ~~-~~specific NEPA analysis indicates that a net conservation gain to the species ~~will~~ would be achieved. This exception is limited to projects ~~which~~ that fulfill the use for which the corridors were designated (e.g., transmission lines and~~,~~ pipelines) and the designated width of a corridor ~~will~~ would not be exceeded as a result of any project collocation.
- *Land Tenure*—Management action associated with land disposals was clarified to include land exchanges as a means of disposal.
- *WAFWA GRSG Conservation Team*—Additional clarification was added to ARMPAs related to the WAFWA GRSG Conservation Teams that were identified in the Proposed RMPAs: "WAFWA management zones will be used to facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response, through WAFWA GRSG Conservation Teams ~~(Teams)~~. These teams will convene and respond to issues at the appropriate scale~~,~~ and will ~~utilize~~ use existing coordination and management structures to the extent possible."
- *Cheatgrass*—The following management action was included consistent with the purpose and need and objectives of the ARMPAs: "Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species."
- *Valid Existing Rights*—The following management action was added to the ARMPAs: "Consider the likelihood of ~~development of~~developing not-yet-constructed surface-disturbing activities~~—~~, as defined in Table 2 of the Monitoring Framework~~–~~, under valid existing rights ~~prior to~~before authorizing new projects in ~~PHMA~~PHMAs."

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the Final EIS in various places was grouped into a stipulation appendix and added to the ARMPA as Appendix G Stipulations.
- Appendix G, Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA, was modified to delete the reference to Tables 2 to 7. These tables ~~2 to 7~~ were deleted from the Final EIS Appendix G before it was made available to the public for protest, but the reference was not deleted in the appendix text ~~of the Appendix~~. This discrepancy was identified during protest resolution and ~~by the Governor during~~ the Governor's consistency review. These values will be calculated after the ROD is signed ~~ing of the ROD~~ (see Adaptive Management below).
- Many editorial changes, including deleting repeated numbers and correcting spelling errors, were made when finalizing the ARMPA.
- On August 7, 2015, President Obama signed into law the Sawtooth National Recreation Area and Jerry Peak Wilderness Act (House Resolution 1138). In accordance with the Wilderness Act (16 USC, Section 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the BLM in Idaho, comprising approximately 116,898 acres, were designated as Wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness.

  This bill also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas, and they are no longer subject to Section 603(c) of the FLPMA.

  Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine ~~County,~~and Custer Counties~~y~~, and the Cities~~y~~ of Challis, ~~the City of~~ Clayton, and ~~the City of~~ Stanley. These conveyances include approximately 53 acres of ~~PHMA~~PHMAs, 10 acres of ~~IHMA~~IHMAs, and 828 acres of ~~GHMA~~GHMAs that are reflected in the ARMPA as being administered by the BLM. Once conveyed, the BLM will adjust the maps and acres as they appear in the ARMPA through plan maintenance to depict that these lands are not subject to the BLM management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

Special Status Species

- ~~Deleted t~~The Seasonal Timing Restrictions from Appendix C of the Final EIS were deleted to reduce redundancy because these restrictions were already in the RDFs appendix.

Livestock Grazing

- Livestock Grazing RM -16 and RM 18, which are now MD LG 15 and MD LG 17 ~~respectively~~ in the ARMPA, had the following sentence added as an accepted recommendation made ~~by the Governor~~ during the Governor's consistency review to clarify management and conservation action prioritization in ~~SFA~~SFAs ~~and~~: "Management and conservation action prioritization will occur at the Conservation Area (California) scale and

be based on GRSG population and habitat trends: Focusing management and conservation actions first in ~~SFA~~SFAs followed by areas of ~~PHMA~~PHMAs outside ~~SFA~~SFAs."

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in ~~PHMA~~PHMAs, ~~IHMA~~IHMAs, and ~~GHMA~~GHMAs would ~~only~~ be available for disposal only through exchange. This was removed because it was not consistent with BLM policy, and the net conservation gain clause in MD LR-13 ~~will provide assurance~~would ensure that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes, such as changing should to shall and would to will, to reflect the final decision language.
- Re-categorizing some of the management decisions into other common resource programs. For example, all of the fire and fuels management decisions are ~~all~~ numbered under FIRE and are not split into different sub-category names.
- Re-lettering the critical appendices and deleting those that are no longer applicable ~~for~~ to the ARMPA.

Special Status Species

- Added clarity to MD SSS 2–A 3 by describing ~~what~~ the energy and mining facilities ~~to which~~where this decision would ~~apply~~be applicable; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A by including references to valid existing rights and applicable law for the requirement of a net conservation gain.
- Specified in MD SSS 8 that this activity would be coordinated with the Nevada Department of Wildlife or California Department Fish and Wildlife and that breeding activity surveys would be done for actions involving mineral activities and ROWs.
- Deleted Action PR 4 from the Proposed RMPA because the BLM does not manage landfills and transfer stations.
- Under the Brood-Rearing/Summer category, clarified that the objective of the 7-inch-deep, rooted perennial bunchgrass in upland habitats was only for a 522-foot (200 meter) area around riparian areas and meadows. The additional reference was added for Casazza et al. 2011.
- Footnote #7 was deleted. The original footnote stated that the "specific height requirements needed to meet the objective will be set at the time of habitat assessment framework assessments." This is incorrect because the height requirements will need to be set well in advance of the habitat assessment framework assessments.
- A new footnote was added as footnote #1: "Any one single habitat indicator does not define whether the habitat objective is or is not met. Instead, the preponderance of evidence from

all indicators within that seasonal habitat period must be considered when assessing sage-grouse habitat objectives." This addition was for the purpose of clarification.

Adaptive Management

- Clarified under MD SSS 21 that the BLM will coordinate with the Nevada Department of Wildlife and that the decision was specific to mineral activities and ROW actions.

Fire and Fuels Management

- Deleted "Field Offices" and "Districts" from MD FIRE 3, as there will be a multi-layered approach to coordination, including BLM State Offices.
- In Objective FIRE 3, added "in ~~SFA~~SFAs first" to provide more emphasis to the ~~SFA~~SFAs over the rest of the ~~PHMA~~PHMAs for this action.
- Modified MD FIRE 26 to delete "Districts," as there will be a multi-layered approach to identifying treatment needs for wildfire and invasive species management across the State.
- Added "FWS" as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 1 was modified for clarity and to include the fact that the BLM would conduct appropriate consultation, cooperation, and coordination.
- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to." This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock or is being purposefully rested."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…"

Mineral Resources

- Management Decision MR 18 was modified to provide the Barrick Enabling Agreement (March 2015) as an example of appropriate mitigation that can be considered in the future, and the last sentence was removed because it only repeated BLM regulations and is unnecessary.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet wide "or a different width is specified for congressional designated corridors." This is in response to the Lincoln County Conservation Recreation Development Act (2204), which included congressionally designated corridors that were not included in the plan amendment

or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this act.

- Action LR-LUA 21 from the Proposed Plan was deleted because the Federal Highway Administration and the Nevada Department of Transportation already have valid existing rights associated with their easements and ROWs, and this planning effort would not change the terms and conditions of their existing easements or ROWs. Making this a management action is repetitive and unnecessary.

Travel and Transportation

- Due to confusion that was outlined in protest letters and in the Governor's consistency review, MD TTM 2 was clarified to say that limiting off-highway travel to existing routes in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations."
- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning." This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment," as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning Area, the two mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed RMPA (~~which~~ these are now separate appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Lands and Realty

- A typographical error in the socioeconomic analysis of the Proposed RMPA was identified during the protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows: Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D, E, F, and the Proposed Plan…" is replaced with the following:

  "Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases

would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-State providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on terrain. In rural areas, burial of new distribution lines would be more than double the cost of new overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers, infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat."

Renewable Energy

- Managed Decision RE-2 was modified to include the statement, "In Harney, Lake, and Malheur Counties, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of ~~PHMA~~PHMAs and ~~GHMA~~GHMAs) before approving development in ~~PHMA~~PHMAs."

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and human disturbances. This modification was recommended ~~by the Governor~~ during the Governor's consistency review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the Proposed RMPA, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMPA, the ~~use of~~ words ~~like~~ "would," "could," "should," and "may" were generally removed or revised to reflect the *active* management direction of an ARMPA rather than *potential* management presented when the Proposed RMPA was one of many alternatives that the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMPA), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMPA), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog, a Federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is ~~applied to~~included in all applicable objectives and management actions, not

just the five actions in the Proposed RMPA where this concept and language was already present.

- Throughout the Proposed RMPA there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or State biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during ~~the Governor's~~his consistency review.
- The Proposed RMPA introduced the term ~~BSU~~biologically significant unit (BSU) for adaptive management and the disturbance cap to provide a consistent approach for managing and monitoring across the GRSG range. In the Utah Sub-~~r~~Region, the boundaries of the BSUs follow the population area boundaries within ~~PHMA~~PHMAs. As part of resolving protests, the ARMPA was revised to note that BSUs are ~~PHMA~~PHMAs within population areas. Whenever the term BSU was used, it was replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across State lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMPA, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA MZs when addressing designation of ~~PHMA~~PHMAs. This change was made during the Governor's consistency review to more closely reflect the management in the State of Utah's Conservation Plan for GRSG in Utah (2013).
- MA-GRSG-1 from the Proposed RMPA, which is now MA-SSS-1 in the ARMPA was revised to include the following text: "The BLM will apply these goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language was added based on an accepted recommendation made by the Governor during the Governor's consistency review.
- The language of MA-GRSG-1 from the Proposed RMPA, which is now MA-SSS-1 in the ARMPA, regarding non-habitat areas within ~~PHMA~~PHMAs and ~~GHMA~~GHMAs was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMPA, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMPA, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual~~,~~ incremental increases in noise levels.

- The language of MA-GRSG-6 from the Proposed RMPA, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside ~~PHMA~~PHMAs/~~GHMA~~GHMAs. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction ~~regarding management of~~for managing areas outside ~~PHMA~~PHMAs and ~~/GHMA~~GHMAs that have been treated to improve GRSG habitat. The change was necessary to avoid the implication of changing allocations or altering ~~PHMA~~PHMA~~/~~ and ~~GHMA~~GHMA boundaries outside a planning process, while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

Livestock Grazing

- The language of MA-GRA-6 from the Proposed RMPA, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to align with similar concepts and intent ~~that was present~~ in the livestock grazing sections in GRSG amendments throughout the Great Basin.

2.5 PROTEST RESOLUTION

The BLM's planning regulations at 43 ~~CFR, Part~~CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by the BLM's planning decisions to protest proposed planning decisions within 30 days ~~from~~ of when the ~~date the~~ notice of availability of the Proposed RMP/Final EIS was published in the *Federal Register* (May 29, 2015). ~~Below are descriptions of the protest resolution process for each of the four Great Basin Region Proposed RMPAs/Final EISs.~~

The BLM Director concluded that the BLM had followed all applicable laws, regulations, and policies and had considered all relevant resource information and public input in developing the Proposed RMPAs/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The ~~BLM~~ Director resolved the protests without making significant changes to the Proposed RMPAs/Final EISs, though minor clarifications were made and are summarized in **Section 2.4**. The ~~BLM~~ Director's decisions on the protests are summarized in each of the Proposed RMPAs/Final EISs Director's Protest Resolution Reports, which are available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

Below are descriptions of the protest resolution process for each of the four Great Basin Region Proposed RMPAs/Final EISs.

2.5.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed RMPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points, pursuant to 43 ~~CFR, Part~~CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report ~~included~~are as follows:

- Compliance with FLPMA
- Compliance with NEPA

- Compliance with ESA
- Density and disturbance
- Adaptive management
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Areas of critical environmental concern
- Fire and fuels management
- Fluid minerals
- Solid minerals
- Special status species
- Lands and realty ~~and~~
- Travel and transportation management

2.5.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed RMPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed as they did not contain any valid protest points, pursuant to 43 ~~CFR, Part~~CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report ~~included~~are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change

- Noise
- Areas of critical environmental concern
- Solid minerals
- Special status species
- Lands with wilderness characteristics
- Lands and realty
- Tribal issues
- WHBs ~~and~~
- Travel and transportation management

2.5.3 Oregon

For the Oregon GRSG Proposed RMPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points, pursuant to 43 ~~CFR, Part~~CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report ~~included~~are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Monitoring
- Areas of critical environmental concern
- Fire and fuels management
- Solid minerals
- Special status species ~~and~~
- Travel and transportation management

2.5.4 Utah

For the Utah GRSG Proposed RMPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points, pursuant to 43 ~~CFR, Part~~CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report ~~included~~are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance

- Adaptive management
- Land use allocations
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise
- Areas of critical environmental concern
- Fire and fuels management
- Fluid minerals
- Solid minerals
- Special status species
- Lands and realty
- Travel and transportation management ~~and~~
- Reasonable foreseeable development scenarios

2.6 GOVERNOR'S CONSISTENCY REVIEW

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands" (43 ~~CFR, Part~~CFR 1610.3-2[a]).

The general requirement in FLPMA~~/~~ planning regulations is to coordinate the land use planning process with plans of other agencies, States, and local governments to the extent consistent with law (see FLPMA Section 202[c][9] and ~~CFR, Part~~CFR 1610.3-1[a])~~;~~ and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with Federal law~~,~~ or to the maximum extent practical; see ~~CFR, Part~~CFR 1610.3-2[a][b]). In accordance with FLPMA, the BLM was aware of and gave consideration to State, local, and tribal land use plans and provided meaningful public involvement throughout the development of the Proposed RMPAs/Final EISs.

The BLM is aware that there are specific State laws and local plans relevant to aspects of public land management that are discrete from, and independent of, Federal law~~;~~~~.~~ however, the BLM is bound by Federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that the BLM's land use plans be consistent with officially~~-~~ approved

State and local plans only if those plans are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands.

Where officially- approved State and local plans or policies and programs conflict with the purposes, policies, and programs of Federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially- approved State and local policies and programs (as opposed to plans), this consistency provision ~~only~~ applies only to the maximum extent practical. While county and Federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the Federal agency planning process is not bound by or subject to State or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors, asserting inconsistencies between the BLM's Proposed RMPAs and their State's or local governments' resource-related plans, policies, and~~/or~~ procedures, as well as other concerns that they had with the proposed planning documents.

On August 6, 2015, the BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected ~~on August 6, 2015~~. These Governors were then provided with 30- days to appeal the BLM State Director's decisions to the BLM Director. On September 8, 2015, the BLM Director received appeals from the Governors of Idaho and Nevada; on September 11, 2015, the BLM Director received an appeal from the Governor of Utah. The BLM Director reviewed these appeals and rejected the recommendations of the Governors of Idaho, Nevada, and Utah by letters dated September 16, 2015, ~~prior to the issuance of~~before this ROD was issued. The BLM Director's response to these appeals will also be published in the *Federal Register* ~~subsequent to the issuance of~~after this ROD is issued.

In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications ~~to the ARMPAs~~ were made and are summarized in **Section 2.4**.

3. ALTERNATIVES

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CHAPTER 3
ALTERNATIVES

3.1 ALTERNATIVES CONSIDERED

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs ~~in order~~. Their intent was to meet ~~in the~~ purpose and need of this ~~effort~~ planning to identify and incorporate appropriate management direction in land use plans to conserve, enhance, and restore GRSG habitat. This would be accomplished by reducing, eliminating, or minimizing threats to GRSG habitat. All management considered under any of the alternatives complied with Federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping~~,~~ and to maintain or increase GRSG abundance and distribution in the Planning Area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions, constituting a separate RMP amendment. The goal was met ~~in~~ to varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law, there are typically few or no distinctions between alternatives.

3.1.1 Alternative A—No Action Alternative

Alternative A meets the CEQ requirement that a no action alternative be considered. This alternative continues current management direction derived from the existing field~~/~~ and district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities ~~such~~ as mineral leasing and development, recreation, ~~construction of~~ utility corridor constructions~~s~~, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria ~~to guide the identification of~~for identifying site-specific use levels ~~for implementation activities~~.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. ~~This alternative~~Moreover, it did not include necessary changes ~~that are needed to be made~~ to the existing decisions based on the FWS 2010 listing ~~petition~~ decision ~~that~~, which identified the inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative also did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B—National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the NTT Report. The GRSG NTT, comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-grouse Conservation Measures* in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations~~,~~ and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse MZs. The NTT Report preparers proposed conservation measures based on habitat requirements and other life history aspects of GRSG ~~and~~. Also they described the scientific basis for the conservation measures proposed within each program area. The NTT Report also provided a discussion of and emphasized the importance of standardizing monitoring ~~efforts~~ across the WAFWA Sage-Grouse MZs.

The BLM's Washington Office IM 2012-044 directed the sub-regional planning ~~efforts~~ to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in ~~PHMA~~PHMAs and would avoid development in ~~GHMA~~GHMAs~~,~~; it would close ~~PHMA~~PHMAs to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals~~,~~; and it would recommend withdrawal from locatable mineral entry in all ~~PHMA~~PHMAs. These management actions would reduce surface disturbance in ~~PHMA~~PHMAs and would minimize disturbance in ~~GHMA~~GHMAs, thereby maintaining GRSG habitat.

Management actions for wildfire would focus on suppression in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices proposed in the NTT Report would be included as RDFs as part of Alternative B and are listed in Appendix C, Required Design Features (RDFs), of each of the attached ARMPAs.

~~This~~ Alternative B was not selected in its entirety as the ARMPAs because ~~the majority~~most of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to ~~PHMA~~PHMAs, and few conservation measures in the report were provided for in ~~GHMA~~GHMAs. As a result, ~~this~~ Alternative B did not provide adequate conservation in ~~GHMA~~GHMAs.

3.1.3 Alternative C—Citizen Groups' Recommended Alternative One

Alternative C was based on an alternative recommended by citizen groups~~' recommended alternative~~. This alternative emphasizes improvingement and protectingon of GRSG habitat ~~for GRSG~~ and was applied to all occupied GRSG habitat (~~PHMA~~PHMAs and ~~GHMA~~GHMAs). Alternative C limited commodity development in areas of occupied GRSG habitat~~,~~ and closed or excluded large portions of the Planning Area to many land uses. This included all ~~PHMA~~PHMAs and ~~GHMA~~GHMAs as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and nonenergy leasable mineral development, and exclusion areas for ROWs. The Utah Draft RMPA/EIS combined this alternative with Alternative F (discussed below) and included two sub-alternatives under Alternative C for a reduction in livestock grazing and WHB management.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs to such ~~as~~ an extent that it did not ~~give~~ adequately accommodat~~eion to~~ local needs, customs, and culture.~~, and~~ Also, it included proposed actions that are not necessary for GRSG conservation. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D—Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the preferred alternative in the Draft EISs, balanced opportunities to use and develop the Planning Area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while ~~still~~ allowing for human disturbances, with stringent mitigation measures. This alternative represents the mix and variety of management actions based on the BLM's analysis and judgment, which best resolve the resource issues and management concerns, while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMPAs/EISs, this alternative was modified to become the Proposed RMPAs and was analyzed in the Final EISs. The preferred alternatives, with slight variations, became the proposed plans in the Final EISs.

In ~~PHMA~~PHMAs under Alternative D, ~~there would be limitation on~~ disturbance in GRSG habitat would be limited by excluding wind and solar energy development (except for certain counties in Southeastern Oregon, where avoidance is applied), avoiding most ROW development (subject to certain conditions), applying NSO stipulations to fluid mineral development, and closing ~~PHMA~~PHMAs to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In ~~GHMA~~GHMAs under Alternative D, allocations are less stringent~~,~~ but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in ~~GHMA~~GHMAs).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative based on information provided by the State or Governor's offices for inclusion and analysis in the EISs. In many instances, the BLM had to adjust what was provided by the States and Governors to fit such requirements as BLM language, and decision-making constructs, etc. This alternative incorporates guidance from specific State conservation strategies, if developed, or recommendations from the State on management offor managing Federal lands and. It emphasizes managingement of GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. This Alternative E was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a State GRSG conservation plan and, under this alternative, reverted back to Alternative A, the No -Action alternative.

For Nevada, Alternative E would apply an "-avoid, minimize, and mitigate"- strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. The effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed. This is because the State's plan does not contain land use plan land use plan -level allocation decisions (, such as ROW exclusion and avoidance areas); it and relies largely on the avoid, minimize, and mitigate strategy at the project level.

The FWS March 2010 "warranted, but precluded" ESA listing petition decision identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism. The BLM believes this Alternative E did not incorporate adequate regulatory mechanisms into the existing plan to meet its purpose and need to conserve, enhance, and protect GRSG and its habitat;, therefore, the BLM did not select Alternative E as the ARMPA.

For Oregon, Alternative E contains GRSG conservation guidelines from *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat*. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the State plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the State plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats, such as recreation, improper livestock grazing, and West Nile virus, for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, Alternative E1 is based on the State of Utah's *Conservation Plan for Greater Sage-Grouse in Utah* (Utah Greater Sage-Grouse Working Group 2013) and would apply to all BLM-administered lands in Utah. In Alternative E1 conservation measures would be applied to 11 State-identified areas that the State identified, called Sage-Grouse Management Areas. Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on State or

Federally managed lands within any particular ~~sage-grouse~~GRSG management area~~:~~, occupied habitat outside of these ~~State-identified Sage-Grouse Management~~ areas would not receive new management protection~~. They~~ and would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the State's plans were not consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 Alternative F—Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for ~~PHMA~~PHMAs and ~~GHMA~~GHMAs. Alternative F would limit commodity development in areas of occupied GRSG habitat~~,~~ and would close or designate portions of the Planning Area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in ~~PHMA~~PHMAs. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and WHB management ~~utilization~~ use by 25 percent within ~~PHMA~~PHMAs and ~~GHMA~~GHMAs. While the Utah Draft EIS did not include an Alternative F, it did create two sub-alternatives under Alternative C for livestock grazing and WHBs to consider and analyze a similar reduction.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in ~~PHMA~~PHMAs and ~~GHMA~~GHMAs to such ~~as~~ an extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMPAs/EISs, the BLM developed the Proposed Plan Amendments/Final EISs for managing BLM-administered lands. In these documents ~~Proposed Plan Amendments/Final EISs~~, the BLM focused on addressing public comments, while continuing to meet ~~the BLM's~~its legal and regulatory mandates.

The Proposed Plan Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the Draft EISs. The Proposed Plan Amendments, with slight variations (as outlined in **Section 2.4** of this ROD), became ARMPAs. The BLM adopted~~s~~ the Proposed Plan Amendments as the ARMPAs~~, as~~ because they also balance resource protections~~,~~ with resource uses to protect resources, while achieving sustainable resource development.

3.1.8 Environmentally Preferable Alternative

CEQ regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 ~~CFR, Part~~CFR 1505.2[b]). Question 6A of CEQ's *40 Most-Asked Questions* regarding CEQ's NEPA regulations (46 FR 18026) defines that term to ordinarily mean the alternative ~~which~~ that best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs, is the most environmentally preferable. However, NEPA expresses a continuing

policy of the Federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA). FLPMA requires the BLM to manage the public lands for multiple-use and sustained yield. (see FLPMA Section 302.) And Section 102(12) of FLPMA declares a policy of the United States that ""the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 USC, Section 21a) as it pertains to the public lands."" For these reasons, Alternative B was not selected as the sub-regional ARMPAs.

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations
- They did not meet the purpose and need
- The alternative was already captured within the range of alternative analyzed in the EIS
- They were already part of an existing plan, policy, or administrative function
- They did not fall within the limits of the planning criteria

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11 of each of the sub-regional Proposed Amendments/Final EISs.

Idaho and Southwestern Montana

- FWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of ~~PHMA~~PHMAs or ~~GHMA~~GHMAs to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of ~~PHMA~~PHMAs or ~~GHMA~~GHMAs to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- FWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative

- Close All or Portions of ~~PHMA~~PHMAs or ~~GHMA~~GHMAs to OHV Use Alternative

Utah

- FWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as ~~PHMA~~PHMAs for All Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- COT Report Alternative
- BLM Policies and Regulations Alternative

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4. PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

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CHAPTER 4
PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and U.S. Department of the Interior policies and procedures for implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed management.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through *Federal Register* notices, public formal and informal public meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related web websites.

This section documents the outreach efforts that have occurred to date. For more plan-specific information related to the public involvement, consultation, and coordination processes that the BLM conducted, please refer to Chapter 3 of the attached ARMPAs.

4.1 PUBLIC INVOLVEMENT

The scoping period for the National GRSG Planning Strategy, including the four sub-regional Planning Areas in the Great Basin Region, began with the publication of the Notice of Intent in the *Federal Register* on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012 (BLM and Forest Service 2012).

A Notices of Availability for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMPAs/EISs were published in the *Federal Register* on November 1, 2013. The Oregon Draft RMPA/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Draft RMPAs/EISs, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMPAs/EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the proposed plan amendments. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft RMPAs/EISs' comment periods. Comments on the Draft RMPAs/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the proposed plan amendments. Public comments resulted in the addition of clarifying text, but did not significantly change the Proposed RMPAs.

A Notices of Availability for all of the Great Basin Region GRSG Proposed RMPAs and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-regions were released on May 29, 2015. The release of the EPA's Notices of Availability initiated a 30-day public protest period and a 60-day Governor's consistency review. Refer to **Sections 2.5** and **2.6** for a full description of the protest period and Governor's consistency review outcomes.

4.2 Cooperating Agencies

A cooperating agency is any Federal, State, or local government agency or Native American tribe that enters into a formal agreement with the lead Federal agency to help develop an environmental analysis. Cooperating agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are as follows:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other Federal, State, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal MOU for the National GRSG Planning Strategy with the FWS and the Forest Service. In addition, the Great Basin sub-regions also invited local, State, other Federal, and tribal representatives to participate as cooperating agencies for these RMPAs/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 MOUs signed with State agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. (Additional information can also be found in Chapter 6 of each of the Proposed Amendments/Final EISs.) These cooperating agencies divided by sub-region are provided below.:

Great Basin Region-Wide

US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana

Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California

Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration

Washoe County
Washoe Tribe
White Pine County

Oregon

Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah

Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emery County
Garfield County
Grand County
Iron County
Kane County
Lincoln County (~~WY~~Wyoming)
Millard County
Rich County
Sanpete County
Sevier County
State of Utah (PLPCO)
State of Wyoming
Sweetwater County (~~WY~~Wyoming)
Sweetwater County Conservation District (~~WY~~Wyoming)
Tooele County
Uinta County (~~WY~~Wyoming)
Uintah County (Utah)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

4.3 FWS SECTION 7 CONSULTATION

Under Section 7 of the ESA, Federal agencies must consult with the FWS when any action the agency carries out, funds, or authorizes *may affect* a listed endangered or threatened species or its designated critical habitat. The four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the Final EISs. (The FWS is a cooperating agency in this planning process.) FWS staff participated in interdisciplinary team meetings and ~~has~~ have been provided with drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the FWS, ~~prior to~~before the release of the Draft RMPAs/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan amendments "may affect" the species for which this consultation occurred.

~~Prior to~~ Before the release of the Proposed Amendments/Final EISs, the BLM formally submitted the biological assessments to the FWS for review on whether the plans would affect a Federally listed, proposed, or candidate species. The FWS evaluated the biological assessments and concurred with ~~the~~ either a "no affect" or "may effect, but will not adversely affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana~~, which~~; these memoranda are appendices to each of the~~se~~ ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah prairie dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix J).

4.4 NATIVE AMERICAN AND STATE HISTORIC PRESERVATION OFFICE CONSULTATION

In recognition of the government-to-government relationship between individual tribes and the Federal government, the BLM initiated Native American consultation in preparation of the four Great Basin sub-regional RMPAs/EISs. The BLM coordinated~~ion~~ with Native American tribes ~~occurred~~ throughout the planning process. In December 2011, the BLM sent ~~65 individual~~ letters to 65 tribal governments. The letters provided~~ing~~ initial notification of the RMPAs/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation ~~efforts~~ related to the planning process. Tribes have been participating in the RMPAs/EISs processes through numerous meetings and through personal BLM contacts, and in some cases, as cooperating agencies.

As part of the NEPA scoping and consultation process, the BLM notified the Idaho, Montana, Nevada, California, and Oregon State Historic Preservation Officers (SHPOs) of the opportunities to comment on the planning and NEPA documents prepared for these efforts, as they relate to historic properties in the Planning Areas and the land use plan decisions included in the ARMPAs. The BLM sought information about historic properties in consideration of land use planning decisions in accordance with the National Programmatic Agreement between the BLM, Advisory Council on Historic Preservation, National Conference of SHPOs, and the Idaho, Montana, and Oregon State Protocol Agreement between the BLM and these SHPOs. If the BLM received comments and information from SHPOs and tribes, then it considered and incorporated that information ~~was considered and incorporated~~ into the Proposed RMPAs/Final EISs and the ARMPAs.

The BLM has met its obligations under Section 106 of the National Historic Preservation Act, 54 USC, Section 306108, as outlined in the National Programmatic Agreement and the State protocols. The BLM will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American tribes, and other interested parties. This is, consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant State protocols or where applicable to the Section 106 regulations.

For the Utah ARMPA, the BLM completed consultation with the Utah SHPO, in accordance with the 36 CFR, PartCFR 800. In July 2015, the BLM submitted a formal letter, concluding that the land use plan amendments would not adversely affect cultural properties and seeking input and concurrence on those findings. The BLM received a concurrence letter from the Utah SHPO on July 30, 2015. The BLMIt will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American tribes, and other interested parties. This is, consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant State protocols and, programmatic agreements, or where applicable the Section 106 regulations.

5. REFERENCES

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CHAPTER 5
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6. APPROVAL

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CHAPTER 6
APPROVAL

Land Use Plan Decisions

It is the decision of the Bureau of Land Management to approve the Great Basin Region Resource Management Plan Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana Sub-regions, as described in this Record of Decision. The Proposed Plan Amendments and related Final Environmental Impact Statements were published on May 29, 2015, in the *Federal Register* (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze
Director
Bureau of Land Management

Date

Approval

I hereby approve the land use plan decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 1610.5-2(b) and 43 CFR 4.410(a)(3), it is not subject to appeal under Department regulations at 43 CFR, Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice M. Schneider
Assistant Secretary
Land and Minerals Management

Date

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Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region including the Greater Sage-Grouse Sub-Regions of:

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:

U.S. Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WO/XX/XX-XX+XXX

[Insert BLM WO Letterhead]

Comment [MEM1]: Need to pull text into letter format and have Neil / Janice sign by 9/11 (when we send the draft RODs to EMPSi for tech edit.

In Reply Refer To:
(WO210)(1610)

Dear Reader:

Comment [SJM2]: Pls incorporate my comments from RM into this cover letter too. thx

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). The ROD approves the four Great Basin Region ARMPAs, which are part the National Greater Sage-Grouse Planning Strategy that was initiated on December 11, 2011. The conservation strategy was initiated by the Bureau of Land Management (BLM) in response to the U.S. Fish and Wildlife Service's (FWS) March 2010 "warranted, but precluded" Endangered Species Act (ESA) listing petition decision. In this decision, the FWS identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism.

The BLM's ARMPAs provide a landscape-level, science-based, coordinated, collaborative strategy for addressing threats to the Greater Sage-Grouse (GRSG) and its habitat. This strategy was designed to address issues identified in the FWS 2010 "warranted but precluded" decision. In addition, the strategy was guided by over a decade of research, analyses and recommendations for GRSG conservation including the Conservation Objectives Team (COT) Report and the BLM National Technical Team (NTT) Report. Each of these reports was developed through a collaborative effort of state and federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, the U.S. Forest Service, and state and other partners were fundamental to the development of these ARMPAs.

It is important to note that this ROD and these ARMPAs apply only to BLM-administered lands, including BLM sub-surface mineral estate. Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. These Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs for the Great Basin sub-regions included proposed GRSG management direction for National Forest System lands (in Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah). However, the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

The Federal Land Policy and Management Act (FLPMA) require the development and maintenance, and, as appropriate, the revision of land use plans for management of public lands. The National Environmental Policy Act (NEPA) requires Federal agencies to prepare an Environmental Impact Statement (EIS) for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the Draft RMP Amendments/Draft EISs incorporated analysis and input provided by the public; local, State, and other Federal agencies and organizations; Native American tribes; Cooperating Agencies, and BLM resource specialists, and were published in the fall of 2013. Ninety -day public comment periods ensued, with more than 4,990 substantive comments from 1,348 unique letters submitted on all four sub-regional proposed LUPAs/Final EISs in the Great Basin Region. These comments were reviewed, summarized and considered in preparing the Proposed RMP Amendments/Final EISs.

The Proposed RMPAs/Final EISs were made available on May 29, 2015, for a 60-day governor's consistency review and 30-day protest period. The BLM received consistency review letters from the States of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region and has worked closely with these states to address their concerns and to resolve inconsistencies where possible. Across all four sub-regions in the Great Basin Region, 133 protest submission letters were received from government entities, private citizens, NGOs, and other stakeholders; 124 of these submissions contained valid protest issues pursuant to 43 CFR 1610.5-2 and were addressed in the Director's Protest Resolution Reports. These reports are available on line at: http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html.

The BLM now approves the attached ARMPAs as the land use plans that will guide future land and resource management within GRSG habitat in the Great Basin Region for the life of the plan amendments. The ARMPAs will benefit GRSG and over 350 other species of wildlife as well as other multiple uses, including grazing and recreation, which depend on healthy sagebrush-steppe landscapes.

Copies of the ROD and ARMPAs can be obtained from the BLM's National Greater Sage-Grouse webpage at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the public, local, state, and other federal agencies, Native American tribal representatives, and the Cooperating Agencies, all of whom contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented.

Sincerely,
X

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

Summary

Comment [SJM3]: Pls incorporate my comments from RM into this summary as well.

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse habitat on public lands administered by the Bureau of Land Management (BLM), consistent with the BLM's multiple use and sustained-yield mission and the joint objective established by federal and state leadership through the Greater Sage Grouse Task Force to conserve GRSG habitat on federal, state, and private land such that additional protections under the Endangered Species Act (ESA) can be avoided.

In response to a 2010 determination by the FWS that the listing of the GRSG under the ESA was "warranted but precluded" by other priorities, the BLM, in coordination with the U.S. Department of Agriculture Forest Service (Forest Service), has developed a targeted, multi-tiered, coordinated, collaborative landscape-level management strategy, based on the best available science, that offers the highest level of protection for GRSG in the most important habitat areas to address the specific threats identified in the 2010 FWS "warranted but precluded" decision and the FWS 2013 Conservation Objectives Team (COT) report.

This ROD and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah include management direction that avoids and minimizes additional disturbance in GRSG habitat management areas as well as targets restoration and improvements to the most important areas of habitat. The management direction in the ARMPAs is accomplished through land use allocations that apply to GRSG habitat. These allocations (1) eliminate most new surface disturbance in the most highly-valued sagebrush ecosystem areas identified as Sagebrush Focal Areas (SFAs); (2) avoid or limit new surface disturbance in Priority Habitat

Management Areas (PHMAs), of which SFAs are a subset; and (3) minimize surface disturbance in General Habitat Management Areas (GHMA). In addition to protective land use allocations in habitat management areas, the ARMPAs include a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, and other conservation measures that apply throughout designated habitat management areas. The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land use plan decisions in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The targeted land use plan protections presented in this ROD and ARMPAs not only protect the GRSG and its habitat, but also over 350 wildlife species associated with the sagebrush-steppe ecosystem, which is widely recognized as one of the most endangered ecosystems in North America. Reversing the slow degradation of this valuable ecosystem will also benefit local rural economies and a variety of rangeland uses in addition to habitat protection, including recreation and grazing, in a manner that safeguards the long term sustainability, diversity and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 states in which the ARMPAs in the Great Basin and the plans in the Rocky Mountain Region apply. In combination with additional state and federal actions underway and in development, the strategy represents an unprecedented, coordinated, and collaborative effort among federal land management agencies and the states to manage an entire ecosystem and associated flora and fauna in order to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future". [Dan Ashe. Transmittal letter to COT Report. 2013].

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List of Tables

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Comment [MEM4]: EMPSi will populate.

Comment [SJM5]: Pls make my same changes from RM here as well, thx

1. INTRODUCTION

This Record of Decision (ROD) approves the BLM's attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR] §1601 et seq.), and other applicable laws. The BLM prepared Environmental Impact Statements (EISs) in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA) and the Council on Environmental Quality's Regulations for implementing the procedural provisions of NEPA (40 CFR §1500.1 et seq.).

Throughout the GRSG planning process, the Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities for the Great Basin Region, which is available at http://www.fs.usda.gov/r4/.

This ROD, in conjunction with the ARMPs and ARMPAs approved through the Rocky Mountain ROD, constitute land use planning decisions of the BLM to conserve the GRSG and its habitats throughout that portion of the remaining range of the species that is administered by the BLM under authority of FLPMA. The efforts of the BLM, in coordination with the U.S. Forest Service on National Forest System lands within the remaining range of the species, constitutes a coordinated strategy for conserving the GRSG and the sagebrush-steppe ecosystem on the majority of Federal lands on which the species depends. These decisions complement those implemented by federal agencies through An Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior and the Sage Grouse Initiative as well as those implemented by state and local governments as well as private land owners and other partners.

1.1 Great Basin Region Planning Area

The Great Basin Region planning area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. (see **Figure 1-1** – Great Basin Region Greater Sage-Grouse Sub-regions). A separate EIS was prepared for each of these sub-regions. Each sub-region conducted its own planning effort with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, as well as areas that shared common threats to the GRSG and their habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the Western Association of Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Conservation Strategy to delineate management zones with similar ecological and biological issues.

[Insert **Figure 1-1** - Great Basin Region Greater Sage-Grouse Sub-regions]

The Great Basin Region planning area boundaries include all lands regardless of jurisdiction (see **Figure 1-2** - Great Basin Region Planning Area). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, states, local governments, and privately-owned lands within the four sub-regions that make up the Great Basin. The planning area also includes other BLM-administered lands that are not identified as habitat management areas for GRSG. The ARMPAs generally do not establish any additional management for these lands outside of GRSG habitat management areas and they will continue to be managed according to the existing land use plans for these planning areas.

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[Insert **Figure 1-2** - Great Basin Region Planning Area]

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	NV/NE CA	ID/SW MT	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,597,500**
USFWS	805,900	81,400	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,300**	**48,209,900**	**31,656,200**	**194,208,900**

Source: BLM GIS 2015
Acres have been rounded to the nearest hundredth.

The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure 1-3** - Great Basin Region Decision Area-, Greater Sage-Grouse Habitat Management Areas (BLM-administered)), including surface and split-estate lands where the BLM has subsurface mineral rights. For a description of these habitat management areas, refer to **Section 1-5**.

[Insert **Figure 1-3** - Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas (BLM-administered)]

1.2 Early GRSG Conservation Efforts

Comment [SJM6]: Pls incorporate comments from RM ROD into this section

Currently, GRSG occupy an estimated 66% of the historically occupied range. The BLM manages the majority of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State populations). Efforts to conserve GRSG habitat by the BLM and other wildlife conservation agencies and organizations have been ongoing for many years. These efforts provide an important foundation for the GRSG conservation strategy that guides these plans.

The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

http://sagemap.wr.usgs.gov/docs/Greater_Sage-grouse_Conservation_Assessment_060404.pdf

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the FWS, the Forest Service, the U.S. Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy*, with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the Strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The Strategy outlined the critical need to develop the associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats upon which they depend. The catalyst for this effort was widespread concern for declining populations and reduced distribution of GRSG.
http://www.wafwa.org/documents/pdf/GreaterSage-grouseConservationStrategy2006.pdf

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and summarize the BLM's ongoing conservation efforts. A product of this effort was one of the first range-wide priority habitat maps for GRSG that were referred to as "key habitat". At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression efforts in GRSG habitat on BLM lands. An additional outcome of this team was the signing of a Memorandum of Understanding by the WAFWA; the BLM, FWS, USGS in the Department of the Interior; and the US Department of Agriculture Forest Service and NRCS, to provide for cooperation among the participating state and federal land managers and wildlife management and science agencies in

the conservation and management of GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the Western United States.

http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/fwp.Par.95958.File.dat/SagegrouseMOU.pdf

In 2010, the BLM commissioned an effort to map and model breeding bird densities of GRSG across the West. A conference was convened with state wildlife agencies to coordinate the lek survey data needed for this effort. This modelling project, through an agreement with the FWS, mapped known active leks across the West. This model served as a standard starting point for all states to identify priority habitat for the species.

http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/bird_density.print.html

In March 2010, the US Fish and Wildlife Service (USFWS) published its 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 Federal Register 13910 (March 23, 2010)). In that finding, the USFWS concluded that GRSG was "warranted, but precluded" under the Endangered Species Act (ESA). This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

As part of their 2010 finding, the USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 Federal Register 13910 (March 23, 2010)). In addition, the FWS found that existing local, state and federal regulatory mechanisms were not sufficient to address threats to the habitat. For the BLM, which manages approximately 66 million acres of the remaining habitat for the species (See **Figure 1-4**.), the ~~US~~FWS has identified the agency's Resource Management Plans (RMPs) as the primary regulatory mechanisms.

1.3 Threats to Greater Sage-Grouse in the Great Basin Region

Comment [SJM7]: Pls incorporate comments from RM ROD here; I have identified some additional ones in text unique to GB

The FWS identified a number of specific threats to GRSG in the Great Basin Region in the context of its 2010 finding. The primary threats identified are the widespread present and potential impacts of wildfire, the loss of native habitat to invasive species, and conifer encroachment. Other threats, some of which are more localized by nature, include habitat fragmentation due to anthropogenic disturbances associated with energy development, mining, infrastructure, recreation, urbanization and sagebrush elimination, as well as impacts to habitat -associated with free-roaming equids and improper livestock grazing.

In 2011, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The charge of the NTT was to identify science-based management

considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones (Figure 1-4). The NTT produced *A Report on National Greater Sage-grouse Conservation Measures* (The NTT Report) which proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. The NTT Report also emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones.
http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

Comment [SJM8]: FR v. Federal Register elsewhere

In 2012, the ~~US~~FWS, with the support of the Western Governors Association Sage Grouse Task Force, convened the Conservation Objectives Team (COT), comprising state and federal representatives, to produce a peer-reviewed report identifying the principal threats to GRSG survival and the degree to which these threats need to be reduced or ameliorated to conserve the GRSG so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT Report, released in March 2013, also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". Finally, the COT report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2)**. The BLM also identified and explained additional threats in the Final EISs that were published with proposed plans on May 29, 2015. **Figure 1-4** identifies the PACs, GRSG populations (and their names), and WAFWA Management Zones across the West.
http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf

[Insert **Figure 1-4** - GRSG Priority Areas for Conservation, Populations, and WAFWA Management Zones.]

A summary of the nature and extent of threats identified by the COT for each remaining identified population of GRSG in the Great Basin Region—as highlighted in the 2013 COT ~~r~~Report—is provided in **Table 1-2**.

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Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (UT)	9b				Y	Y	Y	Y		Y			Y	Y	UT
Uintah (UT)	9c				Y	Y	Y	L	Y	Y			Y	Y	UT
Strawberry Valley (UT)	10a	Y			Y	Y	Y	Y		Y			Y		UT
Carbon (UT)	10b	Y			Y		Y	Y	Y	Y			Y		UT
Sheeprock Mountains (UT)	11	Y			Y	L	L	Y	Y	L		Y	L		UT
Emery (UT)	12	Y			Y	Y	Y	Y	Y	Y			Y		UT
Greater Parker Mountain (UT)	13a				Y	Y	Y			Y			Y		UT
Panguitch (UT)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	UT
Bald Hills (UT)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	UT
Ibapah (UT)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		UT
Hamlin Valley (UT)	15b	Y			Y	Y	Y			Y		Y	Y		UT
Box Elder (UT)	26b			Y	Y	Y	Y	L	Y	Y			Y		UT

Table 1-2. Threats to GRSG in the Great Basin Region (Utah) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan(s)
N. Great Basin (OR, ID, NV)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	ID/SW MT, OR, NV/CA
Baker (OR)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	OR
Central Oregon (OR)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	OR
W. Great Basin (OR, CA, NV)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		OR, NV/CA
Klamath (CA)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	NV/CA
Northwest Interior (NV)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		NV/CA
Southern Great Basin (NV)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		NV/CA
Quinn Canyon Range (NV)	16	Y			Y	Y	Y			Y	Y	Y	Y		NV/CA
Warm Springs Valley (NV)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	NV/CA
East Central (ID)	18	Y	L	Y	L	Y	L	Y		Y	Y		L		ID/SW MT
Snake-Salmon-Beaverhead (ID)	23		L	L	Y	L	Y	Y		L	Y	Y	L		ID/SW MT
Weiser (ID)	25	Y	L	L	L	L	Y	Y		L	Y		L	L	ID/SW MT
Sawtooth (ID)	27	Y	L		L	U	L			Y	Y		L		ID/SW MT
Southwest Montana (MT)	19-22		L		L	L	Y	L	L	L	Y		L	L	ID/SW MT

Table 1-2. (cont.) Threats to GRSG in the Great Basin Region (OR, CA, NV, ID, SWMT) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

1.4 National Greater Sage Grouse Conservation Strategy

Comment [SJM9]: Pls incorporate comments from RM ROD into this section; there seem to be spacing issues btw paragraphs that need to be standardized.

Based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a listing decision on this species, the BLM recognized the need to incorporate explicit objectives and concrete conservation measures into Resource Management Plans (RMPs) to conserve GRSG habitat and provide robust regulatory mechanisms. In August, 2011, the BLM chartered a strategy to revise and amend existing RMPs throughout the range of the GRSG to incorporate management actions intended to conserve, enhance, and restore the species and the habitat on which it depends. Separate planning efforts were initiated to address the conservation needs of the Bi-State population in California and Nevada, and the Washington State distinct population segment.

In light of the 2010 "warranted" determination by the FWS, and specific threats summarized in the COT Report, the BLM found that additional management direction and specific conservation measures on federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. The BLM proposed to incorporate the management direction and conservation measures into the BLM's land use plans. The goal of incorporating these specific measures into BLM land use plans is to conserve, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA may be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and Supplemental EIS to incorporate GRSG Conservation Measures into Land Use Plans (LUPs) across the range of the species. A total of 15 sub-regional planning efforts and associated EISs were intiated to analyze the alternatives developed for each of the plan amendments and revisions across the range of the species.[1] **Figure 1-5** illustrates the regional and sub-regional planning area boundaries, along with BLM-administered PHMAs and GHMAs across the Western United States.

[Insert **Figure 1-5** – Regional and Sub-Regional Boundaries with GRSG Habitat Management Areas (BLM-Administered Lands)]

Comment [SJM10]: Move down consistent with comments in RM ROD

The planning efforts associated with the National GRSG Conservation Strategy have been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by USFWS in the 2010 listing decision, along with the WAFWA Management Zones (MZs) framework (Stiver et al. 2006). Due to differences in the ecological characteristics of sagebrush across the range of the greater sage-grouse, WAFWA delineated seven Management Zones (MZs I-VII) based primarily on floristic provinces. Vegetation found within a MZ is similar and sage-grouse and their habitats within these areas are likely to respond similarly to environmental factors and management actions.

[1] The National GRSG Conservation Strategy consisted of 15 separate EISs. The Bighorn Basin RMP has been split between the two field offices that make up the Bighorn Basin planning area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.

The Rocky Mountain Region is comprised of BLM planning efforts (which includes plan revisions and plan amendments) in the states of Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin) and a portion of VII (Colorado Plateau). The Great Basin Region is comprised of planning efforts (plan amendments) in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. This region falls within WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. The NEPA EIS analyses were done at the sub-regional level. These sub-regions are based on the identified threats to the GRSG and the WAFWA MZs from the FWS 2010 listing decision with additional detail regarding threats to individual populations and sub-regions from the FWS COT report. In the Rocky Mountain Region, some sub-regions correspond to BLM field/district office boundaries, specifically for planning efforts that are incorporating GRSG conservation measures through plan revisions that were initiated prior to the start of the National GRSG Conservation Strategy in December 2011.

Comment [SJM11]: Move text from above here consistent with RM ROD

The BLM used the best available science, including additional review from the USGS on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered state GRSG conservation strategies where they existed, as well as state recommendations for measures to conserve GRSG on BLM-administered lands, where relevant, in the planning effort. These are reflected in the approved plans to the extent compatible with GRSG conservation objectives to conserve, enhance and restore GRSG habitat to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the Approved Resource Management Plan Amendments Address the Identified Threats to the Conservation of the GRSG

Comment [SJM12]: Pls insert comments here from the RM ROD as well

The 2006 WAFWA *Greater Sage Grouse Comprehensive Conservation Strategy* stated goal for management of the GRSG was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations". The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed".

In establishing the COT, with the backing of the Sage Grouse Task Force, FWS Director Dan Ashe affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report -- reversing negative population trends and achieving a neutral or positive population trend -- and emphasized the following:

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (WAFWA 2006 Strategy)"

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT stated, "[m]aintenance of the integrity of PACs … is the essential foundation for

sage-grouse conservation". To achieve this, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT emphasized an "avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

The plans were developed to address specific, identified threats to the species in order to conserve GRSG such that the need to list the species under ESA may be avoided. Across ten western States, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the FWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, priorities and approaches in each.

Comment [SJM13]: In both RODs sometimes "see" is capitalized and sometimes lowercase. Pick one for consistency

In order to protect the most important GRSG habitat areas, the planning effort began with mapping areas of important habitat across the range of the GRSG. In collaboration with state fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). In Utah, all occupied GRSG habitat was identified as PPH. The draft land use plans used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) in the Proposed RMP Amendments/Final EISs to identify the management decisions which apply to those areas (except for Nevada and Utah). The designated GRSG Habitat Management Areas on BLM-administered lands in the decision area include: PHMA, which largely coincide with Priority Areas for Conservation (PACs) identified in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report) (See **Figure 1-4**); GHMA; Other Habitat Management Areas (OHMA, applicable only to the Nevada and Northeastern California); and Important Habitat Management Areas (IHMA, applicable only to Idaho). **Table 1-4** identifies surface acres of PHMA, GHMA, OHMA, and IHMA in the decision area for the Great Basin Region.

Habitat maps were based initially on state key habitat maps which identified areas necessary for sage-grouse conservation derived from various data sources including breeding bird density maps and lek counts, nesting areas, sightings, and habitat distribution data including occupied suitable seasonal habitats, nesting and brood rearing areas, and connectivity areas or corridors. This information served as the basis for the development of BLM preliminary priority habitat (PPH) and preliminary general habitat (PGH) maps and, subsequently, for the identification of Priority Habitat Management Areas (PHMAs) and General Habitat Management Areas (GHMA), respectively. The COT also used state key habitat maps as a basis for identifying Priority Areas for Conservation (PACs). The COT report notes that there is substantial overlap between PACs and BLM PPH areas, with the exception of areas in Nevada and Utah [COT Report, p 13]. Figure 1-5 illustrates the regional and sub-regional planning area boundaries, along with BLM-administered PHMA and GHMA across the Western United States.

PHMA, GHMA, OHMA, and IHMA are defined as follows:

Comment [SJM14]: Add reference to the table showing BLM surface and mineral estate in Decision area for GB, similar to RM ROD

- **PHMA**— BLM-administered lands identified as having highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the Preliminary Priority Habitat boundaries. Areas of PHMAs largely coincide with areas identified as Priority Areas for Conservation (PACs) in the COT report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report).
- **GHMA**— BLM-administered lands that are occupied seasonal or year-round habitat outside of PHMA where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the Preliminary General Habitat boundaries.
- **OHMA** —BLM-administered lands in Nevada, identified as unmapped habitat in the Proposed RMP/EIS that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA** —BLM-administered lands in Idaho that provide a management buffer for PHMAs and connect patches of PHMAs. IHMAs encompasses areas of generally moderate to high habitat value habitat and/or populations, but that are not as important as PHMAs. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

Table 1-3
Surface Acres of PHMA, GHMA, OHMA, and IHMA in the Decision Area for the Great Basin Region

BLM administered surface acres	PHMA	GHMA	OHMA	IHMA
Idaho and Southwestern MT	4,627,200	2,179,700	0	2,737,600
Utah*	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern CA	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

*41,200 acres of National Forest System lands in the Anthro Mountain area of Utah would be managed as neither PHMA nor GHMA. These areas would be identified as "Occupied – Anthro Mountain." In the Utah ARMPA, these areas are considered split-estate, where the BLM administers the mineral estate.

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure 1-3** - Great Basin Region Decision Area - Greater Sage-Grouse Habitat Management Areas). Across the Great Basin Region, there are 8,385,280 acres of BLM administered SFAs. SFAs correspond to the areas identified by the FWS as GRSG "strongholds" and which represent "a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection". (http://www.fws.gov/greaterSageGrouse/documents/ESA%20Process/GRSG%20Strongholds%20memo%20to%20BLM%20and%20USFS%20102714.pdf).

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SFAs are areas of highest habitat value for GRSG and are managed to avoid new surface disturbance, given that they contain high-quality sagebrush habitat; highest breeding bird densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and, in some cases, are adjacent to protected areas that serve to anchor the conservation importance of the landscape. SFA management is consistent with the recommendations provided by FWS that these are the areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species."

This tiered habitat management area framework, in associated with the land use plan allocation decisions (explained more fully in Section 1.6.2 of this ROD) in the ~~ARMPs and~~ ARMPAs provide a high degree of certainty that the integrity of PHMAs can be maintained through management decisions to avoid or minimize additional surface disturbance.

Comment [SJM15]: Delete if we intend to only discuss the amendments at issue in the GB; keep if we are also referencing RM here.

Remaining habitats in GHMAs and IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important habitats outside of PACs be conserved to the extent possible". Thus, land allocations in GHMAs and IHMAs provide for more flexibility for land use activities while minimizing impacts on existing GRSG leks.

Major components of the -attached ARMPAs that address the specific threats to GRSG and its habitat, as identified in the ~~US~~FWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report) are listed and summarized in **Table 1-4**.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining, infrastructure, and	• PHMA: ~~I~~implement an anthropogenic disturbance cap of 3% within the Biologically Significant Unit and proposed project analysis areas in PHMA (slight variations to this management component in the State of Nevada only). • PHMA and IHMA: Apply a disturbance density cap of 1 energy and

Comment [SJM16]: In RM ROD, these are sometimes lower case after a colon. Should be internally consistent and consistent btw RODs. I have not gone through to change them all here. Pls also incorporate other revisions from RM ROD into the table. I also included some periods where those were missing.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
energy development.	mining facility per 640 acres (except in the State of Nevada). ● IHMA: Implement the 3% disturbance cap. Apply Anthropogenic Disturbance Development Criteria. ● Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. ● Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat. ● Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available. ● Consider the potential for the development of valid existing rights when authorizing new projects in PHMA. ● When authorizing third-party actions that result in habitat loss and degradation, require and ensure mitigation that provides a net conservation gain to the species.
Energy development—fluid minerals, including geothermal resources	● PHMA: Open to fluid mineral leasing subject to a No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exceptions. In SFAs, a NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if certain criteria are met. ● IHMA: Open to fluid mineral leasing subject to NSO stipulation without waiver or modification, and with limited exception. ● GHMA: Open to fluid mineral leasing subject to Controlled Surface Use (CSU) and Timing Limitation (TL) lease stipulations (except in the State of Utah where some portions of GHMA are open with standard lease stipulations) ● Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
Energy development—wind energy	● PHMA: Exclusion area (not available for wind energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) ● IHMA: Avoidance area (may be available for wind energy development with special stipulations) ● GHMA: Avoidance area (may be available for wind energy development with special stipulations) (except in the States of Utah and Idaho, where these areas are open to wind energy development)

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
Energy development—solar energy	• PHMA: Exclusion area (not available for solar energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) • IHMA: Avoidance area (may be available for solar energy development with special stipulations) • GHMA: Exclusion area (not available for solar energy development under any conditions) (except in the States of Oregon and Montana where these areas are avoidance areas for solar energy development and the State of Idaho, where these areas are open to solar energy development)
Infrastructure—major ROWs	• PHMA: Avoidance area (may be available for major ROWs with special stipulations) • IHMA: Avoidance area (may be available for major ROWs with special stipulations) • GHMA: Avoidance area (may be available for major ROWs with special stipulations) (except in the State of Utah where GHMA is open)
Infrastructure—minor ROWs	• PHMA: Avoidance area (may be available for minor ROWs with special stipulations) • IHMA: Avoidance area (may be available for minor ROWs with special stipulations)
Mining—locatable minerals	• SFA: Recommend withdrawal from the Mining Law of 1872
Mining—nonenergy leasable minerals	• PHMA: Closed area (not available for nonenergy leasable minerals, however, expansion of existing operations could be considered if the disturbance is within the cap and subject to compensatory mitigation.
Mining—salable minerals	• PHMA: Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)
Improper Livestock grazing	• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs followed by PHMA to ensure

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	compliance with the terms and conditions of grazing permits.
Free-roaming equid management	● Prioritize gathers in SFAs, followed by other PHMAs. ● Manage Herd Management Areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives. ● Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of Herd Management Area Plans in GRSG habitat.
Range management structures	● Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats. ● Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	● PHMA and IHMA: Do not construct new recreation facilities unless required for health and safety purposes or if the construction will result in a net conservation gain to the species. ● Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. ● PHMA & GHMA: OHV use limited to existing routes (routes to be designated through future travel management planning). The Utah ARMPA does retain two areas as open to OHV use in PHMA.
Fire	● Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. ● Restrict the use of prescribed fire for fuel treatments. ● Prioritize post-fire treatments in SFAs, other PHMAs, IHMAs, and GHMAs.
Nonnative, invasive plant species	● Improve GRSG habitat by treating annual grasses. ● Treat sites in PHMA, IHMA, and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	● PHMA: Maintain all lands capable of producing sagebrush (but no less than 70%) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. ● All BLM use authorizations will contain terms and conditions

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural conversion and exurban development	• GRSG habitat will be retained in federal management unless: (1) the agency can demonstrate that disposal (including exchanges) of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal (including exchanges) of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

1.6 Key Components of the BLM Greater Sage-Grouse Conservation Strategy

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG and their habitat by eliminating or minimizing threats to GRSG habitat identified in the 2010 listing decision and highlighted in the "background and purpose" section of the COT report. Consequently, consistent with guidance contained in the COT and NTT Reports, four essential components of the GRSG conservation strategy were identified: 1) avoiding or minimizing new and additional surface disturbances, 2) improving habitat conditions, 3) reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin, and 4) monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management as needed.

The land allocations and management actions included in the ARMPAs incorporate these components and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Land Allocations and Habitat Protection/Surface Disturbance Measures

The four Great Basin ARMPAs build on the designated habitat management areas described in **Section 1.5** by applying management actions to these areas to avoid and minimize disturbance associated with proposed projects as described below and shown in **Table 1.4**. Land use plan allocations specify locations within the planning area that are available or unavailable for certain uses and also prioritize conservation and restoration management actions applied to habitat management areas.

~~Through this ROD, the BLM adopts those portions of the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah EISs applicable to National Forest System lands, pursuant to the provisions of 40 CFR 1506.3(c). The EISs conducted for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Amendments sufficiently disclose and analyze all environmental issues associated with mineral leasing and provides support to the BLM to authorize mineral leasing in on USFS administered lands, should consent be provided by or consultation be required with the USFS prior to issuance of a lease, in compliance with applicable mineral leasing and NEPA regulations, and subject to further site-specific environmental analysis where applicable.~~

The COT Report states that "maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (COT, p 36). Areas of PHMA largely coincide with areas identified as PACs in the COT report.~~The COT Report notes that "loss and fragmentation of sagebrush habitats is a primary cause of the decline of sage-grouse populations".~~ While surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat as rangeland fire and invasive species,, the BLM ARMPAs include land allocations and management actions that avoid and minimize surface disturbance in PHMA for identified threats (e.g., energy, mining, infrastructure, improper grazing, free-roaming equids, recreation and urbanization). These land allocations and management actions are necessary because the location and extent of habitat loss to fire is difficult to predict and much of the habitat due to low precipitation in the Great Basin is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

The most restrictive allocations include requirements to avoid and minimize additional disturbance in SFAs, which are a subset of PHMA, where surface disturbance from fluid mineral development is avoided by NSO without waiver, modification, or exception. In addition, these areas will be recommended for withdrawal to address the risk of disturbance due to mining.

In PHMAs outside of SFAs new fluid mineral leasing would be subject to NSO with no waivers or modifications. Exceptions would be granted only if the proposed action would not have direct, indirect, or cumulative effects on GRSG or its habitat; or, if the action is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to GRSG. This is fully consistent with guidance in the NTT report which states, "Do not allow new surface occupancy on federal lands within priority habitats" (NTT, p. 23).

Similarly, PHMA is closed to non-energy and salable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free-use permits and the expansion of existing active pits for salable minerals and expansion of existing non-energy leasable development under certain conditions. This exception is included because of the importance of these materials to local communities and their limited disturbance which will be offset by the mitigation requirements. Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses the potential disturbance threat from coal development. In Utah, at the time an application for a new coal lease or lease modification is

submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

All PHMAs will be managed as exclusion areas for commercial renewable energy development (solar and wind) with the exception of areas outside of SFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas, however, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMA and GHMA) before approving development in PHMA. New rights-of-ways and development for transmission lines, pipelines, and related infrastructure would be avoided through restrictions on land use authorizations. In avoidance areas, exceptions would only be granted if it can be demonstrated that adverse impacts will be avoided or that residual impacts will be mitigated.

High voltage transmission lines will be avoided in PHMA. However, the planning, siting, and environmental review of a limited number of priority transmission lines (Transwest Express and portions (that are co-located with Transwest Express) of Gateway South, Gateway West and Boardman to Hemingway), which have been underway for a several years and are deemed critical to expanding access to renewable sources of energy and to improving the reliability of the western grid, will proceed through NEPA analysis of these proposed lines under separate authorization processes. Conservation measures for GRSG are being analyzed as part of those NEPA processes, which should achieve a net conservation benefit for GRSG.

While restrictions on future development in PHMA are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMA are tailored to allow disturbance but with restrictions to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for unavoidable impacts will be required for proposed projects in GHMA. Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. (See **Table 1-3** for more details on GHMA management decisions.) Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts to GRSG or its habitat and then compensating for unavoidable impacts to GRSG or its habitat, to a net conservation gain standard for the species. This is consistent with guidance in the COT Report which states: "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur. …If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal , state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs."

In addition to allocations that limit disturbance in PHMA and GHMA, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs, and GHMAs to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and as such, reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts to sensitive species, and decreases the need for compensatory mitigation.

Additionally, new recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat, or, unless required for health and safety purposes.

In PHMA and GHMA, travel is limited to existing routes until routes are designated through the implementation travel management planning process. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning processes.

In general, all forms of new development in PHMAs and GHMAs would either be closed, excluded, avoided, or developed only if the resultant effect is a net conservation gain to the GRSG or its habitat, ensuring that existing habitat would be protected and providing opportunities, through compensatory mitigation.

While improper livestock grazing can be a threat to GRSG habitat, grazing is not considered a discrete surface disturbing activity for purposes of monitoring and calculating disturbance. The plans address grazing management for the conservation of GRSG and its habitat and is further described in Section 1.6.2. ~~The plans address grazing management for the conservation of GRSG and its habitat by incorporating terms and conditions into permits to achieve habitat objectives and by prioritizing assessment and the review of grazing permits (see Section 1.6.2).~~

Disturbance Caps, Density Caps, Lek Buffers, and Required Design Features

In addition to the management actions and allocations discussed above, the ARMPAs provide further assurance that anthropogenic disturbances in PHMAs will be limited through the use of disturbance caps, density caps, and lek buffers.

A 3% anthropogenic disturbance cap in PHMA has been established in accordance with the recommendations contained in the NTT Report, and peer-reviewed literature from the Great Basin (Knick 2013). Disturbance will be calculated at two scales: first at a Biologically Significant Unit (BSU) scale determined in coordination with the state and second, for the proposed project area. BSUs are geographic units of PHMA that contain relevant and important GRSG habitat. In Oregon for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of anthropogenic disturbance cap and in some ARMPAs, the adaptive management habitat triggers.

If 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within PHMA in any given BSU, no further discrete anthropogenic disturbances (subject to valid existing rights) will be permitted on BLM-managed lands within PHMAs in that BSU until restoration of disturbed lands brings the BSU below the cap. If the 3% anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap.

An exception to the 3% disturbance cap is provided in designated utility corridors for purposes of achieving a net conservation gain to the species. This exception is limited to projects which fulfill the use for which the corridors were designated (e.g., transmission lines and pipelines) within the designated width of a corridor. This exception will concentrate future ROW surface disturbance in areas of existing disturbance and avoid new development of infrastructure corridors in PHMAs consistent with guidance in the COT report. In addition, the Oregon and Nevada/Northeast California ARMPAs include variations to the disturbance cap: Oregon does not allow more than 1% new anthropogenic disturbance per decade, not to exceed 3% disturbance at any time. In Nevada, permit exceedances of the 3% disturbance cap at the BSU and/or the project level can occur provided that the outcome results in a net conservation benefit to the species with the concurrence of the BLM, Nevada Department of Wildlife, and FWS in each exception.

In Southwest Montana (the BLM's Dillon Field Office), the BLM will limit disturbance to 3% until the State of Montana's Sage Grouse Plan's disturbance calculation methodology is instituted and is in effect at which time disturbance will be permitted up to a 5% cap. This is to recognize, as with the Wyoming Core Area Strategy, the importance of the all-lands-all-disturbances strategy that Montana plans to institute for sage-grouse conservation.
Appendix E of each of the attached ARMPAs includes additional information about the methodology for calculating anthropogenic disturbance at the BSU and project scales.

The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage co-location of structures to reduce habitat fragmentation. The limit is an average of one facility per 640 acres in PHMA in a project authorization area, consistent with guidance contained in the NTT Report. If the disturbance density in the PHMA in a proposed project area is, on average, less than 1 facility per 640 acres, the project can proceed through the NEPA analysis incorporating mitigation measures into an alternative. If the disturbance density in the proposed project area is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or redesigned so facilities are co-located into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The one facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer-distances as identified in the USGS Report Conservation Buffer Distance Estimates for GRSG – A Review (Open File Report 2014-1239). Lek buffer distances will be applied at the project specific level as required conservation measures to address the impacts to leks as identified in the NEPA analysis. The lek buffer distances vary by type of disturbance (road, energy development, infrastructure, etc.) and justifiable departures may be appropriate as fully described in Appendix B of the ARMPAs. In both PHMA and GHMA, impacts should be avoided first by locating the action outside of the applicable lek buffer-distance(s) as defined in the ARMPAs. In PHMA, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed. In GHMA, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions."

Additionally, Required Design Features (RDFs) are required for certain activities in all GRSG habitat, including oil and gas development, infrastructure, and other surface disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts to GRSG and its habitat from threats (such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators). However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area). In Nevada and Northeastern California, RDFs are also applied to their identified OHMAs.

1.6.2 Improving Habitat Condition

In addition to prescribing land use allocations and managing resource uses in order to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

The ARMPAs contain an overall habitat management objective that "In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush canopy cover or as consistent with specific ecological site conditions." To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into land management programs, including wild horse and burros, grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives through treatment of invasive annual grasses and the removal of encroaching conifers in SFA, PHMA, and GHMA, and restoration of degraded landscapes, including those impacted by fire events (See **Section 1.6.3**.)

The BLM recognizes that improper grazing ~~is~~ can be a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report recommendation for grazing states, "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)." To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs include requirements for the incorporation of terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review and processing of authorizations and field checks of grazing permits, and take numerous actions to avoid and minimize the impacts of range management structures (**see Table 1-4**).

The BLM will prioritize reviews and processing of grazing authorizations, as well as field checks of grazing permits in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMA, focusing first on riparian and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area, but rather reflects a decision to prioritize resources to ensure permittees and the BLM manage grazing properly in those areas most important to GRSG. If the BLM finds that relevant habitat objectives are not being met due to improper grazing, the BLM will work with the permittee to ensure progress towards habitat objectives.

To address the localized threat due to negative influences of grazing by free-roaming equids (wild horses and burros (WHB)), the BLM will focus on maintaining WHB Herd Management Areas in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending Herd Management Area (HMA) plans to incorporate GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFAs, then the remainder of PHMA, and then GHMA. In SFAs and PHMA, the BLM will assess and adjust AMLs through the NEPA process within HMAs when WHBs are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

During the implementation of the ARMPAs, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in GRSG habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action. This standard is consistent with the recommendation included in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* published by the FWS in September, 2014, which states that mitigation "should be strategically designed to result in net overall positive outcomes for sage-grouse". Mitigation will follow the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g. avoid, minimize, and compensate) and be implemented on BLM-managed lands in a manner consistent with Departmental guidance for landscape mitigation pursuant to Secretarial Order 3330. If impacts from BLM management actions and authorized third party actions result in habitat loss and degradation that remain after applying avoidance and minimization measures (i.e. residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

Comment [17]: Hotlink documents throughout

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams based on WAFWA Management Zones, including members from the respective states, Forest Service, FWS, and NRCS. These Conservation Teams will facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response. These Teams will

convene and respond to issues at the appropriate scale, and ~~to advise on these specific tasks and~~ will utilize existing coordination and management structures to the extent possible.

With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the *Integrated Rangeland Fire Management Strategy* will further these goals and objectives. The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the Integrated Rangeland Fire Management Strategy were designed to identify landscapes of high resistance and resilience based on research by Chambers (Chambers et al, 2014b). Additionally, by limiting or eliminating anthropogenic surface disturbance, especially in the SFAs, ensuring the integrity of the PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation efforts, connectivity and availability of sagebrush habitat will increase, thus contributing to increased climate resilience. The SFAs in particular, were identified as key areas to conserve as climate changes. The Oregon ARMPA commits to use climate change science concerning projected changes in species ranges and changes in site capability to adjust expected and desired native species compositions as that information becomes available.

As identified by the FWS 2010 decision and the COT report, climate change can impact efforts to conserve the GRSG and its habitat in a number of ways. While several ARMPAs acknowledge the potential impact of climate change on GRSG habitat and conservation efforts, specific strategies to address the impacts of climate change are limited. The BLM and Forest Service, in coordination with the FWS, will continue to assess the potential impacts of climate change on GRSG and its habitat and develop strategies to mitigate anticipated effects on GRSG conservation efforts. Changes to management decisions will require a plan revision or amendment, as appropriate, recognizing the need to ensure that future management direction improves the resilience of habitat areas essential to the conservation of the species. ~~.~~

1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency". For this reason, the ARMPAs seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush. Prescribed fire will not be used except under the following conditions: the NEPA analysis for the Burn Plan provides a clear rationale for why alternative techniques were not selected as a viable option, how GRSG habitat management goals and objectives would be met by its use, how the COT Report objectives would be addressed and met, and a risk assessment is prepared to address how potential threats to GRSG habitat would be minimized.

The cornerstone of the FIAT protocol is recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers, et al., 2014b). The final FIAT process report was completed in June 2014 by the Fire and Invasive Assessment Team. The BLM, the Forest Service, FWS, and other cooperating agencies agreed to incorporate this approach into the ARMPAs. This information is being used to identify and design projects to change vegetation composition and/or structure to modify potential fire behavior for the purpose of improving fire suppression effectiveness and limiting fire spread and intensity due to invasive grasses and conifer encroachment. The BLM *Greater Sage Grouse Invasive Annual Grasses & Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats.

Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species, and prioritize vegetation treatments closest to occupied GRSG habitats and near occupied leks. Through guidance in the ARMPAs supplemented by the *Integrated Rangeland Fire Management Strategy*, a commitment has been made to address the invasion and expansion of cheatgrass, medusa head, and other invasive grasses through expanded efforts to treat impacted acres and to accelerate and expand efforts to restore lands impacted by fire with native grasses and sagebrush seedlings. Efforts are underway to increase the acreages to be treated with chemical and biological agents to kill and stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion.

In addition to and complementing the ARMPAs described in this ROD, Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department"** (emphasis added). The strategy places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes, which are identified by the Fire and Invasives Assessment Tool (FIAT) for the Great Basin Region, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT Assessments provide a list of findings, recommendations, and considerations to protect, maintain, and enhance GRSG habitat. The Assessments also apply recent science and identify highly resistant and resilient landscapes to target fire management activities to these most important lands. In addition, through the issuance of a Leaders' Intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions with regard to the allocation of resources for firefighting in 2015. Additional resources have been allocated and will be targeted to fuel treatments (including invasive species control), suppression (through the prepositioning of fire-fighting resources and the training of additional Rangeland Fire Protection Associations, local volunteer firefighters, and veteran fire fighters), and habitat restoration in these areas. Firefighting assets (aircraft, firefighters and related equipment) will be located near areas of high priority for rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT Report noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective." The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats."

A rangewide monitoring and evaluation framework will be established and implemented as described in the Monitoring Framework (Appendix D of each attached ARMPA). This monitoring strategy has two parts: (1) implementation monitoring (i.e., are decisions being implemented in a timely manner, are actions taken consistent with the plan decisions), and (2) effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals). Through effectiveness monitoring, BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat to determine if the desired management objectives (e.g. avoiding and minimizing additional surface disturbance in PHMAs) have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, size of patches, etc.). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by state wildlife agencies and other partners, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRSG populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ameliorate negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Teams (as described in Section 1.6.2) will also be used to advise regional monitoring strategies and data analysis as described in the plans.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored - habitat condition and/or population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after the issuance or signature of this ROD.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the state, FWS, and the BLM to see if the causal factor can be determined and what

implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines).

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger is tripped, the BLM will implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. If a hard trigger is tripped in a PAC that crosses state boundaries, the WAFWA Management Zone GRSG Conservation Team will convene to discuss causes and identify potential responses.

In the event that new scientific information becomes available demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM will immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive such as an Instruction Memorandum (IM) or a plan amendment.

1.7 Unique Aspects of the Great Basin ARMPAs

The ARMPs and ARMPAs and their associated EISs were developed through four planning efforts across the Great Basin Region (as described in Section 1.1). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing, in particular, implementing measures to limit anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and state-specific management approaches.

This flexible landscape approach provided the opportunity to incorporate recommendations resulting from collaboration with the states and local cooperators as well as public comments in each planning area. The plans and their future implementation are strengthened by the contributions of local partners and their knowledge, expertise, and experience.

Measures incorporated into the plans remain consistent with the range-wide objective of conserving, enhancing, and restoring GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat, such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Great Basin Region's ARMPAs.

Idaho and Southwestern Montana

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The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third

category of habitat referred to as Important Habitat Management Areas (IHMA). IHMA are BLM-administered and National Forest System lands that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations. In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance while providing an acceptable additional level of flexibility in IHMA and GHMA since surface disturbance due to development is not as great a threat to habitat in the sub-region. The three tiers also serve as the foundation for an adaptive management approaches that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, IHMA will be managed as PHMA to maintain sufficient PHMA to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat, as described in Appendix E of the attached Idaho and Southwestern Montana ARMPA, which was developed by the BLM in concert with the Idaho Department of Fish and Game, Forest Service, and FWS. The Idaho and Southwestern Montana ARMPA also includes additional Required Design Features (RDFs) based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local FWS office. Examples include avoiding building new wire fences within 2 km of occupied leks and placing new, taller structures out of line of sight or at least one kilometer from occupied leks. The BLM will also work with the state of Idaho in setting priorities for the review and processing of grazing permits/leases in SFAs consistent with the methodology recommended by the State of Idaho in its proposed plan for the management of BLM-administered lands in the state.

On August 7, 2015, the Sawtooth National Recreation Area and Jerry Peak Wilderness Act (H.R. 1138) was signed into law. In accordance with the Wilderness Act (16 U.S.C. 1131 *et seq*.), certain Federal lands in the Challis National Forest and Challis District of the Bureau of Land Management in the State of Idaho, were designated as wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness. Approximately 12,430 acres of this wilderness area fall within BLM-administered PHMA, which is all SFA. This area will now also be managed as Wilderness consistent with the Wilderness Act. As specified in the Sawtooth National Recreation Area and Jerry Peak Wilderness Act, a wilderness management plan will be developed within 5-years of the signing of the Act and it will outline specific management guidance for the new wilderness area.

This bill also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas (WSAs) and they are no longer subject to management pursuant to Section 603(c) of the FLPMA. The acres released as WSAs include approximately 71,194 acres of PHMA, 11,923 acres of IHMA, and 5,912 acres of GHMA. The ARMPA decisions for these areas will not change as a result of the release.

Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine County, Custer County, the City of Challis, the City of Clayton, and the City of Stanley. These conveyances include approximately 53 acres of PHMA, 10 acres of IHMA, and 828 acres of GHMA that are reflected in the ARMPA as being administered by the BLM. Once conveyed, the BLM will adjust the maps and acres as they appear in the ARMPA through plan maintenance to depict

that these lands are not subject to the management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

The decisions affecting Southwestern Montana in the ARMPA consistent with the objectives of the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development. The BLM plan will permit the disturbance limit to go from a 3% to a 5% disturbance cap, consistent with the Montana Plan when the process for implementing their disturbance calculation methodology is instituted and effective. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if additional sage-grouse related management actions should be adjusted with coordination from the State of Montana and the FWS to achieve consistent and effective conservation across all lands, regardless of ownership.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the "2014 Coates Maps", developed locally using the best available science, and included "Other Habitat Management Areas", where required design features will be applied at the project level. Decisions for BLM-administered lands in the State of California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Decisions for BLM-administered lands in the State of Nevada incorporate key elements of the State of Nevada Greater Sage-Grouse Conservation Plan (State of Nevada 2014) including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the planning area. This mitigation strategy focuses restoration efforts in the key areas most valuable to the GRSG. The ARMPA adopts a Disturbance Management Protocol (DMP) to provide for a 3% limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, State of Nevada, and FWS. The plan provides for this exception due to the development of mitigation tools in Nevada, including the Conservation Credit System, in collaboration with the FWS. Furthermore, given the concurrence of the Nevada Department of Wildlife and FWS in each exception, this approach is consistent with conservation objectives. The Disturbance Management Protocol in BLM-administered lands in Nevada was also deemed sufficient such that the Nevada ARMPA does not utilize a disturbance density cap, which is required in the three other Great Basin Region ARMPAs.

In coordination with the FWS, the Nevada ARMPA also allows for an exception to the geothermal NSO which is an energy development priority for the state and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (Conservation Plan for Greater Sage-Grouse in Utah) and the State of Wyoming (Executive Orders 2011-05 and 2013-3), which establishes conservation measures for protecting GRSG and also focuses conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the state's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in GHMA because 96% of the breeding GRSG in Utah are within PHMAs where conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and required design features as well as requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates GHMA as open to wind energy and high voltage transmission ROW development (consistent with the net-conservation-gain mitigation framework for the ARMPA). The Utah ARMPA also designates GHMA open to oil and gas development with standard constraints.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Hagen 2011) which establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the State of Oregon in which disturbance is capped at 1% per decade, in addition to the 3% cap in BSUs and project analysis areas.

The BLM Oregon plans provide additional flexibility for wind development in PHMA in Harney, Lake, and Malheur counties by allowing avoidance rather than exclusion within PHMAs that are outside of the SFAs. In Harney, Lake and Malheur counties, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMA and GHMA) before approving development in PHMA. The BLM provided this flexibility after recognizing the extent of high and medium potential wind areas in these counties that is in PHMAs, the fact that wind energy is excluded in SFAs in these counties, and, after coordination with the USFWS, determining that the more rigorous disturbance cap (in which disturbance is capped at 1% per decade) and adaptive management triggers adopted by the Oregon plan would compensate for the limited wind development likely to occur in these areas. In addition, the plan encourages development of wind energy ROWs outside of PHMA first, or in non-habitat areas within PHMA, before development is permitted in higher value habitat areas. Due to these factors, the BLM finds these limited areas of flexibility for wind development are not inconsistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic areas where habitat enhancement and restoration activities are encouraged, as well as other strategic areas to address the impacts associated with climate change.

For additional information regarding the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs, which provides a crosswalk regarding how the ARMPAs address specific threats to GRSG identified in the COT Report through these state-specific management prescriptions.

Comment [19]: Hotlink.

1.8 Decision Rationale

The ARMPAs provide a comprehensive and effective conservation strategy for addressing the threats identified by the FWS such that the need for additional protections under the ESA may be avoided. The ARMPAs contain objectives which strive to conserve the GRSG and its habitat on BLM-administered lands across the remaining range of the species consistent with measures identified or recommended in the NTT or COT reports.

In combination with the sage-grouse conservation actions taken by the individual states within the remaining range of the species and separate but connected initiatives to address the threat of rangeland fire to curb the spread of non-native invasive grasses, and to promote conservation measures to benefit the Greater sage-grouse on private lands, the BLM and Forest Service proposed ARMPAs are an essential component of the effort to conserve the GRSG and its habitat. Combined, all of the ARMPAs associated with the BLM's National GRSG Conservation Strategy would affect approximately 66 million acres of the remaining habitat for the species.

The BLM Greater Sage-Grouse Conservation Strategy is built upon the following key concepts:

- **Landscape-level**: The planning effort encompasses the remaining habitat of the GRSG on BLM-administered public lands, covering 10 western states in the Great Basin and Rocky Mountain regions. As such, the strategy provides a coherent framework across the BLM RMPs to implement landscape-level conservation for GRSG while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple use and sustained yield mandates under FLPMA. The conservation measures included as part of this landscape - level conservation effort address identified threats to the species, recognizing local ecological conditions, and incorporating existing conservation efforts where they are consistent with the overall objective of conserving GRSG across its remaining range.
- **Best Available Science** – The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, state agencies, the US Geological Survey, the FWS and other sources. The COT Report provided a "blueprint" for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The BLM National Technical Team (NTT) Report provided additional guidance for addressing the most significant threats to the GRSG. A series of subsequent reports on how to improve efforts to reduce the threats of rangeland fire and invasive species prepared in collaboration with the WAFWA, as well as a report to the Secretary of the

Interior entitled "An Integrated Rangeland Fire Management Strategy" also informed the GRSG conservation.

- **Targeted, Multi-Tiered Approach** – The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration efforts to the most important habitat management areas as determined by state and federal sage grouse experts, largely consistent with the Priority Areas for Conservation (PACs) identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as Priority Habitat Management Areas (PHMAs). Within PHMA, the ARMPAs/ARMPs provide an added level of protection to eliminate most surface disturbance through the delineation of Sagebrush Focal Areas (SFA), derived from areas identified by the FWS as "strongholds" essential for the species' survival. General Habitat Management Areas (GHMAs), recognize the potential value of habitat areas outside of PACs -- as recommended by the COT -- where surface disturbance is minimized while providing greater flexibility for other land resource uses.
- **Coordinated**: The ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, federally-administered lands essential to the conservation of the GRSG are managed in a coordinated manner. The FWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative**: The ARMPAs reflected extensive input from the relevant states, collaborators, and stakeholders and the public from the outset. The ARMPAs were developed with the benefit of input from the individual states and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force (SGTF) was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate state and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG consistent with the multiple-use and sustained-yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis and recommendations for GRSG conservation including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through a collaborative effort of state and federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report –which identified threats to GRSG habitat as well as the most important habitat to protect--provided an important framework for development of the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of state and federal scientists, wildlife biologists, resource managers, and policy advisors, was tasked by the Director of the FWS "with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future."

In addition, the Fire and Invasives Assessment Team (FIAT) Report and the USGS compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and

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infrastructure on GRSG populations -- *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review*, and the *Integrated Rangeland Fire Management Strategy: Final report to the Secretary* (Manier et al, 2014; DOI 2015b) provided important guidance in the development of critical aspects of the proposed ARMPAs/ARMPs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG experience where consistent with the overall GRSG management objectives.

The BLM ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs/ARMPs also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate state-developed conservation measures in each of the sub-regional plans has added complexity in developing the overall conservation strategy, the body of local knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the difficult task of implementing the plans upon completion.

In his transmittal letter accompanying the final COT report, FWS Director Dan Ashe reaffirmed his charge, "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. … Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels."

The ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report, and the BLM NTT Report. As previously noted, the COT Report stated, "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

In order to address the identified threats and meet the recommendations of the COT, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMA which align closely with PACs identified in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report). Within PHMA, the plans identify SFAs based on the FWS analysis of strongholds for the species based on population density, habitat integrity, and resilience to climate change among other factors. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in wild horse and burro populations to achieve AML). This approach will allow the BLM to

target limited resources to those areas identified by the FWS which are most important to long-term ecosystem health and species persistence.

PHMA and GHMA boundaries are based on Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH) (except in Utah, where PPH was derived from occupied habitat). Consistent with BLM's Instruction Memorandum 2012-044, PPH and PGH are based on data and maps developed through a collaborative effort between the BLM and the respective state wildlife agency. PPH and PGH (PHMA and GHMA in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty 2010), sage grouse proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas. PGH (now GHMA) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

Allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMA – from energy, to transmission lines, to recreation facilities and grazing structures are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. In all instances, whether in PHMA or GHMA, any adverse impacts associated with development would have to be compensated with habitat protection or restoration activities that produce a net conservation benefit for the GRSG. The ARMPAs/ARMPs will also prioritize future oil and gas leasing and development outside of identified GRSG habitat management areas (i.e., SFAs, PHMAs, and GHMAs) to reduce the potential for future conflict with GRSG.

In addition, the ARMPs and ARMPAs include measures to limit surface disturbance in PHMA through the establishment of disturbance limits or "caps" and density restrictions of on average 1 energy facility per 640 acres, as well as lek buffers. These requirements reflect recommendations contained in the NTT Report and are consistent with certain state strategies that were already in place before the initiation of the BLM's National GRSG Conservation Strategy. As described in Section 1.6.1, BLM determined the appropriate lek buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al, 2014) based on best available science.

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in SFAs, then in PHMAs, and finally in areas designated as GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMA or GHMA will be designed to a net conservation gain standard consistent with the recommendation included in the September 2013 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework*. According to the authors, the Framework was prepared …

> "to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse".

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT to …

> "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g. shrub cover, nesting cover)."

The ARMPAs also address the adverse impacts of free-roaming equids (wild horses and burros) on GRSG habitat by prioritizing gathers and removal of wild horses and burros to achieve AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has been working with the National Academy of Sciences to conduct new research of methods to reduce wild horse and burro reproduction rates. Through a combination of targeted gathers and the development of an effective agent for controlling future free-roaming equid reproductive rates, over time, this threat to GRSG may be effectively managed.

Since the interaction of fire and invasive species represents the greatest threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat that led to Secretarial Order (S.O.) 3336 and subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior*.

http://www.forestsandrangelands.gov/rangeland/documents/IntegratedRangelandFireManagementStrategy_FinalReportMay2015.pdf

In accordance with the S.O. and subsequent rangeland fire management strategy, substantial changes in policy and management direction affecting all aspects of the rangeland fire management program – from better coordination between resource managers and fire management officers; to the identification and prioritization of prevention, suppression, and restoration efforts in SFAs, PHMAs, and GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This effort, and the initiative to fight the spread of non-native invasive species that contributes to higher rangeland fire risk (e.g. cheatgrass) discussed below, has fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

The COT report – and other more recent research and analysis – amplify concern for the contribution of cheatgrass and other invasive annual species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers (Chambers et al, 2014b) led to the development of the Fire and Invasives Assessment Tool (FIAT) and a subsequent assessment that identified areas of resistance and resilience to fire within

SFAs, PHMAs, and GHMAs. Through use of the FIAT Assessment/Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss as well as target restoration to those areas important to the species where success is more likely. The BLM is also committed to and accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive annual species.

Even prior to completion of the FIAT assessment, BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY2014 Omnibus Appropriation, BLM prioritized the funding of treatments and activities within each state that benefit GRSG (See **Figure 1-6)**.

In addition, the Sage Grouse Initiative (SGI) launched by the Natural Resources Conservation Service in 2010 also contributes to the effort to protect and restore important GRSG habitat. In collaboration with the states and private landowners on private lands, as well as with the BLM and USFS on federally-administered public lands, NRCS has worked to reduce the encroachment of pinyon-juniper trees and restore rangeland habitat on private and BLM-administered lands.

[Insert Figure 1-6. FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments.]

To further supplement these efforts, the Department has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes and BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. The Department has identified required policy changes to increase the commitment, flexibility and time frame for use of Emergency Stabilization and Burned Area Restoration (ES & BAR) funding on priority sagebrush-steppe habitats.

Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy,* the BLM and Forest Service conservation strategy places heavy reliance on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs. Monitoring plans will be developed in coordination with relevant state and federal agencies and will incorporate evaluation of GRSG population trends by the states and changes in habitat condition by the federal land management agencies. As the WAFWA report states …

> Monitoring provides the "currency" necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and there, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort.

In addition, the ARMPAs incorporate an adaptive management framework that provides an "early warning system" of "soft triggers" to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes in population levels or habitat conditions occur. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and "hard triggers" are reached, the ARMPAs identify measures that will be put in place, including plan-level responses, in an effort to reverse the declines.

In summary, the ARMPAs emphasize an "avoidance first" strategy consistent with the recommendations in the COT Report by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished through identification of important GRSG habitat areas and then applying allocations that exclude or avoid surface disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, are important to the long-term conservation of GRSG. Restoration decisions include specific habitat objectives, and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management Strategy* as well as NRCS' Sage Grouse Initiative (SGI) investments in private landowners' conservation efforts. This strategy reflects a high level of commitment by federal partners to conserve the GRSG and its habitat. These actions on over half of the most important lands for GRSG conservation will serve as an anchor and complement the significant actions being taken by state and local governments as well as private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of new conservation actions that will go into effect through the BLM ARMPAs as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for both resource management agencies since 2010 and a long-term commitment to assure the conservation of the species consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape for the BLM and amplifies the need for collaboration among federal, state, tribal, and private partners to conserve the GRSG consistent with direction articulated in the NTT report:

"Land uses, habitat treatments, and anthropogenic disturbances will need to be managed below threshold necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to sage grouse habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future."

The conservation benefits to the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPs and ARMPAs provide an essential foundation for conserving the GRSG which, in conjunction with the amended Forest Service LRMPs, affect nearly two-thirds of GRSG habitat across the remaining range of the species. In conjunction with similar conservation efforts by other federal and state agencies, private landowners, and local partners, the BLM National GRSG Conservation Strategy constitutes an historic conservation effort that will benefit more than 350 species and the sagebrush ecosystem upon which they depend. It is through collaborative efforts to conserve the imperiled sagebrush ecosystem that conservation of the GRSG and other sagebrush obligate species can best be achieved and the listing of the GRSG under the ESA may be avoided.

1.9 Implementation

Future decisions made in conformance with the ARMPAs serve to continuously and actively implement its provisions. Decisions presented as Management Decisions can be characterized as *immediate* or *one-time future* decisions.

Immediate Decisions: These decisions are the lands use planning decisions that go into effect upon signature of the ROD. These include goals, objectives, allowable uses and management direction, such as the allocation of lands as open or closed for saleable mineral sales, lands open with stipulations for oil and gas leasing, and OHV area designations. These decisions require no additional analysis and guide future land management actions and subsequent site specific implementation decisions in the planning area. Proposals for future actions such as oil and gas leasing, land adjustments, and other allocation-based actions will be reviewed against these land use plan decisions to determine if the proposal is in conformance with the plan.

One-Time Future Decisions: These types of decisions include those that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementation of "one-time" RMP decisions will be based on several criteria, including:

- Current and projected resource needs and demands,
- National BLM management direction, and
- Available resources.

General Implementation Schedule of "One-Time" Decisions: Future Decisions discussed in the attached ARMPAs will be implemented over a period of years depending on budget and staff availability. After issuing the ROD, BLM will prepare implementation plans that establish tentative timeframes for completion of "one-time" decisions identified in these ARMPs and ARMPAa. These actions require additional site specific decision-making and analysis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, changing program priorities, non-discretionary workloads, and cooperation by partners and external publics. Yearly review of the plan will provide consistent tracking of accomplishments and provide information that can be used to develop annual budget requests to continue implementation.

1.9.1 Additional Implementation Guidance and Considerations

Instructional Memoranda – Additional instruction and management direction will be necessary to implement certain land allocation decisions and direction included in the ARMPAs. For example, additional guidance will be provided to clarify how the Bureau will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat. Instructional

Memoranda (IM) and related guidance will be completed by the BLM-Washington office. The BLM intends to complete IMs for the following management direction within 90 days of the RODs: oil and gas leasing and development prioritization and livestock grazing. Other IMs, including, monitoring, and mitigation, will be developed as necessary. Issuance of this national guidance will supersede any related national and field level guidance currently in effect. Additional national, state and field level guidance will be developed as necessary to implement the decisions in the plans.

Comment [HMS21]: Note that this is still under discussion, between saying:

"The BLM will complete IMs for…"

Vs

"The BLM intends to complete IMs for…"

Map Adjustment and GRSG Seasonal Habitats – PHMA was designed to include breeding bird density, sage-grouse proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas, and GHMA was designed to include the areas of occupied seasonal, connectivity, or year-round habitat outside of PHMA. As additional important habitats are identified, the BLM will map, and incorporate these habitats for GRSG, consistent with best available science, through subsequent plan revisions or amendments, as appropriate. Priority should be given to ensuring that wintering habitat is identified and captured in all changes in habitat maps subsequent to this decision. In the interim, the BLM will use the existing maps for all decisions.

Continued Commitment to Research and Use of Best Available Science: Through implementation of this strategy, new management issues and questions are likely to arise that may warrant additional guidance and/or study by technical experts, scientists, and researchers. The BLM is committed to continue to work with individuals and institutions with expertise in relevant fields in order to ensure that land and resource management affecting conservation of the GRSG and the sagebrush ecosystem continues to be guided by sound, peer-reviewed research and the best available science.

Training -- Given the nature and complexity of the management direction in these ARMPAs, the BLM, in collaboration with the Forest Service and the FWS, will develop and implement a schedule of trainings for key functions, actions, and decisions associated with these plans. In this manner, the BLM will seek to better inform its personnel, partners, cooperators, and stakeholders of the changes in management that will result from this new management paradigm.

2. DECISION

2.1 Summary of the Approved Management Decisions

The decision is hereby made to approve the Great Basin Region Greater Sage-Grouse ARMPAs for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments 1 through 4). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs amend the land use plans described in **Sections 1.3** of attachments 1 through 4.

The land use decisions conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes), and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective upon signing of this ROD, they generally require additional implementation decision steps before on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 What the Record of Decision and Approved Resource Management Plan Amendments Provide

The ARMPAs include GRSG and GRSG habitat land use plan level management decisions in the form of:

- Goals
- Objectives (Desired Future Conditions)
- Land Use Allocations and Allowable Uses
- Management Actions

Goals are the broad statements of desired outcomes, and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the planning area that are available or not available for certain uses and are also used to prioritize conservation and restoration management actions. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/ or sale, and what lands are open, closed, or limited to motorized travel (please note that all acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Management decisions/actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands, including but not limited to stipulations, guidelines, best management practices (BMPs), and required design features.

The ARMPAs' management decisions were crafted to incorporate conservation measures into LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats (see **Section 1.3**).

The EISs conducted for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Amendments sufficiently disclose and analyze all environmental issues associated with mineral leasing on USFS administered lands, should consent be provided by or consultation be required with the USFS prior to issuance of a lease, in compliance with applicable mineral leasing and NEPA regulations, and subject to further site-specific environmental analysis where applicable.

2.3 What the Record of Decision and Approved Resource Management Plan Amendments Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for land use plan level travel management area decisions in the Idaho and Southwestern Montana ARMPA.

The ARMPAs and ARMPs do not violate valid existing rights.

The ARMPAs do not contain decisions for the mineral estates that is not administered by the BLM. ARMPA decisions for surface estate only apply to BLM managed lands. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

- *Statutory requirements.* The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy.* The decision will not change BLM's obligation to conform to current or future National policy.
- *Funding levels and budget allocations.* These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

2.4 Modifications and Clarifications

The ARMPAs in the Great Basin Region include minor modifications and clarifications to the Proposed RMPs and RMP Amendments. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency review. These modifications and clarifications are hereby adopted by this ROD.

The following modifications/clarifications were made to all of the ARMPAs in the Great Basin Region.

- ARMPA Formatting: The plans were reformatted between the Proposed RMPA and ARMPA planning stages for consistency across the Great Basin Region; the order of management actions and the prefixes for the goals, objectives, and management actions were changed in the ARMPAs to provide consistency among the amendments and revisions for GRSG goals and objectives.
- U.S Forest Service References (applicable only to the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah ARMPAs): All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plan Amendment under their planning authorities.
- Fire: Management actions/decisions were modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.
- Livestock Grazing: The following statement, "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3," was added to the management action/decision which reads, "At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks."
- Glossary: Numerous glossary definitions were deleted due to the fact that the terms were not used/referenced in the ARMPAs. If not already contained in the Proposed RMPAs' glossary, the following terms and definitions were added to the glossary for clarification:
    - Grazing Relinquishment: the voluntary and permanent surrender by an existing permittee or lessee, (with concurrence of any base property lienholder(s)), of their priority (preference) to use a livestock forage allocation on public land as well as their permission to use this forage. Relinquishments do not require the consent or approval by BLM. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.
    - Transfer of Grazing Preference: the BLM's approval of an application to transfer grazing preference from one party to another or from one base property to another, or both. Grazing preference means a superior or priority position against others for the purposes of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee.
    - Valid Existing Right: Documented, legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include but are not limited to fee title ownership, mineral rights, rights-of-way, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.
    - Mining Claim: A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the Mining Law and

local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, millsite, and tunnel site.

- Energy or Mining Facility: Human constructed assets designed and created to serve a particular function and to afford a particular convenience or service that is affixed to a specific locations, such as oil and gas well pads and associated infrastructure.

- GRSG Habitat Mapping: Information was added to the ARMPAs to specify that when new information becomes available about GRSG habitat, including seasonal habitats, in coordination with the state wildlife agency and FWS, and based on best available scientific information, the BLM may revise the GRSG habitat management area maps and associated management decisions through plan maintenance or plan amendment/revision, as appropriate.
- Adaptive Management: The Greater Sage-Grouse Adaptive Management Strategy was revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.
- Vegetation: The desired condition for maintaining a minimum of 70% of lands capable of producing sagebrush with 10 to 30% sagebrush canopy cover in SFAs and PHMAs was modified to read as follows: "In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush canopy cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6)."
- GRSG Habitat Objectives: For clarification purposes, within each of the ARMPA GRSG Habitat Objectives Tables, native bunchgrasses was provided as an example of a perennial grass cover and the inclusion of residual grasses was added to the perennial grass cover and height objective.
- Sagebrush Focal Areas: Examples of the types of vegetation and conservation actions that will be prioritized within SFAs were provided for clarity in the management action/decision. These examples include land health assessments and wild horse and burro management and habitat restoration actions.
- Required Design Features: One of the criteria for demonstrating that a variation to an RDF is warranted was modified to include the following statement, "An alternative RDF, a state-implemented conservation measure or plan-level protection is determined to provide equal or better protection for GRSG or its habitat."
- Lands and Realty: The following management actions/decisions and objectives were calrified:
  - Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
  - Within existing designated utility corridors, the 3% disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location.

- Land Tenure: Management action associated with land disposals was clarified to include land exchanges as a means of disposal.
- WAFWA GRSG Conservation Team. Additional clarification was added to ARMPAs related to the WAFWA GRSG Conservation Teams that were identified in the Proposed RMPAs: "WAFWA management zones will be used to facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response, through WAFWA GRSG Conservation Teams (Teams). These Teams will convene and respond to issues at the appropriate scale, and ~~to advise on these specific tasks and~~ will utilize existing coordination and management structures to the extent possible."
- Cheatgrass: The following management action was included consistent with the purpose and need and objectives of the ARMPAs: "Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species."
- Valid Existing Rights: The following management action was added to the ARMPs and ARMPAs: "Consider the potential for the development of not-yet-constructed valid existing rights of surface disturbing activities as defined in Table 2 of the Monitoring Framework prior to authorizing new projects in PHMA."

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the FEIS in various places was grouped into a stipulation appendix and added it to the ARMPA as Appendix G Stipulations.
- Appendix G Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA was modified to delete the reference to Tables 2 to 7. Tables 2 to 7 were deleted from the FEIS Appendix G before it was made available to the public for protest, but the reference was not deleted in text of the Appendix. This discrepancy was identified during protest resolution and by the Governor during the Governor's Consistency Review. These values will be calculated after the signing of the ROD (see Adaptive Management below).
- Many editorial changes including, deleting repeated numbers, spelling errors, etc, were made when finalizing the ARMPA.
- On August 7, 2015, President Barack Obama signed into law the Sawtooth National Recreation Area and Jerry Peak Wilderness Act (H.R. 1138). In accordance with the Wilderness Act (16 U.S.C. 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the Bureau of Land Management in the State of Idaho, comprising approximately 116,898 acres, were designated as wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness. This bill also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas and they are no longer subject to section 603(c) of the FLPMA. In accordance with the Recreation and Public Purposes Act, this law also

conveyed public lands to Blaine County, Custer County, the City of Challis, the City of Clayton, and the City of Stanley. The new wilderness area, the release of the WSAs, and the lands that were conveyed by this law were not within the decision area of the Idaho and Southwestern Montana ARMPA, therefore, no changes to the ARMPA have been made as a result of the passage of this law.

Special Status Species

- Deleted the Seasonal Timing Restrictions from Appendix C FEIS to reduce redundancy because these restrictions were already in the Required Design Features Appendix.

Renewable Energy

- Managed Decision RE-2 was modified to include the statement, "In Harney, Lake and Malheur counties, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMA and GHMA) before approving development in PHMA."

Livestock Grazing

- Livestock Grazing RM-16 and RM 18, which are now MD LG 15 and MD LG 17 respectively in the ARMPA, had the following sentence added as an accepted recommendation made by the Governor during the Governor's Consistency Review to clarify management and conservation action prioritization in SFAs and: "Management and conservation action prioritization will occur at the Conservation Area (CA) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFAs followed by areas of PHMA outside SFAs."

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in PHMA, IHMA, and GHMA would only be available for disposal through exchange. This was removed because it was not consistent with BLM policy and the net conservation gain clause in MD LR-13 will provide assurance that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes such as changing 'should' to 'shall', and 'would' to 'will' to reflect the final decision language.

- Re-categorizing some of the Management Decisions into other common resource programs. For example, all of the Fire and Fuels management decisions are all numbered under FIRE, and are not split into different sub-category names.
- Re-lettering of the critical Appendices, and deletion of those that are no longer applicable for the ARMPA.

Special Status Species

- Added clarity to MD SSS 2 A 3, by describing what energy and mining facilities to which this decision would apply; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A, by including references to valid existing rights and applicable law for the requirement of a 'net conservation gain'.
- Specified in MD SSS 8 that this activity would be coordinated with NDOW or CDFW, and that breeding activity surveys would be for actions involving mineral activities and rights-of-ways.
- Deleted Action PR 4 from the Proposed LUPA because BLM does not manage landfills and transfer stations.
- Under the Brood Rearing/Summer category, it was clarified that the objective of the 7 inch deep rooted perennial bunchgrass in upland habitats was only for a 522-foot (200 meter) area around riparian areas and meadows. The additional reference was added for Casazza et al. 2011
- The footnote #7 was replaced. The original footnote stated that the "specific height requirements needed to meet the objective will be set at the time of HAF assessments". This is incorrect, because the height requirements will need to be set well in advance of the HAF assessments.
- The footnote #7 was replaced with "Any one single habitat indicator does not define whether the habitat objective is or is not met. Instead, the preponderance of evidence from all indicators within that seasonal habitat period must be considered when assessing sage-grouse habitat objectives." This addition was for the purpose of clarification.

Adaptive Management

- Moved the Adaptive Management Strategy section out of Chapter 2 and made it into Appendix J; moved the Adaptive Management decisions under MD SSS 17 – MD SSS 22.
- Clarified under MD SSS 21 that BLM will coordinate with NDOW, and that the decision was specific to mineral activities and rights-of-way actions.

Fire and Fuels Management

- Deleted 'field offices and districts' from MD FIRE 3, as there will be a multi-layer approach to coordination, including BLM State Offices.
- In Objective FIRE 3, added 'in SFAs first' to provide more emphasis to the SFA over the rest of the PHMA for this action.

- Modified MD FIRE 26 to delete 'Districts', as there will be a multi-layer approach to identifying treatment needs for wildfire and invasive species management across the state.
- Added 'FWS' as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 1 was modified for clarity and to include the fact that BLM would conduct appropriate consultation, cooperation and coordination
- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include, "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to". This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock or is being purposefully rested."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…"

Mineral Resources

- Management Decision MR 18 was modified to provide the Barrick Enabling Agreement as an example of appropriate mitigation that can be considered in the future, and the last sentence was removed because it only repeated BLM regulations, and is unnecessary.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet in width… "or a different width is specified for congressional designated corridors". This is in response to the Lincoln County Conservation Recreation Development Act (2204) which included congressionally designated corridors that were not included in the plan amendment or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this Act.
- Action LR-LUA 21 from the Proposed Plan was deleted because the Federal Highway Administration and the Nevada Department of Transportation already have valid existing rights associated with their easements and ROWs, and this planning effort would not change the terms and conditions of their existing easements or ROWs. Making this a Management Action is repetitive and unnecessary.

Travel and Transportation

- Due to confusion that was outlined in protest letters and in the Governor's Consistency Review, MD TTM 2 was clarified that limiting off-highway travel to existing routes in PHMAs and GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations".
- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning". This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment", as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning area, the two Mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed LUPA (which are now separate Appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Lands and Realty

- A typographical error in the socioeconomic analysis of the proposed RMPA was identified during the Protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows: Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D,E, F, and the Proposed Plan…" is replaced with: "Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-state providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on

terrain. In rural areas, burial of new distribution lines would be more than double the cost of new overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers, infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat."

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and anthropogenic disturbances. This modification was recommended by the Governor during the Governor's Consistency Review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the proposed RMPA, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMP Amendment, the use of words like "would," "could," "should," and "may" were generally removed or revised to reflect the active management direction of an ARMPA rather than potential management presented when the Proposed RMP Amendment was one of many alternatives the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMP Amendment), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMP Amendment), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog (UPD), a federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is applied to all applicable objectives and management actions, not just the five actions in the Proposed RMP Amendment where this concept and language was already present.
- Throughout the Proposed RMPA there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or state biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during the Governor's Consistency Review.

- The Proposed RMP Amendment introduced the term "biologically significant units" (BSU) for adaptive management and the disturbance cap to provide a consistent approach for managing and monitoring across the GRSG range. In the Utah Sub-Region, the BSU concept is the same as PHMA within population areas. As part of resolving protests, the ARMP was revised to note that "BSUs" are PHMA within population areas. Whenever the term BSU was used, it was replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across state lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMP Amendment, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA management zones when addressing designation of PHMA. This change was made during the Governor's Consistency Review to more closely reflect the management in the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah (2013).
- MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA was revised to include the following text: "The BLM will apply these goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language was added based on an accepted recommendation made by the Governor during the Governor's Consistency Review.
- The language of MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, regarding non-habitat areas within PHMA and GHMA was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMP Amendment, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMP Amendment, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual, incremental increases in noise levels.
- The language of MA-GRSG-6 from the Proposed RMP Amendment, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside PHMA/GHMA. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction regarding management of areas outside PHMA/GHMA that have been treated to improve GRSG habitat. The change was necessary to avoid implication of

changing allocations or altering PHMA/GHMA boundaries outside a planning process while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

Livestock Grazing

- The language of MA-GRA-6 from the Proposed RMP Amendment, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to align with similar concepts and intent that was present in the livestock grazing sections in GRSG amendments throughout the Great Basin.

2.5 Protest Resolution

BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest proposed planning decisions within 30 days from the date the Notice of Availability of the Proposed RMP/Final EIS was published in the Federal Register (May 29, 2015). Below are descriptions of the protest resolution process for each of the four Great Basin Region PRMPAs/FEISs.

The Director concluded that the BLM followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed Land Use Plan Amendments/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed Land Use Plan Amendments/Final EISs, though minor clarifications were made and are summarized in Section 2.4.1. The BLM Director's decisions on the protests are summarized in each of the PRMPAs/FEISs Director's Protest Resolution Reports, which are available on the following BLM website:
http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

2.5.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed LUPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,

- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty, and
- travel and transportation management.

2.5.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed LUPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- Air Quality,
- Climate Change,
- Noise,
- ACECs,
- solid minerals,
- special status species,
- lands with wilderness characteristics,
- lands and realty,
- tribal issues,
- wild horse and burros, and
- travel and transportation management.

2.5.3 Oregon

For the Oregon GRSG Proposed LUPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as

they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- monitoring,
- ACECs,
- fire and fuels management,
- solid minerals,
- special status species, and
- travel and transportation management.

2.5.4 Utah

For the Utah GRSG Proposed LUPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- land use allocations,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- air quality,
- climate change,
- noise,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty,
- travel and transportation management, and
- reasonable foreseeable development scenarios.

2.6 Governor's Consistency Review

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)). The general requirement in FLPMA/planning regulations is to coordinate the land use planning process with plans of other agencies, states, and local governments to the extent consistent with law (see FLPMA s. 202(c)(9) and 1610.3-1(a)); and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with federal law, or to maximum extent practical) (see 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to state, local, and tribal land use plans and provided meaningful public involvement throughout the development of the Proposed RMP Amendments/Final EISs.

The BLM is aware that there are specific state laws and local plans relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that BLM's land use plans be consistent with officially-approved state and local plans only if those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Where officially-approved state and local plans or policies and programs conflict with the purposes, policies, and programs of federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved state and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to state or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors identifying inconsistencies between the BLM's proposed RMP amendments and their state's or local governments' resource-related plans, policies and/or procedures, as well as other concerns that they had with the proposed planning documents. The BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected on August 6, 2015. These Governors were then provided with 30-days to appeal the BLM State Director's decisions to the BLM Director. By September 8, 2015, the BLM Director received appeals from.

Comment [mem22]: Need to update when GCR process is towards completion.

In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications to the ARMPAs were made and are summarized in Section 2.4.1.

3. ALTERNATIVES

3.1 Alternatives Considered

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs in order to meet in the purpose and need of this effort to identify and incorporate appropriate management direction in LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. All management considered under any of the alternatives complied with federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping, and to maintain or increase GRSG abundance and distribution in the planning area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMP amendment. The goal was met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law there are typically few or no distinctions between alternatives.

3.1.1 Alternative A – No Action Alternative

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction derived from the existing field/district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. This alternative did not include changes that are needed to be made to the existing decisions based on the FWS 2010 listing petition decision that identified inadequacy of regulatory

mechanisms as a significant threat to GRSG and its habitat. This alternative did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B: National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the National Technical Team (NTT) Report. The GRSG National Technical Team (NTT), comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-Grouse Conservation Measures* in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable sage-grouse populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones. The NTT Report proposed conservation measures based on habitat requirements and other life history aspects of sage-grouse and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. The Report can be accessed at:
http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

The BLM's Washington Office Instructional Memorandum (IM) Number 2012-044 directed the sub-regional planning efforts to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in PHMA and avoid development in GHMA, would close PHMA to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals, and would recommend withdrawal from locatable mineral entry in all PHMA. These management actions would reduce surface disturbance in PHMA and would minimize disturbance in GHMA, thereby maintaining GRSG habitat. Management actions for wildfire would focus on suppression in PHMA and GHMA, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices (BMPs) proposed in the NTT report would be included as required design features as part of Alternative B and are listed in Appendix C, Required Design Features (RDFs), of each of the attached ARMPAs.

This alternative was not selected in its entirety as the ARMPAs because the majority of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMA, and few conservation measures in the Report were provided for in GHMA. As a result, this alternative did not provide adequate conservation in GHMA. .

3.1.3 Alternative C: Citizen Groups' Recommended Alternative One

Alternative C was based on a citizen groups' recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and was applied to all occupied GRSG habitat (PHMA

and GHMA. Alternative C limited commodity development in areas of occupied GRSG habitat, and closed or excluded large portions of the planning area to many land uses. This included all PHMA and GHMA as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and non-energy leasable mineral development, and exclusion areas for right-of-ways. The Utah LUPA/Draft EIS combined this alternative with Alternative F (discussed below) and included two sub-alternatives under Alternative C for a reduction in livestock grazing and wild horses and burros management.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D: Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the Preferred Alternative in the Draft EISs, balanced opportunities to use and develop the planning area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while still allowing for anthropogenic disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions based on BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMP Amendments/EISs, this alternative was modified to become the Proposed RMP Amendments and analyzed in the FEISs. The Preferred Alternatives, with slight variations, became the Proposed Plans in the FEISs.

In PHMA under Alternative D, there would be limitation on disturbance in GRSG habitat by excluding wind and solar energy development (except for certain counties in Southeastern Oregon where avoidance is applied), avoiding all other ROW development, applying no surface occupancy stipulations to fluid mineral development, and closing PHMA to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMA under Alternative D, allocations are less stringent, but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMA).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMA and GHMA, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative based on information provided by the State or Governor's offices for inclusion and analysis in the EISs. In many instances, the BLM had to adjust what was provided by the States and Governors to fit BLM language, decision-making constructs, etc. This alternative incorporates guidance from specific state conservation strategies, if developed or recommendations from the state on management of Federal lands and emphasizes management of GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. This alternative was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a state GRSG conservation plan and under this alternative, reverted back to Alternative A, the no-action alternative.

For Nevada, Alternative E would apply an avoid, minimize, and mitigate strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. Effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed because allocation decisions were not part of the state's plan.

For Oregon, Alternative E contains GRSG conservation guidelines from Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the state plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the state plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats such as recreation, improper livestock grazing, and West Nile virus for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, Alternative E1 is based on the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah and would apply to all BLM-administered lands in Utah. In alternative E1 conservation measures would be applied to 11 areas that the state identified, called Sage-Grouse Management Areas (SGMAs). Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMAs. Occupied habitat outside of the state-identified SGMAs would not receive new management protection. They would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the state's plans were not consistent with the purposes, policies and programs of Federal laws and regulations

applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 – Alternative F: Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMA and GHMA. Alternative F would limit commodity development in areas of occupied GRSG habitat, and would close or designate portions of the planning area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMA. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and wild horse and burro management utilization by 25 percent within PHMA and GHMA. While the Utah Draft EIS did not include an Alternative F, it did create two sub-alternatives under Alternative C for livestock grazing and wild horses and burros to consider and analyze a similar reduction.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 – Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP Amendments/EISs, the BLM developed the Proposed Amendments/Final EISs for managing BLM-administered lands. The Proposed Amendments/Final EISs focused on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the DEISs. The Proposed Plans, with slight variations (as outlined in Section 2.5 of this ROD), became ARMPAs.

3.1.8 Environmentally Preferable Alternative

Council on Environmental Quality (CEQ) regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2(b)). Question 6A of CEQ's 40 most-asked questions regarding CEQ's NEPA regulations defines that term to ordinarily mean the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative B, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs is the most environmentally preferable. However, NEPA expresses a continuing policy of the federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive

harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA).

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations;
- They did not meet the purpose and need;
- The alternative was already captured within the range of alternative analyzed in the EIS;
- They were already part of an existing plan, policy, or administrative function; or
- They did not fall within the limits of the planning criteria.

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11of each of the sub-regional Proposed Amendments/Final EISs.

Idaho and Southwestern Montana

- FWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- FWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative

Utah

- FWS-Listing Alternative

- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMA for all Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- Conservation Objectives Team (COT) Report Alternative
- BLM Policies and Regulations Alternative

4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed management.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through Federal Register notices, public formal and informal meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related Web sites. This section documents the outreach efforts that have occurred to date. For more plan specific information related to the public involvement, consultation, and coordination processes that the BLM conducted, please refer to Chapter 3 of the attached ARMPAs.

4.1 Public Involvement

The scoping period for the National GRSG Planning Strategy, including the four sub-regional planning areas in the Great Basin Region, began with the publication of the NOI in the Federal Register on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012.

A Notice of Availability (NOA) for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMP Amendments/EISs were published in the Federal Register on November 1, 2013. The Oregon Draft RMP Amendment/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Draft RMPAs/DEIS, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon

conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMPAs/Draft EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the Proposed Plan Amendments. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft RMPAs/Draft EISs' comment periods. Comments on the Draft RMPAs/Draft EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed Plan Amendments. Public comments resulted in the addition of clarifying text, but did not significantly change Proposed RMPAs.

A Notice of Availability (NOA) for all of the Great Basin Region GRSG Proposed RMPAs and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-Regions were released on May 29, 2015. The release of the EPA's NOA initiated a 30 day public protest period and a 60 day governor'' consistency review. Refer to **Section 2.5 and 2.6** for a full description of the protest period and governor's consistency review outcomes.

4.2 Cooperating Agencies

A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into a formal agreement with the lead federal agency to help develop an environmental analysis. Cooperating Agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other federal, state, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal Memorandum of Understanding (MOU) for the National GRSG Planning Strategy with the FWS and the U.S. Forest Service. In addition, the Great Basin sub-regions also invited local, state, other federal, and tribal representatives to participate as Cooperating Agencies for these RMP Amendments/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 MOUs signed with state agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. Additional information can also be found in Chapter 6 of each of the Proposed Amendments/FEISs. These cooperating agencies divided by sub-region are provided below:

Great Basin Region-Wide
US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana
Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California
Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County

Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration
Washoe County
Washoe Tribe
White Pine County

Oregon
Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District US
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah
Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emery County
Garfield County
Grand County
Iron County
Kane County
Lincoln County (WY)
Millard County
Rich County
Sanete County
Sevier County
State of Utah (PLPCO)
State of Wyoming
Sweetwater County (WY)
Sweetwater County Conservation District (WY)
Tooele County
Uinta County (WY)
Uintah County (UT)

Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

4.3 FWS Section 7 Consultation

Consultation with FWS is required under Section 7(c) of the ESA before the start of any BLM project that may affect any federally listed or endangered species or its habitat. These planning processes are considered a major project, and the four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the FEISs. The FWS is a cooperating agency in this planning process. FWS staff participated in interdisciplinary team meetings and has been provided drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the FWS prior to the release of the Draft RMP Amendments/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan Amendments "may affect" the species for which this consultation occurred.

Prior to the release of the Proposed Amendments/FEISs, the BLM formally submitted the biological assessments to the FWS for review. The USFWS evaluated the biological assessments and concurred with the either a "no affect" or "may effect, but will not adversely affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana, which are appendices to each of these ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah Prairie Dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix K).

4.4 Native American and State Historic Preservation Office Consultation

In recognition of the government-to-government relationship between individual tribes and the federal government, the BLM initiated Native American consultation in preparation of the four Great Basin sub-regional RMP Amendments/EISs. Coordination with Native American tribes occurred throughout the planning process. In December 2011, the BLM sent 65 individual letters to tribal governments providing initial notification of the RMP Amendments/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation efforts related to the planning process. Tribes have been participating in the RMP Amendments/EISs processes through numerous meetings and through personal BLM contacts, and in some cases, as Cooperating Agencies.

As part of the NEPA scoping and consultation process, , the BLM notified the Idaho, Montana, Nevada, California, and Oregon State Historic Preservation Officers (SHPOs) of the opportunities to comment on the planning and NEPA documents prepared for these efforts, as they relate to historic properties in the planning areas and the land use plan decisions included in the ARMPAs. The BLM sought information about historic properties in consideration of land use planning decisions in accordance with the National Programmatic Agreement (PA) between the BLM, Advisory Council on Historic Preservation, National Conference of State Historic Preservation Officers, and the Idaho, Montana, and Oregon State Protocol Agreement between the BLM and these SHPOs. If the BLM received comments and information from SHPOs and Tribes, that information was considered and incorporated into the Proposed RMPAs/Final EISs and the ARMPAs. The BLM has met its obligations under Section 106 of the NHPA, 54 U.S.C. § 306108, as outlined in the National PA and the State Protocols. The BLM will satisfy the requirements of NHPA Section 106 for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, THPOs, Native American Tribes, and other interested parties, consistent with the alternative procedures set forth in the National PA and relevant State Protocol or where applicable the Section 106 regulations.

For the Utah ARMPA, the BLM completed consultation with the Utah SHPO in accordance with the 36 CFR Part 800. In July 2015, the BLM submitted a formal letter, concluding that the land use plan amendments would not adversely affect cultural properties and seeking input and concurrence on those findings and received a concurrence letter from the Utah SHPO on July 30, 2015. The BLM will satisfy the requirements of NHPA Section 106 for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers (THPOs), Native American Tribes, and other interested parties, consistent with the alternative procedures set forth in the National PA and relevant State Protocol, programmatic agreements, or where applicable the Section 106 regulations.

5. REFERENCES

Comment [23]: EMPSi will develop.

6. APPROVAL

Land Use Plan Amendment Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Great Basin Region Approved Resource Management Plan (RMP) Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions, as described in this Record of Decision. Notices of the public availability of the Proposed Plan Amendments and related Final Environmental Impact Statements (EIS) were published in the Federal Register on May 29, 2015. in the (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the

protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze Director Bureau of Land Management	Date

Secretarial Approval

I hereby approve the land use plan amendment decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Department regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice Schneider Assistant Secretary for Land and Minerals Management Department of the Interior	Date

7. ATTACHMENTS

Attachement 1. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachement 2. Nevada and Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment

Attachement 3. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachement 4. Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-regions of

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:
US Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

MISSION STATEMENT

The BLM manages more than 245 million acres of public land, the most of any Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The BLM also administers 700 million acres of subsurface mineral estate throughout the nation. The BLM's mission is to manage and conserve the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield. In Fiscal Year 2014, the BLM generated $5.2 billion in receipts from public lands.

[insert document number]

[Insert BLM WO Letterhead]

In Reply Refer To:
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD approves the four Great Basin Region ARMPAs, which are part of the National Greater Sage-Grouse Conservation Strategy that was initiated on December 11, 2011. The Bureau of Land Management (BLM) initiated the conservation strategy in response to the US Fish and Wildlife Service's (FWS) March 2010 "warranted, but precluded" Endangered Species Act listing petition decision. In this decision, the FWS identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism.

Combined, the BLM and the Forest Service administer approximately 62 percent of the GRSG habitat across the remaining range of the species. The National GRSG Conservation Strategy has been coordinated under two administrative planning regions across this landscape: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by the FWS in the 2010 listing decision, along with the Western Association of Fish and Wildlife Agencies' management zones framework (Stiver et al. 2006; see **Figure 1-4**, GRSG Priority Areas for Conservation, Populations, and WAFWA Management Zones, of this ROD).

Range-wide, the BLM prepared 15 environmental impact statements (EISs), with associated proposed RMP amendments and revisions in the Rocky Mountain and Great Basin regions. The Forest Service was involved in the development of five EISs: two in the Rocky Mountain Region and three in the Great Basin. Each agency prepared two RODs: one for the approval of ARMPAs and Approved Resource Management Plans (ARMPs) in each of the regions covered by the GRSG Conservation Strategy; thus, the BLM and the Forest Service prepared a total of four RODs to implement the Federal GRSG conservation plans across the remaining range of the species.

This ROD applies to the BLM ARMPAs in the Great Basin Region. However, the complete strategy for GRSG conservation on BLM- and Forest Service-administered lands across the remaining range of the species consists of this ROD (and associated plans), in conjunction with the BLM ROD for the Great Basin Region and the two Forest Service RODs, one for each region.

The BLM's ARMPAs provide a landscape-level, science-based, coordinated, collaborative strategy for addressing threats to GRSG and its habitat. This strategy was designed to address issues identified in the FWS 2010 "warranted, but precluded" decision. In addition, the strategy was guided by over a decade of research, analyses, and recommendations for GRSG conservation, including the Conservation Objectives Team Report and the BLM National Technical Team Report. These reports were developed

through a collaboration of State and Federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, US Geological Survey, the Forest Service, and State and other partners were fundamental to developing these ARMPAs.

It is important to note that this ROD and these ARMPAs apply only to BLM-administered lands, including BLM subsurface mineral estate. Throughout the GRSG planning process, the FWS has been a cooperating agency on the Idaho and Southwestern Montana, the Nevada and Northeastern California, and the Utah planning efforts.

These Draft RMPAs/EISs and Proposed RMPAs/Final EISs for the Great Basin sub-regions include proposed GRSG management direction for National Forest System lands in Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah. As noted above, the Forest Service has completed two separate RODs and associated land and resource management plan amendments under its planning authorities.

The Federal Land Policy and Management Act requires the development and maintenance and, as appropriate, the revision of land use plans for managing public lands. The National Environmental Policy Act requires Federal agencies to prepare an EIS for major Federal actions significantly affecting the quality of the human environment. In fulfilling these requirements, the Draft RMP Amendments/EISs were published in the fall of 2013. They incorporated analysis and input provided by the following:

- The public
- Local, State, and other Federal agencies and organizations
- Native American tribes
- Cooperating agencies
- BLM resource specialists

Ninety-day public comment periods ensued, with more than 4,990 substantive comments from 1,348 unique letters submitted on all four sub-regional Draft RMPAs/EISs in the Great Basin Region. The BLM and Forest Service reviewed, summarized, and took into consideration these comments when preparing the Proposed RMPAs and RMPs/Final EISs.

The Proposed RMPAs/Final EISs were made available on May 29, 2015, for a 60-day Governor's consistency review and 30-day protest period. The BLM received consistency review letters from governors of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region. The BLM has worked closely with these States to address their concerns and to resolve inconsistencies where possible. Across all four sub-regions in the Great Basin Region, 133 protest submission letters were received from government entities, private citizens, nongovernmental organizations, and other stakeholders; 124 of these submissions contained valid protest issues, pursuant to 43 CFR 1610.5-2, and were addressed in the Director's Protest Resolution Reports. These reports are available on the Internet at http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

The BLM Director and the Assistant Secretary, Land and Minerals Management, now approve the attached ARMPAs as the land use plans that will guide future land and resource management within GRSG habitat in the Great Basin Region for the life of the plan amendments. The ARMPAs will benefit GRSG and over 350 other species of wildlife that depend on healthy sagebrush-steppe landscapes and will provide other multiple uses, including grazing and recreation.

Copies of the ROD and ARMPAs can be obtained from the BLM's National Greater Sage-Grouse website, http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the public, local, State, and other Federal agencies, Native American tribal representatives, and the cooperating agencies, all of whom contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented.

Sincerely,

Neil Kornze
BLM Director

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

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SUMMARY

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse (GRSG) habitat on public lands administered by the Bureau of Land Management (BLM). This effort is consistent with the BLM's multiple-use and sustained-yield mission and the joint objective established by Federal and State leadership through the Greater Sage-Grouse Task Force to conserve GRSG habitat on Federal, State, and private land such that additional protections under the Endangered Species Act (ESA) can be avoided.

In response to a 2010 determination by the US Fish and Wildlife Service (FWS) that the listing of the GRSG under the ESA was "warranted, but precluded" by other priorities, the BLM, in coordination with the US Department of Agriculture Forest Service (Forest Service), developed a landscape-level management strategy, based on the best available science, that was targeted, multi-tiered, coordinated, collaborative. This strategy offers the highest level of protection for GRSG in the most important habitat areas to address the specific threats identified in the 2010 FWS "warranted, but precluded" decision and the FWS 2013 Conservation Objectives Team (COT) Report.

This ROD and Approved Resource Management Plan Amendments (ARMPAs) are for the Great Basin Region GRSG Sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. They include management direction that avoids and minimizes additional disturbance in GRSG habitat management areas. Moreover, they target restoration of and improvements to the most important areas of habitat. Management in the ARMPAs is directed through land use allocations that apply to GRSG habitat. These allocations accomplish the following:

- Eliminate most new surface disturbance in the most highly valued sagebrush ecosystem areas identified as Sagebrush Focal Areas
- Avoid or limit new surface disturbance in Priority Habitat Management Areas, of which Sagebrush Focal Areas are a subset
- Minimize surface disturbance in General Habitat Management Areas

In addition to protective land use allocations in habitat management areas, the ARMPAs include a suite of management actions, such as establishing disturbance limits, GRSG habitat objectives, mitigation

requirements, monitoring protocols, and adaptive management triggers and responses. They also include other conservation measures that apply throughout designated habitat management areas. The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the remaining range of the species in the Great Basin and to provide greater certainty that BLM resource management plan decisions in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The targeted land use plan protections presented in this ROD and ARMPAs not only protect the GRSG and its habitat but also over 350 wildlife species associated with the sagebrush-steppe ecosystem. This is widely recognized as one of the most imperiled ecosystems in North America. In addition to protecting habitat, reversing the slow degradation of this valuable ecosystem will also benefit local economies and a variety of rangeland uses, including recreation and grazing. This also will safeguard the long-term sustainability, diversity, and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 States in which the ARMPAs in the Great Basin and the plans in the Rocky Mountain Region apply. In combination with additional State and Federal actions underway and in development, the strategy represents an unprecedented coordinated collaboration among Federal land management agencies and the States to manage an entire ecosystem and associated flora and fauna. The goal is to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future." [Dan Ashe. Transmittal letter to COT Report. 2013].

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ATTACHMENTS

1 Idaho And Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment
2 Nevada And Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment
3 Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment
4 Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

ACRONYMS AND ABBREVIATIONS

	Full Phrase
AML	appropriate management level
ARMPA	Approved Resource Management Plan Amendment
BLM	Bureau of Land Management
BSU	biologically significant unit
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COT	Conservation Objectives Team
EIS	environmental impact statement
ESA	Endangered Species Act
FIAT	Fire and Invasives Assessment Team (also Fire and Invasives Assessment Tool)
FLPMA	Federal Land Policy and Management Act
FR	*Federal Register*
FWS	United States Fish and Wildlife Service
GHMAs	General Habitat Management Areas
GRSG	Greater Sage-Grouse
IHMAs	Important Habitat Management Areas
IM	instruction memorandum
MOU	memorandum of understanding
MZ	management zone
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NSO	no surface occupancy
NTT	National Technical Team
OHMAs	Other Habitat Management Areas
OHV	off-highway vehicle
PACs	Priority Areas for Conservations
PGH	preliminary general habitat
PHMAs	Priority Habitat Management Areas
PPH	preliminary priority habitat
RDF	required design feature
RMP	resource management plan
RMPA	resource management plan amendment
ROD	Record of Decision
ROW	right-of-way
SFAs	sagebrush focal areas
SHPO	State Historic Preservation Officer
S.O.	Secretarial Order
USGS	United States Geological Survey
WAFWA	Western Association of Fish and Wildlife Agencies
WHBs	wild horses and burros

1. INTRODUCTION

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CHAPTER 1
INTRODUCTION

This Record of Decision (ROD) approves the United States (US) Department of the Interior, Bureau of Land Management's (BLM's) attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands.

The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA; 43 United States Code [USC], Section 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR], Part 1601 et seq.), and other applicable laws. The BLM prepared environmental impact statements (EISs) in compliance with the National Environmental Policy Act (NEPA; 42 USC, Sections 4321-4347), as amended, and the Council on Environmental Quality's (CEQ's) and the US Department of the Interior's regulations for implementing the procedural provisions of NEPA (40 CFR 1500.1 et seq. and 43 CFR 46.01 et seq., respectively).

Throughout the GRSG planning process, the Forest Service has been a cooperating agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed two separate RODs with associated resource management plan amendments under their planning authorities, which are available at http://www.fs.usda.gov/r4/.

This ROD, in conjunction with the ARMPs and ARMPAs approved through the Rocky Mountain ROD, constitute BLM land use planning decisions to conserve the GRSG and its habitats throughout its remaining range that is administered by the BLM under authority of FLPMA. The efforts of the BLM, in coordination with the Forest Service on National Forest System lands within the remaining range of the species, constitute a coordinated strategy for conserving the GRSG and the sagebrush-steppe ecosystem on most Federal lands on which the species depends. These decisions complement those implemented by Federal agencies through *An Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior*

(US Department of the Interior 2015) and the Sage Grouse Initiative, as well as those implemented by State and local governments, private landowners, and other partners.

1.1 GREAT BASIN REGION PLANNING AREA

The Great Basin Region Planning Area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah.(see **Figure 1-1**, Great Basin Region Greater Sage-Grouse Sub-regions). The BLM prepared a separate EIS for each of these sub-regions, and each sub-region conducted its own planning effort, with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, and areas that share common threats to GRSG and its habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the *Western Association of Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) to delineate management zones (MZs) with similar ecological and biological issues.

The Great Basin Region Planning Area boundaries include all lands regardless of jurisdiction (see **Figure 1-2**, Great Basin Region Planning Area). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, States, local governments, and privately owned lands in the four sub-regions that make up the Great Basin. The Planning Area also includes other BLM-administered lands that are not identified as habitat management areas for GRSG. The ARMPAs generally do not establish any additional management for these lands outside of GRSG habitat management areas, and they will continue to be managed according to the existing land use plans for these Planning Areas.

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	Nevada/NE California	Idaho/SW Montana	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,597,500**
FWS	805,900	81,400	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other Federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,300**	**48,209,900**	**31,656,200**	**194,208,900**

Source: BLM GIS 2015
Note: Acres have been rounded to the nearest hundredth.

Figure 1-1
Great Basin Region Greater Sage-Grouse Sub-regions

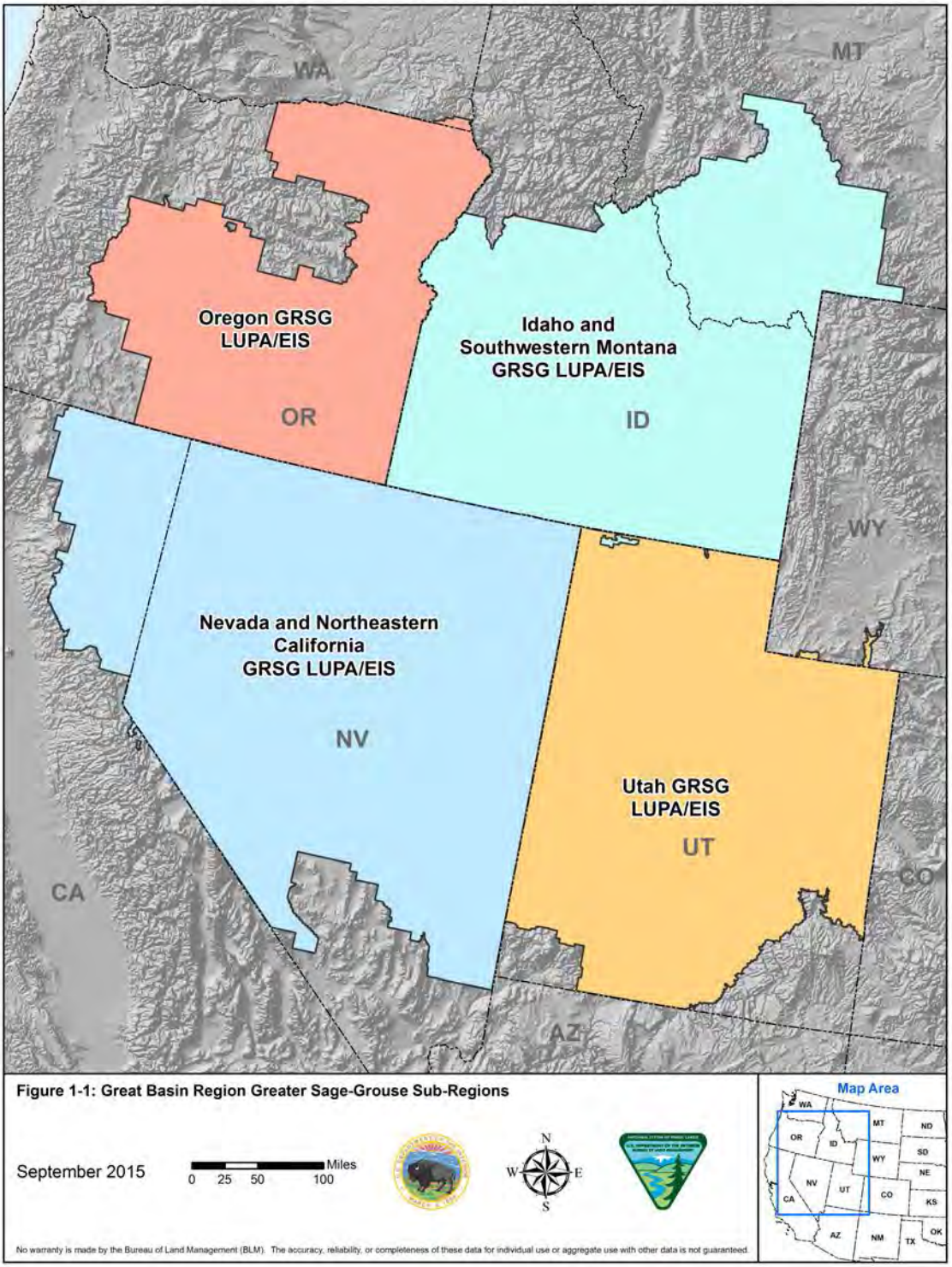
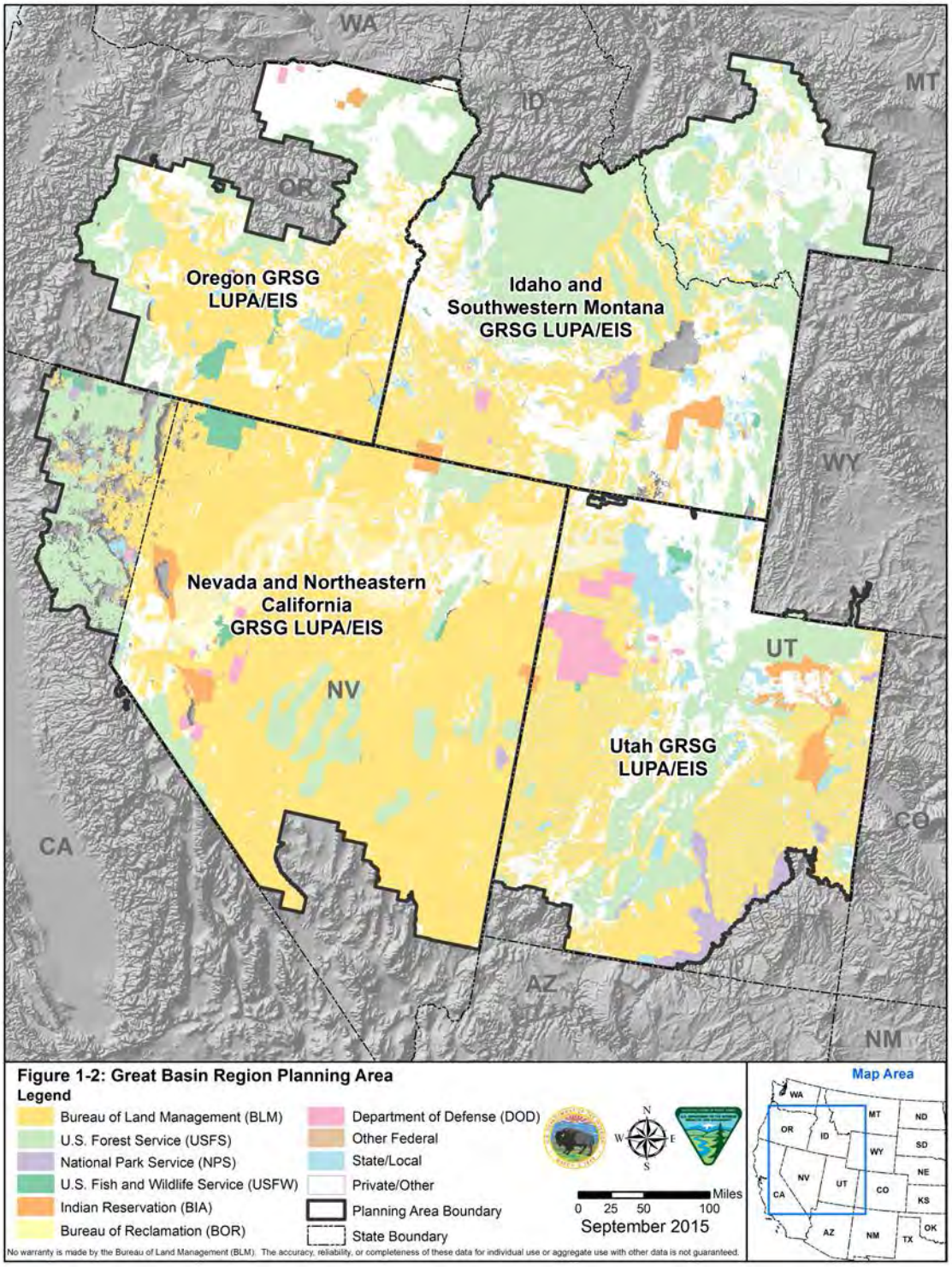


Figure 1-2
Great Basin Region Planning Area



The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure 1-3**, Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas [BLM-administered]), including surface and split-estate lands where the BLM has subsurface mineral rights. For a description of these habitat management areas, refer to **Section 1.5**.

1.2 Early GRSG Conservation Efforts

Currently, GRSG occupy an estimated 56 percent of the historically occupied range. The BLM manages most of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State populations). The BLM and other wildlife conservation agencies and organizations have been conserving GRSG habitat for many years. This provides an important foundation for the GRSG conservation strategy that guides these plans.

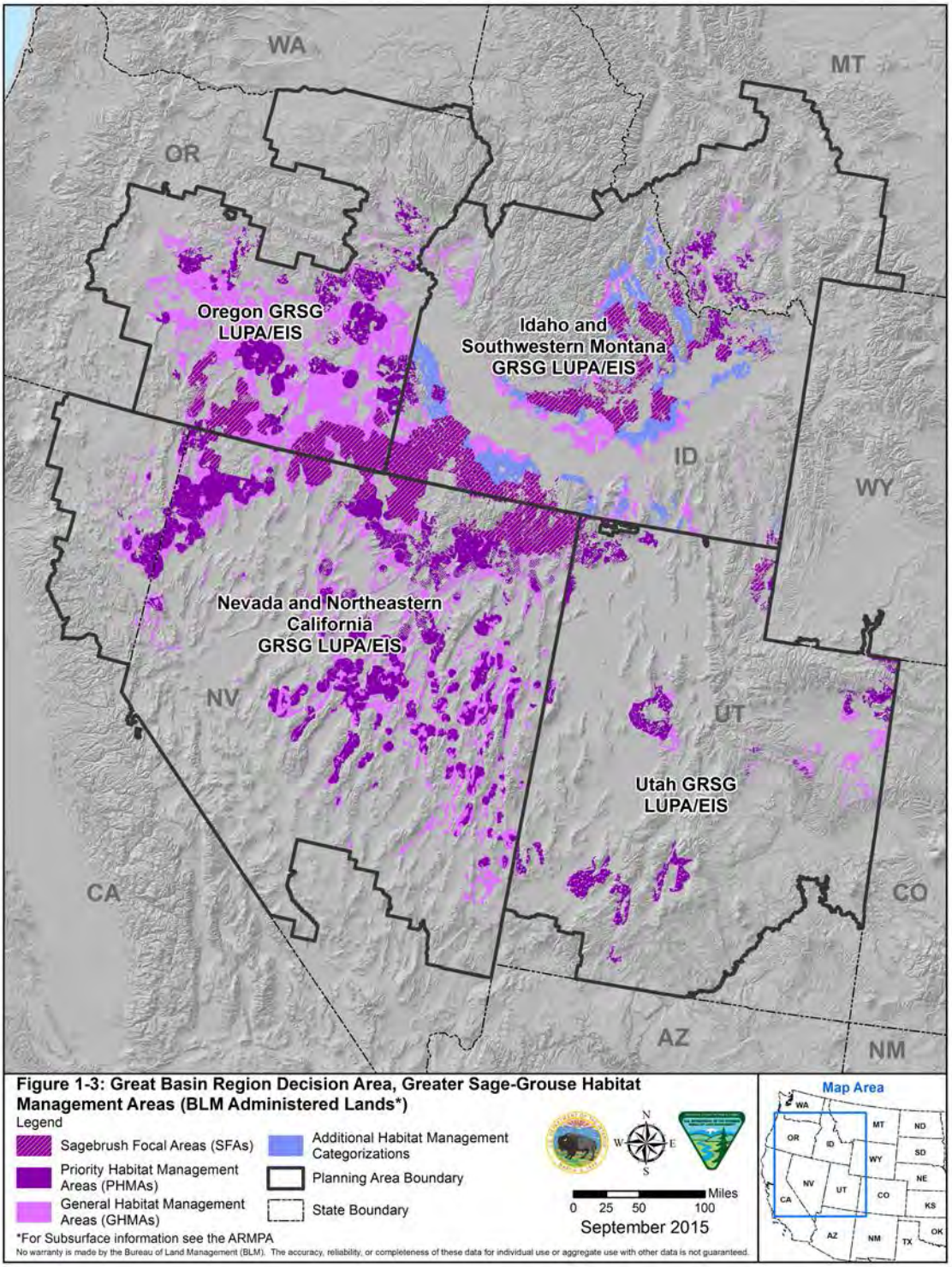
The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* (Connelly et al. 2004) was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the US Fish and Wildlife Service (FWS), the Forest Service, the US Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy* (Stiver et al. 2006), with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The strategy outlined the critical need to develop the associations among local, State, provincial, tribal, and Federal agencies, nongovernmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats that they depend on. The catalyst for this was widespread concern for declining populations and reduced distribution of GRSG.

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and to summarize the BLM's ongoing conservation efforts. A product of this investigation was one of the first range-wide priority habitat maps for GRSG that referred to "key habitat." At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression in GRSG habitat on BLM lands. An additional outcome of this team was the signing of a memorandum of understanding (MOU) by the WAFWA, the BLM, FWS, USGS in the US Department of the Interior, and the Forest Service and Natural Resources Conservation Service (NRCS) in the US Department of Agriculture. The MOU's purpose was to provide for cooperation among the participating State and Federal land managers and wildlife management and science agencies to conserve and manage GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the western United States.

Figure 1-3
Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas (BLM-administered Lands)



In 2010, the BLM commissioned a project to map and model breeding bird densities of GRSG across the West. It convened a conference with State wildlife agencies to coordinate the lek survey data needed for this project. Through an agreement with the FWS, this modeling project mapped known active leks across the West. This served as a standard starting point for all States to identify priority habitat for the species.

In March 2010, the FWS published its *12-Month Finding for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered* (75 FR 13910, March 23, 2010). In that finding, the FWS concluded that GRSG was "warranted, but precluded" under the Endangered Species Act (ESA). This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

As part of its 2010 finding, the FWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. The FWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 FR 13910, March 23, 2010). In addition, the FWS found that existing local, State, and Federal regulatory mechanisms were not sufficient to address threats to the habitat. The FWS has identified for the BLM its resource management plans (RMPs) as the primary regulatory mechanisms; the BLM manages approximately 66 million acres of the remaining habitat for the species (see **Figure 1-4**, GRSG Priority Areas for Conservation, Populations, and WAFWA Management Zones).

1.3 THREATS TO GRSG IN THE GREAT BASIN REGION

In its 2010 finding, the FWS identified a number of specific threats to GRSG in the Great Basin Region. The primary threats are the widespread present and potential impacts of wildfire, the loss of native habitat to invasive species, and conifer encroachment. Other threats, some of which are more localized, are habitat fragmentation due to human disturbances associated with energy development, mining, infrastructure, recreation, urbanization, and sagebrush elimination, as well as impacts on habitat associated with free-roaming equids (horses and burros) and improper livestock grazing.

In 2011, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 *Federal Register* [FR] 13910) in each of the regional WAFWA Sage-Grouse MZs (**Figure 1-4**). The NTT produced *A Report on National Greater Sage-grouse Conservation Measures* (NTT Report; NTT 2011) in which it proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. It also emphasized the importance of standardizing monitoring across the WAFWA GRSG MZs.

In 2012, the FWS, with the support of the Western Governors Association Sage-Grouse Task Force, convened the Conservation Objectives Team (COT), composed of State and Federal representatives. One of the team's tasks was to produce a peer-reviewed report identifying the principal threats to

GRSG survival. Another task was to determine the degree to which these threats need to be reduced or lessened to conserve the GRSG so it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT Report, released in March 2013, also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs . . . is the essential foundation for sage-grouse conservation" (FWS 2013). Finally, the COT Report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2**). The BLM also identified and explained additional threats in the Final EISs that were published with proposed plans on May 29, 2015. **Figure 1-4** identifies the PACs, GRSG populations (and their names), and WAFWA MZs across the West.

A summary of the nature and extent of threats identified in the COT Report for each remaining identified population of GRSG in the Great Basin Region—as highlighted in the 2013 COT Report—is provided in **Table 1-2**.

1.4 National Greater Sage Grouse Conservation Strategy

The BLM recognized the need to incorporate explicit objectives and concrete conservation measures into RMPs[1] to conserve GRSG habitat and provide robust regulatory mechanisms. This was based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a decision on whether to propose this species for listing, In August 2011, the BLM charted a plan to revise and amend existing RMPs throughout the range of the GRSG. The intent was to incorporate management actions to conserve, enhance, and restore the species and the habitat on which it depends. Separate planning began that would address the conservation needs of the Bi-State populations in California and Nevada and the Washington State distinct population segment.

The BLM found that additional management direction and specific conservation measures on Federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. This finding was in light of the 2010 "warranted" determination by the FWS, the recommendations of the NTT, and specific threats summarized in the COT Report. The BLM proposed to incorporate the management direction and conservation measures into its land use plans. The goals of incorporating these specific measures into BLM land use plans are to conserve, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA may be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and a Supplemental EIS to incorporate GRSG conservation measures into land use plans across the range of the species.

The planning associated with the National GRSG Conservation Strategy has been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by the FWS in its 2010 listing decision, along with the WAFWA MZs framework (Stiver et al. 2006). Due to differences in the

[1] BLM land use plans prepared under the present regulations (see 43 CFR 1601.0-5[n]) are generally known as resource management plans. Some BLM land use plans, including ones predating the present regulations, are referred to by different names, including management framework plans. For purposes of this ROD, the BLM and Forest Service land use plan and resource management plan interchangeably refer to all BLM-administered land use plans.

Figure 1-4
GRSG Priority Areas for Conservation, Populations, and WAFWA Management Zones

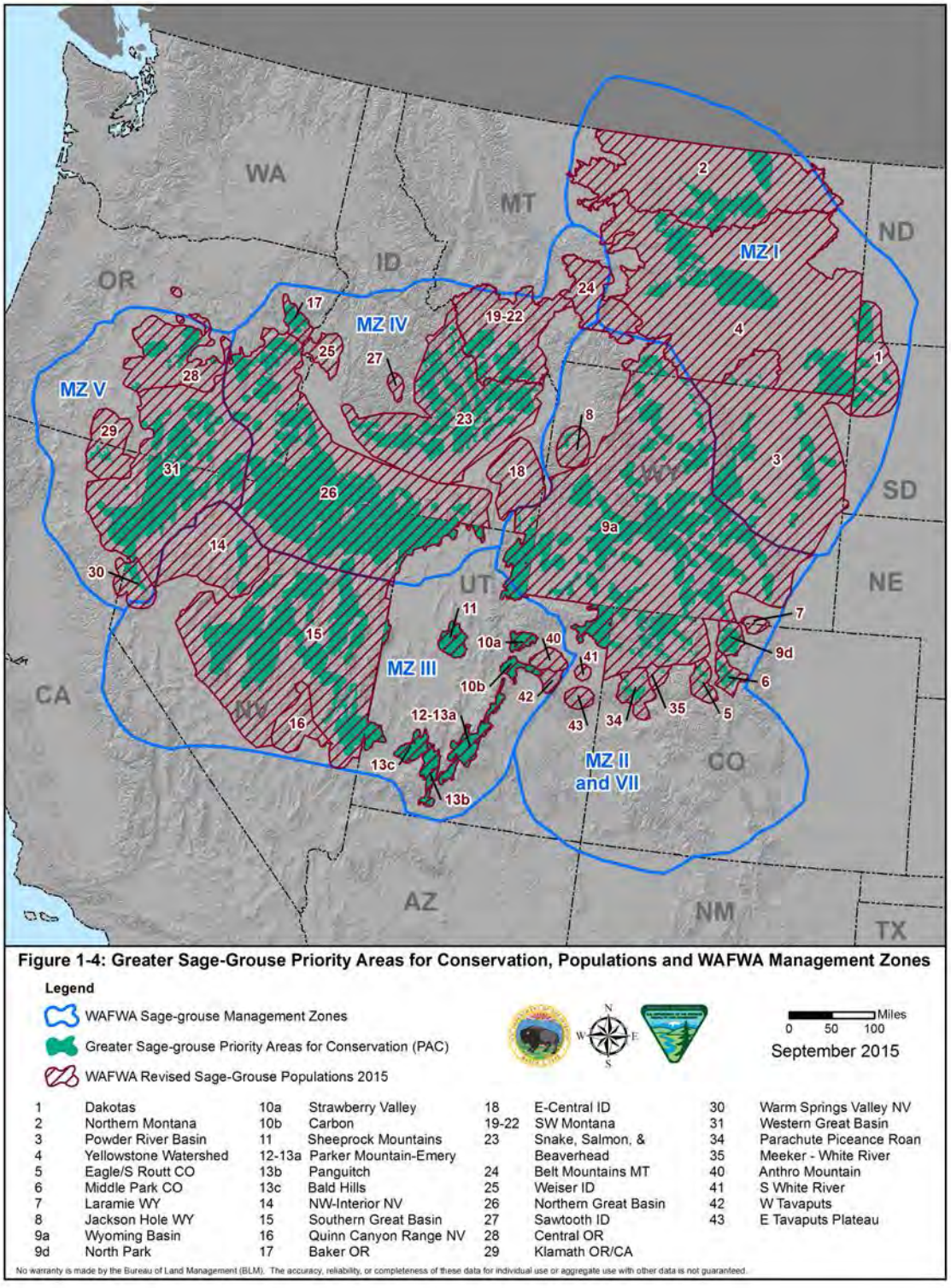


Figure 1-4: Greater Sage-Grouse Priority Areas for Conservation, Populations and WAFWA Management Zones

Table 1-2
Threats to GRSG in the Great Basin Region as identified by the COT

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (Utah)	9b				Y	Y	Y	Y		Y			Y	Y	Utah
Uintah (Utah)	9c				Y	Y	Y	L	Y	Y			Y	Y	Utah
Strawberry Valley (Utah)	10a	Y			Y	Y	Y	Y		Y			Y		Utah
Carbon (Utah)	10b	Y			Y		Y	Y	Y	Y			Y		Utah
Sheeprock Mountains (Utah)	11	Y			Y	L	L	Y	Y	L		Y	L		Utah
Emery (Utah)	12	Y			Y	Y	Y	Y	Y	Y			Y		Utah
Greater Parker Mountain (Utah)	13a				Y	Y	Y			Y			Y		Utah
Panguitch (Utah)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	Utah
Bald Hills (Utah)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Utah
Ibapah (Utah)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		Utah
Hamlin Valley (Utah)	15b	Y			Y	Y	Y			Y		Y	Y		Utah
Box Elder (Utah)	26b			Y	Y	Y	Y	L	Y	Y			Y		Utah
N. Great Basin (Oregon, Idaho, Nevada)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	Idaho/SW Montana, Oregon, Nevada/California
Baker (Oregon)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	Oregon
Central Oregon (Oregon)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	Oregon
W. Great Basin (Oregon, California, Nevada)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		Oregon, Nevada/California
Klamath (California)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	Nevada/California
Northwest Interior (Nevada)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		Nevada/California
Southern Great Basin (Nevada)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		Nevada/California
Quinn Canyon Range (Nevada)	16	Y			Y	Y	Y			Y	Y	Y	Y		Nevada/California
Warm Springs Valley (Nevada)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Nevada/California

Table 1-2
Threats to GRSG in the Great Basin Region as identified by the COT

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
East Central (Idaho)	18	**Y**	L	**Y**	L	**Y**	L	**Y**		**Y**	**Y**		L		Idaho/SW Montana
Snake-Salmon-Beaverhead (Idaho)	23		L	L	**Y**	L	**Y**	**Y**		L	**Y**	**Y**	L		Idaho/SW Montana
Weiser (Idaho)	25	**Y**	L	L	L	L	**Y**	**Y**		L	**Y**		L	L	Idaho/SW Montana
Sawtooth (Idaho)	27	**Y**	L		L	U	L			**Y**	**Y**		L		Idaho/SW Montana
Southwest Montana (Montana)	19-22		L		L	L	**Y**	L	L	L	**Y**		L	L	Idaho/SW Montana

Source: FWS 2013
Threats are characterized as Y = threat is present and widespread, L = threat present but localized, and U = unknown.

ecological characteristics of sagebrush across the range of the GRSG, WAFWA delineated seven MZs (MZs I to VII) based primarily on floristic provinces. Vegetation found within an MZ is similar, and GRSG and their habitats within these areas are likely to respond similarly to environmental factors and management actions.

The Rocky Mountain Region is composed of BLM planning efforts, including plan revisions and plan amendments, in Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin) and a portion of VII (Colorado Plateau). The Great Basin Region is composed of planning efforts (plan amendments) in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. That region falls within WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. The BLM began sub-regional planning efforts and associated EISs to analyze the alternatives developed for each of the Draft and Final RMPAs and ARMPs across the range of the species.[2] These sub-regions are based on the identified threats to GRSG and the WAFWA MZs from the FWS 2010 listing decision, with additional detail on threats to individual populations and sub-regions from the FWS COT Report.

[2] The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP

In the Rocky Mountain Region, some sub-regions correspond to BLM field and district office boundaries, specifically for planning that incorporates GRSG conservation measures through plan revisions that were that began before the start of the National GRSG Conservation Strategy in December 2011. **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries across the western United States.

The BLM used the best available science, including additional review and analysis from the USGS on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered State GRSG conservation strategies where they existed, as well as State recommendations for measures to conserve GRSG on BLM-administered lands, where relevant, in its planning. These are reflected in the approved plans to the extent compatible with GRSG objectives to conserve, enhance, and restore GRSG habitat to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the ARMPAs Address the Identified Threats to the Conservation of GRSG

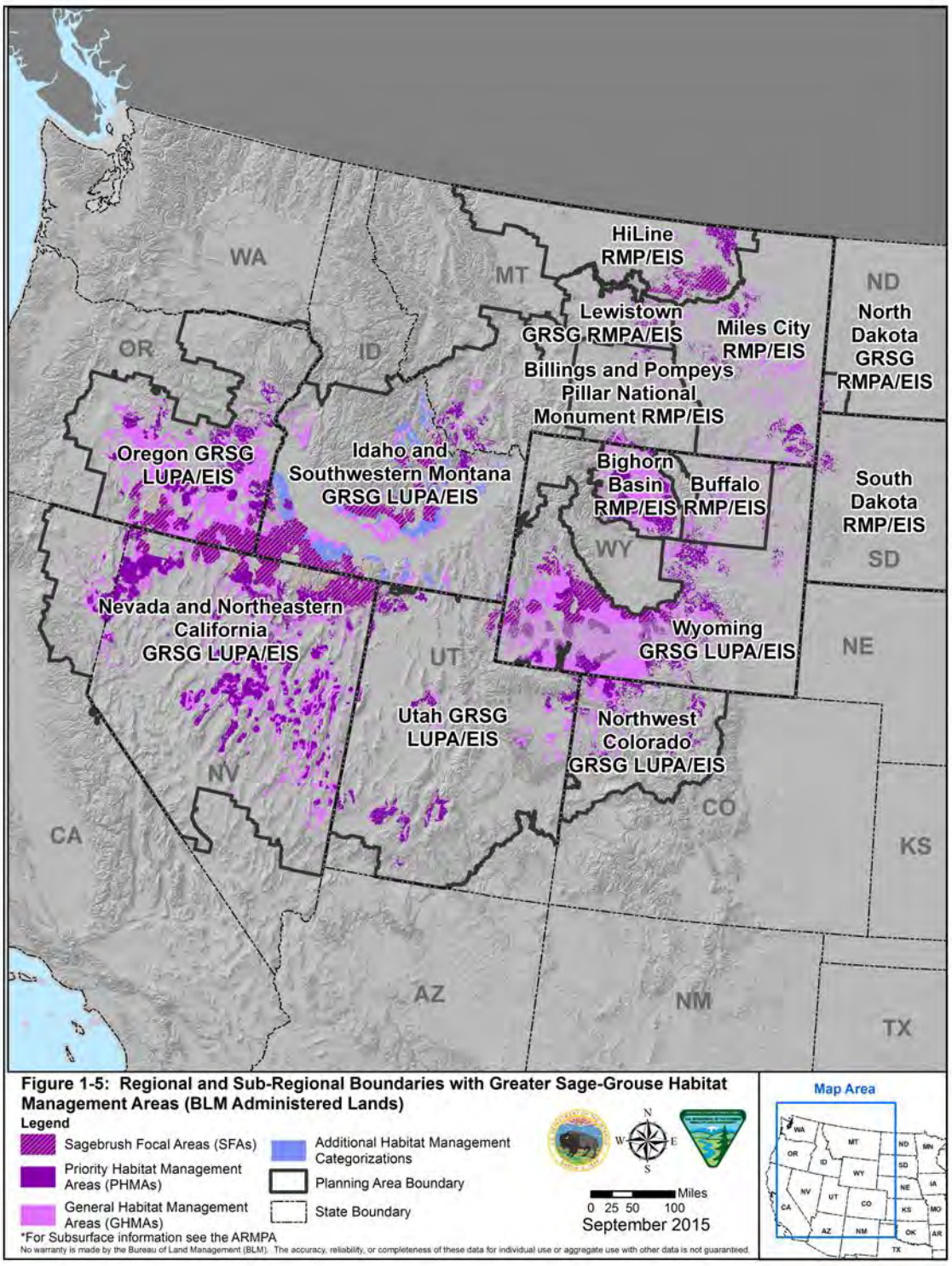
The 2006 WAFWA *Greater Sage-Grouse Comprehensive Conservation Strategy* stated goal for managing GRSG was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations" (Stiver et al. 2006). The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed" (NTT 2011).

In establishing the COT Report, with the backing of the Sage Grouse Task Force, the FWS Director affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report—reversing negative population trends and achieving a neutral or positive population trend—and emphasized the following:

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (Stiver et al. 2006)"

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT Report stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (FWS 2013). To achieve this, the COT Report recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal" (FWS 2013). The COT Report emphasized an "avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy" (FWS 2013).

Figure 1-5
Regional and Sub-regional Boundaries with PHMAs and GRSG Habitat Management Areas (BLM-Administered Lands)



The plans were developed to address specific, identified threats to the species in order to conserve GRSG such that the need to list the species under ESA may be avoided. Across ten western states, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 66 million acres of the remaining habitat for the species (see **Figure 1-5**). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the FWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, priorities and approaches in each.

In order to protect the most important GRSG habitat areas, planning began with mapping areas of important habitat across the GRSG's range. In collaboration with State fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). In Utah, all occupied GRSG habitat was identified as PPH. The draft land use plans used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMAs) and General Habitat Management Areas (GHMAs) in the Proposed RMPAs/Final EISs to identify the management decisions that apply to those areas (except for Nevada and Utah).

The designated GRSG Habitat Management Areas on BLM-administered lands in the decision area are PHMAs, which largely coincide with PACs identified in the COT Report;[3] GHMAs; Other Habitat Management Areas (OHMAs, applicable only to the Nevada and Northeastern California); and Important Habitat Management Areas (IHMAs, applicable only to Idaho). **Table 1-3** identifies surface acres of PHMAs, GHMAs, OHMAs, and IHMAs in the decision area for the Great Basin Region.

Habitat maps were based initially on State key habitat maps, which identified areas necessary for GRSG conservation. These areas were derived from breeding bird density maps and lek counts, nesting areas, sightings, and habitat distribution data. These data included occupied suitable seasonal habitats, nesting and brood-rearing areas, and connectivity areas or corridors. The BLM used this information to develop PPH and PGH maps and, subsequently, to identify PHMAs and GHMAs, respectively.

The COT Report preparers also used State key habitat maps as a basis for identifying PACs. The COT Report notes that there is substantial overlap between PACs and BLM PPH areas, with the exception of areas in Nevada and Utah (FWS 2013, p. 13). **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries, along with BLM-administered PHMAs and GHMAs across the western United States.

The BLM-administered surface and Federal mineral estate of each designation (in acres) in the Decision Area for the Great Basin Region are shown in **Table 1-3**; PHMAs, GHMAs, OHMAs, and IHMAs are defined below.

- **PHMA**—BLM-administered land identified as having the highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the PPH boundaries. Areas of PHMAs largely

[3] Except for PACs in Nevada and Utah, as specified on page 13 of the COT Report; see **Figure 1-4**

coincide with areas identified as PACs in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report).

Table 1-3
Surface Acres of PHMAs, GHMAs, OHMAs, and IHMAs in the Decision Area for the Great Basin Region

BLM-Administered Surface Acres	PHMAs	GHMAs	OHMAs	IHMAs
Idaho and Southwestern Montana	4,627,200	2,179,700	0	2,737,600
Utah*	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern California	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

*41,200 acres of National Forest System lands in the Anthro Mountain area of Utah would be managed as neither PHMAs nor GHMAs. These areas would be identified as "Occupied – Anthro Mountain." In the Utah ARMPA, these areas are considered split-estate, where the BLM administers the mineral estate.

- **GHMA**—BLM-administered GRSG habitat that is occupied seasonally or year-round and is outside of PHMAs. It is where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the PGH boundaries.
- **OHMA**—BLM-administered land in Nevada and Northeastern California, identified as unmapped habitat in the Proposed RMP/Final EIS, that is within the Planning Area and contains seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA**—BLM-administered land in Idaho that provides a management buffer for and that connect patches of PHMAs. IHMAs encompass areas of generally moderate to high habitat value habitat or populations but that are not as important as PHMAs. These lands serve a critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape; they are a subset of PHMAs (see **Figure 1-3**). Across the Great Basin Region, there are 8,385,280 acres of BLM-administered SFAs. They correspond to the areas identified by the FWS as GRSG strongholds and represent "a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection" (FWS 2014a).

SFAs are areas of highest habitat value for GRSG and are managed to avoid new surface disturbance for the following reasons:

- They contain high-quality sagebrush habitat and the highest breeding bird densities
- They have been identified as essential to conservation and persistence of the species
- They represent a preponderance of current Federal ownership
- In some cases, they are next to protected areas that serve to anchor the conservation importance of the landscape

SFA management is consistent with the recommendations provided by the FWS that these are the areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species" (FWS 2014a).

Remaining habitats in GHMAs and IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important habitats outside of PACs be conserved to the extent possible" (FWS 2013). Thus, land allocations in GHMAs and IHMAs provide for more flexibility for land use activities, while minimizing impacts on existing GRSG leks.

Major components of the attached ARMPAs that address the specific threats to GRSG and its habitat, as identified in the FWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report), are listed and summarized in **Table 1-4**.

This tiered habitat management area framework, associated with the land use plan allocation decisions in the ARMPs and ARMPAs (explained more fully in **Section 1.6.2** of this ROD) provides a high degree of certainty that the integrity of PHMAs can be maintained through management decisions. This would be done to avoid or minimize additional surface disturbance. At the same time, it would recognize the potential importance of areas outside of PHMAs for maintaining connectivity between highly important habitats and their potential for addressing seasonal habitat needs, such as winter habitat areas not fully incorporated in PHMAs.[4]

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

[4] An analysis by Crist et al. (2015) highlights the importance of certain key "priority areas" across the species' range and the importance of connectivity between priority areas as a component of successful GRSG conservation. Generally, these priority areas coincide with PHMAs across the landscape. It is important to note that BLM-administered SFAs also coincide with a number of the areas identified by Crist et al. (2015) as important for maintaining connectivity between the network of conservation areas, essential PHMAs, that are of greatest importance to the integrity of the conservation strategy. In addition, to maintain connectivity between PHMAs across the remaining range, requirements were incorporated into most of the ARMPAs for the application of lek buffers. This is consistent with guidance provided by the USGS, mitigation to a net conservation gain, and the use of required design features for projects in GHMAs, described later in this document. These measures are specifically intended to provide benefits for GRSG in GHMAs that can provide added connectivity and habitat protection consistent with the Crist et al. (2015) findings.

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining, infrastructure, and energy development	• PHMAs—Implement a human disturbance cap of 3 percent within the biologically significant unit (BSU) and proposed project analysis areas in PHMAs (slight variations to this management component in Nevada only). • PHMAs and IHMAs—Apply a disturbance density cap of 1 energy and mining facility per 640 acres (except in Nevada). • IHMAs—Implement the 3 percent disturbance cap. Apply Anthropogenic Disturbance Development Criteria (applicable to Idaho only). • Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply required design features (RDFs) when authorizing actions in GRSG habitat. • Minimize the effects of infrastructure projects, including siting, using the best available science, updated as monitoring information on current infrastructure projects becomes available. • Consider the potential for the development of valid existing rights when authorizing new projects in PHMAs. • When authorizing third-party actions that result in habitat loss and degradation, require and ensure mitigation that provides a net conservation gain to the species.
Energy development—fluid minerals, including geothermal resources	• PHMAs—Open to fluid mineral leasing subject to a no surface occupancy (NSO) stipulation without waiver or modification and with limited exceptions. In SFAs, an NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if certain criteria are met. • IHMAs—Open to fluid mineral leasing, subject to NSO stipulation without waiver or modification and with limited exception (applicable to Idaho only). • GHMAs—Open to fluid mineral leasing, subject to controlled surface use and timing limitation lease stipulations (except in Utah, where some portions of GHMAs are open with standard lease stipulations). • Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
Energy development—wind energy	• PHMAs—Exclusion area (not available for wind energy development under any conditions, except in the southeastern counties of Oregon, where portions of PHMAs are avoidance areas). • IHMAs—Avoidance area (may be available for wind energy development with special stipulations; applicable to Idaho only). • GHMAs—Avoidance area (may be available for wind energy development with special stipulations, except in Utah and Idaho, where these areas are

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	open to wind energy development).
Energy development—solar energy	• PHMAs—Exclusion area (not available for solar energy development under any conditions, except in southeastern counties in Oregon, where portions of PHMAs are avoidance areas). • IHMAs—Avoidance area (may be available for solar energy development with special stipulations; applicable to Idaho only). • GHMAs—Exclusion area (not available for solar energy development under any conditions, except in Oregon and Montana, where these areas are avoidance areas for solar energy development, and Idaho, where these areas are open to solar energy development).
Infrastructure—major rights-of-way (ROWs)	• PHMAs—Avoidance area (may be available for major ROWs with special stipulations). • IHMAs—Avoidance area (may be available for major ROWs with special stipulations; applicable to Idaho only). • GHMAs—Avoidance area (may be available for major ROWs with special stipulations, except in Utah, where GHMAs is open).
Infrastructure—minor ROWs	• PHMAs—Avoidance area (may be available for minor ROWs with special stipulations). • IHMAs—Avoidance area (may be available for minor ROWs with special stipulations; applicable to Idaho only).
Mining—locatable minerals	• SFAs—Recommend withdrawal from the Mining Law of 1872.
Mining—nonenergy leasable minerals	• PHMAs—Closed area (not available for nonenergy leasable minerals; however, expansion of existing operations could be considered if the disturbance is within the cap and subject to compensatory mitigation).
Mining—salable minerals	• PHMAs—Closed area (not available for salable minerals), with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met).
Improper livestock grazing	• Prioritize the review and processing of grazing permits and leases in SFAs, followed by PHMAs. • Ensure that the NEPA analysis for renewals and modifications of grazing permits and leases includes specific management thresholds, based on the GRSG habitat objectives table, land health standards, and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs, followed by PHMAs, to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid (horses and burros) management	• Prioritize gathers in SFAs, followed by other PHMAs. • Manage herd management areas in GRSG habitat within established appropriate management level (AML) ranges to achieve and maintain GRSG habitat objectives.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	• Prioritize rangeland health assessment, gathers, and population growth suppression techniques, monitoring, and review and adjust AMLs and preparation of herd management area plans in GRSG habitat.
Range management structures	• Allow range improvements that do not impact GRSG or that provide a conservation benefit to GRSG, such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	• PHMAs and IHMAs—Do not construct new recreation facilities unless required for health and safety purposes or if the construction will result in a net conservation gain to the species. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. • PHMAs and GHMAs—Off-highway vehicle (OHV) use limited to existing routes (routes to be designated through future travel management planning). The Utah ARMPA does retain two areas as open to OHV use in PHMAs.
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection. • Restrict the use of prescribed fire for fuel treatments. • Prioritize post-fire treatments in SFAs, other PHMAs, IHMAs, and GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMAs, IHMAs, and GHMAs that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMAs—Maintain all lands capable of producing sagebrush (but no less than 70 percent), with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. • Ensure that all BLM use authorizations contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat, in a manner that considers tribal cultural values.
Agricultural conversion and exurban development	• Retain GRSG habitat in Federal management, unless disposal (including exchanges) of the lands would provide a net conservation gain to GRSG or disposal (including exchanges) of the lands would have no direct or indirect adverse impact on conservation of GRSG.

1.6 KEY COMPONENTS OF THE BLM GRSG CONSERVATION STRATEGY

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG and their habitat by eliminating or minimizing threats to GRSG habitat identified in the 2010 listing decision and highlighted in the Background and Purpose Section of the COT Report (FWS 2013). Consequently, consistent with guidance contained in the COT and NTT Reports, the BLM identified the following essential components of the GRSG conservation strategy:

- Avoiding or minimizing new and additional surface disturbances
- Improving habitat conditions
- Reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin
- Monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management as needed

The land allocations and management actions included in the ARMPAs incorporate these components and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Land Use Allocations and Management Actions in SFAs, PHMAs, and GHMAs

The four Great Basin ARMPAs build on the designated habitat management areas described in **Section 1.5** by applying management actions to these areas to avoid and minimize disturbance associated with proposed projects as described below and shown in **Table 1-4**. Land use plan allocations specify locations within the Planning Area that are available or unavailable for certain uses and also prioritize conservation and restoration management actions applied to habitat management areas.

The COT Report states that "maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation" (FWS 2013, p. 36). Areas of PHMAs largely coincide with areas identified as PACs in the COT Report. While surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat as rangeland fire and invasive species, the BLM ARMPAs include land allocations and management actions that avoid and minimize surface disturbance in PHMAs for identified threats (e.g., energy, mining, infrastructure, improper grazing, free-roaming equids, recreation and urbanization). These land allocations and management actions are necessary because the location and extent of habitat loss to fire is difficult to predict and much of the habitat due to low precipitation in the Great Basin is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

SFA—The most restrictive allocations include requirements to avoid and minimize additional disturbance in SFAs, which are a subset of lands within PHMAs, with the highest habitat value for GRSG. Surface disturbance from fluid mineral development is avoided by NSO without waiver, modification, or exception. In addition, these areas will be recommended for withdrawal to address the risk of disturbance due to mining.

PHMAs—In PHMAs outside of SFAs new fluid mineral leasing would be subject to NSO with no waivers or modifications. Exceptions would be granted only if the proposed action would not have direct, indirect, or cumulative effects on GRSG or its habitat; or, if the action is proposed to be undertaken as

an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to GRSG. This is fully consistent with guidance in the NTT Report which states, "Do not allow new surface occupancy on federal lands within priority habitats" (NTT2011, p. 23).

Similarly, PHMAs is closed to nonenergy and salable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free-use permits and the expansion of existing active pits for salable minerals and expansion of existing nonenergy leasable development under certain conditions. This exception is included because of the importance of these materials to local communities and their limited disturbance which will be offset by the mitigation requirements. Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses the potential disturbance threat from coal development. In Utah, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMAs is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

All PHMAs will be managed as exclusion areas for commercial renewable energy development (solar and wind) with the exception of areas outside of SFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas, with priority placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMAs and GHMAs) before approving development in PHMAs. New ROWs and development for transmission lines, pipelines, and related infrastructure would be avoided through restrictions on land use authorizations. In avoidance areas, exceptions would only be granted if it can be demonstrated that adverse impacts will be avoided or that residual impacts will be mitigated.

High voltage transmission lines will be avoided in PHMAs. A limited number of priority transmission lines (Transwest Express and portions that are collocated with Transwest Express) of Gateway South, Gateway West and Boardman to Hemingway), have been proposed to expand access to renewable sources of energy and to improve the reliability of the western grid. These projects have been underway for several years, and are currently being analyzed under separate authorization processes. As part of the decision-making process for those projects, conservation measures for GRSG are being analyzed in the project-specific NEPA processes, which should achieve a net conservation benefit for GRSG.

New recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat, or, unless required for health and safety purposes.

In PHMAs, travel is limited to existing routes until routes are designated through the implementation travel management planning process. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning processes.

A 3 percent human disturbance cap in PHMAs has been established in accordance with the recommendations contained in the NTT Report, and peer-reviewed literature from the Great Basin (Knick 2013). Disturbance will be calculated at two scales: first at a BSU scale determined in coordination with the state and second, for the proposed project area. BSUs are geographic units of PHMAs that contain relevant and important GRSG habitat. In Oregon, for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of human disturbance cap and in some ARMPAs, the adaptive management habitat triggers.

If the 3 percent human disturbance cap is exceeded on lands (regardless of landownership) within PHMAs in any given BSU, no further discrete human disturbances (subject to valid existing rights) will be permitted on BLM-managed lands within PHMAs in that BSU until restoration of disturbed lands brings the BSU below the cap. If the 3 percent human disturbance cap is exceeded on all lands (regardless of landownership) within a proposed project analysis area in a PHMAs, then no further human disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap.

An exception to the 3 percent disturbance cap is provided in designated utility corridors for purposes of achieving a net conservation gain to the species. This exception is limited to projects which fulfill the use for which the corridors were designated (e.g., transmission lines and pipelines) within the designated width of a corridor. This exception will concentrate future ROW surface disturbance in areas of existing disturbance and avoid new development of infrastructure corridors in PHMAs consistent with guidance in the COT Report. In addition, the Oregon and Nevada/Northeast California ARMPAs include variations to the disturbance cap: Oregon does not allow more than 1 percent new human disturbance per decade, not to exceed 3 percent disturbance at any time. In Nevada, permit exceedances of the 3 percent disturbance cap at the BSU and/or the project level can occur provided that the outcome results in a net conservation benefit to the species with the concurrence of the BLM, Nevada Department of Wildlife, and FWS in each exception.

In Southwest Montana (the BLM's Dillon Field Office), the BLM will limit disturbance to 3 percent until the State of Montana's Sage Grouse Plan's disturbance calculation methodology is instituted and is in effect at which time disturbance will be permitted up to a 5 percent cap. This is to recognize, as with the Wyoming Core Area Strategy, the importance of the all-lands-all-disturbances strategy that Montana will institute for GRSG conservation (Montana Office of the Governor Executive Order No. 10-2014; State of Montana 2014). Appendix E of each of the attached ARMPAs includes additional information about the methodology for calculating human disturbance at the BSU and project scales.

Additional information about the methodology for calculating human disturbance can be found in Appendix E of each of the attached ARMPAs.

The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage collocation of structures to reduce habitat fragmentation in PHMAs. The limit is an average of one facility per 640 acres in PHMAs in a project authorization area, consistent with guidance contained in the NTT Report. If the disturbance density in the PHMAs in a proposed project area is, on average, less than 1 facility per 640 acres, the project can proceed through the NEPA analysis incorporating mitigation measures into an alternative. If the disturbance density in the proposed project area is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or redesigned so facilities are collocated into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The one facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

GHMAs—While restrictions on future development in PHMAs are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMAs are intended to allow disturbance but minimize any adverse effects of disturbance with restrictions on development activities to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for

unavoidable impacts will be required for proposed projects in GHMAs as will the application of RDFs discussed below. Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. (see **Table 1-4** for more details on GHMAs management decisions.) Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts on GRSG or its habitat and then compensating for unavoidable impacts on GRSG or its habitat, to a net conservation gain standard for the species. This is consistent with guidance in the COT Report which states: "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur… If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal , state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs" (FWS 2013). These conservation measures are intended to ensure that areas of GHMAs that can provide connectivity between PHMAs; may be important seasonal habitats not identified or incorporated into previously mapped areas of PHMAs; or can provide important habitat to replace areas of important habitat lost to fire or human disturbance are protected. This strategy is particularly important given the recent USGS report by Crist et al. (2015), *Range-Wide Network of Priority Aras for Grater Sage-Grouse – A Design for Conserving Connected Distributions or Isolating Individual Zoos*? For management decisions and allocations associated with IHMAs in Idaho, see **Table 1-4**.

Habitat Protection/Surface Disturbance Measures in PHMAs and GHMAs

The following measures related to habitat protect and surface disturbance will be applied in both PHMAs and GHMAs.

Prioritization Objective—In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs, and GHMAs to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and as such, reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreases the need for compensatory mitigation.

Grazing—While improper livestock grazing can be a threat to GRSG habitat, grazing is not considered a discrete surface disturbing activity for purposes of monitoring and calculating disturbance. The plans address grazing management for the conservation of GRSG and its habitat and is further described in **Section 1.6.2**.

Lek Buffers—In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer-distances as identified in the USGS Report *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al. 2014). Lek buffer distances will be applied at the project specific level as required conservation measures to address the impacts on leks as identified in the NEPA analysis. The lek buffer distances vary by type of disturbance (road, energy development, infrastructure, etc.) and justifiable departures may be appropriate as fully described in Appendix B of the ARMPAs. In both PHMAs and GHMAs, impacts should be avoided first by locating the action outside of the applicable lek buffer-distance(s) as defined in the ARMPAs. In PHMAs, the BLM will ensure that any impacts within the buffer distance from a lek are

fully addressed. In GHMAs, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT Report recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions" (FWS 2013).

Required Design Features—RDFs are required for certain activities in all GRSG habitat, including oil and gas development, infrastructure, and other surface disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts on GRSG and its habitat from threats (such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators). The applicability and overall effectiveness of each RDF, however, cannot be fully assessed until the project level, project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area). In Nevada and Northeastern California, RDFs are also applied to their identified OHMAs.

In summary, all forms of new development in PHMAs and GHMAs would either be closed, excluded, avoided, or developed only if the resultant effect is a net conservation gain to the GRSG or its habitat, ensuring that existing habitat would be protected and providing opportunities, through compensatory mitigation.

1.6.2 Improving Habitat Condition

In addition to prescribing land use allocations and managing resource uses in order to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

Habitat Management—The ARMPAs contain an overall habitat management objective that "[i]n all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions." To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into land management programs, including wild horse and burros (WHBs), grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives through treatment of invasive annual grasses and the removal of encroaching conifers in SFAs, PHMAs, and GHMAs, and restoration of degraded landscapes, including those impacted by fire events (see **Section 1.6.3**.)

Livestock Grazing—The BLM recognizes that improper grazing can be a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report recommendation for grazing states, "[c]onduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage- grouse (e.g. shrub cover, nesting cover)" (FWS 2013). To ensure that

grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs include requirements for the incorporation of terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review and processing of authorizations and field checks of grazing permits, and take numerous actions to avoid and minimize the impacts of range management structures (see **Table 1-4**).

The BLM will prioritize reviews and processing of grazing authorizations, as well as field checks of grazing permits in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMAs, focusing first on riparian and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area, but rather reflects a decision to prioritize resources to ensure permittees and the BLM manage grazing properly in those areas most important to GRSG. If the BLM finds that relevant habitat objectives are not being met due to improper grazing, the BLM will work with the permittee to ensure progress towards habitat objectives.

Wild Horses and Burros—To address the localized threat due to negative influences of grazing by free-roaming equids (WHBs), the BLM will focus on maintaining WHB Herd Management Areas in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending Herd Management Area plans to incorporate GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFAs, then the remainder of PHMAs, and then GHMAs. In SFAs and PHMAs, the BLM will assess and adjust AMLs through the NEPA process within Herd Management Areas when WHBs are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

Mitigation and Net Conservation Benefit—During the implementation of the ARMPAs, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in GRSG habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action. This standard is consistent with the recommendation included in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* (FWS 2014b), which states that mitigation "should be strategically designed to result in net overall positive outcomes for sage-grouse." Mitigation will follow the regulations from the CEQ NEPA regulatory requirements (40 CFR 1508.20; e.g., avoid, minimize, and compensate) and be implemented on BLM-managed lands in a manner consistent with Departmental guidance for landscape mitigation pursuant to Secretarial Order (S.O.) 3330. If impacts from BLM management actions and authorized third party actions result in habitat loss and degradation that remain after applying avoidance and minimization measures (i.e. residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams based on WAFWA MZs, including members from the respective States, Forest Service, FWS, and NRCS. These Conservation Teams will facilitate cross-state issues, such as

regional mitigation and adaptive management monitoring and response. These Teams will convene and respond to issues at the appropriate scale, and will utilize existing coordination and management structures to the extent possible.

Climate Change: With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the *Integrated Rangeland Fire Management Strategy* (US Department of the Interior 2015) will further these goals and objectives. The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the *Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015) were designed to identify landscapes of high resistance and resilience based on research by Chambers (Chambers et al. 2014). Additionally, by limiting or eliminating human surface disturbance, especially in the SFAs, ensuring the integrity of the PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation efforts, connectivity and availability of sagebrush habitat will increase, thus contributing to increased climate resilience. The SFAs in particular, were identified as key areas to conserve as climate changes. The Oregon ARMPA commits to use climate change science concerning projected changes in species ranges and changes in site capability to adjust expected and desired native species compositions as that information becomes available.

As identified by the FWS 2010 listing decision and the COT Report, climate change can impact efforts to conserve the GRSG and its habitat in a number of ways. While several ARMPAs acknowledge the potential impact of climate change on GRSG habitat and conservation efforts, specific strategies to address the impacts of climate change are limited. The BLM and Forest Service, in coordination with the FWS, will continue to assess the potential impacts of climate change on GRSG and its habitat and will develop strategies to mitigate anticipated effects on GRSG conservation efforts, as necessary and appropriate. Changes to management decisions will require a plan revision or amendment, as appropriate, recognizing the need to ensure that future management direction improves the resilience of habitat areas essential to the conservation of the species.

1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT Report emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency" (FWS 2013). Recent USGS studies by Brooks et al. (2015) and Coates et al. (2015) reinforce the importance of a comprehensive management strategy to prevent and suppress rangeland fires in the western part of the range of the GRSG, and to act aggressively to restore habitat areas impacted by fire.

For this reason, the ARMPAs seek to improve efforts to strategically-develop fuel breaks in collaboration with GRSG biologists to reduce potential habitat loss from rangeland fires, accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush, and fight the spread of cheatgrass and other invasive species that increase the frequency and intensity of rangeland fires. However, prescribed fire will not be used in sagebrush steppe except under the following conditions: the NEPA analysis for the Burn Plan provides a clear rationale for why alternative techniques were not selected as a viable option, how GRSG habitat management goals and objectives would be met by its

use, how the COT Report objectives would be addressed and met, and a risk assessment is prepared to address how potential threats to GRSG habitat would be minimized.

Recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers et al. 2014) provides the basis for improved targeting of fire management activities on BLM lands. The BLM, the Forest Service, FWS, and other cooperating agencies agreed to incorporate this approach into the ARMPAs. This information is being used to identify and design projects to change vegetation composition and/or structure to modify potential fire behavior for the purpose of improving fire suppression effectiveness and limiting fire spread and intensity due to invasive grasses and conifer encroachment. The BLM *Greater Sage Grouse Invasive Annual Grasses and Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats.

Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species, and prioritize vegetation treatments for the purpose closest to occupied GRSG habitats and near occupied leks.

In addition to and complementing the fire management measures in the ARMPAs described in this ROD, S. O. 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department**" (emphasis added; US Department of the Interior 2015).

S. O. 3336 directed the development of the *Integrated Rangeland Fire Management Strategy* (Strategy) which places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes, with a focus on priority GRSG habitat, including those identified by the FIAT for the Great Basin Region, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT Assessments provide a critical guidance to protect, maintain, and enhance GRSG habitat consistent with best available science and identify highly resistant and resilient landscapes to target fire management activities to these most important lands.

A key element of the Strategy is a commitment to address the invasion and expansion of cheatgrass, medusahead rye, and other invasive grasses through expanded efforts to treat impacted acres. Efforts are underway to increase the acreages to be treated with chemical and biological agents to kill and stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion. In addition, recently adopted Departmental guidance will allocate Emergency Stabilization and Burned Area Rehabilitation funds on a risk-based approach using historic acres burned to accelerate and expand efforts to restore lands impacted by fire with native grasses and sagebrush seedlings. The BLM recently announced a Native Seed Strategy to accelerate and expand efforts to produce, store, and allocate native seed for native vegetation and sagebrush to restore and rehabilitate burned areas to accelerate efforts to improve the health of the sagebrush ecosystem and habitat for GRSG.

Finally, through the issuance of a Leaders' Intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions with regard to the allocation of resources for firefighting in 2015. Additional resources have been allocated and will be targeted to fuel treatments (including invasive species

control), suppression (through the prepositioning of fire-fighting resources and the training of additional Rangeland Fire Protection Associations, local volunteer firefighters, and veteran fire fighters), and habitat restoration in these areas. Firefighting assets (aircraft, firefighters and related equipment) were repositioned in advance of the 2015 fire season to improve capacity to reduce acres of rangelands lost to fire by improving the success of initial attack. In future years, BLM firefighting assets will be located near PHMAs to limit habitat losses due to rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT Report noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective" (FWS 2013). The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats" (NTT 2011).

A range-wide monitoring and evaluation framework will be established and implemented as described in the Monitoring Framework (Appendix D of each attached ARMPA). This monitoring strategy has two parts: (1) implementation monitoring (i.e., are decisions being implemented in a timely manner, are actions taken consistent with the plan decisions), and (2) effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals). Through effectiveness monitoring, BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat to determine if the desired management objectives (e.g. avoiding and minimizing additional surface disturbance in PHMAs) have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, size of patches, etc.). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by State wildlife agencies and other partners, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRSG populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ameliorate negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Teams (as described in **Section 1.6.2**) will also be used to advise regional monitoring strategies and data analysis as described in the plans.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored - habitat condition and/or population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after the issuance or signature of this ROD.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a

project-by-project basis to mitigate for the specific causal factor in the decline of populations or habitats, with consideration of local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the State, FWS, and the BLM to see if the causal factor can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a hard trigger, which signals more severe habitat loss or population declines.

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger is tripped, the BLM will implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. If a hard trigger is tripped in a PAC that crosses State boundaries, the WAFWA MZ GRSG Conservation Team will convene to discuss causes and identify potential responses.

In the event that new scientific information becomes available demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM will immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive such as an instruction memorandum (IM) or a plan amendment.

1.7 Unique Aspects of the Great Basin ARMPAs

The ARMPAs and their associated EISs were developed through four planning efforts across the Great Basin Region (as described in **Section 1.1**). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing, in particular, implementing measures to limit anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and State-specific management approaches.

This flexible landscape approach provided the opportunity to incorporate recommendations resulting from collaboration with the States and local cooperators as well as public comments in each Planning Area. The plans and their future implementation are strengthened by the contributions of local partners and their knowledge, expertise, and experience.

Measures incorporated into the plans remain consistent with the range-wide objective of conserving, enhancing, and restoring GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat, such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Great Basin Region's ARMPAs.

Idaho and Southwestern Montana

The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third category of habitat referred to as IHMAs. IHMAs are BLM-administered and National Forest System lands that provide a management buffer for PHMAs and connect patches of PHMAs. IHMAs encompasses areas of generally moderate to high conservation value habitat and/or populations.

In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance while providing an acceptable additional level of flexibility in IHMAs and GHMAs since surface disturbance due to development is not as great a threat to habitat in the sub-region. The three tiers also serve as the foundation for an adaptive management approaches that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, IHMAs will be managed as PHMAs to maintain sufficient PHMAs to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat, as described in Appendix E of the attached Idaho and Southwestern Montana ARMPA, which was developed by the BLM in concert with the Idaho Department of Fish and Game, Forest Service, and FWS. The Idaho and Southwestern Montana ARMPA also includes additional RDFs based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local FWS office. Examples are avoiding building new wire fences within 2 km of occupied leks and placing new, taller structures out of line of sight or at least one kilometer from occupied leks. The BLM will also work with the State of Idaho in setting priorities for the review and processing of grazing permits/leases in SFAs consistent with the methodology recommended by the State of Idaho in its proposed plan for the management of BLM-administered lands in the State.

On August 7, 2015, the Sawtooth National Recreation Area and Jerry Peak Wilderness Act (House Resolution 1138) was signed into law. In accordance with the Wilderness Act (16 USC, Section 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the BLM in Idaho, were designated as Wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness. Approximately 12,430 acres of this Wilderness Area is within BLM-administered SFAs. This area will now also be managed as Wilderness consistent with the Wilderness Act. As specified in the Sawtooth National Recreation Area and Jerry Peak Wilderness Act, a wilderness management plan will be developed within five years of the signing of the act and it will outline specific management guidance for the new wilderness area.

This act also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas and they are no longer subject to management, pursuant to Section 603(c) of the FLPMA. The acres of wilderness study areas released include approximately 71,194 acres of PHMAs, 11,923 acres of IHMAs, and 5,912 acres of GHMAs. The ARMPA decisions for these areas will not change as a result of the release.

Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine County, Custer County, the City of Challis, the City of Clayton, and the City of Stanley. These conveyances include approximately 53 acres of PHMAs, 10 acres of IHMAs, and 828 acres of GHMAs that are reflected in the ARMPA as being administered by the BLM. Once conveyed, these lands will not be subject to the BLM management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

The decisions affecting Southwestern Montana in the ARMPA are consistent with the objectives of the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014; State of Montana 2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy

exploration and development. The BLM plan will permit the disturbance limit to go from a 3 percent to a 5 percent disturbance cap, consistent with the Montana Plan when the process for implementing their disturbance calculation methodology is instituted and effective. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if additional GRSG related management actions should be adjusted with coordination from the State of Montana and the FWS to achieve consistent and effective conservation across all lands, regardless of ownership.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the "2014 Coates Maps," developed locally using the best available science, and included OHMAs, where RDFs will be applied at the project level. Decisions for BLM-administered lands in the State of California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration Final EIS (BLM 2008).

Decisions for BLM-administered lands in Nevada incorporate key elements of the *State of Nevada Greater Sage-Grouse Conservation Plan* (State of Nevada 2014) including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the Planning Area. This mitigation strategy focuses restoration efforts in the key areas most valuable to the GRSG. The ARMPA adopts a Disturbance Management Protocol to provide for a 3 percent limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, State of Nevada, and FWS. The plan provides for this exception due to the development of mitigation tools in Nevada, including the Conservation Credit System, in collaboration with the FWS. Furthermore, given the concurrence of the Nevada Department of Wildlife and FWS in each exception, this approach is consistent with conservation objectives. The Nevada ARMPA does not use a disturbance density cap, required in the three other Great Basin Region ARMPAs, in light of the Disturbance Management Protocol in BLM-administered lands in Nevada.

In coordination with the FWS, the Nevada ARMPA also allows for an exception to the geothermal NSO, which is an energy development priority for the State and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (*Conservation Plan for Greater Sage-Grouse in Utah*; Utah Greater Sage-Grouse Working Group 2013) and the State of Wyoming (Executive Orders 2011-5, 2013-3, and 2015-4), which establishes conservation measures for protecting GRSG and also focuses conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the State's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in GHMAs because 96 percent of the breeding GRSG in Utah are within PHMAs where conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and RDFs as well as

requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates GHMAs as open to wind energy and high voltage transmission ROW development (consistent with the net-conservation-gain mitigation framework for the ARMPA). The Utah ARMPA also designates GHMAs open to oil and gas development with standard constraints.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (Hagen 2011) which establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the State of Oregon in which disturbance is capped at 1 percent per decade, in addition to the 3 percent cap in BSUs and project analysis areas.

The BLM Oregon plans provide additional flexibility for wind development in PHMAs in Harney, Lake, and Malheur counties by allocating them as avoidance areas (rather than exclusion areas) within PHMAs that are outside of the SFAs. In Harney, Lake and Malheur counties, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMAs and GHMAs) before approving development in PHMAs. The BLM provided this flexibility after recognizing the extent of high and medium potential wind areas in these counties that is in PHMAs, the fact that wind energy is excluded in SFAs in these counties, and, after coordination with the FWS, determining that the more rigorous disturbance cap (in which disturbance is capped at 1 percent per decade) and adaptive management triggers adopted by the Oregon plan would compensate for the limited wind development likely to occur in these areas. Due to these factors, the BLM finds these limited areas of flexibility for wind development are consistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic areas where habitat enhancement and restoration activities are encouraged, as well as other strategic areas to address the impacts associated with climate change.

For additional information regarding the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs, which provides a crosswalk regarding how the ARMPAs address specific threats to GRSG identified in the COT Report through these State-specific management prescriptions.

1.8 DECISION RATIONALE

The ARMPAs provide a comprehensive, coordinated, and effective conservation strategy for addressing the threats identified by the FWS such that the need for additional protections under the ESA may be avoided. The ARMPAs contain objectives which strive to conserve the GRSG and its habitat on BLM-administered lands across the remaining range of the species consistent with measures identified or recommended in the NTT Report, the COT Report, recent USGS studies, and other relevant research and analysis.

In combination with the GRSG conservation actions taken by the individual States within the remaining range of the species and initiatives to address the threat of rangeland fire to curb the spread of non-

native invasive grasses, and to promote conservation measures to benefit GRSG on private lands, the BLM and Forest Service proposed ARMPAs are an essential component of the effort to conserve the GRSG and its habitat. Combined, all of the ARMPAs associated with the BLM's National GRSG Conservation Strategy would affect approximately 66 million acres of the remaining habitat for the species.

The BLM GRSG Conservation Strategy is built on the following key concepts:

- **Landscape-level**—The planning effort encompasses the remaining habitat of the GRSG on BLM-administered public lands, covering 10 western States in the Great Basin and Rocky Mountain regions. As such, the strategy provides a coherent framework across the BLM ARMPAs to implement landscape-level conservation for GRSG while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple-use and sustained-yield mandates under FLPMA. The conservation measures included as part of this landscape-level conservation effort address identified threats to the species, recognizing local ecological conditions, and incorporating existing conservation efforts where they are consistent with the overall objective of conserving GRSG across its remaining range.
- **Best available science—**The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, State agencies, the USGS, the FWS and other sources. The COT Report provided a "blueprint" for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The NTT Report provided additional guidance for addressing the most significant threats to the GRSG. The concepts set forth in a number of reports prepared by the USGS regarding specific threats to GRSG, habitat connectivity, and related issues are reflected in the land allocation and resource management decisions. In addition, a series of reports on how to improve efforts to reduce the threats of rangeland fire and invasive species prepared in collaboration with the WAFWA, as well as a report to the Secretary of the Interior entitled *An Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior* also informed the GRSG conservation (US Department of the Interior 2015).
- **Targeted, multi-tiered approach**—The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration efforts to the most important habitat management areas as determined by State and Federal GRSG experts, largely consistent with the PACs identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as PHMAs. Within PHMAs, the ARMPAs provide an added level of protection to eliminate most surface disturbance through the delineation of SFAs, derived from areas identified by the FWS as "strongholds" essential for the species' survival. GHMAs, recognize the potential value of habitat areas outside of PACs -- as recommended by the COT Report -- where surface disturbance is minimized while providing greater flexibility for other land resource uses.
- **Coordinated—**The ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, Federally-administered lands essential to the conservation of the GRSG are managed in a coordinated

manner. The FWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.

- **Collaborative—**The ARMPAs reflected extensive input from the relevant States, collaborators, and stakeholders and the public from the outset. The ARMPAs were developed with the benefit of input from the individual States and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force (SGTF) was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate State and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG consistent with the multiple-use and sustained-yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis and recommendations for GRSG conservation including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through a collaborative effort of State and Federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report, which identified threats to GRSG habitat as well as the most important habitat to protect, provided an important framework for development of the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of State and Federal scientists, wildlife biologists, resource managers, and policy advisors, was tasked by the Director of the FWS "with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future" (FWS 2013).

In addition, the FIAT Report and the USGS compilation and summary of published scientific studies that evaluate the influence of human activities and infrastructure on GRSG populations (*Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review* [Manier et al. 2014], and the *Integrated Rangeland Fire Strategy: Final Report to the Secretary of the Interior* [US Department of the Interior 2015]) provided important guidance in the development of critical aspects of the ARMPAs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG management experience where consistent with the overall GRSG conservation objectives.

The BLM ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate State-developed conservation measures in each of the sub-regional plans has added complexity in developing the overall conservation strategy, the body of local knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the task of implementing the plans upon completion.

In his transmittal letter accompanying the final COT Report, the FWS Director reaffirmed his charge. "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. . . . Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels" (FWS 2013).

The ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report, and the NTT Report. As previously noted, the COT Report stated, "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT Report recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal." The COT further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy" (FWS 2013).

In order to address the identified threats and meet the recommendations of the COT Report, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMAs which align closely with PACs identified in the COT Report (except for PACs in Nevada and Utah, as specified on page 13 of the COT Report). Within PHMAs, the plans identify SFAs based on the FWS analysis of strongholds for the species based on population density, habitat integrity, and resilience to climate change among other factors. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in WHB populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS (and reinforced by recent USGS analysis) which are most important to long-term sagebrush ecosystem health and species persistence.

PHMAs and GHMAs boundaries are based on PPH and PGH (except in Utah, where PPH was derived from occupied habitat). Consistent with BLM's IM 2012-044, PPH and PGH are based on data and maps developed through a collaborative effort between the BLM and the respective State wildlife agency. PPH and PGH (PHMAs and GHMAs in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty et al. 2010), GRSG proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas. PGH (now GHMAs) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

As discussed in **Section 1.6**, allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMAs – from energy, to transmission lines, to recreation facilities and grazing structures are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. The ARMPAs will also prioritize future oil and gas leasing and development outside of identified GRSG habitat management areas (i.e., SFAs, PHMAs, and GHMAs) to reduce the potential for future conflict with GRSG.

The ARMPAs include additional measures to limit surface disturbance in PHMAs through the establishment of disturbance limits or caps and density restrictions (except in Nevada) of on average 1 energy facility per 640 acres, as well as lek buffers. These requirements reflect recommendations contained in the NTT Report and are consistent with certain State strategies that were already in place before the initiation of the BLM's National GRSG Conservation Strategy. As described in **Section 1.6.1**, BLM determined the appropriate lek buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al. 2014) based on best available science.

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in SFAs, then in PHMAs, and finally in areas designated as GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMAs or GHMAs will be designed to a net conservation gain standard consistent with the recommendation included in the September 2014 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework Version 1.0* (FWS 2014b). According to the authors, the Framework was prepared …

> "to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse" (FWS 2014b).

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT Report to " . . . conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g. shrub cover, nesting cover)" (FWS 2013).The ARMPAs also address the adverse impacts of free-roaming equids (WHBs) on GRSG habitat by prioritizing gathers and removal of WHBs to achieve AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has been working with the National Academy of Sciences to conduct new research of methods to reduce WHB reproduction rates. Through a combination of targeted gathers and the development of an effective agent for controlling future free-roaming equid reproductive rates, over time, this threat to GRSG may be effectively managed.

Since the interaction of fire and invasive species represents the primary threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat that led to S. O. 3336 and subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015).

In accordance with the S. O. and subsequent rangeland fire management strategy, substantial changes in policy and management direction affecting all aspects of the rangeland fire management program have

been and will be made to enhance BLM's ability to manage the threat of rangeland fire – from better coordination between resource managers and fire management officers; to the identification and prioritization of prevention, suppression, and restoration efforts in SFAs, PHMAs, and GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This effort, and the initiative to fight the spread of non-native invasive species that contributes to higher rangeland fire risk (e.g., cheatgrass) discussed below, has fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

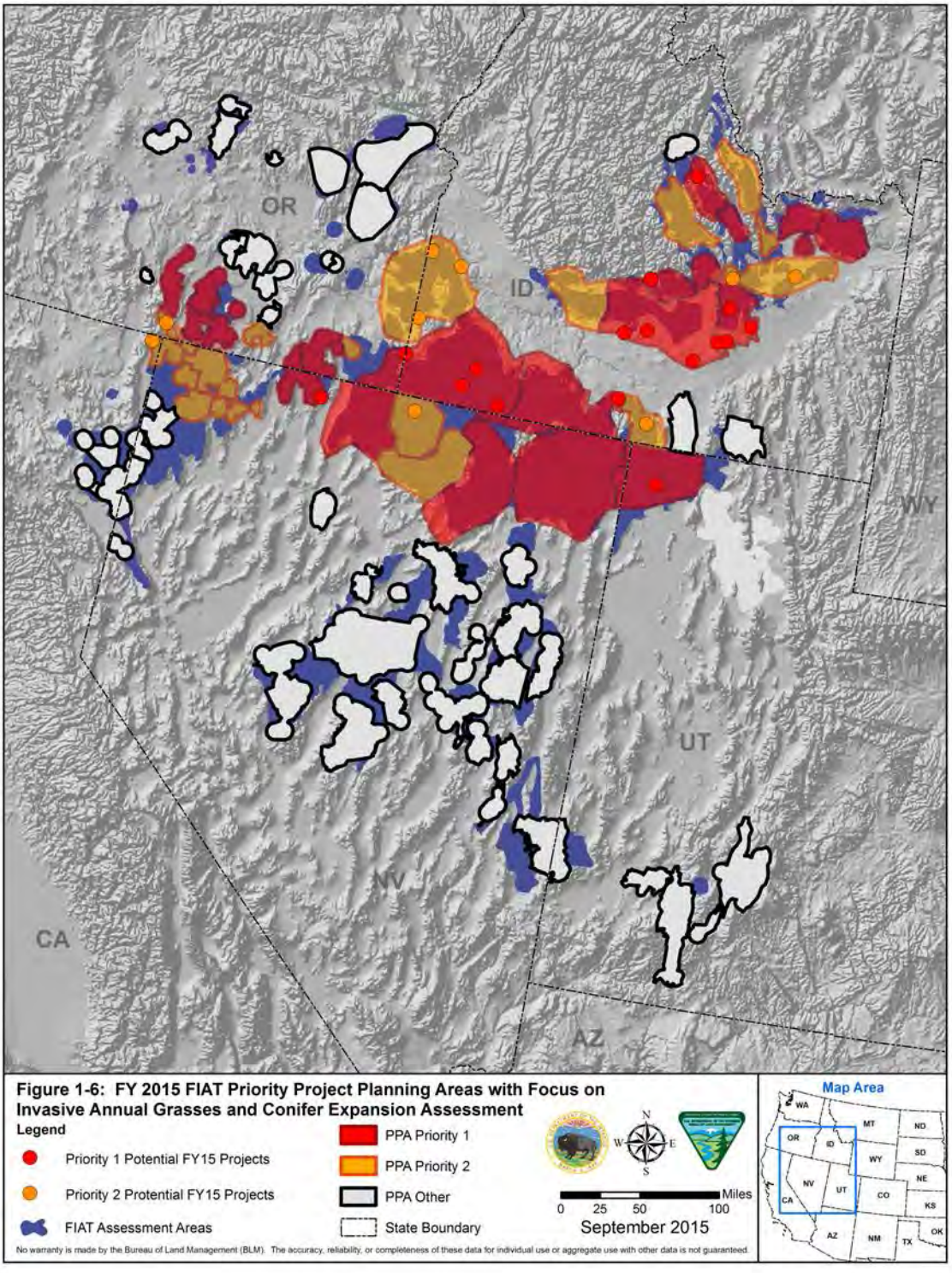
The COT Report, and other more recent research and analysis, amplify concern for the contribution of cheatgrass and other invasive annual species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers (Chambers et al. 2014) led to the development of the FIAT and a subsequent assessment that identified areas of resistance and resilience to fire within SFAs, PHMAs, and GHMAs. Through use of the FIAT Assessment/Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss as well as target restoration to those areas important to the species where success is more likely. The BLM is also committed to and accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive annual species.

Even prior to completion of the FIAT assessment, BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY2014 Omnibus Appropriation, BLM prioritized the funding of treatments and activities within each State that benefit GRSG (see **Figure 1-6**, FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments).

To further supplement these efforts, among other things, the Department of the Interior has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes and BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. In addition, the Department has approved policy changes to increase the commitment, flexibility and time frame for use of Emergency Stabilization and Burned Area Rehabilitation funding. Through adoption of a risk-based approach using a rolling average of the acres lost to fire during the previous five fire seasons, Emergency Stabilization and Burned Area Rehabilitation funding will be allocated to the BLM to permit an increased focus on the restoration of priority sagebrush-steppe habitats impacted by fire.

In addition, the Sage Grouse Initiative launched by the NRCS in 2010 also contributes to the effort to protect and restore important GRSG habitat. In collaboration with the States and private landowners on private lands, as well as with the BLM and the Forest Service on Federally-administered public lands, NRCS has worked to reduce the encroachment of pinyon-juniper trees and restore rangeland habitat on private and BLM-administered lands.

Figure 1-6
FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments



Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy* (Stiver et al. 2006), the BLM and Forest Service conservation strategy places heavy reliance on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs. Monitoring plans will be developed in coordination with relevant State and Federal agencies and will incorporate evaluation of GRSG population trends by the States and changes in habitat condition by the Federal land management agencies. As the WAFWA report states,

> Monitoring provides the "currency" necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and therefore, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort (Stiver et al. 2006).

In addition, the ARMPAs incorporate an adaptive management framework that provides an early warning system of soft triggers to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes in population levels or habitat conditions occur. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and hard triggers are reached, the ARMPAs identify measures that will be put in place, including plan-level responses, in an effort to reverse the declines.

In summary, the ARMPAs emphasize an "avoidance first" strategy consistent with the recommendations in the COT Report by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished through identification of important GRSG habitat areas and then applying allocations that exclude or avoid surface disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, are important to the long-term conservation of GRSG.

Restoration decisions include specific habitat objectives, and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by S. O. 3336 and the *Integrated Rangeland Fire Management Strategy* (US Department of the Interior 2015) as well as NRCS's Sage Grouse Initiative investments in private landowners' conservation efforts. This strategy reflects a high level of commitment by Federal partners to conserve the GRSG and its habitat. The actions on Federal lands, which constitute nearly two-thirds of the most important lands for GRSG conservation, will anchor and complement the significant actions being taken by State and local governments as well as private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of new conservation actions that will go into effect through the BLM ARMPAs as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for the BLM since 2010 and a long-term commitment to assure the conservation of the species consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape for the BLM and amplifies the need for collaboration among Federal, State, tribal, and private partners to conserve the GRSG consistent with direction articulated in the NTT Report:

"Land uses, habitat treatments, and human disturbances will need to be managed below thresholds necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to GRSG habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future" (NTT 2011, p. 6-7).

The conservation benefits to the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPs and ARMPAs provide an essential foundation for conserving the GRSG which, in conjunction with the amended Forest Service Land and Resource Management Plans, affect nearly two-thirds of GRSG habitat across the remaining range of the species. In conjunction with similar conservation efforts by other Federal and State agencies, private landowners, and local partners, the BLM National GRSG Conservation Strategy constitutes an historic conservation effort that will benefit more than 350 species and the sagebrush ecosystem that they depend on. It is through these landscape-level, science-based, collaborations to conserve the imperiled sagebrush ecosystem that conservation of the GRSG and other sagebrush obligate species can best be achieved and the listing of the GRSG under the ESA may be avoided.

1.9 IMPLEMENTATION

Future management decisions made in conformance with the ARMPAs can be characterized as *immediate* or *one-time future* decisions.

Immediate decisions—These decisions are the land use planning decisions that go into effect when the ROD is signed. These include goals, objectives, allowable uses, and management direction, such as the allocation of lands as open or closed for salable mineral sales, lands open with stipulations for oil and gas leasing, and OHV area designations. These decisions require no additional analysis and guide future land management actions and subsequent site-specific implementation decisions in the Planning Area. Proposals for future actions, such as oil and gas leasing, land adjustments, and other allocation-based actions, will be reviewed against these RMP decisions to determine if the proposal is in conformance with the plan.

One-time future decisions—These are the types of decisions that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementing one-time RMP decisions will be based on the following criteria:

- Relative importance of the action to the efficacy of the GRSG conservation strategy
- National BLM management direction regarding plan implementation
- Available resources

General Implementation Schedule of "One-Time" Decisions: Future Decisions discussed in the attached ARMPAs will be implemented over a period of years, depending on budget and staff availability. After issuing the ROD, the BLM will prepare implementation plans that establish tentative timeframes for

completing one-time decisions identified in these ARMPAs. These actions require additional site-specific decision-making and analysis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, nondiscretionary workloads, and cooperation by partners and external publics. Yearly review of the plan will provide consistent tracking of accomplishments and will provide information that can be used to develop annual budget requests to continue implementation.

1.9.1 Additional Implementation Guidance and Considerations

Instructional Memoranda—Additional instruction and management direction will be necessary to implement certain land allocation decisions and direction included in the ARMPAs. For example, additional guidance will be provided to clarify how the Bureau will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat. IMs and related guidance will be completed by the BLM-Washington office. The BLM shall complete IMs for the following management direction with the intent of completing these IMs within 90 days of the RODs: oil and gas leasing and development prioritization and livestock grazing. Other IMs, including, monitoring, and mitigation, will be developed as necessary. Issuance of this national guidance will supersede any related national and field level guidance currently in effect. Additional national, State and field level guidance will be developed as necessary to implement the decisions in the plans.

Map Adjustment, GRSG Seasonal Habitats, and Connectivity—PHMAs was designed to include breeding bird density, GRSG proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas, and GHMAs was designed to include the areas of occupied seasonal, connectivity, or year-round habitat outside of PHMAs. As additional important habitats are identified (e.g., winter habitat and key connectivity areas), the BLM will map and incorporate these habitats for GRSG, consistent with best available science, through subsequent plan maintenance, revision, or amendment, as appropriate. Priority should be given to ensuring that wintering habitat is identified and captured in all changes in habitat maps subsequent to this decision. In the interim, the BLM will use the existing maps for all decisions.

Continued Commitment to Research and Use of Best Available Science:—By implementing this strategy, new management issues and questions are likely to arise that may warrant additional guidance or study by technical experts, scientists, and researchers. The BLM is committed to continue to work with individuals and institutions with expertise in relevant fields in order to ensure that land and resource management affecting conservation of the GRSG and the sagebrush ecosystem continues to be guided by sound, peer-reviewed research and the best available science.

Training—Given the nature and complexity of the management direction in these ARMPAs, the BLM, in collaboration with the Forest Service and the FWS, will develop and implement a schedule of trainings for key functions, actions, and decisions associated with these plans. In this manner, the BLM will seek to better inform its personnel, partners, cooperators, and stakeholders of the changes in management that will result from this new management paradigm.

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2. DECISION

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CHAPTER 2
DECISION

2.1 SUMMARY OF THE APPROVED MANAGEMENT DECISIONS

The decision is hereby made to approve the Great Basin Region GRSG ARMPAs for the Great Basin Region GRSG Sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments 1 through 4). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs amend the land use plans described in Sections 1.1 of attachments 1 through 4.

The land use decisions conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes), and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective upon signing of this ROD, implementation of on-the-ground activities requires additional steps before any on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 WHAT THE ROD AND ARMPAS PROVIDE

The ARMPAs include GRSG and GRSG habitat land use plan level management decisions in the form of the following:

- Goals
- Objectives (desired future conditions)
- Land use allocations and allowable uses
- Management actions

Goals are the broad statements of desired outcomes and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the Planning Area that are available or not available for certain uses and are also used to prioritize conservation and restoration management actions. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/or sale, and what lands are open, closed, or limited to motorized travel All acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Management decisions/actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands, including but not limited to stipulations, guidelines, best management practices, and RDFs.

The ARMPAs' management decisions were crafted to incorporate conservation measures into RMPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats (see **Section 1.3**).

The EISs conducted for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Amendments sufficiently disclose and analyze all environmental issues associated with mineral leasing on Forest Service-administered lands, should consent be provided by or consultation be required with the Forest Service before issuing a lease, in compliance with applicable mineral leasing and NEPA regulations and subject to further site-specific environmental analysis where applicable.

2.3 WHAT THE ROD AND ARMPAS DO NOT PROVIDE

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for land use plan level travel management area decisions in the Idaho and Southwestern Montana ARMPA.

The ARMPAs do not violate valid existing rights.

The ARMPAs do not contain decisions for the mineral estates that are not administered by the BLM. ARMPA decisions for surface estate only apply to BLM managed lands. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

- *Statutory requirements.* The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy.* The decision will not change BLM's obligation to conform to current or future National policy.
- *Funding levels and budget allocations.* These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be

incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

2.4 MODIFICATIONS AND CLARIFICATIONS

The ARMPAs in the Great Basin Region include minor modifications and clarifications to the Proposed RMPAs. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency review. These modifications and clarifications are hereby adopted by this ROD.

The following modifications/clarifications were made to all of the ARMPAs in the Great Basin Region.

- ARMPA Formatting—The plans were reformatted between the Proposed RMPA and ARMPA planning stages for consistency across the Great Basin Region; the order of management actions and the prefixes for the goals, objectives, and management actions were changed in the ARMPAs to provide consistency among the amendments and revisions for GRSG goals and objectives.
- Forest Service References (applicable only to the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah ARMPAs)—All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. The Forest Service has completed two separate RODs and Land and Resource Management Plan Amendments under their planning authorities.
- Fire—Management actions/decisions were modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.
- Livestock Grazing—The following statement, "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR, Part 4110.2-3," was added to the management action/decision which reads, "At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks."
- Glossary—Numerous glossary definitions were deleted due to the fact that the terms were not used/referenced in the ARMPAs. If not already contained in the Proposed RMPAs' glossary, the following terms and definitions were added to the glossary for clarification:
  - Grazing Relinquishment: The voluntary and permanent surrender by an existing permittee or lessee, (with concurrence of any base property lienholder[s]), of their priority (preference) to use a livestock forage allocation on public land as well as their permission to use this forage. Relinquishments do not require the consent or approval by BLM. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.
  - Transfer of Grazing Preference: the BLM's approval of an application to transfer grazing preference from one party to another or from one base property to

another, or both. Grazing preference means a superior or priority position against others for the purposes of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee.

  - Valid Existing Right: Documented, legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include but are not limited to fee title ownership, mineral rights, ROWs, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.
  - Mining Claim: A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the 1872 Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, mill site, and tunnel site.
  - Energy or Mining Facility: Human constructed assets designed and created to serve a particular function and to afford a particular convenience or service that is affixed to a specific locations, such as oil and gas well pads and associated infrastructure.

- GRSG Habitat Mapping—Information was added to the ARMPAs to specify that when new information becomes available about GRSG habitat, including seasonal habitats, in coordination with the State wildlife agency and FWS, and based on best available scientific information, the BLM may revise the GRSG habitat management area maps and associated management decisions through plan maintenance or plan amendment/revision, as appropriate.
- Adaptive Management—The GRSG Adaptive Management Strategy was revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.
- Vegetation—The desired condition for maintaining a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover in SFAs and PHMAs was modified to read as follows: "In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health" (BLM Tech Ref 1734-6; Pellant 2005).
- GRSG Habitat Objectives—For clarification purposes, within each of the ARMPA GRSG Habitat Objectives Tables, native bunchgrasses was provided as an example of a perennial grass cover and the inclusion of residual grasses was added to the perennial grass cover and height objective.
- Sagebrush Focal Areas—Examples of the types of vegetation and conservation actions that will be prioritized within SFAs were provided for clarity in the management action/decision. These examples include land health assessments and WHB management and habitat restoration actions.

- Required Design Features—One of the criteria for demonstrating that a variation to an RDF is warranted was modified to include the following statement, "An alternative RDF, a state-implemented conservation measure or plan-level protection is determined to provide equal or better protection for GRSG or its habitat."
- Lands and Realty—The following management actions/decisions and objectives were clarified:
  - Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
  - Within existing designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (e.g., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project collocation.
- Land Tenure—Management action associated with land disposals was clarified to include land exchanges as a means of disposal.
- WAFWA GRSG Conservation Team—Additional clarification was added to ARMPAs related to the WAFWA GRSG Conservation Teams that were identified in the Proposed RMPAs: "WAFWA management zones will be used to facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response, through WAFWA GRSG Conservation Teams (Teams). These Teams will convene and respond to issues at the appropriate scale, and will utilize existing coordination and management structures to the extent possible."
- Cheatgrass—The following management action was included consistent with the purpose and need and objectives of the ARMPAs: "Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species."
- Valid Existing Rights—The following management action was added to the ARMPAs: "Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table 2 of the Monitoring Framework–under valid existing rights prior to authorizing new projects in PHMAs."

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the Final EIS in various places was grouped into a stipulation appendix and added to the ARMPA as Appendix G Stipulations.
- Appendix G, Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA was modified to delete the reference to Tables 2 to 7. Tables 2 to 7 were deleted from the Final EIS Appendix G before it was made

available to the public for protest, but the reference was not deleted in text of the Appendix. This discrepancy was identified during protest resolution and by the Governor during the Governor's consistency review. These values will be calculated after the signing of the ROD (see Adaptive Management below).

- Many editorial changes, including deleting repeated numbers and correcting spelling errors, were made when finalizing the ARMPA.
- On August 7, 2015, President Obama signed into law the Sawtooth National Recreation Area and Jerry Peak Wilderness Act (House Resolution 1138). In accordance with the Wilderness Act (16 USC, Section 1131 et seq.), certain Federal lands in the Challis National Forest and Challis District of the BLM in Idaho, comprising approximately 116,898 acres, were designated as wilderness, as a component of the National Wilderness Preservation System, known as the Jim McClure-Jerry Peak Wilderness.

  This bill also released the Jerry Peak West, Corral-Horse Basin, and Boulder Creek Wilderness Study Areas and they are no longer subject to Section 603(c) of the FLPMA. Finally the Sawtooth National Recreation Area and Jerry Peak Wilderness Act also directed the BLM to convey certain public lands to Blaine County, Custer County, the City of Challis, the City of Clayton, and the City of Stanley. These conveyances include approximately 53 acres of PHMAs, 10 acres of IHMAs, and 828 acres of GHMAs that are reflected in the ARMPA as being administered by the BLM. Once conveyed, the BLM will adjust the maps and acres as they appear in the ARMPA through plan maintenance to depict that these lands are not subject to the BLM management decisions outlined in the Idaho and Southwestern Montana GRSG ARMPA.

Special Status Species

- Deleted the Seasonal Timing Restrictions from Appendix C Final EIS to reduce redundancy because these restrictions were already in the RDFs Appendix.

Livestock Grazing

- Livestock Grazing RM-16 and RM 18, which are now MD LG 15 and MD LG 17 respectively in the ARMPA, had the following sentence added as an accepted recommendation made by the Governor during the Governor's consistency review to clarify management and conservation action prioritization in SFAs and "Management and conservation action prioritization will occur at the Conservation Area (California) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFAs followed by areas of PHMAs outside SFAs."

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in PHMAs, IHMAs, and GHMAs would only be available for disposal through exchange. This was removed because it was not consistent with BLM policy and the net conservation gain clause in MD LR-13 will provide assurance that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes such as changing should to shall and would to will to reflect the final decision language.
- Re-categorizing some of the management decisions into other common resource programs. For example, all of the fire and fuels management decisions are all numbered under FIRE and are not split into different sub-category names.
- Re-lettering the critical appendices and deleting those that are no longer applicable for the ARMPA.

Special Status Species

- Added clarity to MD SSS 2 A 3 by describing what energy and mining facilities to which this decision would apply; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A by including references to valid existing rights and applicable law for the requirement of a net conservation gain.
- Specified in MD SSS 8 that this activity would be coordinated with Nevada Department of Wildlife or California Department Fish and Wildlife and that breeding activity surveys would be for actions involving mineral activities and ROWs.
- Deleted Action PR 4 from the Proposed RMPA because the BLM does not manage landfills and transfer stations.
- Under the Brood-Rearing/Summer category, clarified that the objective of the 7-inch-deep rooted perennial bunchgrass in upland habitats was only for a 522-foot (200 meter) area around riparian areas and meadows. The additional reference was added for Casazza et al. 2011.
- Footnote #7 was deleted. The original footnote stated that the "specific height requirements needed to meet the objective will be set at the time of habitat assessment framework assessments." This is incorrect because the height requirements will need to be set well in advance of the habitat assessment framework assessments.
- A new footnote was added as footnote #1: "Any one single habitat indicator does not define whether the habitat objective is or is not met. Instead, the preponderance of evidence from all indicators within that seasonal habitat period must be considered when assessing sage-grouse habitat objectives." This addition was for the purpose of clarification.

Adaptive Management

- Clarified under MD SSS 21 that the BLM will coordinate with the Nevada Department of Wildlife and that the decision was specific to mineral activities and ROW actions.

Fire and Fuels Management

- Deleted "field offices" and "districts" from MD FIRE 3, as there will be a multi-layered approach to coordination, including BLM State Offices.

- In Objective FIRE 3, added "in SFAs first" to provide more emphasis to the SFAs over the rest of the PHMAs for this action.
- Modified MD FIRE 26 to delete "Districts," as there will be a multi-layer approach to identifying treatment needs for wildfire and invasive species management across the State.
- Added "FWS" as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 1 was modified for clarity and to include the fact that the BLM would conduct appropriate consultation, cooperation and coordination.
- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to." This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock or is being purposefully rested."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…"

Mineral Resources

- Management Decision MR 18 was modified to provide the Barrick Enabling Agreement (March 2015) as an example of appropriate mitigation that can be considered in the future, and the last sentence was removed because it only repeated BLM regulations and is unnecessary.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet wide "or a different width is specified for congressional designated corridors." This is in response to the Lincoln County Conservation Recreation Development Act (2204), which included congressionally designated corridors that were not included in the plan amendment or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this Act.
- Action LR-LUA 21 from the Proposed Plan was deleted because the Federal Highway Administration and the Nevada Department of Transportation already have valid existing rights associated with their easements and ROWs, and this planning effort would not change the terms and conditions of their existing easements or ROWs. Making this a Management Action is repetitive and unnecessary.

Travel and Transportation

- Due to confusion that was outlined in protest letters and in the Governor's consistency review, MD TTM 2 was clarified that limiting off-highway travel to existing routes in PHMAs

and GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations."

- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning." This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment," as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning Area, the two mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed RMPA (which are now separate appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Lands and Realty

- A typographical error in the socioeconomic analysis of the Proposed RMPA was identified during the protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows: Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D, E, F, and the Proposed Plan…" is replaced with the following:

  "Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-State providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on terrain. In rural areas, burial of new distribution lines would be more than double the cost of new overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers,

infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat."

Renewable Energy

- Managed Decision RE-2 was modified to include the statement, "In Harney, Lake, and Malheur counties, priority would be placed on locating commercial scale wind and solar energy development in non-habitat areas first (i.e., outside of PHMAs and GHMAs) before approving development in PHMAs."

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and human disturbances. This modification was recommended by the Governor during the Governor's consistency review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the Proposed RMPA, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMPA, the use of words like "would," "could," "should," and "may" were generally removed or revised to reflect the active management direction of an ARMPA rather than potential management presented when the Proposed RMPA was one of many alternatives the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMPA), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMPA), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog, a Federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is applied to all applicable objectives and management actions, not just the five actions in the Proposed RMPA where this concept and language was already present.
- Throughout the Proposed RMPA there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or State biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during the Governor's consistency review.
- The Proposed RMPA introduced the term BSU for adaptive management and the disturbance cap to provide a consistent approach for managing and monitoring across the GRSG range. In the Utah Sub-region, the boundaries of the BSUs follow the population area boundaries within PHMAs. As part of resolving protests, the ARMPA was revised to note that BSUs are PHMAs within population areas. Whenever the term BSU was used, it was

replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across State lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMPA, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA MZs when addressing designation of PHMAs. This change was made during the Governor's consistency review to more closely reflect the management in the State of Utah's Conservation Plan for GRSG in Utah (2013).
- MA-GRSG-1 from the Proposed RMPA, which is now MA-SSS-1 in the ARMPA was revised to include the following text: "The BLM will apply these goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language was added based on an accepted recommendation made by the Governor during the Governor's consistency review.
- The language of MA-GRSG-1 from the Proposed RMPA, which is now MA-SSS-1 in the ARMPA, regarding non-habitat areas within PHMAs and GHMAs was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMPA, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMPA, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual, incremental increases in noise levels.
- The language of MA-GRSG-6 from the Proposed RMPA, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside PHMAs/GHMAs. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction regarding management of areas outside PHMAs/GHMAs that have been treated to improve GRSG habitat. The change was necessary to avoid implication of changing allocations or altering PHMAs/GHMAs boundaries outside a planning process while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

Livestock Grazing

- The language of MA-GRA-6 from the Proposed RMPA, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to align with similar concepts and intent that was present in the livestock grazing sections in GRSG amendments throughout the Great Basin.

2.5 PROTEST RESOLUTION

The BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest proposed planning decisions within 30 days from the date the notice of availability of the Proposed RMP/Final EIS was published in the *Federal Register* (May 29, 2015). Below are descriptions of the protest resolution process for each of the four Great Basin Region Proposed RMPAs/Final EISs.

The Director concluded that the BLM followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed RMPAs/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed RMPAs/Final EISs, though minor clarifications were made and are summarized in **Section 2.4**. The BLM Director's decisions on the protests are summarized in each of the Proposed RMPAs/Final EISs Director's Protest Resolution Reports, which are available on the following BLM website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

2.5.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed RMPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Areas of critical environmental concern
- Fire and fuels management
- Fluid minerals
- Solid minerals
- Special status species
- Lands and realty and
- Travel and transportation management

2.5.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed RMPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air Quality
- Climate Change
- Noise
- Areas of critical environmental concern
- Solid minerals
- Special status species
- Lands with wilderness characteristics
- Lands and realty
- Tribal issues
- WHBs and
- Travel and transportation management

2.5.3 Oregon

For the Oregon GRSG Proposed RMPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- Compliance with FLPMA
- Compliance with NEPA

- Compliance with ESA
- Density and disturbance
- Monitoring
- Areas of critical environmental concern
- Fire and fuels management
- Solid minerals
- Special status species and
- Travel and transportation management

2.5.4 Utah

For the Utah GRSG Proposed RMPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- Compliance with FLPMA
- Compliance with NEPA
- Compliance with ESA
- Density and disturbance
- Adaptive management
- Land use allocations
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise
- Areas of critical environmental concern
- Fire and fuels management
- Fluid minerals
- Solid minerals
- Special status species
- Lands and realty

- Travel and transportation management and
- Reasonable foreseeable development scenarios

2.6 GOVERNOR'S CONSISTENCY REVIEW

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands" (43 CFR 1610.3-2[a]). The general requirement in FLPMA/planning regulations is to coordinate the land use planning process with plans of other agencies, States, and local governments to the extent consistent with law (see FLPMA Section 202[c][9] and CFR 1610.3-1[a]); and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with Federal law, or to maximum extent practical; see CFR 1610.3-2[a][b]). In accordance with FLPMA, the BLM was aware of and gave consideration to State, local, and tribal land use plans and provided meaningful public involvement throughout the development of the Proposed RMPAs/Final EISs.

The BLM is aware that there are specific State laws and local plans relevant to aspects of public land management that are discrete from, and independent of, Federal law. However, the BLM is bound by Federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that BLM's land use plans be consistent with officially-approved State and local plans only if those plans are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands. Where officially-approved State and local plans or policies and programs conflict with the purposes, policies, and programs of Federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved State and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and Federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the Federal agency planning process is not bound by or subject to State or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors asserting inconsistencies between the BLM's Proposed RMPAs and their State's or local governments' resource-related plans, policies and/or procedures, as well as other concerns that they had with the proposed planning documents. The BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected on August 6, 2015. These Governors were then provided with 30-days to appeal the BLM State Director's decisions to the BLM Director. On September 8, 2015, the BLM Director received appeals from the Governors of Idaho and Nevada. On September 11, 2015, the BLM Director received an appeal from the Governor of Utah. The BLM Director reviewed these appeals and rejected the recommendations of the Governors of Idaho, Nevada, and Utah by letters dated September 16, 2015, prior to the issuance of this ROD. The BLM Director's response to these appeals will also be published in the Federal Register subsequent to the issuance of this ROD.

In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications to the ARMPAs were made and are summarized in **Section 2.4**.

3. ALTERNATIVES

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CHAPTER 3
ALTERNATIVES

3.1 ALTERNATIVES CONSIDERED

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs in order to meet in the purpose and need of this effort to identify and incorporate appropriate management direction in land use plans to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. All management considered under any of the alternatives complied with Federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping, and to maintain or increase GRSG abundance and distribution in the Planning Area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMP Amendment. The goal was met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law there are typically few or no distinctions between alternatives.

3.1.1 Alternative A—No Action Alternative

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction derived from the existing field/district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. This alternative did not include changes that are needed to be made to the existing decisions based on the FWS 2010 listing petition decision that identified inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B—National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the NTT Report. The GRSG NTT, comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-grouse Conservation Measures* in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse MZs. The NTT Report proposed conservation measures based on habitat requirements and other life history aspects of GRSG and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse MZs.

The BLM's Washington Office IM 2012-044 directed the sub-regional planning efforts to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in PHMAs and avoid development in GHMAs, would close PHMAs to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals, and would recommend withdrawal from locatable mineral entry in all PHMAs. These management actions would reduce surface disturbance in PHMAs and would minimize disturbance in GHMAs, thereby maintaining GRSG habitat. Management actions for wildfire would focus on suppression in PHMAs and GHMAs, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices proposed in the NTT Report would be included as RDFs as part of Alternative B and are listed in Appendix C, Required Design Features (RDFs), of each of the attached ARMPAs.

This alternative was not selected in its entirety as the ARMPAs because the majority of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMAs, and few conservation measures in the Report were provided for in GHMAs. As a result, this alternative did not provide adequate conservation in GHMAs.

3.1.3 Alternative C—Citizen Groups' Recommended Alternative One

Alternative C was based on a citizen groups' recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and was applied to all occupied GRSG habitat (PHMAs

and GHMAs. Alternative C limited commodity development in areas of occupied GRSG habitat, and closed or excluded large portions of the Planning Area to many land uses. This included all PHMAs and GHMAs as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and nonenergy leasable mineral development, and exclusion areas for ROWs. The Utah Draft RMPA/EIS combined this alternative with Alternative F (discussed below) and included two sub-alternatives under Alternative C for a reduction in livestock grazing and WHB management.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMAs and GHMAs to such as extent that it did not give adequate accommodation to local needs, customs, and culture., and included proposed actions that are not necessary for GRSG conservation. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D—Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the preferred alternative in the Draft EISs, balanced opportunities to use and develop the Planning Area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while still allowing for human disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions based on BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMPAs/EISs, this alternative was modified to become the Proposed RMPAs and analyzed in the Final EISs. The Preferred Alternatives, with slight variations, became the Proposed Plans in the Final EISs.

In PHMAs under Alternative D, there would be limitation on disturbance in GRSG habitat by excluding wind and solar energy development (except for certain counties in Southeastern Oregon where avoidance is applied), avoiding most ROW development (subject to certain conditions), applying NSO stipulations to fluid mineral development, and closing PHMAs to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMAs under Alternative D, allocations are less stringent, but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMAs).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMAs and GHMAs, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative based on information provided by the State or Governor's offices for inclusion and analysis in the EISs. In many instances, the BLM had to adjust what was provided by the States and Governors to fit BLM language, decision-making constructs, etc. This alternative incorporates guidance from specific State conservation strategies, if developed or recommendations from the State on management of Federal lands and emphasizes management of GRSG seasonal habitats and maintaining

habitat connectivity to support population objectives. This alternative was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a State GRSG conservation plan and under this alternative, reverted back to Alternative A, the No-Action alternative.

For Nevada, Alternative E would apply an 'avoid, minimize, and mitigate' strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. Effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed because the State's Plan does not contain land use plan land use plan level allocation decisions (such as ROW exclusion and avoidance areas) and relies largely on the avoid, minimize, and mitigate strategy at the project level. The FWS March 2010 "warranted, but precluded" ESA listing petition decision identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism. The BLM believes this alternative did not incorporate adequate regulatory mechanisms into the existing plan to meet its purpose and need to conserve, enhance, and protect GRSG and its habitat, therefore, the BLM did not select alternative E as the ARMPA.

For Oregon, Alternative E contains GRSG conservation guidelines from Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the State plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the State plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats such as recreation, improper livestock grazing, and West Nile virus for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, Alternative E1 is based on the State of Utah's *Conservation Plan for Greater Sage-Grouse in Utah* (Utah Greater Sage-Grouse Working Group 2013) and would apply to all BLM-administered lands in Utah. In Alternative E1 conservation measures would be applied to 11 areas that the State identified, called Sage-Grouse Management Areas. Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on State or Federally managed lands within any particular Sage-Grouse Management Area. Occupied habitat outside of the State-identified Sage-Grouse Management Areas would not receive new management protection. They would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the State's plans were not consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 Alternative F—Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMAs and GHMAs. Alternative F would limit commodity development in areas of occupied GRSG habitat, and would close or designate portions of the Planning Area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMAs. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and WHB management utilization by 25 percent within PHMAs and GHMAs. While the Utah Draft EIS did not include an Alternative F, it did create two sub-alternatives under Alternative C for livestock grazing and WHBs to consider and analyze a similar reduction.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMAs and GHMAs to such as extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMPAs/EISs, the BLM developed the Proposed Plan Amendments/Final EISs for managing BLM-administered lands. The Proposed Plan Amendments/Final EISs focused on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed Plan Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the Draft EISs. The Proposed Plan Amendments, with slight variations (as outlined in **Section 2.4** of this ROD), became ARMPAs. The BLM adopts the Proposed Plan Amendments as the ARMPAs, as they also balance resource protections, with resource uses to protect resources while achieving sustainable resource development.

3.1.8 Environmentally Preferable Alternative

CEQ regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2[b]). Question 6A of CEQ's 40 Most-Asked Questions regarding CEQ's NEPA regulations (46 FR 18026) defines that term to ordinarily mean the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs is the most environmentally preferable. However, NEPA expresses a continuing policy of the Federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA). FLPMA requires the BLM to manage the public lands for multiple use and sustained yield. (see FLPMA Section 302.) And Section 102(12) of FLPMA declares a policy of the United States that ""the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 USC, Section 21a) as it pertains to the public lands."" For these reasons, Alternative B was not selected as the sub-regional ARMPAs.

3.2 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations
- They did not meet the purpose and need
- The alternative was already captured within the range of alternative analyzed in the EIS
- They were already part of an existing plan, policy, or administrative function
- They did not fall within the limits of the planning criteria

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11 of each of the sub-regional Proposed Amendments/Final EISs.

Idaho and Southwestern Montana

- FWS-Listing Alternative
- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMAs or GHMAs to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMAs or GHMAs to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- FWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMAs or GHMAs to OHV Use Alternative

Utah

- FWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)

- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMAs for all Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- COT Report Alternative
- BLM Policies and Regulations Alternative

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4. PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

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CHAPTER 4
PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and U.S. Department of the Interior policies and procedures implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed management.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through Federal Register notices, public formal and informal meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related Web sites. This section documents the outreach efforts that have occurred to date. For more plan specific information related to the public involvement, consultation, and coordination processes that the BLM conducted, please refer to Chapter 3 of the attached ARMPAs.

4.1 PUBLIC INVOLVEMENT

The scoping period for the National GRSG Planning Strategy, including the four sub-regional Planning Areas in the Great Basin Region, began with the publication of the Notice of Intent in the Federal Register on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012 (BLM and Forest Service 2012).

A Notice of Availability for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMPAs/EISs were published in the Federal Register on November 1, 2013. The Oregon Draft RMPA/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Draft RMPAs/EISs, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon

conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMPAs/EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the Proposed Plan Amendments. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft RMPAs/EISs' comment periods. Comments on the Draft RMPAs/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed Plan Amendments. Public comments resulted in the addition of clarifying text, but did not significantly change Proposed RMPAs.

A Notice of Availability for all of the Great Basin Region GRSG Proposed RMPAs and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-regions were released on May 29, 2015. The release of the EPA's Notice of Availability initiated a 30 day public protest period and a 60 day Governor's consistency review. Refer to **Sections 2.5** and **2.6** for a full description of the protest period and Governor's consistency review outcomes.

4.2 COOPERATING AGENCIES

A cooperating agency is any Federal, State, or local government agency or Native American tribe that enters into a formal agreement with the lead Federal agency to help develop an environmental analysis. Cooperating Agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other Federal, State, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal MOU for the National GRSG Planning Strategy with the FWS and the Forest Service. In addition, the Great Basin sub-regions also invited local, State, other Federal, and tribal representatives to participate as Cooperating Agencies for these RMPAs/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 MOUs signed with State agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. Additional information can also be found in Chapter 6 of each of the Proposed Amendments/Final EISs. These cooperating agencies divided by sub-region are provided below:

Great Basin Region-Wide

US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana

Beaverhead County Commissioners

Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners
US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California

Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration
Washoe County
Washoe Tribe

White Pine County

Oregon

Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah

Beaver County
Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emery County
Garfield County
Grand County
Iron County
Kane County
Lincoln County (WY)
Millard County
Rich County
Sanpete County
Sevier County
State of Utah (PLPCO)
State of Wyoming
Sweetwater County (WY)
Sweetwater County Conservation District (WY)
Tooele County
Uinta County (WY)
Uintah County (Utah)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

4.3 FWS SECTION 7 CONSULTATION

Under Section 7 of the ESA, Federal agencies must consult with the FWS when any action the agency carries out, funds, or authorizes *may affect* a listed endangered or threatened species or its designated critical habitat. The four Great Basin sub-regional Final EISs defined potential impacts on threatened and

endangered species as a result of management actions proposed in the alternatives analyzed in the Final EISs. The FWS is a cooperating agency in this planning process. FWS staff participated in interdisciplinary team meetings and has been provided drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the FWS prior to the release of the Draft RMPAs/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan Amendments "may affect" the species for which this consultation occurred.

Prior to the release of the Proposed Amendments/Final EISs, the BLM formally submitted the biological assessments to the FWS for review on whether the plans would affect a Federally listed, proposed, or candidate species. The FWS evaluated the biological assessments and concurred with the either a "no affect" or "may effect, but will not adversely affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana, which are appendices to each of these ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah Prairie Dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix J).

4.4 NATIVE AMERICAN AND STATE HISTORIC PRESERVATION OFFICE CONSULTATION

In recognition of the government-to-government relationship between individual tribes and the Federal government, the BLM initiated Native American consultation in preparation of the four Great Basin sub-regional RMPAs/EISs. Coordination with Native American tribes occurred throughout the planning process. In December 2011, the BLM sent 65 individual letters to tribal governments providing initial notification of the RMPAs/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation efforts related to the planning process. Tribes have been participating in the RMPAs/EISs processes through numerous meetings and through personal BLM contacts, and in some cases, as Cooperating Agencies.

As part of the NEPA scoping and consultation process, the BLM notified the Idaho, Montana, Nevada, California, and Oregon State Historic Preservation Officers (SHPOs) of the opportunities to comment on the planning and NEPA documents prepared for these efforts, as they relate to historic properties in the Planning Areas and the land use plan decisions included in the ARMPAs. The BLM sought information about historic properties in consideration of land use planning decisions in accordance with the National Programmatic Agreement between the BLM, Advisory Council on Historic Preservation, National Conference of SHPOs, and the Idaho, Montana, and Oregon State Protocol Agreement between the BLM and these SHPOs. If the BLM received comments and information from SHPOs and Tribes, that information was considered and incorporated into the Proposed RMPAs/Final EISs and the ARMPAs. The BLM has met its obligations under Section 106 of the National Historic Preservation Act, 54 USC, Section 306108, as outlined in the National Programmatic Agreement and the State Protocols. The BLM will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American Tribes, and other interested parties,

consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant State Protocol or where applicable the Section 106 regulations.

For the Utah ARMPA, the BLM completed consultation with the Utah SHPO in accordance with the 36 CFR 800. In July 2015, the BLM submitted a formal letter, concluding that the land use plan amendments would not adversely affect cultural properties and seeking input and concurrence on those findings. BLM received a concurrence letter from the Utah SHPO on July 30, 2015. The BLM will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American Tribes, and other interested parties, consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant State Protocol, programmatic agreements, or where applicable the Section 106 regulations.

5. REFERENCES

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CHAPTER 5
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6. APPROVAL

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CHAPTER 6
APPROVAL

Land Use Plan Decisions

It is the decision of the Bureau of Land Management to approve the Great Basin Region Resource Management Plan Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana Sub-regions, as described in this Record of Decision. The Proposed Plan Amendments and related Final Environmental Impact Statements were published on May 29, 2015, in the *Federal Register* (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze
Director
Bureau of Land Management

Date

Approval

I hereby approve the land use plan decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 1610.5-2(b) and 43 CFR 4.410(a)(3), it is not subject to appeal under Department regulations at 43 CFR, Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice M. Schneider
Assistant Secretary
Land and Minerals Management

Date

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From: Mermejo, Lauren [lmermejo@blm.gov]
Sent: Tuesday, September 29, 2015 5:58 PM
To: nvca sagegrouse
Subject: Fwd: FW: More VDDT Modeling

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Tue, Nov 4, 2014 at 1:13 PM
Subject: FW: More VDDT Modeling
To: Quincy F <qfbahr@blm.gov>, Joan Suther <jsuther@blm.gov>, Jessica Rubado <jarubado@blm.gov>, Brent Ralston <bralston@blm.gov>, jmbeck@blm.gov, "Melvin (Joe) Tague" <jtague@blm.gov>, Randall Sharp <sharphay@att.net>
Cc: rmickelsen@fs.fed.us, "Morris, Craig -FS" <cmorris01@fs.fed.us>, Matthew Magaletti <mmagalet@blm.gov>

Hi All –

Please see Rob's response below to my question about re-running the VDDT model for all the alternatives using LandFire. As he states: **Craig will need you to either confirm that the alternatives from the DEIS have not changed….or work with Craig to validate the changes in the alternatives that are needed for modeling assumptions.**

PLEASE, PLEASE, PLEASE do this ASAP so that Craig can get started!

Thank you!

Lauren

From: Mickelsen, Robert -FS [mailto:rmickelsen@fs.fed.us]
Sent: Tuesday, November 04, 2014 12:17 PM
To: Lauren Mermejo; Stein, Glen -FS
Cc: Morris, Craig -FS
Subject: RE: More VDDT Modeling

Hi Lauren,

I just confirmed with Craig that he has the time to rerun the models for all alternatives. What Craig will need is the Program Leads in each Sub-region to either confirm that the alternatives

from the DEIS have not changed or work with Craig to validate the changes in the alternatives that are needed for modeling assumptions.

Robbert Mickelsen

Acting Regional Director

Natural Resources

Intermountain Region

U.S. Forest Service

324 25th Street, Ogden, Utah 84401

Phone: 801-625-5669

Cell: 208-206-3637

From: Lauren Mermejo [mailto:lmermejo@blm.gov]
Sent: Tuesday, November 04, 2014 11:51 AM
To: Mickelsen, Robert -FS; Stein, Glen -FS
Cc: Morris, Craig -FS
Subject: More VDDT Modeling

Hi Rob –

On our Great Basin PL call this morning, there was a question about if you all (FS) are re-running the VDDT models using LandFire for all of the alternatives for the four plans in the Great Basin – so we can do an honest analysis comparison across the board (comparing everything to our Proposed Plan).

We are sort of at a lull right now – and I am assured that it should not be that complicated (but what do I know?) – and, at first, we weren't going to do it because of timing issues…..but now we seem to have plenty of time as we await our marching orders. So…just wondering if you can rerun the models efficiently and in a timely manner?

Let me know ….

Thanks,

Lauren

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

From: Mermejo, Lauren [lmermejo@blm.gov]
Sent: Monday, August 24, 2015 2:38 PM
To: nvca sagegrouse
Subject: Fwd: FW: TAble 2-3-Help

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Fri, May 15, 2015 at 8:55 AM
Subject: FW: TAble 2-3-Help
To: jmbeck@blm.gov, Quincy Bahr <qfbahr@blm.gov>
Cc: mdillon@fs.fed.us, Glen Stein <gstein@fs.fed.us>

We had a comment on the conifer VDDT Table during our Cooperating Agency review – for which we received clarification from Rob Mickelsen and have since made the change. If this is the same footnote that either of you have, would you also please make this change as per Rob below? (follow the trail below) Thanks!

Lauren

From: Randall Sharp [mailto:sharphay@att.net]
Sent: Friday, May 15, 2015 8:51 AM
To: lmermejo@blm.gov
Subject: FW: TAble 2-3-Help

Randall M. Sharp

sharphay@att.net

Sharp Consultants Inc

775-746-8791

530-640-4398 (cell)

From: Mickelsen, Robert -FS [mailto:rmickelsen@fs.fed.us]
Sent: Friday, May 15, 2015 6:45 AM
To: sharphay@att.net
Cc: holly.prohaska@empsi.com; akosic@blm.gov
Subject: RE: TAble 2-3-Help

It can be either so "and/or" would work.

Good catch.

Holly, this edit could be applied to the objectives tables in Idaho-SW MT and Utah as well.

Robbert Mickelsen
Ecosystem Branch Chief

Caribou-Targhee NF Curlew NG

Forest Service

Intermountain Region

p: 208-557-5764
c: 208-206-3637
rmickelsen@fs.fed.us

1405 Hollipark Drive

Idaho Falls, Idaho 83401

www.fs.fed.us

Caring for the land and serving people

From: Randall Sharp [mailto:sharphay@att.net]
Sent: Thursday, May 14, 2015 12:14 PM
To: Mickelsen, Robert -FS
Cc: holly.prohaska@empsi.com; akosic@blm.gov
Subject: FW: TAble 2-3-Help

Rob;

We received a comment from the state of NV asking if footnote should be 'and" instead of 'or"

Randall M. Sharp

sharphay@att.net

Sharp Consultants Inc

775-746-8791

530-640-4398 (cell)

From: Holly Prohaska [mailto:holly.prohaska@empsi.com]
Sent: Thursday, May 14, 2015 11:12 AM
To: Randall Sharp (sharphay@att.net)
Subject: TAble 2-3

Issue was with footnote 2:

Table 2-3
Acres to be Treated Annually for 50 Years

State	Mechanical Treatment[1]	Prescribed Fire[2]
Nevada	66,700	1,800

Table 2-3
Acres to be Treated Annually for 50 Years

State	Mechanical Treatment[1]	Prescribed Fire[2]
California[3]	3,200	900
Total	**69,900**	**2,700**

[1]Removal of conifers that have invaded sagebrush, generally phase one juniper that is 10 percent or less.

[2]Acres are those that are greater than 30 percent sagebrush canopy cover **or** invaded by 10 percent or greater conifer.

[3]BLM California-managed lands will be consistent with annual acres of treatment specified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Holly Prohaska

EMPSi Environmental Management and Planning Solutions, Inc.
26 O'Farrell Street, 7th Floor
San Francisco, CA 94108
tel: 415-544-0440 fax: 866-698-4836
www.EMPSi.com Twitter: EMPSInc Facebook: EMPSi

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

GREAT BASIN VEGETATION MODELING

The following definitions will apply to each Seral Stage in all models:

Early Seral (ES) = 0-10% Sagebrush canopy cover

Mid Seral (MS) = 11-25% Sagebrush canopy cover

Mid Seral (MS C) = 11-25% Sagebrush canopy cover with conifer

Late Seral (LS) = >25% Sagebrush canopy cover

Late Seral (LS C) = >25% Sagebrush canopy cover with conifer

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7.5

POPULATION	N5	SUB POPULATION	Acres
Wyoming Basin	3807	SW WY/NW CO/NE UT/SE ID	11068281
Great Basin Core	902	E-Central OR	3742292
Great Basin Core	904	N-Central NV/SE OR/SW ID	5754025
Great Basin Core	905	NE NV/S-Central ID/NW UT	14352635
Snake, Salmon, and Beaverhead	3004	N Side Snake ID	3945527
Snake, Salmon, and Beaverhead	3001	Big Lost ID	551442
Snake, Salmon, and Beaverhead	3006	Upper Snake ID	994569
Snake, Salmon, and Beaverhead	3003	Little Lost ID	610753
Snake, Salmon, and Beaverhead	3002	Lemhi-Birch ID	323496
Great Basin Core	903	Lake Area OR/NE CA/NW NV	9739955
Great Basin Core	906	S-Central OR/N-Central NV	992304
Great Basin Core	901	Central NV	11062214
Great Basin Core	907	SE NV/SW UT	6893710

GBR_PUB_0637
7.5
06/02/2015

Laura Long

From: Meredith Zaccherio <meredith.zaccherio@empsi.com>
Sent: Thursday, September 11, 2014 11:01 AM
To: 'jsuther@blm.gov' (jsuther@blm.gov); "bralston@blm.gov' (bralston@blm.gov)'; 'jtague@blm.gov' (jtague@blm.gov); sharphay@att.net
Cc: Holly Prohaska; Peter Gower; Derek Holmgren; David Batts; "lmermejo@blm.gov' (lmermejo@blm.gov)'; Carol-Anne Garrison; Meredith Zaccherio
Subject: Biological soil crust follow up

I looked further into the biological soil crust discussion we had on Tuesday. Utah did not receive any comments on biological soil crusts, but NV/CA, ID/MT, and OR did. Here is what I suggest:

1) Review your DEIS for discussion of biological soil crust. Consider adding a statement to Chapter 3 (vegetation or soils section) to the effect that biological soil crusts have numerous ecological functions, including resistance to invasive annuals. Be sure to review and cite appropriate literature such as Ponzetti et al. 2007, Deines et al. 2007, and Serpe et al. 2006. These three papers were specifically cited by environmental groups to defend their comments.
2) Add statement to Chapter 4 GRSG in the nature and type of effects that livestock grazing could impact (trample, break up, degrade, etc) biological soil crust.

Regarding comment response, Oregon currently has a succinct and I think appropriate response: "Biological soil crust information has been added to Section 3.xx. Impacts on soil resources from livestock have been clarified in Section 4.xx." Per our discussion, I will add a sentence: "A detailed analysis of impacts to biological soil crusts is not appropriate at the land use plan scale and further impacts will be analyzed on a site-specific basis during project implementation." I will put this response for all three subregions.
Any thoughts or revisions, please send them to me for consideration!
Thanks,
Meredith

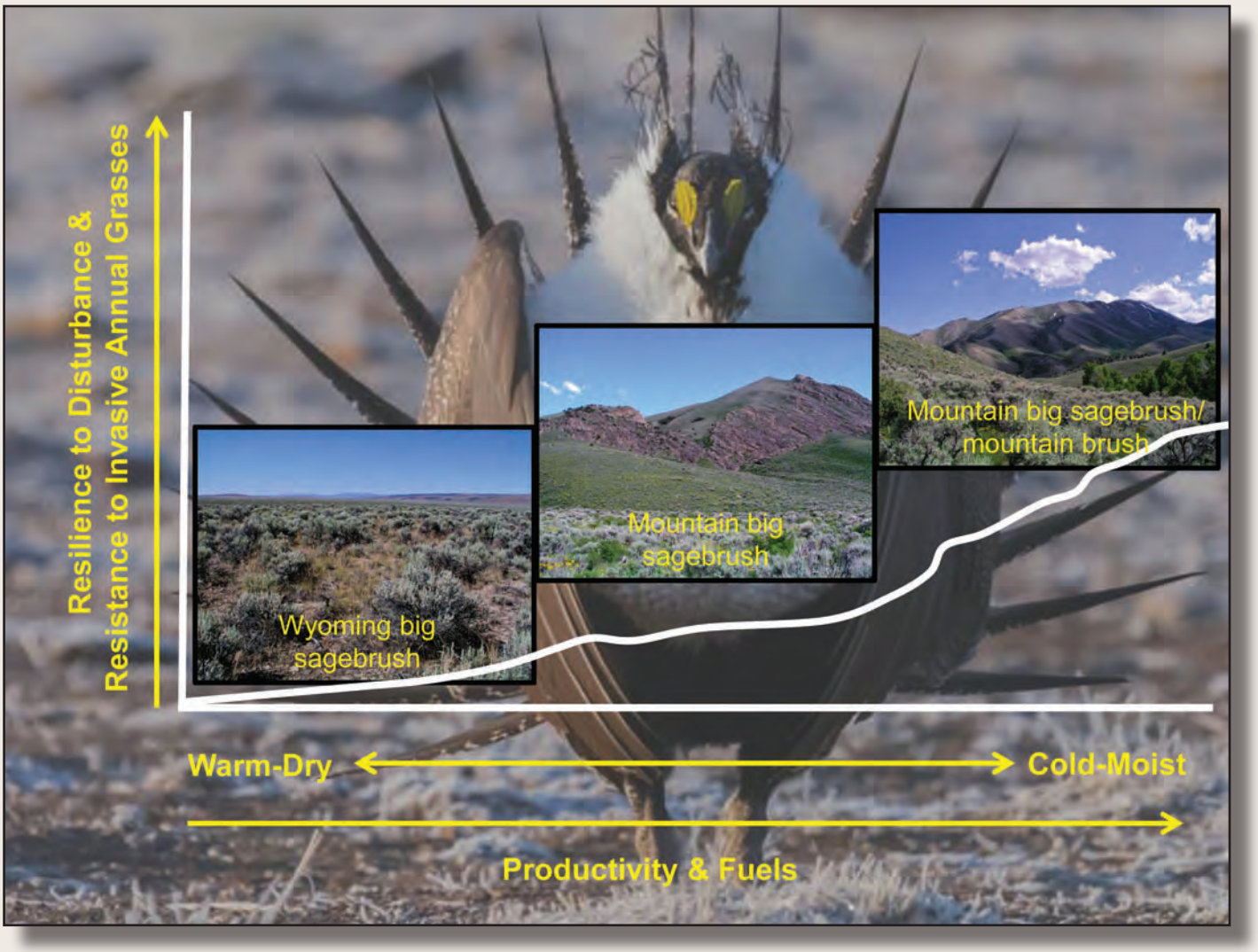
Meredith Zaccherio
EMPSi Environmental Management and Planning Solutions, Inc.
26 O'Farrell Street, 7th Floor
San Francisco, CA 94108
tel: 415-544-0440 fax: 866-698-4836
www.EMPSi.com Twitter: EMPSInc Facebook: EMPSi

#824

USDA United States Department of Agriculture

Using Resistance and Resilience Concepts to Reduce Impacts of Invasive Annual Grasses and Altered Fire Regimes on the Sagebrush Ecosystem and Greater Sage-Grouse: A Strategic Multi-Scale Approach

Jeanne C. Chambers, David A. Pyke, Jeremy D. Maestas, Mike Pellant, Chad S. Boyd, Steven B. Campbell, Shawn Espinosa, Douglas W. Havlina, Kenneth E. Mayer, and Amarina Wuenschel



Forest Service Rocky Mountain Research Station General Technical Report RMRS-GTR-326 September 2014

Chambers, Jeanne C.; Pyke, David A.; Maestas, Jeremy D.; Pellant, Mike; Boyd, Chad S.; Campbell, Steven B.; Espinosa, Shawn; Havlina, Douglas W.; Mayer, Kenneth E.; Wuenschel, Amarina. 2014. **Using resistance and resilience concepts to reduce impacts of invasive annual grasses and altered fire regimes on the sagebrush ecosystem and greater sage-grouse: A strategic multi-scale approach**. Gen. Tech. Rep. RMRS-GTR-326. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 73 p.

Abstract

This Report provides a strategic approach for conservation of sagebrush ecosystems and Greater Sage-Grouse (sage-grouse) that focuses specifically on habitat threats caused by invasive annual grasses and altered fire regimes. It uses information on factors that influence (1) sagebrush ecosystem resilience to disturbance and resistance to invasive annual grasses and (2) distribution, relative abundance, and persistence of sage-grouse populations to develop management strategies at both landscape and site scales. A sage-grouse habitat matrix links relative resilience and resistance of sagebrush ecosystems with sage-grouse habitat requirements for landscape cover of sagebrush to help decision makers assess risks and determine appropriate management strategies at landscape scales. Focal areas for management are assessed by overlaying matrix components with sage-grouse Priority Areas for Conservation (PACs), breeding bird densities, and specific habitat threats. Decision tools are discussed for determining the suitability of focal areas for treatment and the most appropriate management treatments.

Keywords: sagebrush habitat, Greater Sage-Grouse, fire effects, invasive annual grasses, management prioritization, conservation, prevention, restoration

Cover photos: *Greater Sage-grouse photo by Rick McEwan; sagebrush habitat photos by Jeanne Chambers.*

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Using Resistance and Resilience Concepts to Reduce Impacts of Invasive Annual Grasses and Altered Fire Regimes on the Sagebrush Ecosystem and Greater Sage-Grouse: A Strategic Multi-Scale Approach

Jeanne C. Chambers, David A. Pyke, Jeremy D. Maestas, Mike Pellant, Chad S. Boyd, Steven B. Campbell, Shawn Espinosa, Douglas W. Havlina, Kenneth E. Mayer, and Amarina Wuenschel

Introduction

An unprecedented conservation effort is underway across 11 States in the western United States to reduce threats to Greater Sage-Grouse (*Centrocercus urophasianus*; hereafter, sage-grouse) and the sagebrush ecosystems on which they depend (fig. 1). Recent efforts were accelerated by the March 2010 determination that sage-grouse warrant protection under the Federal Endangered Species Act, and by increased emphasis on broad collaboration among state and Federal partners to proactively identify and implement actions to reverse current trends (USFWS 2010, 2013). Conservation success hinges on being able to achieve "the long-term conservation of sage-grouse and healthy sagebrush shrub and native perennial grass and forb communities by maintaining viable, connected, and well-distributed populations and habitats across their range, through threat amelioration, conservation of key habitats, and restoration activities" (USFWS 2013). While strides are being made to curtail a host of threats across the range, habitat loss and fragmentation due to wildfire and invasive plants remain persistent challenges to

Figure 1. Greater Sage-Grouse (*Centrocercus urophasianus*) (photo by Charlotte Ganskopp).

achieving desired outcomes – particularly in the western portion of the range (Miller et al. 2011; USFWS 2010; 2013). Management responses to date have not been able to match the scale of this problem. Natural resource managers are seeking coordinated approaches that focus appropriate management actions in the right places to maximize conservation effectiveness (Wisdom and Chambers 2009; Murphy et al. 2013).

Improving our ability to manage for resilience to disturbance and resistance to invasive species is fundamental to achieving long-term sage-grouse conservation objectives. Resilient ecosystems have the capacity to ***regain*** their fundamental structure, processes, and functioning when altered by stressors like drought and disturbances like inappropriate livestock grazing and altered fire regimes (Holling 1973; Allen et al. 2005). Species resilience refers to the ability of a species to recover from stressors and disturbances (USFWS 2013), and is closely linked to ecosystem resilience. Resistant ecosystems have the capacity to ***retain*** their fundamental structure, processes, and functioning when exposed to stresses, disturbances, or invasive species (Folke et al. 2004). Resistance to invasion by nonnative plants is increasingly important in sagebrush ecosystems; it is a function of the abiotic and biotic attributes and ecological processes of an ecosystem that limit the population growth of an invading species (D'Antonio and Thomsen 2004**)**. A detailed explanation of the factors that influence resilience and resistance in sagebrush ecosystems is found in Chambers et al. 2014.

In general, species are likely to be more resilient if large populations exist in large blocks of high quality habitat across the full breadth of environmental variability to which the species is adapted (Redford et al. 2011). Because sage-grouse are a broadly distributed and often wide-ranging species that may move long-distances between seasonal habitats (Connelly et al. 2011a,b), a strategic approach that integrates both landscape prioritization and site-scale decision tools is needed. This document develops such an approach for the conservation of sagebrush habitats across the range of sage-grouse with an emphasis on the western portion of the range. In recent years, information and tools have been developed that significantly increase our understanding of factors that influence the resilience of sagebrush ecosystems and the distribution of sage-grouse populations, and that allow us to strategically prioritize management activities where they are most likely to be effective and to benefit the species. Although the emphasis of this Report is on the western portion of the sage-grouse range, the approach has management applicability to other sagebrush ecosystems.

In this report, we briefly review causes and effects of invasive annual grasses and altered fire regimes, and then discuss factors that determine resilience to disturbances like wildfire and resistance to invasive annual grasses in sagebrush ecosystems. We illustrate how an understanding of resilience and resistance, sagebrush habitat requirements for sage-grouse, and consequences that invasive annual grasses and wildfire have on sage-grouse populations can be used to develop management strategies at both landscape and site scales. A sage-grouse habitat matrix is provided that links relative resilience and resistance with habitat requirements for landscape cover of sagebrush to both identify priority areas for management and determine effective management strategies at landscape scales. An approach for assessing focal areas for sage-grouse habitat management is described that overlays Priority Areas for Conservation (PACs) and breeding bird densities with resilience and resistance and habitat suitability to spatially link sage-grouse populations with habitat conditions and risks. The use of this approach is illustrated for the western portion of the range and for a diverse area in the northeast corner of Nevada. It concludes with a discussion of the tools available for determining the suitability of focal areas for treatment and the most appropriate management treatments. Throughout the document, the emphasis is on using this approach to guide and assist fire operations, fuels management, post-fire rehabilitation, and habitat restoration activities to maintain or enhance sage-grouse habitat.

Threats of Invasive Annual Grasses and Altered Fire Regimes to Sagebrush Ecosystems and Sage-Grouse

Effects on Sagebrush Ecosystems

Sage-grouse habitat loss and fragmentation due to wildfire and invasive plants are widely recognized as two of the most significant challenges to conservation of the species, particularly in the western portion of the range (Miller et al. 2011; USFWS 2010, 2013). During pre-settlement times, sagebrush-dominated ecosystems had highly variable fire return intervals that ranged from decades to centuries (Frost 1998; Brown and Smith 2000; Miller et al. 2011). At coarse regional scales, fire return intervals in sagebrush ecological types were determined largely by climate and its effects on fuel abundance and continuity. Consequently, fire frequency was higher in sagebrush types with greater productivity at higher elevations and following periods of increased precipitation than in lower elevation and less productive ecosystems (West 1983b; Mensing et al. 2006). At local scales within sagebrush types, fire return intervals likely were determined by topographic and soil effects on productivity and fuels and exhibited high spatial and temporal variability (Miller and Heyerdahl 2008).

Euro-American arrival in sagebrush ecosystems began in the mid-1800s and initiated a series of changes in vegetation composition and structure that altered fire regimes and resulted in major changes in sagebrush habitats. The first major change in fire regimes occurred when inappropriate grazing by livestock led to a decrease in native perennial grasses and forbs and effectively reduced the abundance of fine fuels (Knapp 1996; Miller and Eddleman 2001; Miller et al. 2011). Decreased competition from perennial herbaceous species, in combination with ongoing climate change and favorable conditions for woody species establishment at the turn of the twentieth century, resulted in increased abundance of shrubs (primarily *Artemisia* species) and trees, including juniper (*Juniperus occidentalis, J. osteosperma*) and piñon pine (*Pinus monophylla*), at mid to high elevations (Miller and Eddleman 2001; Miller et al. 2011). The initial effect of these changes in fuel structure was a reduction in fire frequency and size. The second major change in fire regimes occurred when non-native annual grasses (e.g., *Bromus tectorum, Taeniatherum caput-medusa*) were introduced from Eurasia in the late 1800s and spread rapidly into low to mid-elevation ecosystems with depleted understories (Knapp 1996). The invasive annual grasses increased the amount and continuity of fine fuels in many lower elevation sagebrush habitats and initiated annual grass/fire cycles characterized by shortened fire return intervals and larger, more contiguous fires (fig. 2; D'Antonio and Vitousek 1992; Brooks et al. 2004). Since settlement of the region, cheatgrass came to dominate as much as 4 million hectares (9.9 million acres) in the states of Nevada and Utah alone (fig. 3; Bradley and Mustard 2005). The final change in fire regimes occurred as a result of expansion of juniper and piñon pine trees into sagebrush types at mid to high elevations and a reduction of the grass, forb, and shrub species associated with these types. Ongoing infilling of trees is increasing woody fuels, but reducing fine fuels and resulting in less frequent fires (fig. 4; Miller et al. 2013). Extreme burning conditions (high winds, high temperatures, and low relative humidity) in high density (Phase III) stands are resulting in large and severe fires that result in significant losses of above- and below-ground organic matter (sensu Keeley 2009) and have detrimental ecosystem effects (Miller et al. 2013). Based on tree-ring analyses at several Great Basin sites, it is estimated that the extent of piñon and/or juniper woodland increased two to six fold since settlement, and most of that area will exhibit canopy closure within the next 50 years (Miller et al. 2008).

Figure 2. A wildfire that burned through a Wyoming big sagebrush ecosystem with an invasive annual grass understory in southern Idaho (top) (photo by Douglas J. Shinneman), and a close-up of a fire in a Wyoming big sagebrush ecosystem (bottom) (photo by Scott Schaff).

Figure 3. A wildfire that started in invasive annual grass adjacent to a railroad track and burned upslope into a mountain big sagebrush and Jeffrey pine ecosystem in northeast Nevada (top). A big sagebrush ecosystem that has been converted to invasive annual grass in north central Nevada (bottom) (photos by Nolan E. Preece).

Figure 4. Expansion of Utah juniper trees into a mountain big sagebrush ecosystem in east central Utah (top) that is resulting in progressive infilling of the trees and exclusion of native understory species (bottom) (photos by Bruce A. Roundy).

Effects on Sage-Grouse Habitat Selection and Population Dynamics

Understanding the effects of landscape changes on sage-grouse habitat selection and population dynamics can help managers apply more strategic and targeted conservation actions to reduce risks. Two key land cover shifts resulting from invasive annual grasses and altered fire regimes are affecting the ability to achieve the range-wide goal of stable-to-increasing population trends − large-scale reduction of sagebrush cover and conversion of sagebrush ecosystems to annual grasslands.

Sage-grouse are true sagebrush obligates that require large and intact sagebrush landscapes. Consequently, wildfires occurring at the extremes of the natural range of variability that remove sagebrush, even temporarily, over large areas and over short time periods often have negative consequences for sage-grouse. Several range-wide studies have identified the proportion of sagebrush-dominated land cover as a key indicator of sage-grouse population persistence and, importantly, have revealed critical levels of sagebrush landscape cover required by sage-grouse (see Appendix 2 for a description of landscape cover and how it is derived). Knick et al. (2013) found that 90% of active leks in the western portion of the range had more than 40% landscape cover of sagebrush within a 5-km (3.1-mi) radius of leks. Another range-wide analysis documented a high risk of extirpation with <27% sagebrush landscape cover and high probability of persistence with >50% sagebrush landscape cover within 18-km (11.2-mi) of leks (Wisdom et al. 2011). Similarly, Aldridge et al. (2008) found long-term sage-grouse persistence required a minimum of 25%, and preferably at least 65%, sagebrush landscape cover at the 30-km (18.6-mi) scale. Considered collectively, cumulative disturbances that reduce the cover of sagebrush to less than a quarter of the landscape have a high likelihood of resulting in local population extirpation, while the probability of maintaining persistent populations goes up considerably as the proportion of sagebrush cover exceeds two-thirds or more of the landscape. Reduction of sagebrush cover is most critical in low to mid elevations where natural recovery of sagebrush can be very limited within timeframes important to sage-grouse population dynamics (Davies et al. 2011).

Nonnative annual grasses and forbs have invaded vast portions of the sage-grouse range, reducing both habitat quantity and quality (Beck and Mitchell 2000; Rowland et al. 2006; Miller et al. 2011; Balch et al. 2013). Due to repeated fires, some low- to mid-elevation native sagebrush communities are shifting to novel annual grassland states resulting in habitat loss that may be irreversible with current technologies (Davies et al. 2011; Miller et al. 2011; Chambers et al. 2014). At the broadest scales, the presence of non-native annual grasslands on the landscape may be influencing both sage-grouse distribution and abundance. In their analysis of active leks, Knick et al. (2013) found that most leks had very little annual grassland cover (2.2%) within a 5-km (3.1-mi) radius of the leks; leks that were no longer used had almost five times as much annual grassland cover as active leks. Johnson et al. (2011) found that lek use became progressively less as the cover of invasive annual species increased at both the 5-km (3.1-mi) and 18-km (11.2-mi) scales. Also, few leks had >8% invasive annual vegetation cover within both buffer distances.

Patterns of nest site selection also suggest local impacts of invasive annual grasses on birds. In western Nevada, Lockyer (2012) found that sage-grouse selected large expanses of sagebrush-dominated areas and, within those areas, sage-grouse selected microsites with higher shrub canopy cover and lower cheatgrass cover. Average cheatgrass cover at selected locations was 7.1% compared to 13.3% at available locations. Sage-grouse hens essentially avoided nesting in areas with higher cheatgrass cover. Kirol et al. (2012) also found nest-site selection was negatively correlated with the presence of cheatgrass in south-central Wyoming.

Sage-grouse population demographic studies in northern Nevada show that recruitment and annual survival also are affected by presence of annual grasslands at larger scales. Blomberg et al. (2012) analyzed land cover within a 5-km (3.1-mi) radius of leks and found that leks impacted by annual grasslands experienced lower recruitment than non-impacted leks, even following years of high precipitation. Leks that were not affected by invasive annual grasslands exhibited recruitment rates nearly twice as high as the population average and nearly six times greater than affected leks during years of high precipitation.

Piñon and juniper expansion at mid to upper elevations into sagebrush ecosystems also has altered fire regimes and reduced sage-grouse habitat availability and suitability over large areas with population-level consequences (Miller et al. 2011; Baruch-Mordo et al. 2013; Knick et al. 2013). Conifer expansion results in non-linear declines in sagebrush cover and reductions in perennial native grasses and forbs as conifer canopy cover increases (Miller et al. 2000) and this has direct effects on the amount of available habitat for sagebrush-obligate species. Sites in the late stage of piñon and juniper expansion and infilling (Phase III from Miller et al. 2005) have reduced fire frequency (due to decreased fine fuels), but are prone to higher severity fires (due to increased woody fuels) which significantly reduces the likelihood of sagebrush habitat recovery (fig. 5) (Bates et al. 2013). Even before direct habitat loss occurs, sage-grouse avoid or are negatively associated with conifer cover during all life stages (i.e., nesting, brood-rearing, and wintering; Doherty et al. 2008, 2010a; Atamian et al. 2010; Casazza et al. 2011). Also, sage-grouse incur population-level impacts at a very low level of conifer encroachment. The ability to maintain active leks is severely compromised when conifer canopy exceeds 4% in the immediate vicinity of the lek (Baruch-Mordo et al. 2013), and most active leks average less than 1% conifer cover at landscape scales (Knick et al. 2013).

Figure 5. A post-burn, Phase III, singleleaf piñon and Utah juniper dominated sagebrush ecosystem in which soils are highly erosive and few understory plants remain (photo by Jeanne C. Chambers).

Resilience to Disturbance and Resistance to Invasive Annual Grasses in Sagebrush Ecosystems

Our ability to address the changes occurring in sagebrush habitats can be greatly enhanced by understanding the effects of environmental conditions on resilience to stress and disturbance, and resistance to invasion (Wisdom and Chambers 2009; Brooks and Chambers 2011; Chambers et al. 2014). In cold desert ecosystems, resilience of native ecosystems to stress and disturbance changes along climatic and topographic gradients. In these ecosystems, Wyoming big sagebrush (*Artemisia tridentata* spp. *wyomingensis*), mountain big sagebrush (*A. t.* spp. *vaseyana*), and mountain brush types (e.g., mountain big sagebrush, snowberry [*Symphorocarpus* spp.], bitterbrush [*Purshia tridentata*]) occur at progressively higher elevations and are associated with decreasing temperatures and increasing amounts of precipitation, productivity, and fuels (fig. 6; West and Young 2000). Piñon pine and juniper woodlands are typically associated with mountain big sagebrush types, but can occur with relatively cool and moist Wyoming big sagebrush types and warm and moist mountain brush types (Miller et al. 2013). Resilience to disturbance, including wildfire, has been shown to increase along these elevation gradients (fig. 7A) (Condon et al. 2011; Davies et al. 2012; Chambers et al. 2014; Chambers et al. *in press*). Higher precipitation and cooler temperatures, coupled with greater soil development and plant productivity at mid to high elevations, can result in greater resources and more favorable environmental conditions for plant growth and reproduction (Alexander et al. 1993; Dahlgren et al. 1997). In contrast, minimal precipitation and high temperatures at low elevations result in lower resource availability for plant growth (West 1983a,b;

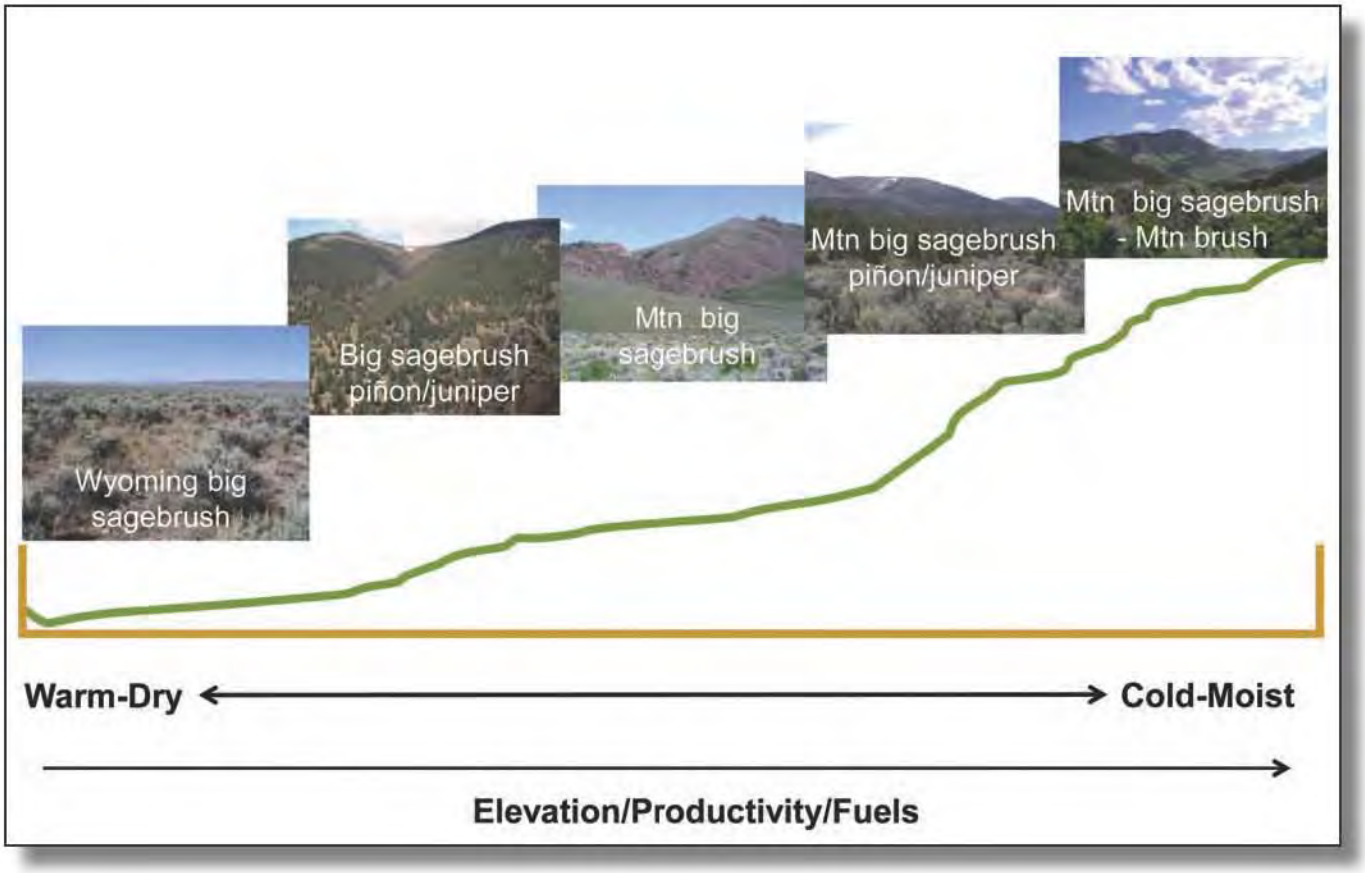

Figure 6. The dominant sagebrush ecological types that occur along environmental gradients in the western United States. As elevation increases, soil temperature and moisture regimes transition from warm and dry to cold and moist and vegetation productivity and fuels become higher.

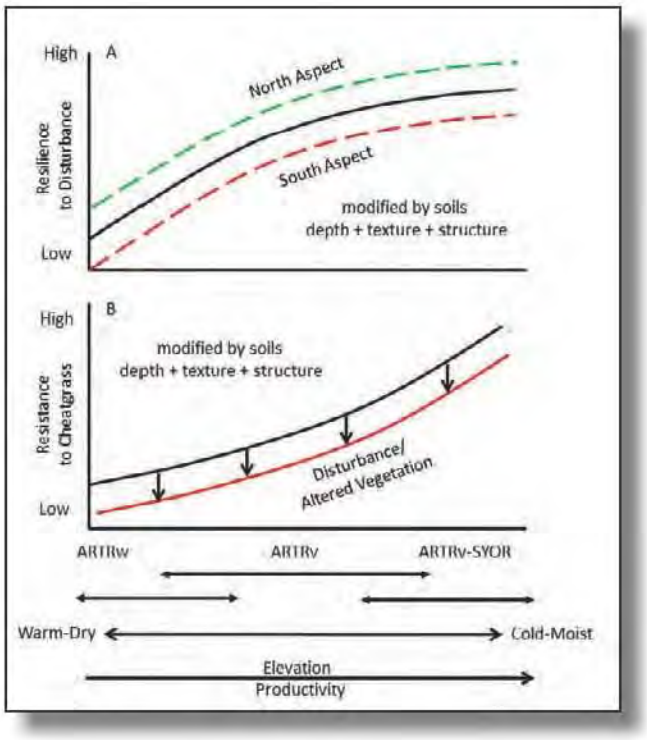

Figure 7. (**A)** Resilience to disturbance and (**B)** resistance to cheatgrass over a typical temperature/precipitation gradient in the cold desert. Dominant ecological sites occur along a continuum that includes Wyoming big sagebrush on warm and dry sites, to mountain big sagebrush on cool and moist sites, to mountain big sagebrush and root-sprouting shrubs on cold and moist sites. Resilience increases along the temperature/precipitation gradient and is influenced by site characteristics like aspect. Resistance also increases along the temperature/precipitation gradient and is affected by disturbances and management treatments that alter vegetation structure and composition and increase resource availability (modified from Chambers et al. 2014; Chambers et al. *in press*).

Smith and Nowak 1990). These relationships also are observed at local plant community scales where aspect, slope, and topographic position affect solar radiation, erosion processes, effective precipitation, soil development and vegetation composition and structure (Condon et al. 2011; Johnson and Miller 2006).

Resistance to invasive annual grasses depends on environmental factors and ecosystem attributes and is a function of (1) the invasive species' physiological and life history requirements for establishment, growth, and reproduction, and (2) interactions with the native perennial plant community including interspecific competition and response to herbivory and pathogens. In cold desert ecosystems, resistance is strongly influenced by soil temperature and moisture regimes (Chambers et al. 2007; Meyer et al. 2001). Germination, growth, and/or reproduction of cheatgrass is physiologically limited at low elevations by frequent, low precipitation years, constrained at high elevations by low soil temperatures, and optimal at mid elevations under relatively moderate temperature and water availability (fig. 7B; Meyer et al. 2001; Chambers et al. 2007). Slope, aspect, and soil characteristics modify soil temperature and moisture and influence resistance to cheatgrass at landscape to plant community scales (Chambers et al. 2007; Condon et al. 2011; Reisner et al. 2013). Genetic variation in cheatgrass results in phenotypic traits that increase survival and persistence in populations from a range of environments, and is likely contributing to the recent range expansion of this highly inbreeding species into marginal habitats (Ramakrishnan et al. 2006; Merrill et al. 2012).

The occurrence and persistence of invasive annual grasses in sagebrush habitats is strongly influenced by interactions with the native perennial plant community (fig. 7B). Cheatgrass, a facultative winter annual that can germinate from early fall through early spring, exhibits root elongation at low soil temperatures, and has higher nutrient uptake and growth rates than most native species (Mack and Pyke 1983; Arredondo et al. 1998; James et al. 2011). Seedlings of native, perennial plant species are generally poor competitors with cheatgrass, but adults of native, perennial grasses and forbs, especially those with similar growth forms and phenology, can be highly effective competitors with the invasive annual (Booth et al. 2003; Chambers et al. 2007; Blank and Morgan 2012).

Also, biological soil crusts, which are an important component of plant communities in warmer and drier sagebrush ecosystems, can reduce germination or establishment of cheatgrass (Eckert et al. 1986; Kaltenecker et al. 1999). Disturbances or management treatments that reduce abundance of native perennial plants and biological soil crusts and increase the distances between perennial plants often are associated with higher resource availability and increased competitive ability of cheatgrass (Chambers et al. 2007; Reisner et al. 2013; Roundy et al. *in press*).

The type, characteristics, and natural range of variability of stress and disturbance strongly influence both resilience and resistance (Jackson 2006). Disturbances like overgrazing of perennial plants by livestock, wild horses, and burros and more frequent or more severe fires are typically outside of the natural range of conditions and can reduce the resilience of sagebrush ecosystems. Reduced resilience is triggered by changes in environmental factors like temperature regimes, abiotic attributes like water and nutrient availability, and biotic attributes such as vegetation structure, composition, and productivity (Chambers et al. 2014) and cover of biological soil crusts (Reisner et al. 2013). Resistance to an invasive species can change when changes in abiotic and biotic attributes result in increased resource availability or altered habitat suitability that influences an invasive species' ability to establish and persist and/or compete with native species. Progressive losses of resilience and resistance can result in the crossing of abiotic and/or biotic thresholds and an inability of the system to recover to the reference state (Beisner et al. 2003; Seastedt et al. 2008).

Interactions among disturbances and stressors may have cumulative effects (Chambers et al. 2014). Climate change already may be shifting fire regimes outside of the natural range of occurrence (i.e., longer wildfire seasons with more frequent and longer duration wildfires) (Westerling et al. 2006). Sagebrush ecosystems generally have low productivity, and the largest number of acres burned often occurs a year or two after warm, wet conditions in winter and spring that result in higher fine fuel loads (Littell et al. 2009). Thus, annual grass fire cycles may be promoted by warm, wet winters and a subsequent increase in establishment and growth of invasive winter annuals. These cycles may be exacerbated by rising atmospheric CO_2 concentrations, N deposition, and increases in human activities that result in soil surface disturbance and invasion corridors (Chambers et al. 2014). Modern deviations from historic conditions will likely continue to alter disturbance regimes and sagebrush ecosystem response to disturbances; thus, management strategies that rely on returning to historical or "pre-settlement" conditions may be insufficient, or even misguided, given novel ecosystem dynamics (Davies et al. 2009).

Integrating Resilience and Resistance Concepts With Sage-Grouse Habitat Requirements to Manage Wildfire and Invasive Annual Grass Threats at Landscape Scales

The changes in sagebrush ecosystem dynamics due to invasive annual species and longer, hotter, and drier fire seasons due to a warming climate make it unlikely that these threats can be ameliorated completely (Abatzoglou and Kolden 2011; USFWS 2013). Consequently, a strategic approach is necessary to conserve sagebrush habitat and sage-grouse (Wisdom et al. 2005; Meinke et al. 2009; Wisdom and Chambers 2009; Pyke 2011). This strategic approach requires the ability to (1) identify those locations that provide current or potential habitat for sage-grouse and (2) prioritize management actions based on the capacity of the ecosystem to respond in the desired manner and to effectively allocate resources to achieve desired objectives. Current understanding of the relationship of landscape cover of sagebrush to sage-grouse habitat provides the capacity to identify those locations on the landscape that have a high probability of

sage-grouse persistence (Aldridge et al. 2008; Wisdom et al. 2011; Knick et al. 2013). Similarly, knowledge of the relationships of environmental characteristics, specifically soil temperature and moisture regimes, to ecological types and their inherent resilience and resistance gives us the capacity to prioritize management actions based on probable effectiveness of those actions (Wisdom and Chambers 2009; Brooks and Chambers 2011; Miller et al. 2013; Chambers et al. 2014; Chambers et al. *in press*,).

In this section, we discuss the use of landscape cover of sagebrush as an indicator of sage-grouse habitat, and the use of soil temperature and moisture regimes as an indicator of resilience to disturbance, resistance to invasive annual grasses and, ultimately, the capacity to achieve desired objectives. We then show how these two concepts can be coupled in a sage-grouse habitat matrix and used to determine potential management strategies at the landscape scales on which sage-grouse depends.

Landscape Cover of Sagebrush as an Indicator of Sage-Grouse Habitat

Landscape cover of sagebrush is closely related to the probability of maintaining active sage-grouse leks, and is used as one of the primary indicators of sage-grouse habitat potential at landscape scales (Aldridge et al. 2008; Wisdom et al. 2011; Knick et al. 2013). Landscape cover of sagebrush less than about 25% has a low probability of sustaining active sage-grouse leks (Aldridge et al. 2008; Wisdom et al. 2011; Knick et al. 2013). Above 25% landscape cover of sagebrush, the probability of maintaining active sage-grouse leks increases with increasing sagebrush landscape cover. At landscape cover of sagebrush ranging from 50 to 85%, the probability of sustaining sage-grouse leks becomes relatively constant (Aldridge et al. 2008; Wisdom et al. 2011; Knick et al. 2013). For purposes of prioritizing landscapes for sage-grouse habitat management, we use 25% as the level below which there is a low probability of maintaining sage-grouse leks and 65% as the level above which there is little additional increase in the probability of sustaining active leks with further increases of landscape cover of sagebrush (fig. 8; Knick et al. 2013). Between about 25% and 65% landscape sagebrush cover, increases in landscape cover of sagebrush have a constant positive relationship with sage-grouse lek probability (fig. 8; Knick et al. 2013). Restoration and management activities that result in an increase in the amount of sagebrush dominated landscape within areas of pre-existing landscape cover between 25% and 65% likely will result in a higher probability of sage-grouse persistence, while declines in landscape cover of sagebrush likely will result in reductions in sage-grouse (Knick et al. 2013). It is important to note that

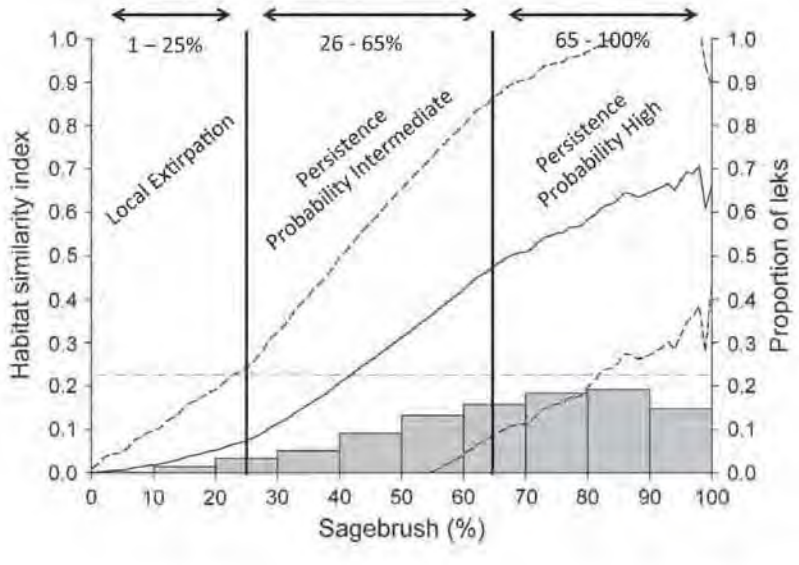

Figure 8. The proportion of sage-grouse leks and habitat similarity index (HSI) as related to the percent landscape cover of sagebrush. The HSI indicates the relationship of environmental variables at map locations across the western portion of the range to minimum requirements for sage-grouse defined by land cover, anthropogenic variables, soil, topography, and climate. HSI is the solid black line ± 1 SD (stippled lines). Proportion of leks are the grey bars. Dashed line indicates HSI values above which characterizes 90% of active leks (0.22). The categories at the top of the figure and the interpretation of lek persistence were added based on Aldridge et al. 2008; Wisdom et al. 2011; and Knick et al. 2013 (figure modified from Knick et al. 2013).

these data and interpretations relate only to persistence (i.e., whether or not a lek remains active) and it is likely that higher proportions of sagebrush cover or improved condition of sagebrush ecosystems may be required for population growth.

For the purposes of delineating sagebrush habitat relative to sage-grouse requirements for landscape cover of sagebrush, we calculated the percentage landscape sagebrush cover within each of the selected categories (1-25%, 26-65%, >65%) for the range of sage-grouse (fig. 9, 10). An explanation of how landscape cover of sagebrush is derived is in Appendix 2. Large areas of landscape sagebrush cover >65% are found primarily in Management Zones (MZ) II (Wyoming Basin), IV (Snake River Plains), and V (Northern Great Basin). In contrast, relatively small areas of landscape sagebrush cover >65% are located in MZ I (Great Plains), III (Southern Great Basin), VI (Columbia Basin), and VII (Colorado Plateau). Sagebrush is naturally less common in the Great Plains region compared to other parts of the range and previous work suggested that sage-grouse populations in MZ I may be more vulnerable to extirpation with further reductions in sagebrush cover (Wisdom et al. 2011). In the western portion of the range, where the threat of invasive annual grasses and wildfire is greatest, the area of sagebrush cover >65% differs among MZs. MZ III is a relatively arid and topographically diverse area in which the greatest extent of sagebrush cover >65% is in higher elevation, mountainous areas. MZs IV and V have relatively large extents of sagebrush cover >65% in relatively cooler and wetter areas, and MZs IV and VI have lower extents of sagebrush cover >65% in warmer and dryer areas and in areas with significant agricultural development. These differences in landscape cover of sagebrush indicate that different sets of management strategies may apply to the various MZs.

Soil Temperature and Moisture Regimes as Indicators of Ecosystem Resilience and Resistance

Potential resilience and resistance to invasive annual grasses reflect the biophysical conditions that an area is capable of supporting. In general, the highest potential resilience and resistance occur with ***cool*** to ***cold*** (frigid to cryic) soil temperature regimes and relatively ***moist*** (xeric to ustic) soil moisture regimes, while the lowest potential resilience and resistance occur with ***warm*** (mesic) soil temperatures and relatively ***dry*** (aridic) soil moisture regimes (Chambers et al. 2014, Chambers et al. *in press*). Definitions of soil temperature and moisture regimes are in Appendix 3. Productivity is elevated by high soil moisture and thus resilience is increased (Chambers et al. 2014); annual grass growth and reproduction is limited by cold soil temperatures and thus resistance is increased (Chambers et al. 2007). The timing of precipitation also is important because cheatgrass and many other invasive annual grasses are particularly well-adapted to Mediterranean type climates with cool and wet winters and warm and dry summers (Bradford and Lauenroth 2006; Bradley 2009). In contrast, areas that receive regular summer precipitation (ustic soil moisture regimes) often are dominated by warm and/or cool season grasses (Sala et al. 1997) that likely create a more competitive environment and result in greater resistance to annual grass invasion and spread (Bradford and Lauenroth 2006; Bradley 2009).

Much of the remaining sage-grouse habitat in MZs I (Great Plains), II (Wyoming Basin), VII (Colorado Plateau), and cool-to-cold or moist sites scattered across the range, are characterized by moderate to high resilience and resistance as indicated by soil temperature and moisture regimes (fig. 11). Sagebrush habitats across MZ I are unique from a range-wide perspective because soils are predominantly cool and ustic, or bordering on ustic as a result of summer precipitation; this soil moisture regime appears to result in higher resilience and resistance (Bradford and Lauenroth 2006).

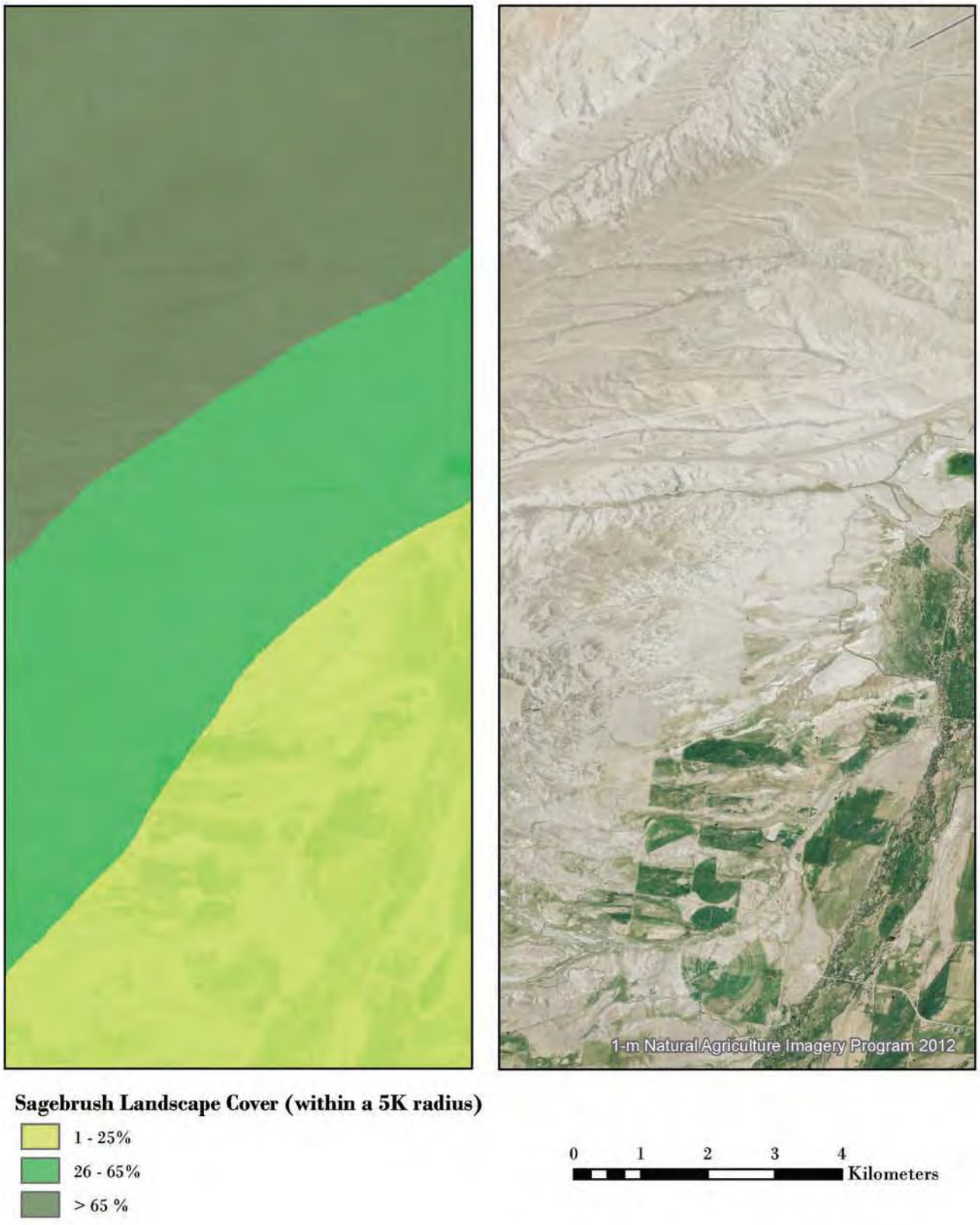

Figure 9. Landscape cover of sagebrush from 1-m National Agricultural Imagery (right) and the corresponding sagebrush landscape cover for the 1-25%, 26-65%, and >65% categories (left). See Appendix 2 for an explanation of how the categories are determined.

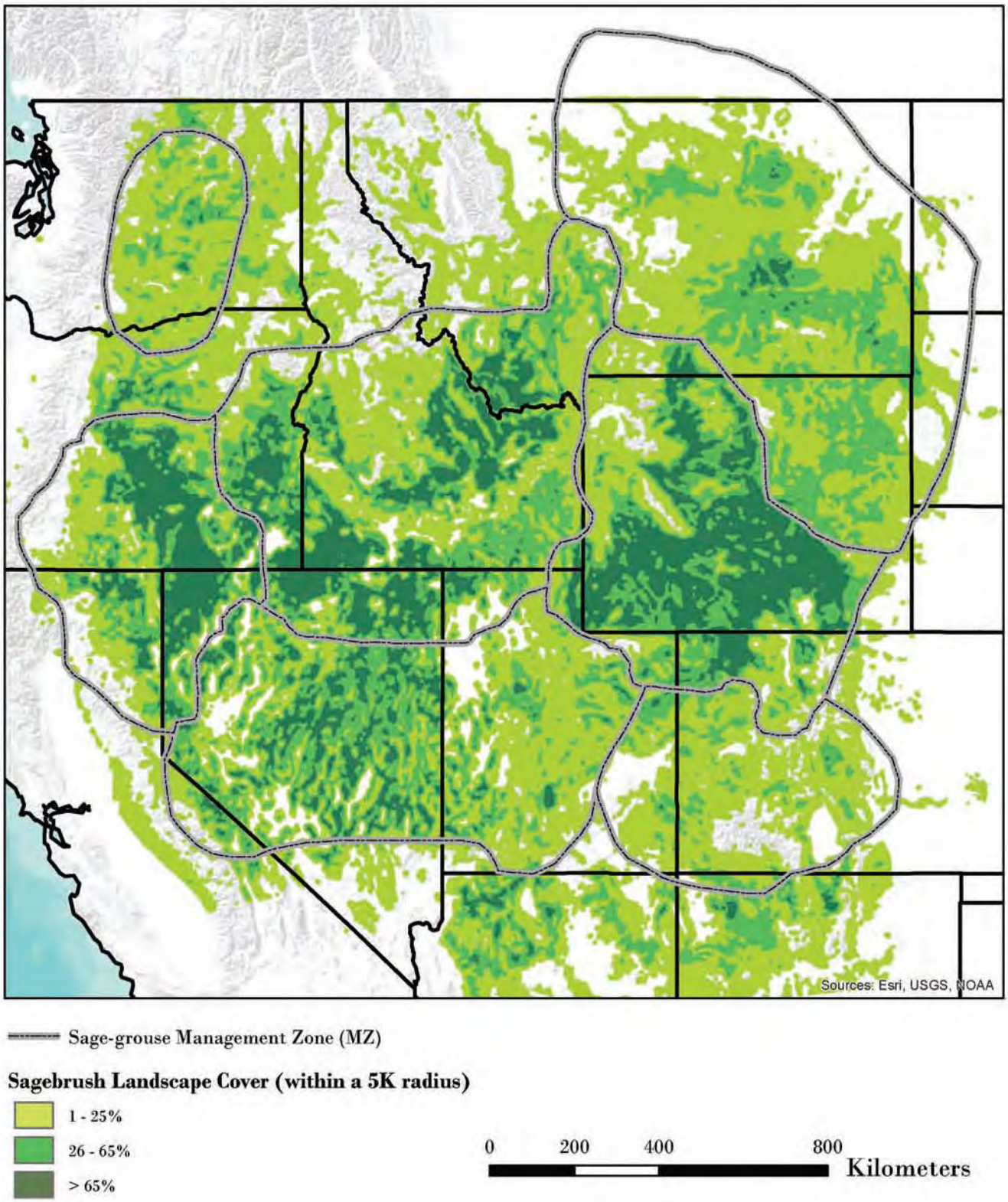

Figure 10. The landscape cover of sagebrush within each of three selected categories (1-25%, 26-65%, >65%) for the range of sage-grouse (Management Zones I – VII; Stiver et al. 2006). The proportion of sagebrush (USGS 2013) within each of the categories in a 5-km (3.1-mi) radius surrounding each pixel was calculated relative to other land cover types for locations with sagebrush cover.

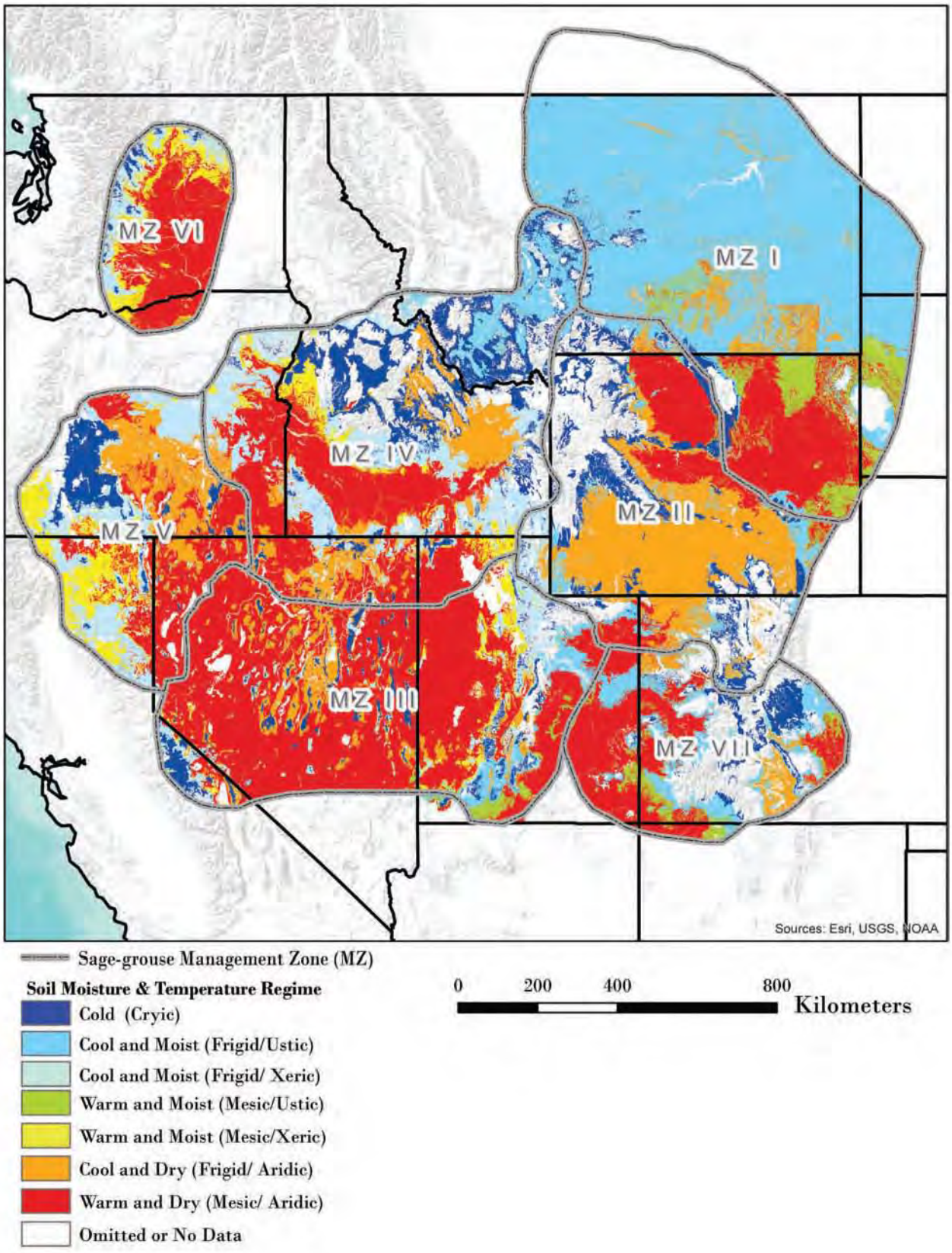

Figure 11. The soil temperature and moisture regimes for the range of sage-grouse (Management Zones I – VII; Stiver et al. 2006). Soil temperature and moisture classes were derived from the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) (Soil Survey Staff 2014a). Gaps in that dataset were filled in with the NRCS State Soil Geographic Database (STATSGO) (Soil Survey Staff 2014b).

However, significant portions of MZs III (Southern Great Basin), much of IV (Snake River Plains), V (Northern Great Basin), and VI (Columbia Basin) are characterized largely by either warm and dry, or warm to cool and moist ecological types with moderate to low resilience and resistance (fig. 11; table 1). Areas within these MZs that have warm and dry soils are typically characterized by Wyoming big sagebrush ecosystems with low to moderately low resilience and resistance and are currently of greatest concern for sage-grouse conservation (fig. 12A). Areas with warm to cool soil temperature regimes and moist precipitation regimes are typically characterized by either Wyoming or mountain big sagebrush, have moderate to moderately low resilience and resistance,

Table 1. Predominant sagebrush ecological types in Sage-Grouse Management Zones III, IV, V, and VI based on soil temperature and soil moisture regimes, typical characteristics, and resilience to disturbance and resistance to invasive annual grasses (modified from Miller et al. 2014 a,b). Relative abundance of sagebrush species and composition of understory vegetation vary depending on Major Land Resource Area and ecological site type.

Ecological type	Characteristics	Resilience and resistance
Cold and Moist (Cryic/Xeric)	Ppt: 14 inches + Typical shrubs: *Mountain big sagebrush, snowfield sagebrush, snowberry, serviceberry, silver sagebrush, and/or low sagebrushes*	*Resilience* – **Moderately high**. Precipitation and productivity are generally high. Short growing seasons can decrease resilience on coldest sites. *Resistance*– **High**. Low climate suitability to invasive annual grasses
Cool and Moist (Frigid/Xeric)	Ppt: 12-22 inches Typical shrubs: *Mountain big sagebrush, antelope bitterbrush, snowberry, and/or low sagebrushes* Piñon pine and juniper potential in some areas	*Resilience* – **Moderately high**. Precipitation and productivity are generally high. Decreases in site productivity, herbaceous perennial species, and ecological conditions can decrease resilience. *Resistance* – **Moderate**. Climate suitability to invasive annual grasses is moderate, but increases as soil temperatures increase.
Warm and Moist (Mesic/Xeric)	Ppt: 12-16 inches Typical shrubs: *Wyoming big sagebrush, mountain big sagebrush, Bonneville big sagebrush, and/or low sagebrushes* Piñon pine and juniper potential in some areas	*Resilience* – **Moderate**. Precipitation and productivity are moderately high. Decreases in site productivity, herbaceous perennial species, and ecological conditions can decrease resilience. *Resistance* – **Moderately low**. Climate suitability to invasive annual grasses is moderately low, but increases as soil temperatures increase.
Cool and Dry (Frigid/Aridic)	Ppt: 6-12 inches Typical shrubs: *Wyoming big sagebrush, black sagebrush, and/or low sagebrushes*	*Resilience* – **Low**. Effective precipitation limits site productivity. Decreases in site productivity, herbaceous perennial species, and ecological conditions further decrease resilience. *Resistance* – **Moderate**. Climate suitability to invasive annual grasses is moderate, but increases as soil temperatures increase.
Warm and Dry (Mesic/Aridic, bordering on Xeric)	Ppt: 8-12 inches Typical shrubs: *Wyoming big sagebrush, black sagebrush and/or low sagebrushes*	*Resilience* – **Low.** Effective precipitation limits site productivity. Decreases in site productivity, herbaceous perennial species, and ecological conditions further decrease resilience. Cool season grasses susceptibility to grazing and fire, along with hot dry summer fire conditions, promote cheatgrass establishment and persistence. *Resistance* – **Low.** High climate suitability to cheatgrass and other invasive annual grasses. Resistance generally decreases as soil temperature increases, but establishment and growth are highly dependent on precipitation.

and have the potential for piñon and juniper expansion (Miller et al. 2014a; Chambers et al. *in press*). Many of these areas also are of conservation concern because piñon and juniper expansion and tree infilling can result in progressive loss of understory species and altered fire regimes (Miller et al. 2013). In contrast, areas with cool to cold soil temperature regimes and moist precipitation regimes have moderately high resilience and high resistance and are likely to recover in a reasonable amount of time following wildfires and other disturbances (Miller et al. 2013) (fig. 12B)

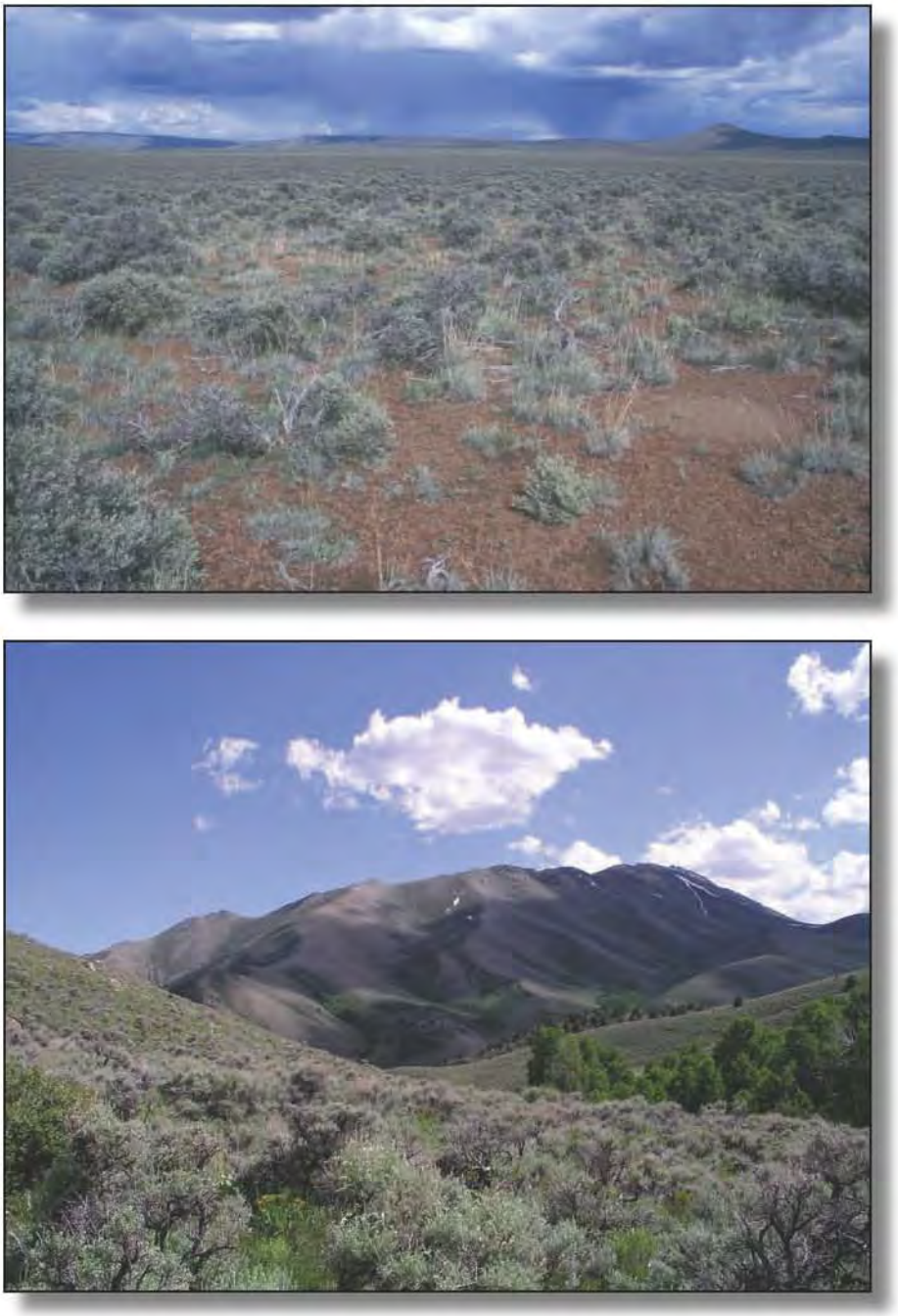

Figure 12. A Wyoming big sagebrush ecosystem with warm and dry soils in southeast Oregon (top) (photo by Richard F. Miller), compared to a mountain big sagebrush ecosystem with cool and moist soils in central Nevada (bottom) (photo by Jeanne C. Chambers).

Management Strategies Based on Landscape Cover of Sagebrush and Ecosystem Resilience and Resistance: The Sage-Grouse Habitat Matrix

Knowledge of the potential resilience and resistance of sagebrush ecosystems can be used in conjunction with sage-grouse habitat requirements to determine priority areas for management and identify effective management strategies at landscape scales (Wisdom and Chambers 2009). The sage-grouse habitat matrix (table 2) illustrates the relative resilience to disturbance and resistance to invasive annual grasses of sagebrush ecosystems in relation to the proportion of sagebrush cover on the landscape. As resilience and resistance go from high to low, as indicated by the rows in the matrix, decreases in sagebrush regeneration and abundance of perennial grasses and forbs progressively limit the capacity of a sagebrush ecosystem to recover after fire or other disturbances. The risk of annual invasives increases and the ability to successfully restore burned or otherwise disturbed areas decreases. As sagebrush cover goes from low to high within these same ecosystems, as indicated by the columns in the matrix, the capacity to provide adequate habitat cover for sage-grouse increases. Areas with less than 25% landscape cover of sagebrush are unlikely to provide adequate habitat for sage-grouse; areas with 26-65% landscape cover of sagebrush can provide habitat for sage-grouse but are at risk if sagebrush loss occurs without recovery; and areas with >65% landscape cover of sagebrush provide the necessary habitat conditions for sage-grouse to persist. Potential landscape scale management strategies can be determined by considering (1) resilience to disturbance, (2) resistance to invasive annuals, and (3) sage-grouse land cover requirements. Overarching management strategies to maintain or increase sage-grouse habitat at landscape scales based on these considerations are conservation, prevention, restoration, and monitoring and adaptive management (table 3; see Chambers et al. 2014). These strategies have been adapted for each of the primary agency programs including fire operations, fuels management, post-fire rehabilitation, and habitat restoration (table 4). Because sagebrush ecosystems occur over continuums of environmental conditions, such as soil temperature and moisture, and have differing land use histories and species composition, careful assessment of the area of concern always will be necessary to determine the relevance of a particular strategy (Pyke 2011; Chambers et al. 2014; Miller et al. 2014 a, b). The necessary information for conducting this type of assessment is found in the "Putting It All Together" section of this report.

Although the sage-grouse habitat matrix (table 2) can be viewed as partitioning land units into spatially discrete categories (i.e., landscapes or portions thereof can be categorized as belonging to one of nine categories), it is not meant to serve as a strict guide to spatial allocation of resources or to prescribe specific management strategies. Instead, the matrix should serve as a decision support tool for helping managers implement strategies that consider both the resilience and resistance of the landscape and landscape sagebrush cover requirements of sage-grouse. For example, low elevation Wyoming big sagebrush plant communities with relatively low resilience and resistance may provide important winter habitat resources for a given sage-grouse population. In a predominantly Wyoming big sagebrush area comprised of relatively low sagebrush landscape cover, a high level of management input may be needed to realize conservation benefits for sage-grouse. This doesn't mean that management activities should not be undertaken if critical or limiting sage-grouse habitat resources are present, but indicates that inputs will be intensive, potentially more expensive, and less likely to succeed relative to more resilient landscapes. It is up to the user of the matrix to determine how such tradeoffs influence management actions.

Table 2. Sage-grouse habitat matrix based on resilience and resistance concepts from Chambers et al. 2014, and sage-grouse habitat requirements from Aldridge et al. 2008, Wisdom et al. 2011, and Knick et al. 2013. Rows show the ecosystems relative resilience to disturbance and resistance to invasive annual grasses derived from the sagebrush ecological types in table 1 (1 = high resilience and resistance; 2 = moderate resilience and resistance; 3 = low resilience and resistance). Columns show the current proportion of the landscape (5-km rolling window) dominated by sagebrush (A = 1-25% land cover; B = 26-65% land cover; 3 = >65% land cover). Use of the matrix is explained in text. Overarching management strategies that consider resilience and resistance and landscape cover of sagebrush are in table 3. Potential management strategies specific to agency program areas, including fire operations, fuels management, post-fire rehabilitation, and habitat restoration are in table 4.

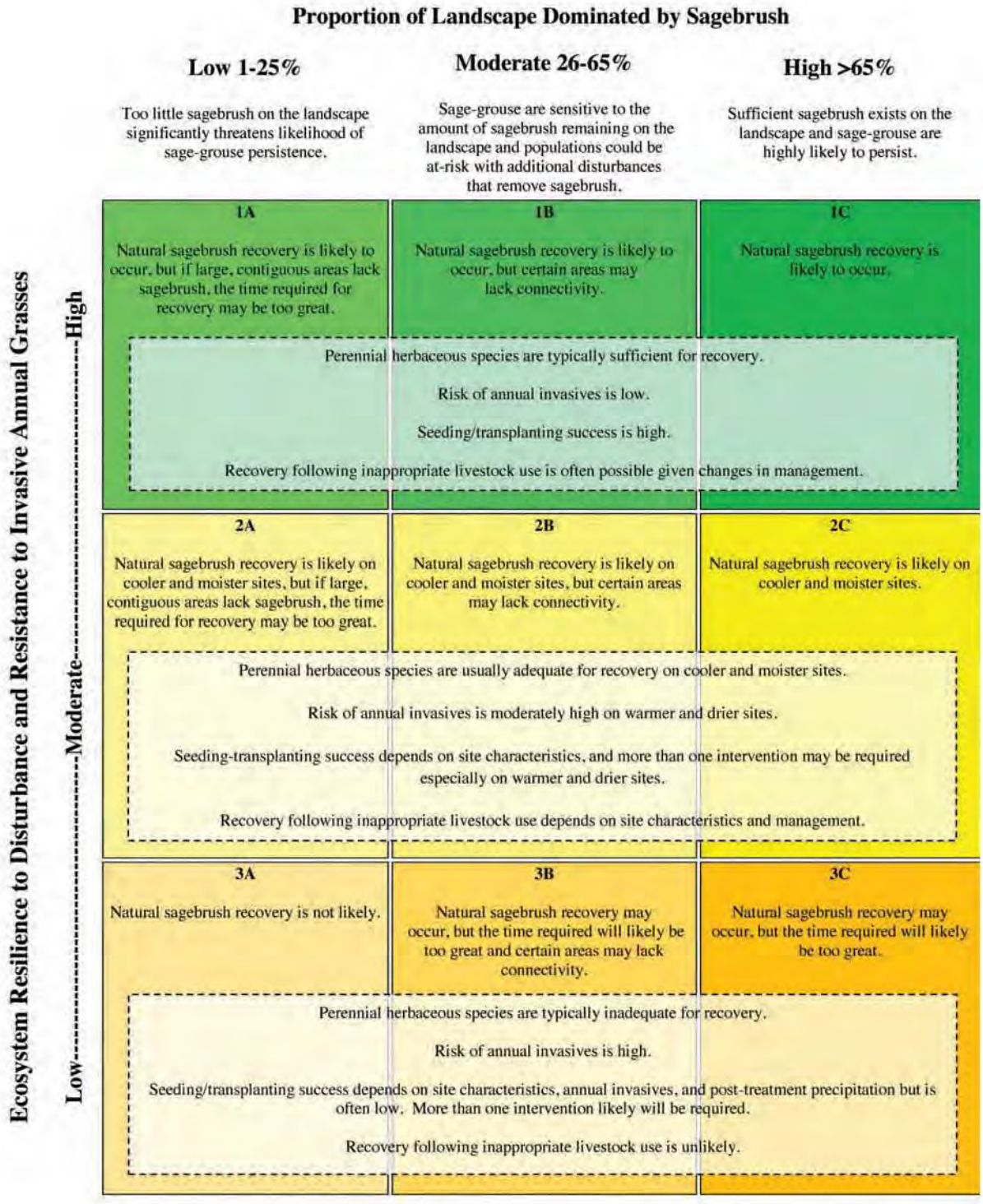

Table 3. Potential management strategies based on resilience to disturbance, resistance to annual grass invasion, and sage-grouse habitat requirements based on Aldridge et al. 2008; Wisdom et al. 2011; and Knick et al. 2013 (adapted from Chambers et al. 2014).

Conserve – maintain or increase resilience to disturbance and resistance to invasive annuals in areas with high conservation value	
Priorities	• Ecosystems with low to moderate resilience to fire and resistance to invasive species that still have large patches of landscape sagebrush cover and adequate perennial grasses and forbs – *ecological types with warm and dry and cool and dry soil temperature/moisture regimes.* • Ecosystems with a high probability of providing habitat for sage-grouse, especially those with >65% landscape cover of sagebrush and adequate perennial herbaceous species – *all ecological types.*
Objective	• Minimize impacts of current and future human-caused disturbances and stressors.
Activities	• Immediately suppress fire in moderate to low resilience and resistance sagebrush and wooded shrublands to prevent an invasive annual grass-fire cycle. Large sagebrush patches are high priority for protection from wildfires. • Implement strategic fuel break networks to provide anchor points for suppression and reduce losses when wildfires escape initial attack. • Manage livestock grazing to prevent loss of perennial native grasses and forbs and biological soil crusts and allow natural regeneration. • Limit anthropogenic activities that cause surface disturbance, invasion, and fragmentation. (e.g., road and utility corridors, urban expansion, OHV use, and mineral/energy projects). • Detect and control new weed infestations.
Prevent – maintain or increase resilience and resistance of areas with declining ecological conditions that are at risk of conversion to a degraded, disturbed, or invaded state	
Priorities	• Ecosystems with moderate to high resilience and resistance – *ecological types with relatively cool and moist soil temperature and moisture regimes*. ○ Prioritize landscape patches that exhibit declining conditions due to annual grass invasion and/or tree expansion (e.g., at risk phase in State and Transition Models). • Ecosystems with a moderate to high probability of providing sage-grouse habitat, especially those with 26-65% landscape cover of sagebrush and adequate perennial native grasses and forbs – *all ecological types*.
Objectives	• Reduce fuel loads and decrease the risk of high intensity and high severity fire. • Increase abundance of perennial native grasses and forbs and of biological soil crusts where they naturally occur. • Decrease the longer-term risk of annual invasive grass dominance.
Activities	• Use mechanical treatments like cut and leave or mastication to remove trees, decrease woody fuels, and release native grasses and forbs in warm and moist big sagebrush ecosystems with relatively low resistance to annual invasive grasses that are in the early to mid-phase of piñon and/or juniper expansion. • Use prescribed fire or mechanical treatments to remove trees, decrease woody fuels, and release native grasses and forbs in cool and moist big sagebrush ecosystems with relatively high resistance to annual invasive grass that are in early to mid-phase of piñon and/or juniper expansion. • Actively manage post-treatment areas to increase perennial herbaceous species and minimize secondary weed invasion. • Consider the need for strategic fuel breaks to help constrain fire spread or otherwise augment suppression efforts.
Restore – increase resilience and resistance of disturbed, degraded, or invaded areas	

Priorities	• Areas burned by wildfire – *all ecological types*
	  ○ Prioritize areas with low to moderate resilience and resistance, and that have a reasonable expectation of recovery.
	  ○ Prioritize areas where perennial grasses and forbs have been depleted.
	  ○ Prioritize areas that experienced high severity fire.

(continued)

Table 3. (Continued).

	• Sage-grouse habitat – *all ecological types*
	  ○ Prioritize areas where restoration of sagebrush and/or perennial grasses is needed to create large patches of landscape cover of sagebrush or connect existing patches of sagebrush habitat.
	  ○ Prioritize areas with adequate landscape cover of sagebrush where restoration of perennial grasses and forbs is needed.
	• Areas affected by anthropogenic activities that cause surface disturbance, invasion, and fragmentation. (e.g., road and utility corridors, urban expansion, OHV use, and mineral/energy projects) – *all ecological types.*

Objectives	• Increase soil stability and curtail dust. • Control/suppress invasive annual grasses and other invasive plants. • Increase landscape cover of sagebrush. • Increase perennial grasses and forbs and biological soil crusts where they naturally occur. • Reduce the risk of large fires that burn sage-grouse habitat.
Activities	• Use integrated strategies to control/suppress annual invasive grass and other annual invaders. • Establish and maintain fuel breaks or greenstrips in areas dominated by invasive annual grasses that are adjacent to areas with >25% landscape sagebrush cover and adequate perennial native grasses and forbs. • Seed perennial grasses and forbs that are adapted to local conditions to increase cover of these species in areas where they are depleted. • Seed and/or transplant sagebrush to restore large patches of sagebrush cover and connect existing patches. • Repeat restoration treatments if they fail initially to ensure restoration success especially in warm and dry soil temperature moisture regimes where weather is often problematic for establishment. • Actively manage restored/rehabilitated areas to increase perennial herbaceous species and minimize secondary weed invasion.
Monitoring and Adaptive Management– implement comprehensive monitoring to track landscape change and management outcomes and provide the basis for adaptive management	
Priorities	• Regional environmental gradients to track changes in plant community and other ecosystem attributes and expansion or contraction of species ranges – *all ecological types.* • Assess treatment effectiveness – *all ecological types.*
Objectives	• Understand effects of wildfire, annual grass invasion, piñon and juniper expansion, climate change and other global stressors in sagebrush ecosystems • Increase understanding of the long- and short-term outcomes of management treatments.
Activities	• Establish a regional network of monitoring sites that includes major environmental gradients. • Collect pre- and post-treatment monitoring data for all major land treatments activities. • Collect data on ecosystem status and trends (for example, land cover type, ground cover, vegetation cover and height [native and invasive], phase of tree expansion, soil and site stability, oddities). • Use consistent methods to monitor indicators. • Use a cross-boundary approach that involves all major land owners. • Use a common data base for all monitoring results (e.g., Land Treatment Digital Library; http://greatbasin.wr.usgs.gov/ltdl/). • Develop monitoring products that track change and provide management implications and adaptations for future management. • Support and improve information sharing on treatment effectiveness and monitoring results across jurisdictional boundaries (e.g., Great Basin Fire Science Delivery Project; www.gbfiresci.org).

Table 4. Specific management strategies by agency program area for the cells within the sage-grouse habitat matrix (table 2). The rows indicate relative resilience and resistance (numbers) and the columns indicate landscape cover of sagebrush by category (letters). Resilience and resistance are based on soil temperature and moisture regimes (fig. 11) and their relationship to ecological types (table 1). Percentage of the landscape dominated by sagebrush is based on the capacity of large landscapes to support viable sage-grouse populations over the long term (fig. 8). Note that these guidelines are related to the sage-grouse habitat matrix, and do not preclude other factors from consideration when determining management priorities for program areas. The "Fire Operations" program area includes preparedness, prevention, and suppression activities.

High Resilience to Disturbance and Resistance to Invasive Annual Grasses (1A, 1B, 1C)

Natural sagebrush recovery is likely to occur. Perennial herbaceous species are sufficient for recovery. Risk of invasive annual grasses is typically low.

Fire Operations	• Fire suppression is typically third order priority, but varies with large fire risk and landscape condition (cells 1A, 1B, 1C). Scenarios requiring higher priority may include: ○ Areas of sagebrush that bridge large, contiguous expanses of sagebrush and that are important for providing connectivity for sage-grouse (cells 1B, 1C). ○ Areas where sagebrush communities have been successfully reestablished through seedings or other rehabilitation investments (cells 1A, 1B, 1C) ○ Areas with later phase (Phase III) post-settlement piñon and juniper that have high resistance to control, are subject to large and/or severe fires, and place adjacent sage-grouse habitat at risk (cells 1A, 1B). ○ All areas when critical burning environment conditions exist. These conditions may be identified by a number of products including, but not limited to: Predictive Services 7-Day Significant Fire Potential Forecasts; National Weather Service Fire Weather Watches and Red Flag Warnings; fire behavior forecasts or other local knowledge.
Fuels Management	• Fuels management to reduce large sagebrush stand losses is a second order priority, especially in cells 1B and 1C. Management activities include: ○ Strategic placement of fuel breaks to reduce loss of large sagebrush stands by wildfire. Examples include linear features or other strategically placed treatments that serve to constrain fire spread or otherwise augment suppression efforts. ○ Tree removal in early to mid-phase (Phases I, II), post-settlement piñon and juniper expansion areas to maintain shrub/herbaceous cover and reduce fuel loads. ○ Tree removal in later phase (Phase III), post-settlement piñon and juniper areas to reduce risks of large or high severity fires. Because these areas represent non-sage-grouse habitat, prescribed fire may be appropriate on cool and moist sites, but invasive plant control and restoration of sagebrush and perennial native grasses and forbs may be necessary.
Post-Fire Rehabilitation	• Post-fire rehabilitation is generally low priority (cells 1A, 1B, 1C). Areas of higher priority include: ○ Areas where perennial herbaceous cover, density, and species composition is inadequate for recovery. ○ Areas where seeding or transplanting sagebrush is needed to maintain habitat connectivity for sage-grouse. ○ Steep slopes and soils with erosion potential.
Habitat Restoration and Recovery	• Restoration is typically passive and designed to increase or maintain perennial herbaceous species, biological soil crusts and landscape cover of sagebrush (cells 1A, 1B, 1C). Areas to consider for active restoration include: ○ Areas where perennial herbaceous cover density, or composition is inadequate for recovery after surface disturbance. ○ Areas where seeding or transplanting sagebrush is needed to maintain habitat connectivity for sage-grouse.

Moderate Resilience to Disturbance and Resistance to Invasive Annuals (2A, 2B, 2C)

Natural sagebrush recovery is likely to occur on cooler and moister sites, but the time required may be too great if large, contiguous areas lack sagebrush. Perennial herbaceous species are usually adequate for recovery on cooler and moister sites. Risk of invasive annual grasses is moderately high on warmer and drier sites.

Fire Operations	• Fire suppression is typically second order priority (cells 2A, 2B, 2C). Scenarios requiring higher priority may include: ○ Areas of sagebrush that bridge large, contiguous expanses of sagebrush and that are important for providing connectivity for sage-grouse (cells 2B, 2C).

(continued)

Table 4. (Continued).

	○ Areas where sagebrush communities have been successfully reestablished through seedings or other rehabilitation investments (cells 2A, 2B, 2C) ○ Areas with later phase (Phase III), post-settlement piñon and juniper that have high resistance to control, are subject to large and/or severe fires, and place adjacent sage-grouse habitat at risk (cells 2A, 2B). ○ Areas where annual grasslands place adjacent sage-grouse habitat at risk (cell 2A). ○ All areas when critical burning environment conditions exist. These conditions may be identified by a number of products including, but not limited to: Predictive Services 7-Day Significant Fire Potential Forecasts; National Weather Service Fire Weather Watches and Red Flag Warnings; fire behavior forecasts or other local knowledge.
Fuels Management	• Fuels management to reduce large sagebrush stand losses is a first order priority, especially in cells 2B and 2C. Management activities include: ○ Strategic placement of fuel breaks to reduce loss of large sagebrush stands by wildfire. Examples include linear features or other strategically placed treatments that serve to constrain fire spread or otherwise augment suppression efforts. ○ Tree removal in early to mid-phase (Phase I, II), post-settlement piñon and juniper expansion areas to maintain shrub/herbaceous cover and reduce fuel loads. ○ Tree removal in later phase (Phase III), post-settlement piñon and juniper areas to reduce risks of large or high severity fires. Because these areas represent non-sage-grouse habitat, prescribed fire may be appropriate on cool and moist sites, but restoration of sagebrush and perennial native grasses and forbs may be necessary.
Post-Fire Rehabilitation	• Post-fire rehabilitation is generally low priority (cells 2A, 2B, 2C) in cooler and moister areas. Areas of higher priority include: ○ Areas where perennial herbaceous cover, density, and species composition is inadequate for recovery. ○ Areas where seeding or transplanting sagebrush is needed to maintain habitat connectivity for sage-grouse. ○ Relatively warm and dry areas where annual invasives are expanding. ○ Steep slopes with erosion potential.
Habitat Restoration and Recovery	• Restoration is typically passive on cooler and moister areas and is designed to increase or maintain perennial herbaceous species, biological soil crusts, and landscape cover of sagebrush (cells 2A, 2B, 2C). Areas to consider for active restoration include: ○ Areas where perennial herbaceous cover, density, and species composition is inadequate for recovery after surface disturbance. ○ Areas where seeding or transplanting sagebrush is needed to maintain habitat connectivity for sage-grouse. ○ Relatively warm and dry areas where annual invasives are expanding.
Low Resilience to Disturbance and Resistance to Invasive Annuals (3A, 3B, 3C)	
Natural sagebrush recovery is not likely. Perennial herbaceous species are typically inadequate for recovery. Risk of invasive annual grasses is high.	
Fire Operations	• Fire suppression priority depends on the landscape cover of sagebrush: ○ Areas with <25% landscape cover of sagebrush are typically third order priority (cell 3A). These areas may be a higher priority if they are adjacent to intact sage-grouse habitat or are essential for connectivity. ○ Areas with 26-65% landscape cover of sagebrush are typically second order priority (cell 3B). These areas are higher priority if they have intact understories and if they are adjacent to sage-grouse habitat. ○ Areas with >65% landscape cover of sagebrush are first order priority (cell 3C). ○ Areas where sagebrush communities have been successfully reestablished through seedings or other rehabilitation investments (cells 3A, 3B, 3C).

(continued)

Table 4. (Continued).

Fuels Management	• Fuels management priority and management activities depend on the landscape cover of sagebrush: ○ Areas with <25% landscape cover of sagebrush are typically third order priority (cell 3A). Strategic placement of fuel breaks may be needed to reduce loss of adjacent sage-grouse habitat by wildfire. Examples include linear features or other strategically placed treatments that serve to constrain fire spread or otherwise augment suppression efforts. ○ Areas with 26-65% landscape cover of sagebrush are typically second order priority (cell 3B). These areas are higher priority if they have intact understories and if they are adjacent to sage-grouse habitat. Strategic placement of fuel breaks may be needed to reduce loss of large sagebrush stands by wildfire. ○ Areas with >65% landscape cover of sagebrush are first order priority (cell 3C). Strategic placement of fuel breaks may be needed to reduce loss of large sagebrush stands by wildfire. ○ Areas where sagebrush communities have been successfully reestablished through seedings or other rehabilitation investments (cells 3A, 3B, 3C). Strategic placement of fuel breaks may be needed to protect investments from repeated loss to wildfire.
Post-Fire Rehabilitation	• Post-fire rehabilitation priority and management activities depend on the landscape cover of sagebrush: ○ Areas with <25% landscape cover of sagebrush are typically third order priority (cell 3A). Exceptions include (1) sites that are relatively cool and moist and (2) areas adjacent to sage-grouse habitat where seeding can be used to increase connectivity and prevent annual invasive spread. In highly invaded areas, integrated strategies that include seeding of perennial herbaceous species and seeding and/or transplanting sagebrush will be required. Success will likely require more than one intervention due to low and variable precipitation. ○ Areas with 26-65% landscape cover of sagebrush are typically second order priority (cell 3B). Exceptions include (1) sites that are relatively cool and moist or that are not highly invaded, and (2) areas adjacent to sage-grouse habitat where seeding can be used to increase connectivity and prevent annual invasive spread. Seeding of perennial herbaceous species will be required where cover, density and species composition of these species is inadequate for recovery. Seeding and/or transplanting sagebrush as soon as possible is necessary for rehabilitating sage-grouse habitat. Success will likely require more than one intervention due to low and variable precipitation. ○ Areas with >65% landscape cover of sagebrush are first order priority, especially if they are part of a larger, contiguous area of sagebrush (cell 3C). Seeding of perennial herbaceous species will be required where cover, density and species composition of these species is inadequate for recovery. Seeding and/or transplanting sagebrush as soon as possible is necessary for rehabilitating sage-grouse habitat. Success will likely require more than one intervention due to low and variable precipitation.
Habitat Restoration and Recovery	• Restoration priority and management activities depends on the landscape cover of sagebrush: ○ Areas with <25% landscape cover of sagebrush are typically third order priority. Exceptions include (1) surface disturbances and (2) areas adjacent to sage-grouse habitat where seeding can be used to prevent annual invasive spread (cell 3A). In highly invaded areas, integrated strategies that include seeding of perennial herbaceous species and seeding and/or transplanting sagebrush will be required. Success will likely require more than one intervention due to low and variable precipitation. ○ Areas with 26-65% landscape cover of sagebrush are typically second order priority (cell 3B). Exceptions include (1) surface disturbances, (2) sites that are relatively cool and moist or that are not highly invaded, and (3) areas adjacent to sage-grouse habitat where seeding can be used to increase connectivity and prevent annual invasive spread. Seeding of perennial herbaceous species may be required where cover, density and species composition of these species is inadequate. Seeding and/or transplanting sagebrush as soon as possible is necessary for restoring sage-grouse habitat. Success will likely require more than one intervention due to low and variable precipitation. ○ Areas with >65% landscape cover of sagebrush are first order priority, especially if they are part of a larger, contiguous area of sagebrush (cell 3C). Seeding of perennial herbaceous species may be required where cover, density, and species composition of these species is inadequate. Seeding and/or transplanting sagebrush as soon as possible is necessary for restoring sage-grouse habitat. Success will likely require more than one intervention due to low and variable precipitation.

Another important consideration is that ecological processes such as wildfire can occur either within or across categories in the sage-grouse habitat matrix and it is necessary to determine the appropriate spatial context when evaluating management opportunities based on resilience and resistance and sage-grouse habitat. For example, if critical sage-grouse habitat occurs in close proximity to landscapes comprised mainly of annual grass-dominated plant communities, then fire risk to adjacent sage-grouse habitat can increase dramatically (Balch et al. 2013). In this scenario, management actions could include reducing the influence of invasive annual grasses with a strategic fuel break on the perimeter of intact sagebrush. Thus, management actions may have value to sustaining existing sage-grouse habitat, even if these measures are applied in locations that are currently not habitat; the spatial relationships of sagebrush and invasive annual grasses should be considered when prioritizing management actions and associated conservation measures.

Informing Wildfire and Fuels Management Strategies to Conserve Sage-Grouse

Collectively, responses to wildfires and implementation of fuels management projects are important contributors to sage-grouse conservation. Resilience and resistance concepts provide a science-based background that can inform fire operations and fuels management strategies and allocation of scarce assets during periods of high fire activity. In fire operations, firefighter and public safety is the overriding objective in all decisions. In addition, land managers consider numerous other values at risk, including the Wildland-Urban Interface (WUI), habitats, and infrastructure when allocating assets and prioritizing efforts. Resilience and resistance concepts are especially relevant for evaluating tradeoffs related to current ecological conditions and rates of recovery and possible ecological consequences of different fire management activities. For example, prioritizing initial attack efforts based on ecological types and their resilience and resistance at fire locations is a possible future application of resilience and resistance concepts. Also, fire prevention efforts can be concentrated where human ignitions have commonly occurred near intact, high quality habitats that also have inherently low resilience and resistance.

Fuels management projects are often applied to (1) constrain or minimize fire spread; (2) alter species composition; (3) modify fire intensity, severity, or effects; or (4) create fuel breaks or anchor points that augment fire management efforts (fig. 13). These activities are selectively used based on the projected ecosystem response, anticipated fire patterns, and probability of success. For example, in areas that are difficult to restore due to low to moderate resilience, fuel treatments can be placed to minimize fire spread and conserve sagebrush habitat. In cooler and moister areas with moderate to high resilience and resistance, mechanical or prescribed fire treatments may be appropriate to prevent conifer expansion and dominance. Given projected climate change and longer fire seasons across the western United States, fuels management represents a proactive approach for modifying large fire trends. Fire operations and fuels management programs contribute to a strategic, landscape approach when coupled with data that illustrate the likelihood of fire occurrence, potential fire behavior, and risk assessments (Finney et al. 2010; Oregon Department of Forestry 2013). In tandem with resilience and resistance concepts, these data can further inform fire operations and fuels management decisions.

Figure 13. Fuel breaks may include roads, natural features, or other management imposed treatments intended to modify fire behavior or otherwise augment suppression efforts at the time of a fire. Such changes in fuel type and arrangement may improve suppression effectiveness by modifying flame length and fire intensity, and allow fire operations to be conducted more safely. The top photo shows a burnout operation along an existing road to remove available fuels ahead of an oncoming fire and constrain overall fire growth (photo by BLM Idaho Falls District). The bottom photo shows fuel breaks located along a road, which complimented fire control efforts when a fire intersected the fuel break and road from the right (photo by Ben Dyer, BLM).

Putting it all Together

Effective management and restoration of sage-grouse habitat will benefit from a collaborative approach that prioritizes the best management practices in the most appropriate places. This section describes an approach for assessing focal areas for sage-grouse habitat management based on widely available data, including (1) Priority Areas for Conservation (PACs), (2) breeding bird densities, (3) habitat suitability as indicated by the landscape cover of sagebrush, (4) resilience and resistance and dominant ecological types as indicated by soil temperature and moisture regimes, and (5) habitat threats as indicated by cover of cheatgrass, cover of piñon and juniper, and by fire history. Breeding bird density data are overlain with landscape cover of sagebrush and with resilience and resistance to spatially link sage-grouse populations with habitat conditions and risks. We illustrate the use of this step-down approach for evaluating focal areas for sage-grouse habitat management across the western portion of the range, and we provide a detailed example for a diverse area in the northeast corner of Nevada that is comprised largely of PACs with mixed land ownership. The sage-grouse habitat matrix (table 2) is used as a tool in the decision process, and guidelines are provided to assist in determining appropriate management strategies for the primary agency program areas (fire operations, fuels management, post-fire rehabilitation, habitat restoration) for each cell of the matrix.

We conclude with discussions of the tools available to aid in determining the suitability of an area for treatment and the most appropriate management treatments such as ecological site descriptions and state and transition models and of monitoring and adaptive management. Datasets used to compile the maps in the following sections are in Appendix 4.

Assessing Focal Areas for Sage-Grouse Habitat Management: Key Data Layers

Priority areas for conservation: The recent identification of sage-grouse strongholds, or Priority Areas for Conservation (PACs), greatly improves the ability to target management actions towards habitats expected to be critical for long-term viability of the species (fig. 14; USFWS 2013). Understanding and minimizing risks of large-scale loss of sagebrush and conversion to invasive annual grasses or piñon and juniper in and around PACs will be integral to maintaining sage-grouse distribution and stabilizing population trends. PACs were developed by individual states to identify those areas that are critical for ensuring adequate representation, redundance, and resilience to conserve sage-grouse populations. Methods differed among states; in general, PAC boundaries were identified based on (1) sage-grouse population data including breeding bird density, lek counts, telemetry, nesting areas, known distributions, and sightings/observations; and (2) habitat data including occupied habitat, suitable habitat, seasonal habitat, nesting and brood rearing areas, and connectivity areas or corridors. Sage-grouse habitats outside of PACs also are important in assessing focal areas for management where they provide connectivity between PACs (genetic and habitat linkages), seasonal habitats that may have been underestimated due to emphasis on lek sites to define priority areas, habitat restoration and population expansion opportunities, and flexibility for managing habitat changes that may result from climate change (USFWS 2013). If PAC boundaries are adjusted, they will need to be updated for future analyses.

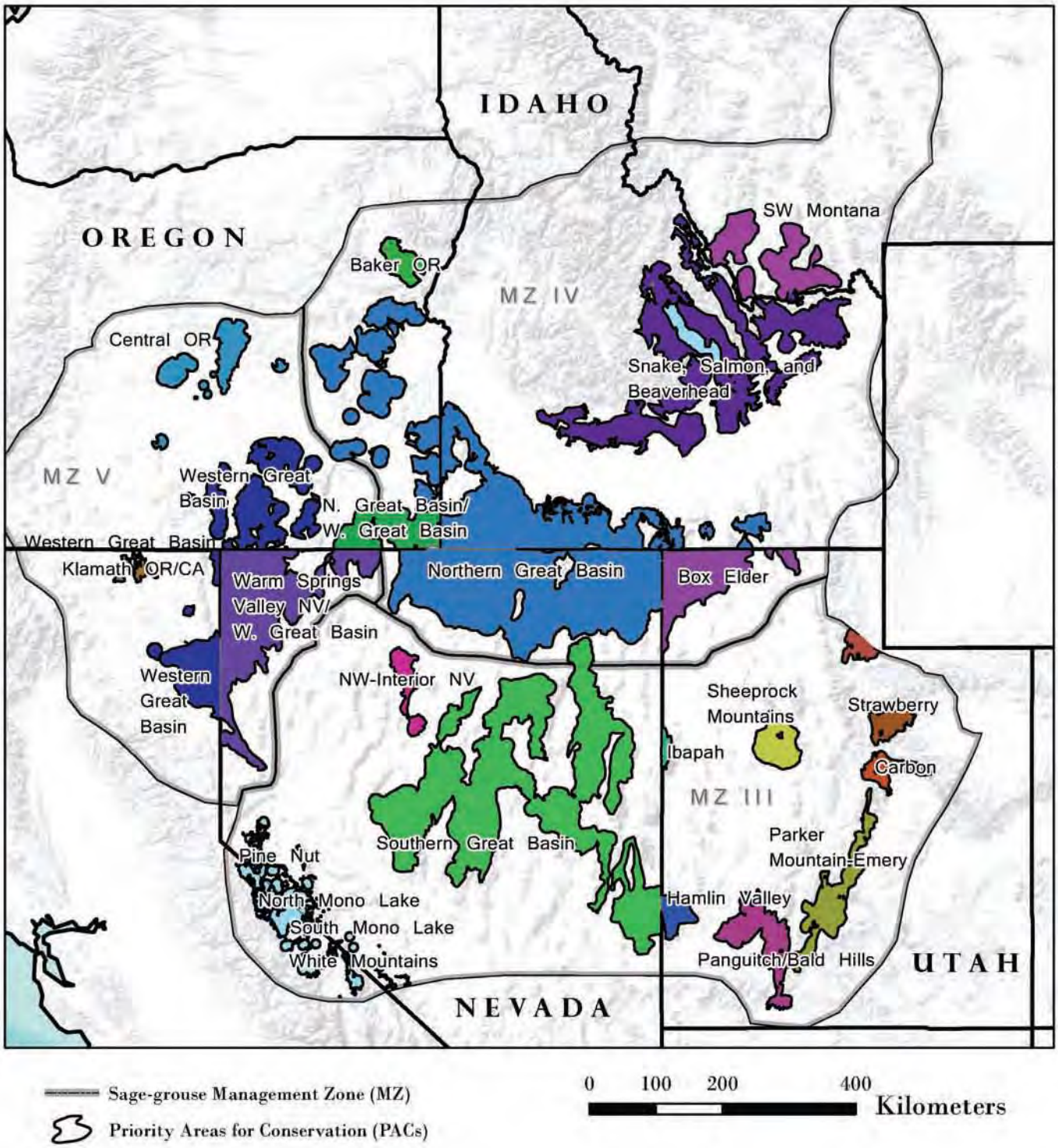

Figure 14. Priority Areas for Conservation (PACs) within the range of sage-grouse (USFWS 2013). Colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

Breeding bird density: Range-wide breeding bird density areas provide one of the few accessible data sets for further prioritizing actions within and adjacent to PACs to maintain species distribution and abundance. Doherty et al. (2010b) developed a useful framework for incorporating population data in their range-wide breeding bird density analysis, which used maximum counts of males on leks (n = 4,885) to delineate breeding bird density areas that contain 25, 50, 75, and 100% of the known breeding population (fig. 15). Leks were mapped according to these abundance values and buffered by a 6.4 to 8.5 km (4.0 to 5.3 mi) radius to delineate nesting areas. Findings showed that while sage-grouse occupy extremely large landscapes, their breeding distribution is highly aggregated in comparably smaller identifiable population centers; 25% of the known population occurs within 3.9% (2.9 million ha; 7.2 million ac) of the species range, and 75% of birds are within 27.0% of the species range (20.4 million ha; 50.4 million ac) (Doherty et al. 2010b). The Doherty et al. (2010b) analysis emphasized breeding habitats primarily because little broad scale data exist for summer and winter habitat use areas. Even though the current breeding bird density data provide the most comprehensive data available, they do not include all existing sage-grouse populations. Incorporating finer scale seasonal habitat use data at local levels where it is available will ensure management actions encompass all seasonal habitat requirements.

For this assessment, we chose to use State-level breeding bird density results from Doherty et al. (2010b) instead of range-wide model results to ensure that important breeding areas in MZs III, IV, and V were not underweighted due to relatively higher bird densities in the eastern portion of the range. It is important to note that breeding density areas were identified using best available information in 2009, so these range-wide data do not reflect the most current lek count information or changes in conditions since the original analysis. Also, breeding density areas should not be viewed as rigid boundaries but rather as the means to prioritize landscapes regionally where step-down assessments and actions may be implemented quickly to conserve the most birds.

Landscape cover of sagebrush: Landscape cover of sagebrush is one of the key determinants of sage-grouse population persistence and, in combination with an understanding of resilience to disturbance and resistance to invasive annuals, provides essential information both for determining priority areas for management and appropriate management actions (fig. 10; tables 2 and 3). Landscape cover of sagebrush is a measure of large, contiguous patches of sagebrush on the landscape and is calculated from remote sensing databases such as LANDFIRE (see Appendix 4). We used the three cover categories of sagebrush landscape cover discussed previously to predict the likelihood of sustaining sage-grouse populations (1-25%, 25-65%, >65%). The sagebrush landscape cover datasets were created using a moving window to summarize the proportion of area (5-km [3.1-mi] radius) dominated by sagebrush surrounding each 30-m pixel and then assigned those areas to the three categories (see Appendix 2). Because available sagebrush cover from sources such as LANDFIRE does not exclude recent fire perimeters, it was necessary to either include these in the analysis of landscape cover of sagebrush or display them separately. Although areas that have burned since 2000 likely do not currently provide desired sage-grouse habitat, areas with the potential to support sagebrush ecological types can provide conservation benefits in the overall planning effort especially within long-term conservation areas like PACs. The landscape cover of sagebrush and recent fire perimeters are illustrated for the western portion of the range (fig.16) and northeast Nevada (fig. 17).

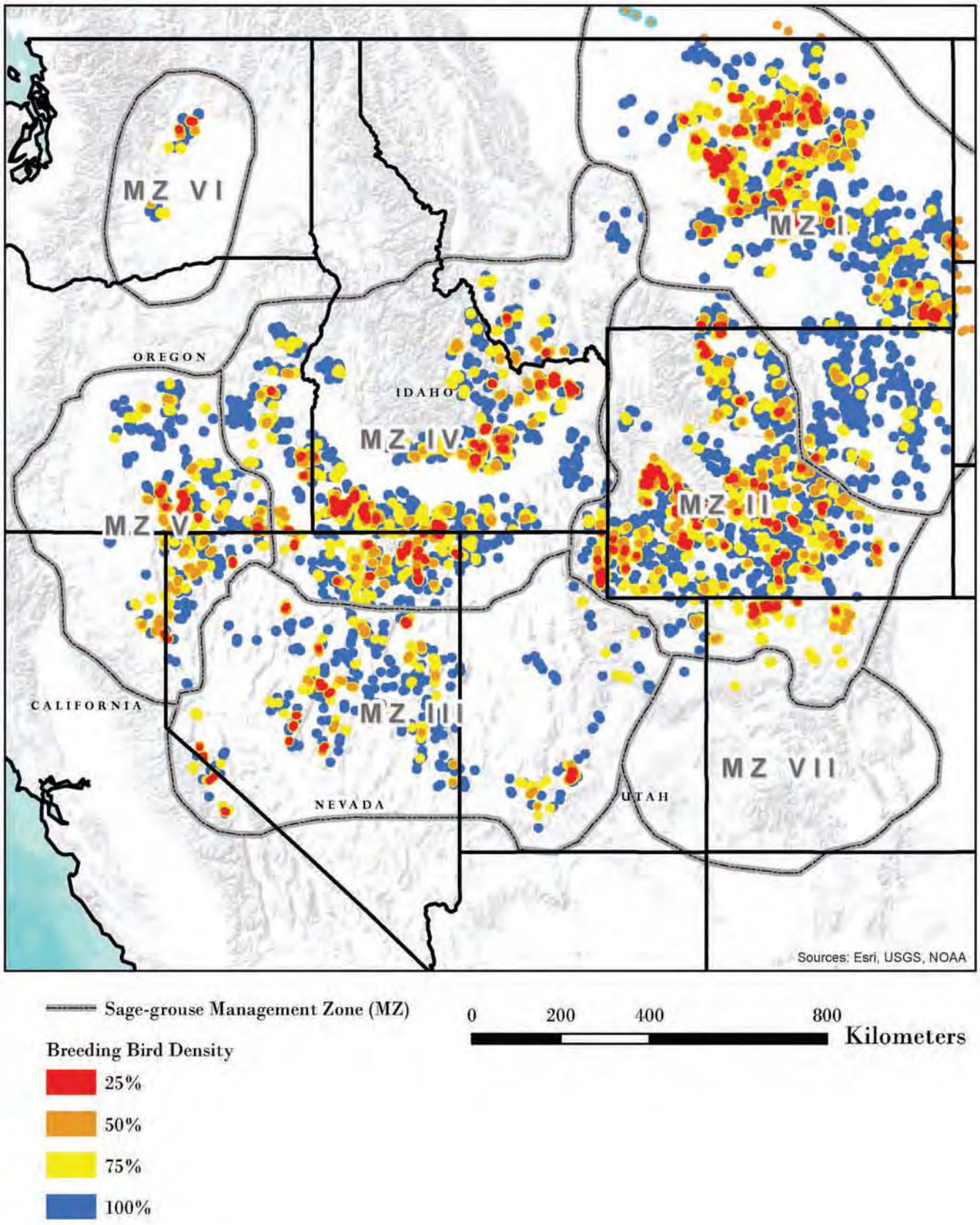

Figure 15. Range-wide sage-grouse breeding bird densities from Doherty et al. 2010. Points illustrate breeding bird density areas that contain 25, 50, 75, and 100% of the known breeding population and are based on maximum counts of males on leks (n = 4,885). Leks were mapped according to abundance values and buffered by 6.4 to 8.5 km (4.0 to 5.2 mi) to delineate nesting areas.

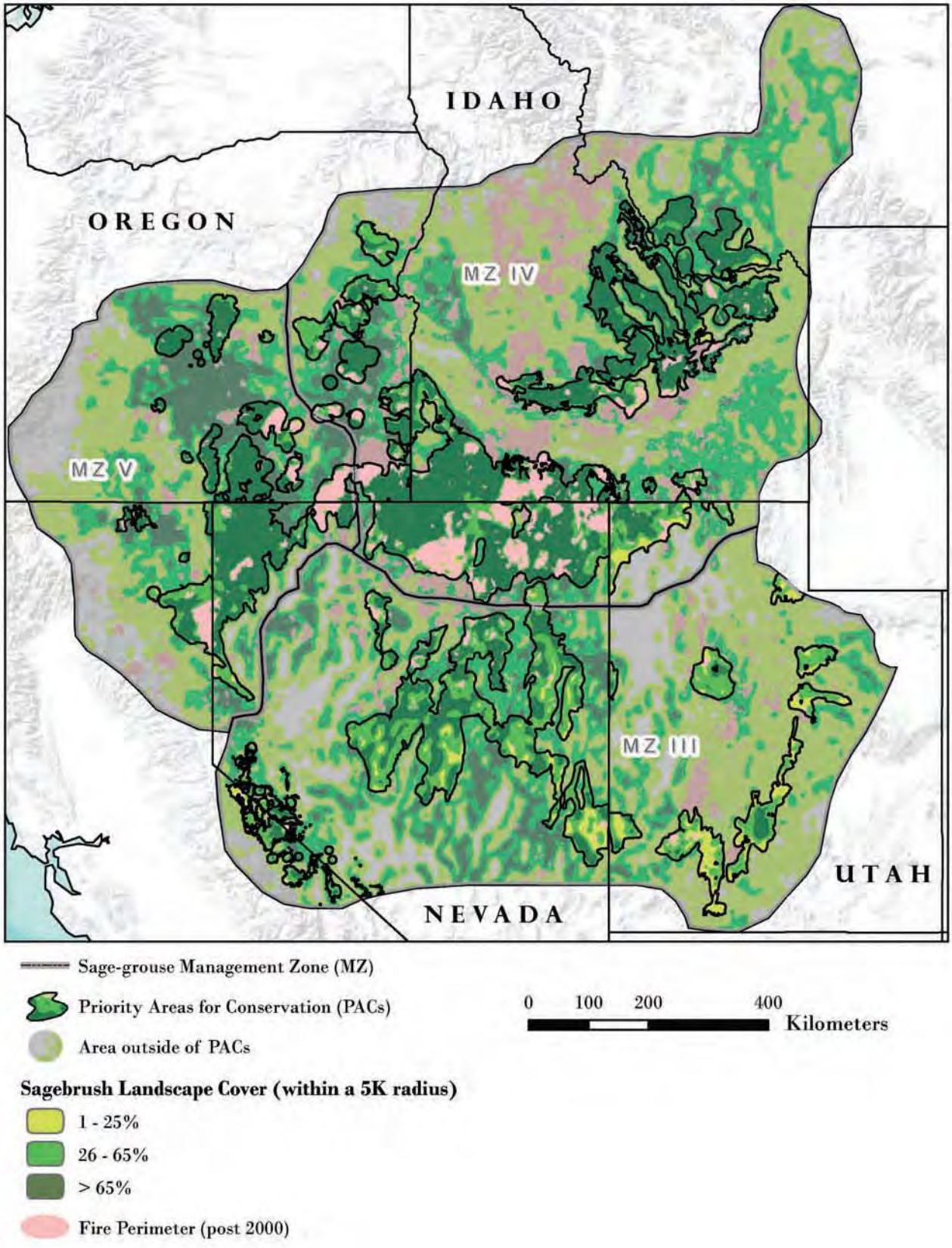

Figure 16. The landscape cover of sagebrush within each of three selected categories (1-25%, 26-65%, >65%) for Management Zones III, IV, and V (Stiver et al. 2006). The proportion of sagebrush (USGS 2013) within each of the categories in a 5-km (3.1-mi) radius surrounding each pixel was calculated relative to other land cover types for locations with sagebrush cover. Darker colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

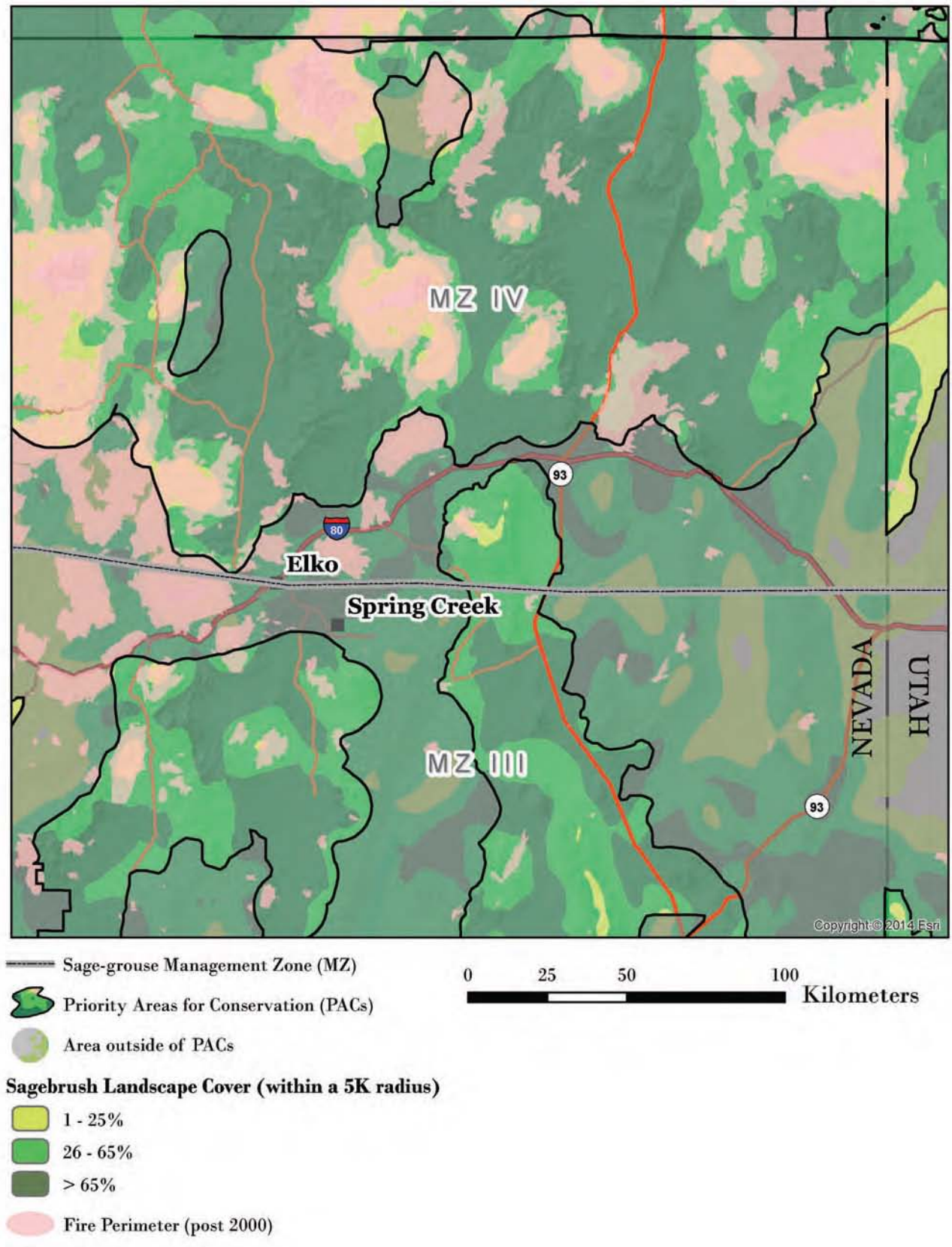

Figure 17. The landscape cover of sagebrush within each of the selected categories (1-25%, 26-65%, >65%) for the north-eastern portion of Nevada. The proportion of sagebrush (USGS 2013) within each of the categories in a 5-km (3.1-mi) radius surrounding each pixel was calculated relative to other land cover types for locations with sagebrush cover. Darker colored polygons delineate Priority Areas for Conservation (USFWS 2013).

Resilience to disturbance and resistance to annuals: Soil temperature and moisture regimes are a strong indicator of ecological types and of resilience to disturbance and resistance to invasive annual plants (fig. 11; table 1). Resilience and resistance predictions coupled with landscape cover of sagebrush can provide critical information for determining focal areas for targeted management actions (tables 2, 3, and 4). The available data for the soil temperature and moisture regimes were recently compiled to predict resilience and resistance (see Appendix 3). These data, displayed for the western portion of the range and northeast Nevada (figs. 18 and 19), illustrate the spatial variability within the focal areas. Soil temperature and moisture regimes are two of the primary determinants of ecological types and of more detailed ecological site descriptions, which are described in the section on "Determining the Most Appropriate Management Treatments at the Project Scale."

Habitat threats: Examining additional land cover data or models of invasive annual grasses and piñon and/or juniper, can provide insights into the current extent of threats in a planning area (e.g., Manier et al. 2013). In addition, evaluating data on fire occurrence and size can provide information on fire history and the rate and pattern of change within the planning area. Data layers for cheatgrass cover have been derived from Landsat imagery (Peterson 2006, 2007) and from model predictions based on species occurrence, climate variables, and anthropogenic disturbance (e.g., the Bureau of Land Management [BLM] Rapid Ecoregional Assessments [REAs]). The REAs contain a large amount of geospatial data that may be useful in providing landscape scale information on invasive species, disturbances, and vegetation types across most of the range of sage-grouse (http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas.html). Similarly, geospatial data for piñon and/or juniper have been developed for various States (e.g., Nevada and Oregon) and are becoming increasingly available rangewide. In addition, more refined data products are often available at local scales. Land managers can evaluate the available land cover datasets and select those land covers with the highest resolution and accuracy for the focal area. Land cover of cheatgrass and piñon and/or juniper and the fire history of the western portion of the range and northeast Nevada are in figures 20-25.

Assessing Focal Areas for Sage-Grouse Habitat Management: Integrating Data Layers

Combining resilience and resistance concepts with sage-grouse habitat and population data can help land managers further gauge relative risks across large landscapes and determine where to focus limited resources to conserve sage-grouse populations. Intersecting breeding bird density areas with soil temperature and moisture regimes provides a spatial tool to depict landscapes with high bird concentrations that may have a higher relative risk of being negatively affected by fire and annual grasses (figs. 26, 27). For prioritization purposes, areas supporting 75% of birds (6.4 to 8.5 km [4.0 to 5.2 mi] buffer around leks) can be categorized as high density while remaining breeding bird density areas (75-100% category; 8.5-km [5.2-mi] buffer around leks) can be categorized as low density. Similarly, warm and dry types can be categorized as having relatively low resilience to fire and resistance to invasive species and all other soil temperature and moisture regimes can be categorized as having relatively moderate to high resilience and resistance. Intersecting breeding bird density areas with landscape cover of sagebrush provides another spatial component revealing large and intact habitat blocks and areas in need of potential restoration to provide continued connectivity (fig. 28).

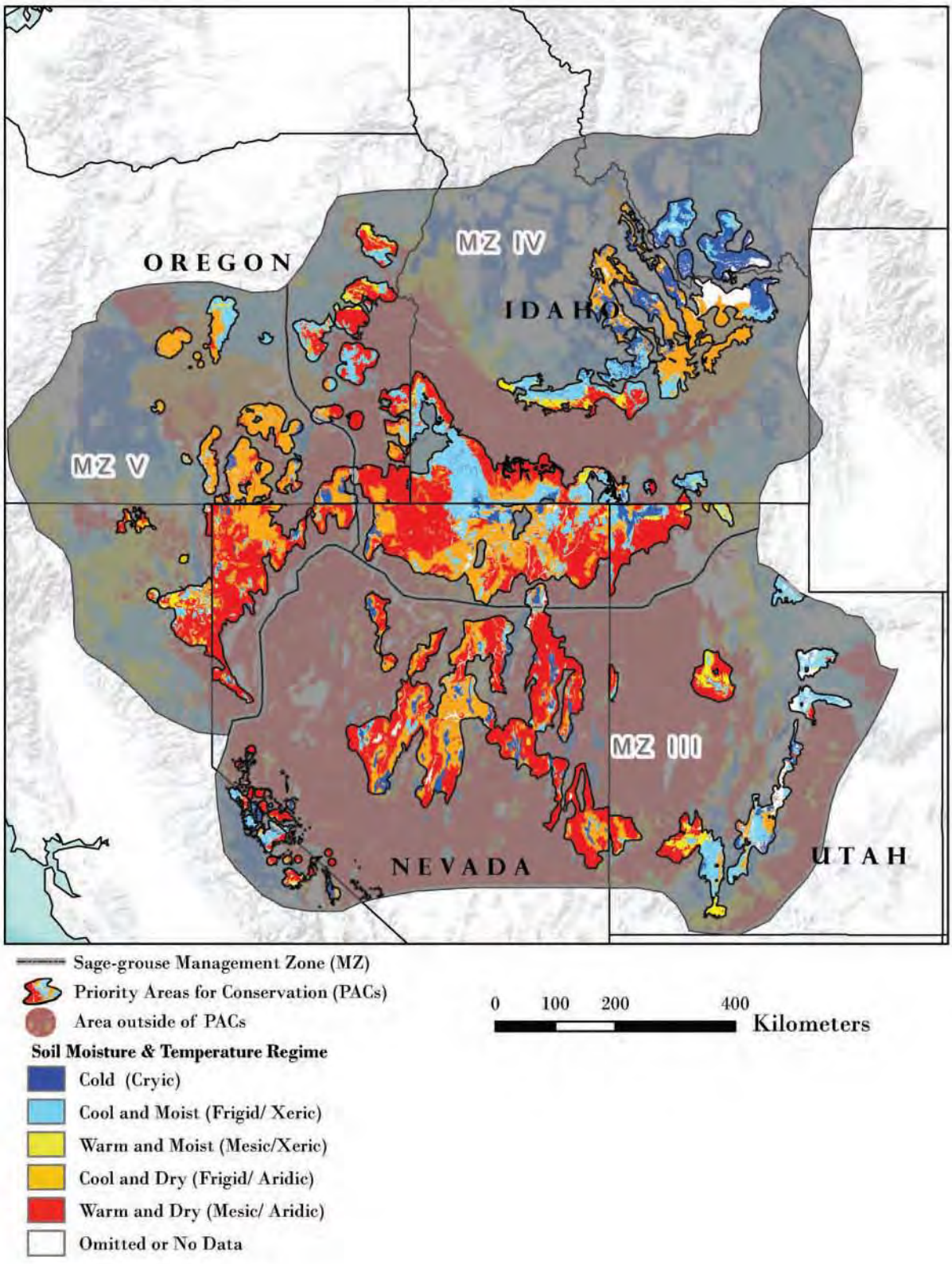

Figure 18. The soil temperature and moisture regimes within sage-grouse Management Zones III, IV, and V (Stiver et al. 2006). Soil temperature and moisture classes were derived from the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) (Soil Survey Staff 2014a). Gaps in that dataset were filled in with the NRCS State Soil Geographic Database (STATSGO) (Soil Survey Staff 2014b). Darker colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

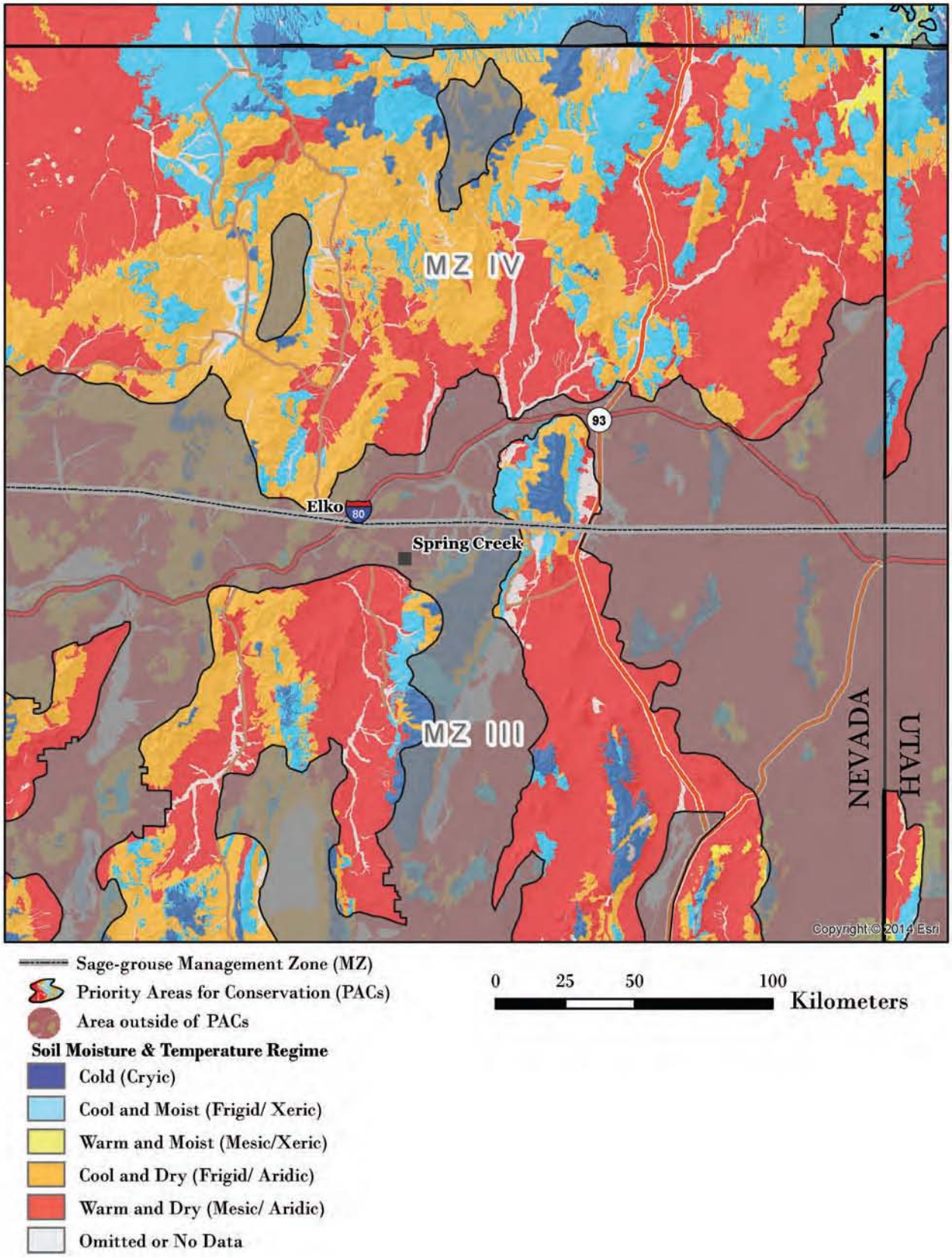

Figure 19. The soil temperature and moisture regimes for the northeast corner of Nevada. Soil temperature and moisture classes were derived from the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) (Soil Survey Staff 2014a). Gaps in that dataset were filled in with the NRCS State Soil Geographic Database (STATSGO) (Soil Survey Staff 2014b). Darker colored polygons delineate Priority Areas for Conservation (USFWS 2013).

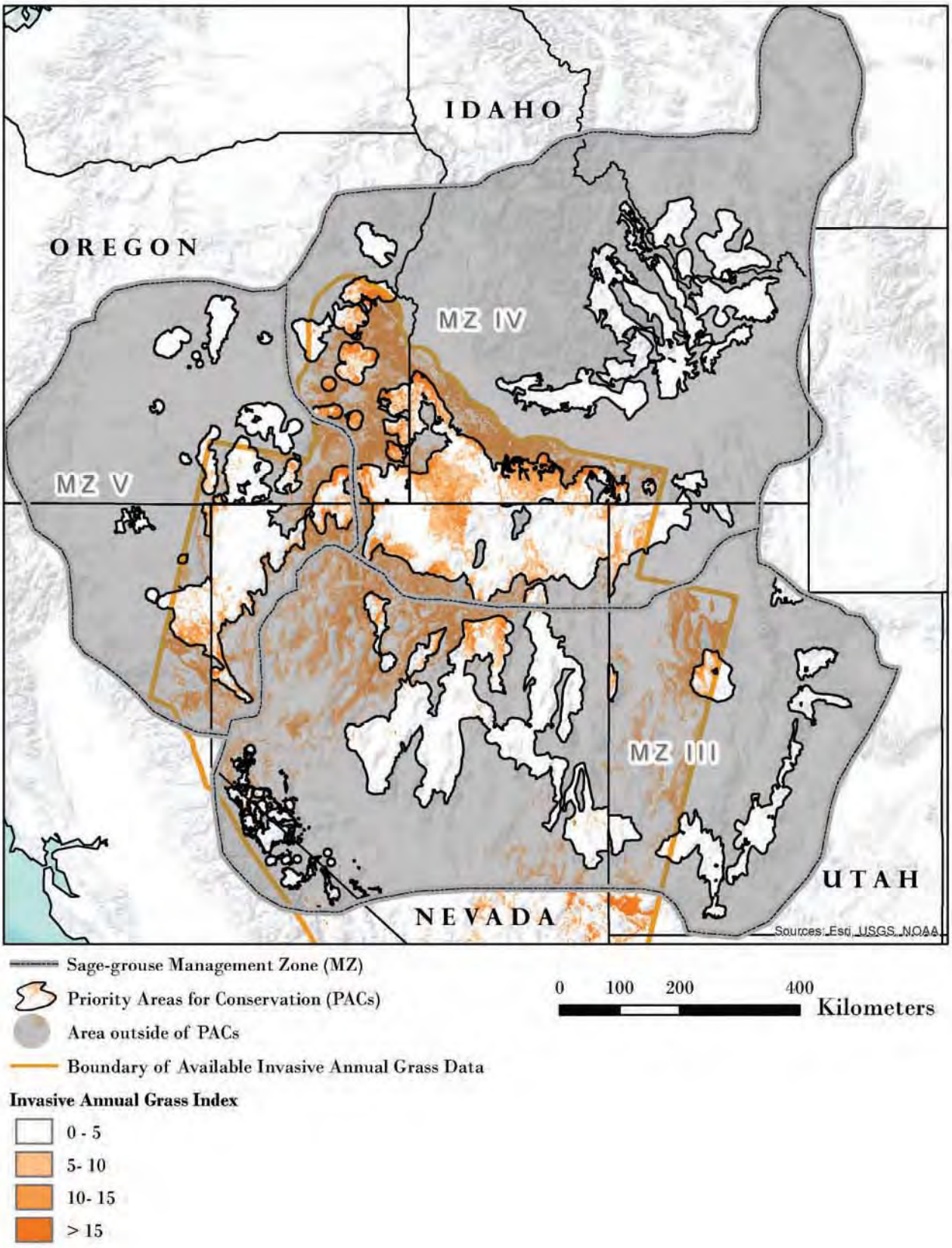

Figure 20. Invasive annual grass index for Nevada (Peterson 2006) and the Owhyee uplands (Peterson 2007) displayed for sage-grouse Management Zones III, IV, and V (Stiver et al. 2006). Lighter colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

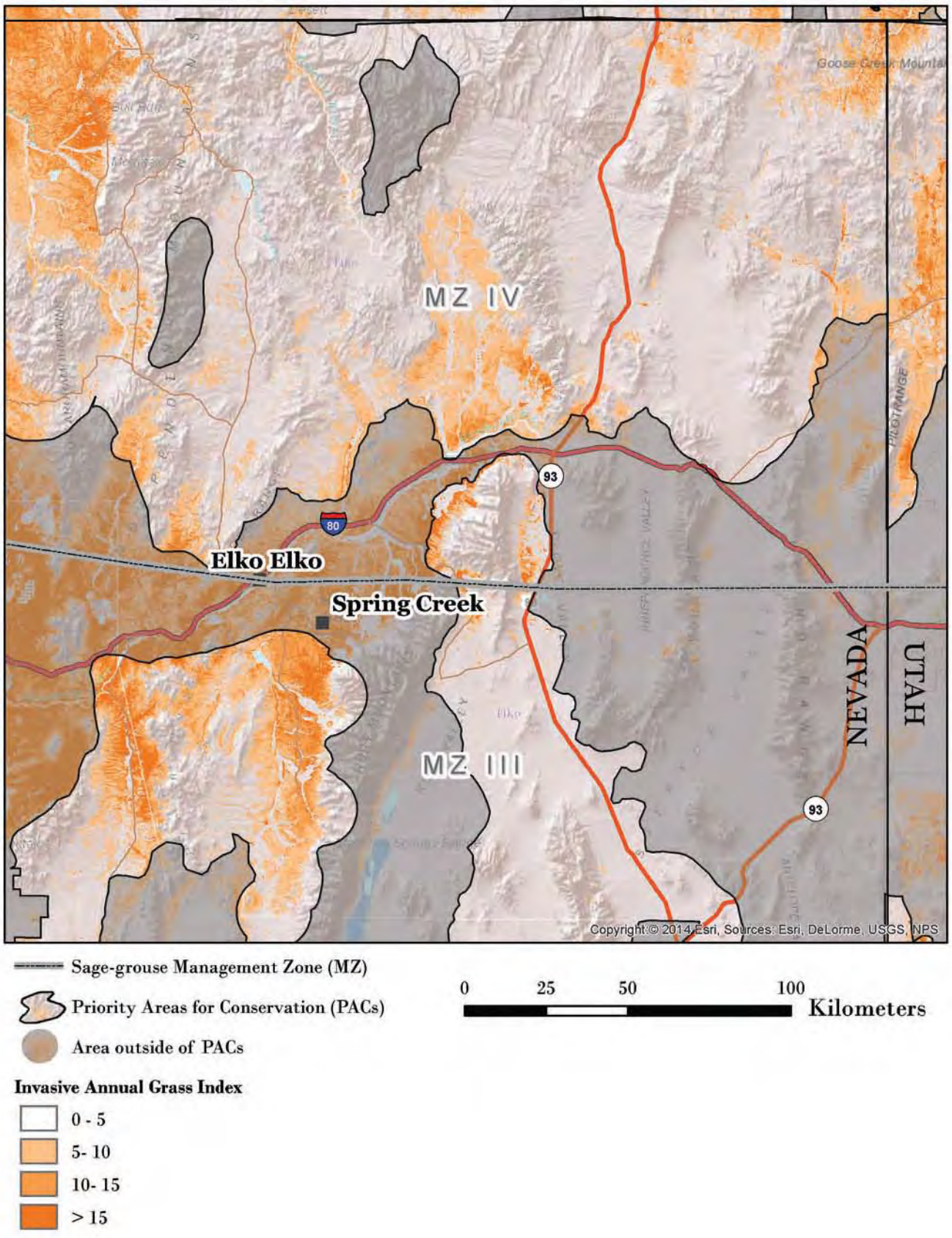

Figure 21. Invasive annual grass index for Nevada (Peterson 2006) and the Owhyee uplands (Peterson 2007) displayed for the northeast corner of Nevada. Lighter colored polygons delineate Priority Areas for Conservation (USFWS 2013).

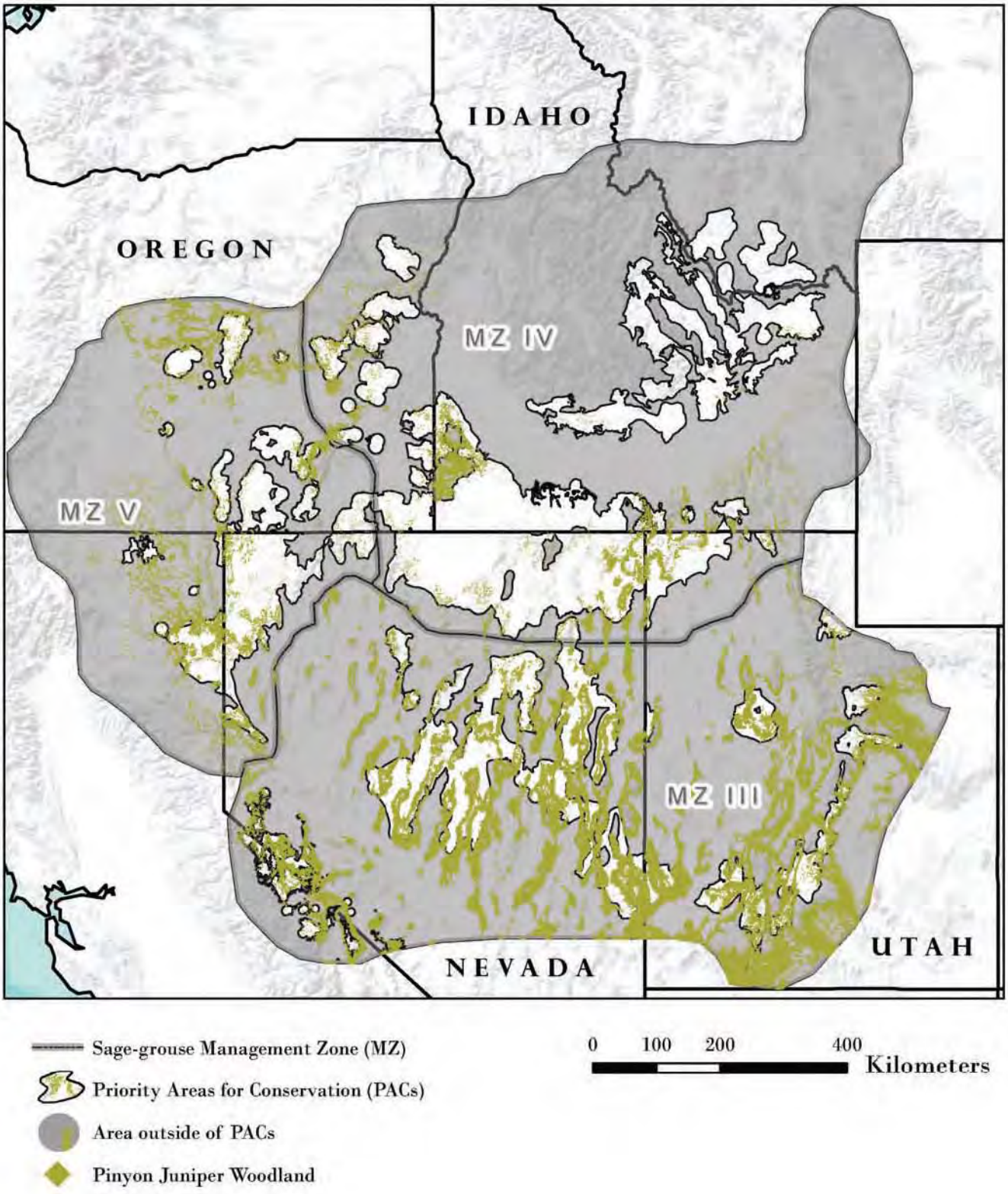

Figure 22. Piñon and/or juniper woodlands (USGS 2004; USGS 2013) within sage-grouse Management Zones III, IV, and V (Stiver et al. 2006). Lighter colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

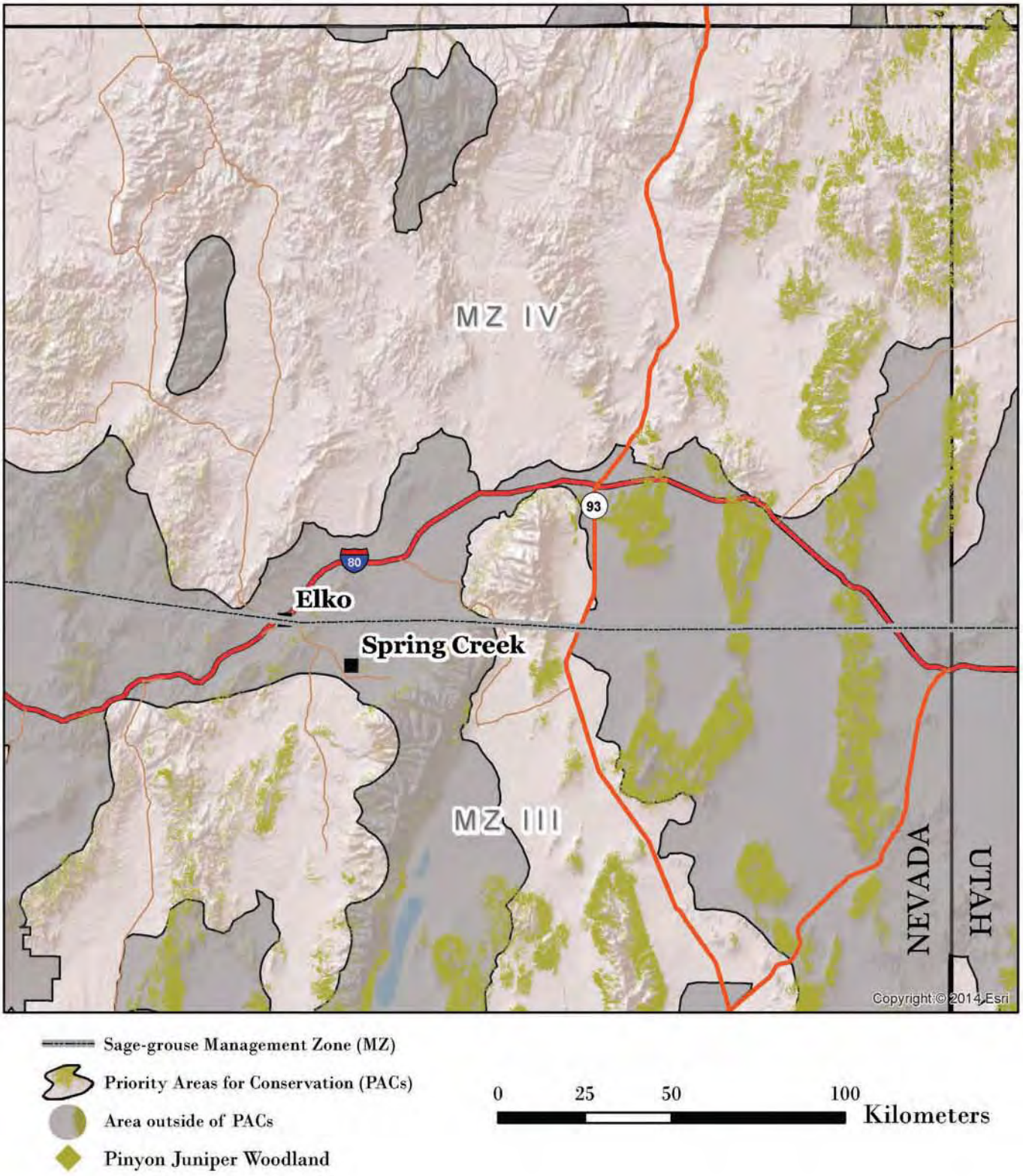

Figure 23. Piñon and/or juniper woodlands (USGS 2004; USGS 2013) within the northeast corner of Nevada. Lighter colored polygons delineate Priority Areas for Conservation (USFWS 2013).

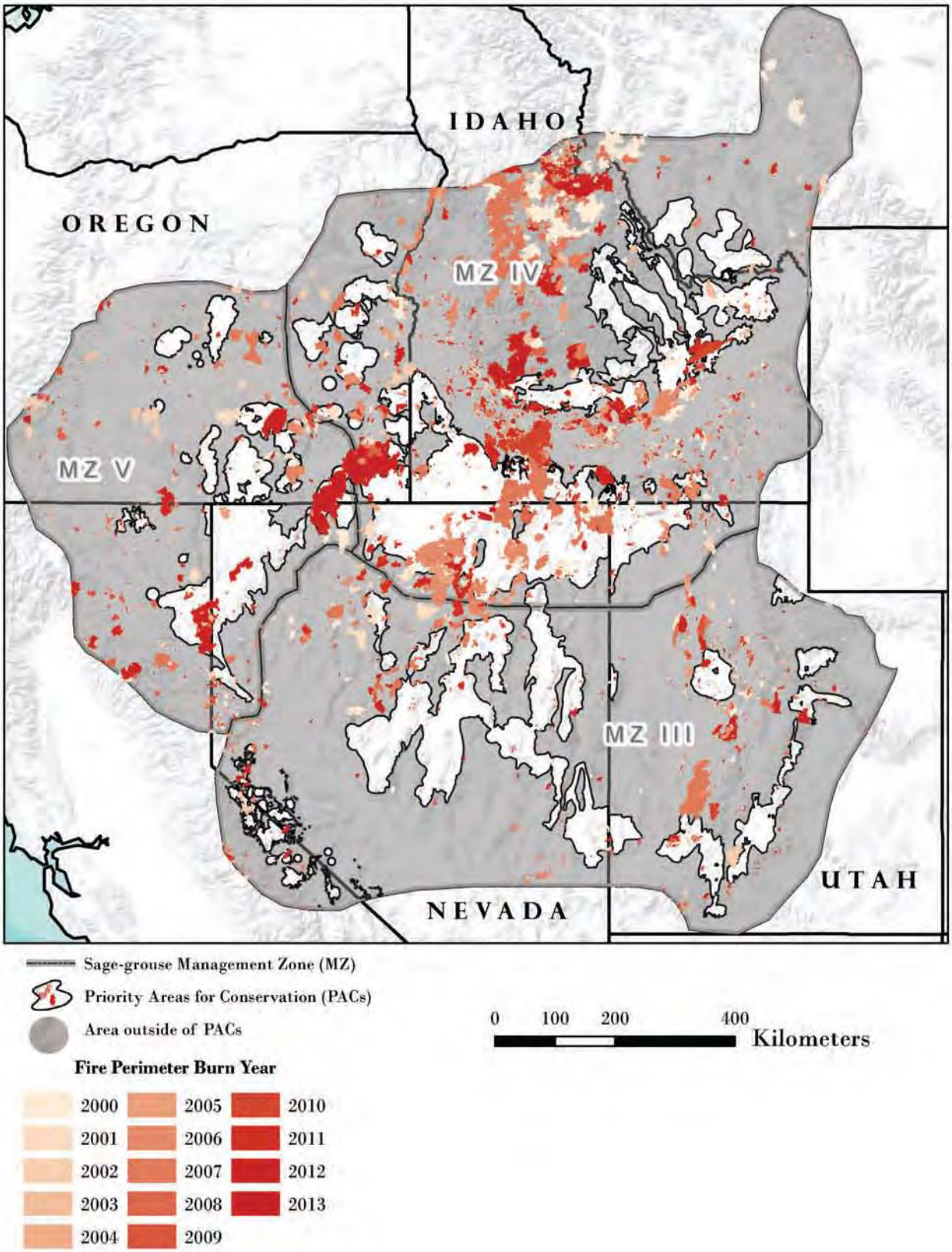

Figure 24. Fire perimeters (Walters et al. 2011; Butler and Bailey 2013) within sage-grouse Management Zones III, IV, and V (Stiver et al. 2006). Ligher colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

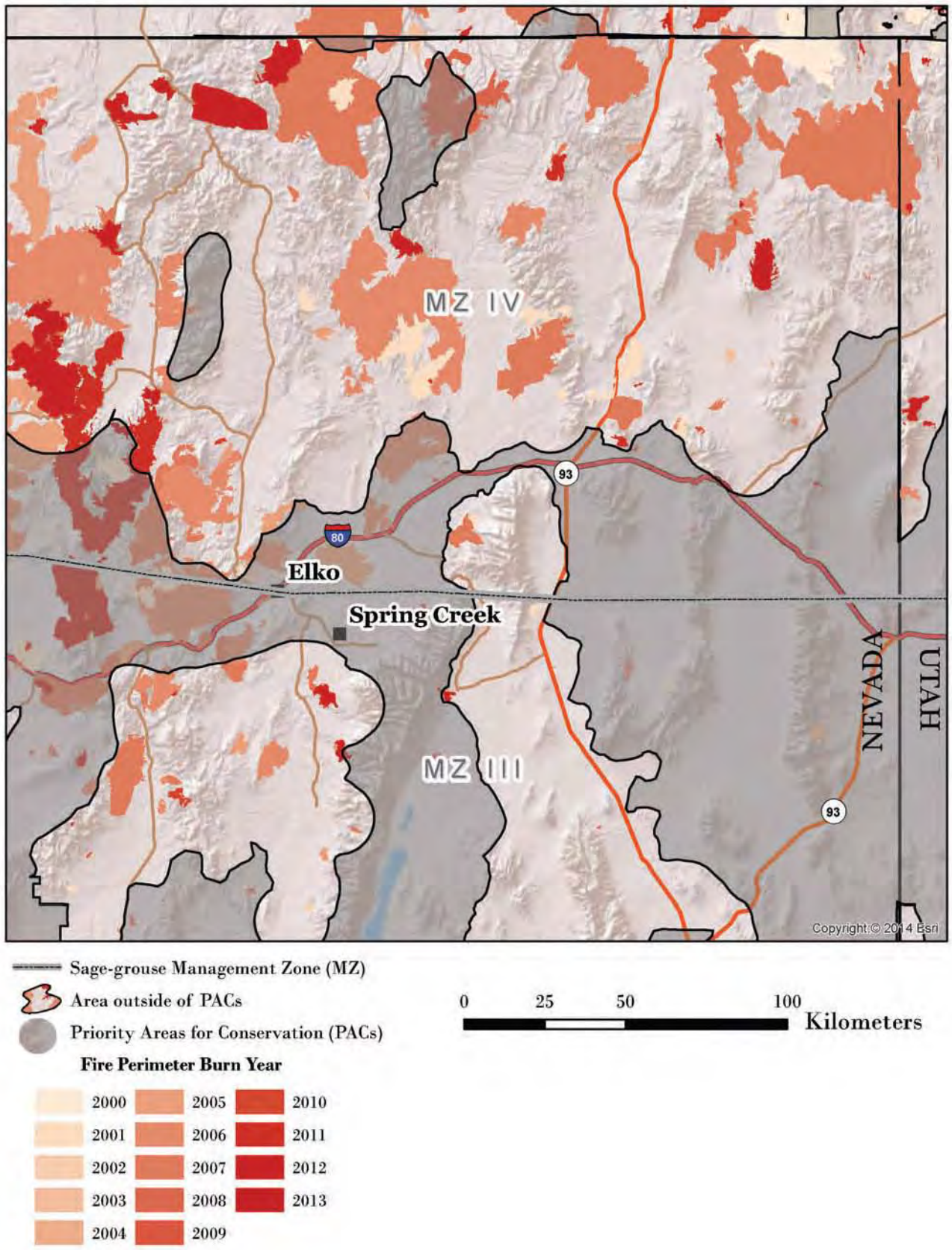

Figure 25. Fire perimeters (Walters et al. 2011; Butler and Bailey 2013) within the northeast corner of Nevada. Lighter colored polygons delineate Priority Areas for Conservation (USFWS 2013).

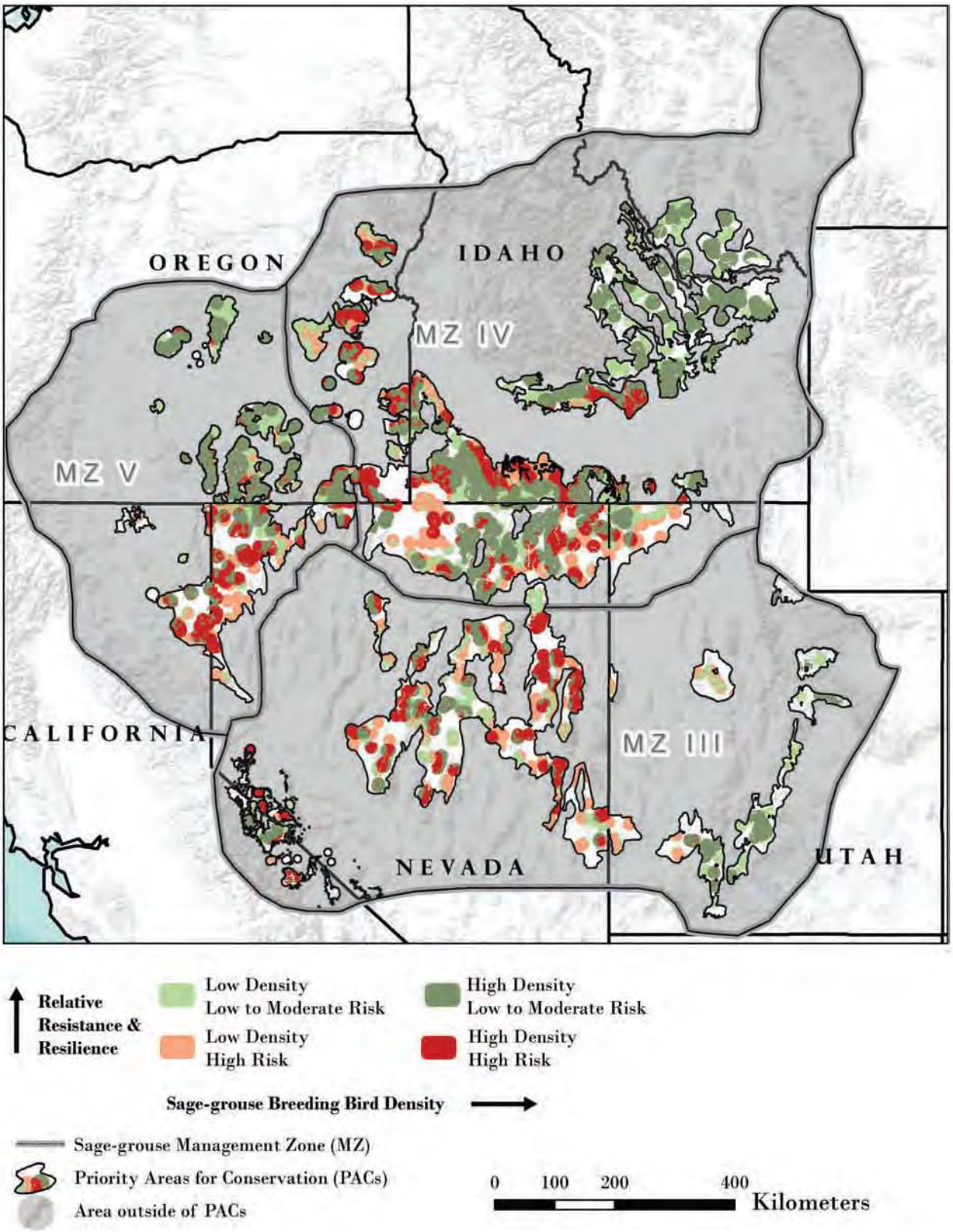

Figure 26. Sage-grouse breeding bird densities (Doherty et al. 2010) for high breeding bird densities (areas that contain 75% of known breeding bird populations) and low breeding bird densities (areas that contain all remaining breeding bird populations) relative to resilience and resistance within sage-grouse Management Zones III, IV, and V (Stiver et al. 2006). Relative resilience and resistance groups are derived from soil moisture and temperature classes (Soil Survey Staff 2014a, b) as described in text, and indicate risk of invasive annual grasses and wildfire. Lighter colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

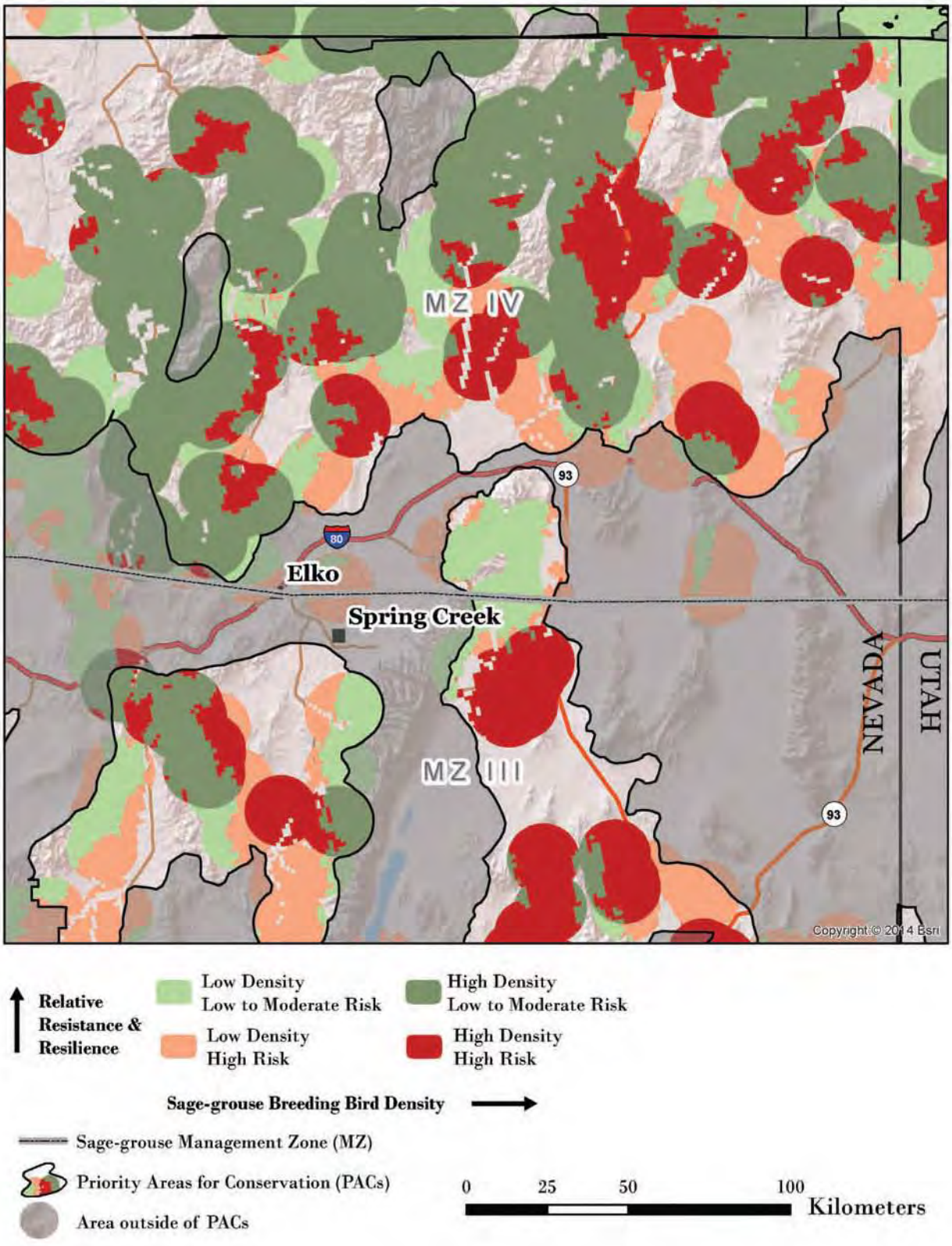

Figure 27. Sage-grouse breeding bird densities (Doherty et al. 2010) for high breeding bird densities (areas that contain 75% of known breeding bird populations) and low breeding bird densities (areas that contain all remaining breeding bird populations) relative to resilience and resistance in the northeast corner of Nevada. Relative resilience and resistance groups are derived from soil moisture and temperature classes (Soil Survey Staff 2014a, b) as described in text, and indicate risk of invasive annual grasses and wildfire. Lighter colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

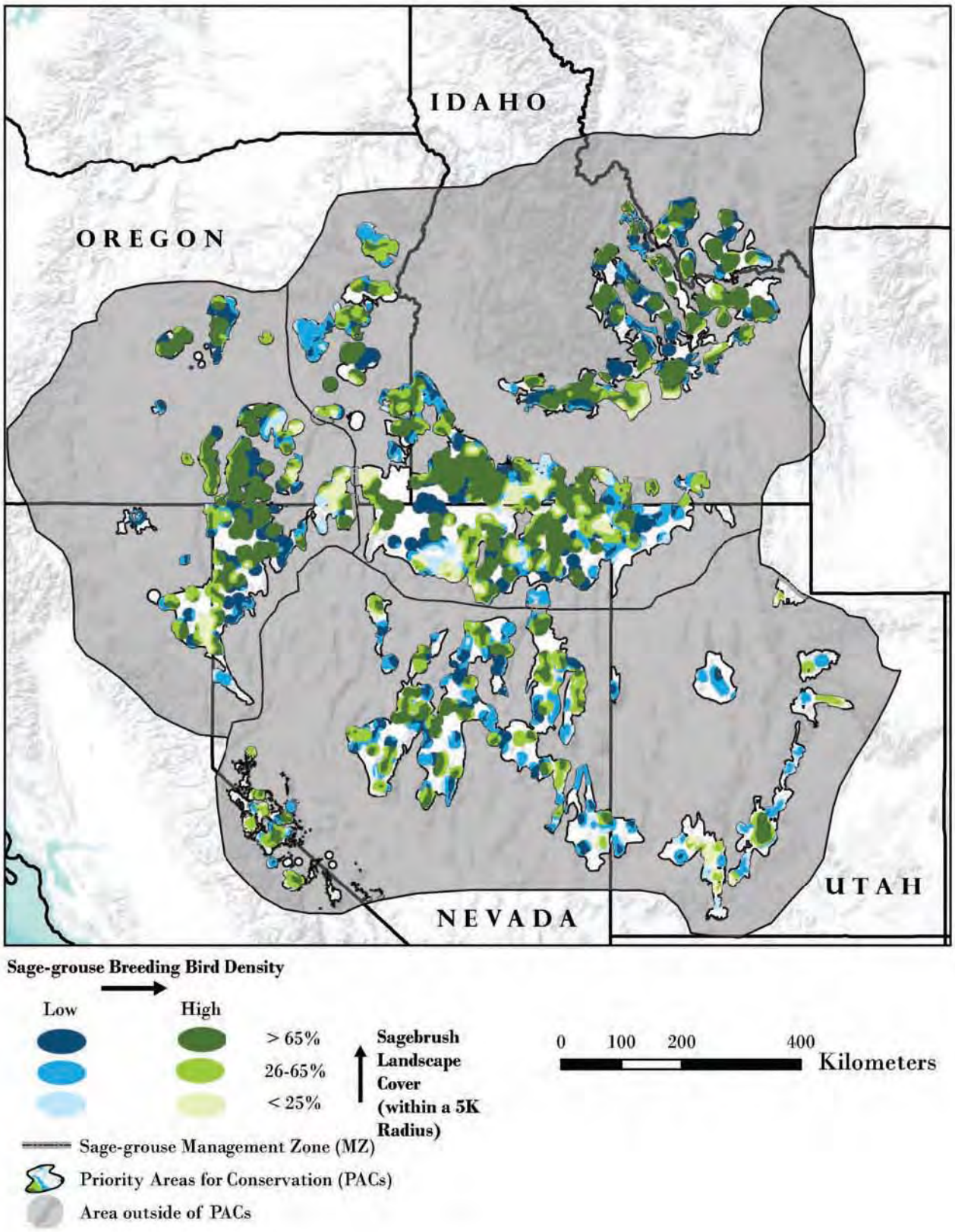

Figure 28. Sage-grouse breeding bird densities (Doherty et al. 2010) for high breeding bird densities (areas that contain 75% of known breeding bird populations) and low breeding bird densities (areas that contain all remaining breeding bird populations) relative to sagebrush cover. Lighter colored polygons within Management Zones delineate Priority Areas for Conservation (USFWS 2013).

Resilience and resistance and sagebrush cover combined with bird population density data provide land managers a way to evaluate trade-offs of particular management options at the landscape scale. For example, high density, low resilience and resistance landscapes with >65% sagebrush landscape cover may require immediate attention for conservation efforts because they currently support a high concentration of birds but have the lowest potential to recover to desired conditions post-fire and to resist invasive plants when disturbed. Similarly, high density but moderate-to-high resilience and resistance landscapes with 26-65% sagebrush cover may be priorities for preventative actions like conifer removal designed to increase the proportion of sagebrush cover and maintain ecosystem resilience and resistance. Mapping relative resilience and resistance and landscape cover of sagebrush for sage-grouse breeding areas should be viewed as a component of the assessment process that can help local managers allocate resources to accelerate planning and implementation.

Interpretations at the Management Zone (MZ) Scale: Western Portion of the Range

An examination of land cover and additional data layers for the western portion of the range reveals large differences among Management Zones (MZs) III, IV and V. MZs IV and V have larger areas with sagebrush cover >65% than MZ III (fig. 16). This may be partly explained by basin and range topography in MZ III, which is characterized by large differences in both environmental conditions and ecological types over relatively short distances. However, the cover of piñon and juniper in and adjacent to PACs in MZ III also is higher than in either MZ IV or V (fig. 22). The greater cover of piñon and juniper in MZ III appears to largely explain the smaller patches of sagebrush cover in the 26-65% and >65% categories.

Our capacity to quantify understory vegetation cover using remotely sensed data is currently limiting, but a visual examination of estimates for invasive annual grass (fig. 20; Peterson 2006, 2007) suggests a higher index (greater cover) in areas with relatively low resistance (warm soil temperatures) in all MZs (see fig. 18). This is consistent with current understanding of resistance to cheatgrass (Chambers et al. 2014; Chambers et al. *in press*). It is noteworthy that the invasive annual grass index is low for most of the central basin and range (central Nevada). Several factors may be contributing to the low index for this area including climate, the stage of piñon and juniper expansion and linked decrease in fire frequency, the relative lack of human development, and the relative lack of management treatments in recent decades (Wisdom et al. 2005; Miller et al. 2011). Not surprisingly, areas with a high annual grass index are outside or on the periphery of current PACs. However, it is likely that invasive annual grasses are present on many warmer sites and that they may increase following fire or other disturbances. In areas with low resistance to invasive annual grasses, they often exist in the understory of sagebrush ecosystems and are not detected by remote sensing platforms such as Landsat.

The number of hectares burned has been highest in MZ IV, adjacent areas in MZ V, and in areas with relatively low resilience and resistance in the northern portion of MZ III that have a high invasive annual grass index (figs. 18, 20, 24). A total of over 1.1 million hectares (2.7 million acres) burned in 2000 and 2006, while over 1.7 million hectares (4.2 million acres) burned in 2007 and 2012 and almost three quarters of these acres were in MZ IV (table 5). In some cases, these fires appear to be linked to the annual invasive grass index, but in others it clearly is not. At this point, there appears to be little relationship between cover of piñon and juniper and wildfire. Mega-fires comprised of hundreds of thousands of acres have burned in recent years, especially in MZ IV. These fires have occurred primarily in areas with low to moderate resilience and resistance and during periods with extreme burning conditions.

Table 5. The number of hectares (acres) burned in Management Zones III, IV, and V each year from 2000 to 2013.

Year	Management Zone III		Management Zone IV		Management Zone V		Total	
2000	155,159	(383,405)	868,118	(2,145,165)	88,871	(219,606)	1,112,148	(2,748,176)
2001	164,436	(406,330)	272,870	(674,276)	141,454	(349,541)	578,760	(1,430,147)
2002	85,969	(212,433)	100,308	(247,867)	113,555	(280,601)	299,833	(740,902)
2003	21,869	(54,038)	127,028	(313,892)	27,597	(68,192)	176,493	(436,123)
2004	20,477	(50,600)	11,344	(28,032)	13,037	(32,216)	44,858	(110,847)
2005	45,130	(111,520)	374,894	(926,382)	22,039	(54,458)	442,063	(1,092,360)
2006	198,762	(491,150)	860,368	(2,126,014)	117,452	(290,230)	1,176,582	(2,907,394)
2007	371,154	(917,140)	1,240,303	(3,064,853)	134,520	(332,406)	1,745,977	(4,314,399)
2008	14,015	(34,632)	109,151	(269,717)	43,949	(108,599)	167,115	(412,949)
2009	43,399	(107,242)	12,250	(30,271)	47,918	(118,408)	103,568	(255,921)
2010	31,597	(78,078)	280,662	(693,531)	21,940	(54,216)	334,200	(825,825)
2011	83,411	(206,114)	283,675	(700,977)	22,909	(56,608)	389,995	(963,699)
2012	203,680	(503,303)	946,514	(2,338,885)	574,308	(1,419,144)	1,724,501	(4,261,331)
2013	45,976	(113,610)	368,434	(910,419)	15,852	(39,170)	430,262	(1,063,199)
Total	1,485,034	(3,669,595)	5,855,920	(14,470,281)	1,385,400	(3,423,396)	8,726,354	(21,563,271)

Coupling breeding bird densities with landscape cover of sagebrush indicates that populations with low densities tend to occur in areas where sagebrush cover is in the 26-65% category, and few populations occur in areas with <25% sagebrush cover (fig. 27) (Knick et al. 2013). Combining the breeding bird densities with resilience and resistance indicates significant variability in risks among high density populations within PACs (fig. 26). A large proportion of remaining high density centers within PACs occurs on moderate-to-high resilience and resistance habitats, while low density/low resilience and resistance areas tend to occur along the periphery of PACs or are disproportionately located in MZ III and southern parts of MZ V.

Examination of other data layers suggests that different wildfire and invasive species threats exist across the western portion of the range, and that management should target the primary threats to sage-grouse habitat within focal areas. In MZs IV and V invasive annual grasses—especially on the periphery of the PACs—and wildfire are key threats. However, recent wildfires are not necessarily linked to invasive annual grasses. This suggests that management strategies for these MZs emphasize fire operations, fuels management focused on decreasing fire spread, and integrated strategies to control annual grasses and increase post-fire rehabilitation and restoration success. Differences in piñon and/or juniper landscape cover exist among MZs with 5,131,900 ha (12,681,202 ac) in MZ III, 528,377ha (1,305,649 ac) in MZ IV, and 558,880 ha (1,381,024 ac) in MZ V. Portions of MZs IV and V are still largely in early stages of juniper expansion indicating a need to address this threat before woodland succession progresses. Because of generally low resilience and resistance in MZ III, greater emphasis is needed on habitat conservation, specifically minimizing or eliminating stressors. Also, greater emphasis on reducing cover of piñon and juniper is needed to reduce woody fuels and increase sagebrush ecosystem resilience to fire by increasing the recovery potential of native understory species.

Interpretations at Regional and Local Land Management Scales: Northeast Nevada Example

The same land covers and data layers used to assess focal areas for sage-grouse habitat within MZs in the western portion of the species range can be used to evaluate focal areas for management in regional planning areas and land management planning units. The emphasis at the scale of the land planning area or management planning unit is on maintaining or increasing large contiguous areas of sagebrush habitat with covers in the 26-65% and especially >65% category. Resilience to disturbance and resistance to invasive annual grasses as indicated by soil temperature and moisture regimes is used to determine the most appropriate activities within the different cover categories. The sage-grouse habitat matrix in table 2 describes the capacity of areas with differing resilience and resistance to recover following disturbance and resist annual invasive grasses and provides the management implications for each of the different cover categories. Table 4 provides potential management strategies for the different sagebrush cover and resilience and resistance categories (cells) in the sage-grouse habitat matrix by agency program areas (fire operations, fuels management, post-fire rehabilitation, habitat restoration). Note that the guidelines in table 4 are related to the sage-grouse habitat matrix, and do not preclude other factors from consideration when determining management priorities for program areas.

Here, we provide an example of how to apply the concepts and tools discussed in this report by examining an important region identified in the MZ scale assessment. The northeastern corner of Nevada was selected to illustrate the diversity of sage-grouse habitat within planning areas and the need for proactive collaboration both within agencies and across jurisdictional boundaries in devising appropriate management strategies (figs. 17, 19, 21, 23, 25). This part of Nevada has large areas of invasive annual grasses and areas with piñon and juniper expansion, and it has experienced multiple large fires in the last decade. It includes a BLM Field Office, Forest Service (FS) land, State land, multiple private owners, and borders two States (fig. 29), which results in both complex ownership and natural complexity.

In the northeast corner of Nevada, an area 5,403,877 ha (13,353,271 ac) in size, numerous large fires have burned in and around PACs (fig. 25). Since 2000, a total of 1,144,317 ha (2,827,669 ac) have burned with the largest fires occurring in 2000, 2006, and 2007. This suggests that the primary management emphasis be on retaining existing areas of sagebrush in the 26-65% and especially >65% categories and promoting recovery of former sagebrush areas that have burned. Fire suppression in and around large, contiguous areas of sagebrush and also in and around successful habitat restoration or post-fire rehabilitation treatments is a first order priority. Fuels management also is a high priority and is focused on strategic placement of fuel breaks to reduce loss of large sagebrush stands by wildfire without jeopardizing existing habitat quality. Also, in the eastern portion of the area, piñon and juniper land cover comprises 471,645 ha (1,165,459 ac) (fig. 23). In this area, management priorities include (1) targeted tree removal in early to mid-phase (Phase I and II), post-settlement piñon and juniper expansion areas to maintain shrub/herbaceous cover and reduce fuel loads, and (2) targeted tree removal in later phase (Phase III) post-settlement piñon and juniper areas to reduce risk of high severity fire. In areas with moderate to high resilience and resistance, post-fire rehabilitation focuses on accelerating sagebrush establishment and recovery of perennial native herbaceous species. These areas often are capable of unassisted recovery and seeding is likely needed only in areas where perennial native herbaceous species have been depleted (Miller et al. 2013). Seeding introduced species can retard recovery of native perennial grasses and forbs that are important to sage-grouse and should be avoided in these areas (Knutson et al. 2014). Seeding or transplanting of sagebrush may be needed to accelerate establishment in focal areas.

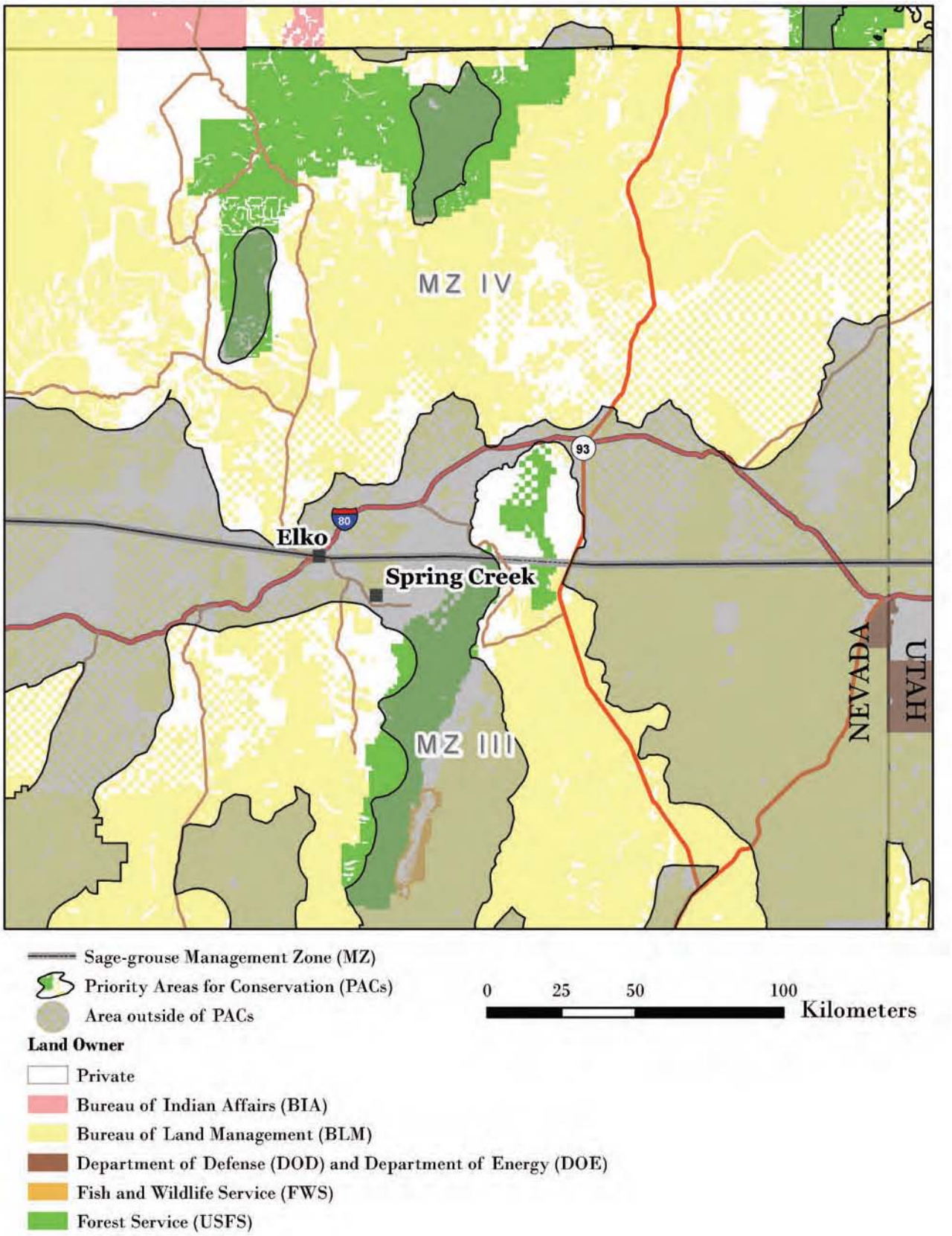

Figure 29. Land ownership for the northeast corner of Nevada. Lighter colored polygons delineate Priority Areas for Conservation (USFWS 2013).

In areas with lower resilience and resistance and high breeding bird densities, large, contiguous areas of sagebrush with intact understories are a high priority for conservation (figs. 17, 19, 27). In these areas, emphasis is on maintaining or increasing habitat conditions by minimizing stressors and disturbance. Post-fire rehabilitation and restoration activities focus on areas that increase connectivity among existing large areas of sagebrush. Because of low and variable precipitation, more than one intervention may be required to achieve restoration or rehabilitation goals. Appropriately managing livestock, wild horse and burro use (if applicable), and recreational use in focal areas is especially important to promote native perennial grass and forb growth and reproduction and to maintain or enhance resilience and resistance.

Determining the Most Appropriate Management Treatments at the Project Scale

Once focal areas and management priorities have been determined, potential treatment areas can be assessed to determine treatment feasibility and appropriate treatment methods. Different treatment options exist (figs. 30, 31) that differ in both suitability for a focal area and likely effectiveness. Field guides for sagebrush ecosystems and piñon and juniper expansion areas that incorporate resilience and resistance concepts are being developed to help guide managers through the process of determining both the suitability of an area for treatment and the most appropriate treatment. These guides are aligned with the different program areas and emphasize (1) fuel treatments (Miller et al. 2014a), (2) post-fire rehabilitation (Miller et al. 2014b), and (3) restoration (Pyke et al., in preparation). Additional information on implementing these types of management treatments is synthesized in Monsen et al. (2004) and Pyke (2011); additional information on treatment response is synthesized in Miller et al. (2013). In this section, we summarize the major steps in the process for determining the suitability of an area for treatment and the most appropriate treatment. We then provide an overview of two of the primary tools in the assessment process – ecological site descriptions (ESDs) and state and transition models (STMs). We conclude with a discussion of the importance of monitoring and adaptive management.

Steps in the process*:* Logical steps in the process of determining the suitability of an area for treatment and the most appropriate treatment(s) include (1) assessing the potential treatment area and identifying ecological sites, (2) determining the current successional state of the site, (3) selecting the appropriate action(s), and (4) monitoring and evaluation to determine post-treatment management. A general approach that uses questions to identify the information required in each step was developed (table 6). These questions can be modified to include the specific information needed for each program area and for treating different ecological sites. This format is used in the field guides described above.

Figure 30. Common vegetation treatments for sagebrush dominated ecosystems with relatively low resilience and resistance include seeding after wildfire in areas that lack sufficient native perennial grasses and forbs for recovery (top) (photo by Chad Boyd), and mowing sagebrush to reinvigorate native perennial grasses and forbs in the understory (bottom) (photo by Scott Schaff). Success of mowing treatments depends on having adequate perennial grasses and forbs on the site to resist invasive annual grasses and to promote recovery.

Figure 31. Vegetation treatments for sagebrush ecosystems exhibiting piñon and juniper expansion include cutting the trees with chainsaws and leaving them in place (top) (photo by Jeremy Roberts) and shredding them with a “bullhog” (middle) (photo by Bruce A. Roundy) on sites with relatively warm soils and moderately low resistance to cheatgrass. Prescribed fire (bottom) (photo by Jeanne C. Chambers) can be a viable treatment on sites with relatively cool and moist soils that have higher resilience to disturbance and resistance to invasive annual grasses. Treatment success depends on having adequate perennial grasses and forbs on the site to resist invasive annual grasses and promote recovery and will be highest on sites with relatively low densities of trees (Phase I to Phase II woodlands).

Table 6. General guidelines for conducting fuels management, fire rehabilitation, and restoration treatments (modified from Miller et al. 2007; Tausch et al. 2009; Pyke 2011; Chambers et al. 2013).

Steps in the process	Questions and considerations
I. Assess potential treatment area and identify ecological sites	1. Where are priority areas for fuels management, fire rehabilitation or restoration within the focal area? Consider sage-grouse habitat needs and resilience and resistance. 2. What are the topographic characteristics and soils of the area? Verify soils mapped to the location and determine soil temperature/moisture regimes. Collect information on soil texture, depth and basic chemistry for restoration projects. 3. How will topographic characteristics and soils affect vegetation recovery, plant establishment and erosion? Evaluate erosion risk based on topography and soil characteristics. 4. What are the potential native plant communities for the area? Match soil components to their correlated ESDs. This provides a list of potential species for the site(s).
II. Determine current state of the site	5. Is the area still within the reference state for the ecological site(s)?
III. Select appropriate action	6. How far do sites deviate from the reference state? How will treatment success be measured? 7. Do sufficient perennial shrubs and perennial grasses and forbs exist to facilitate recovery? 8. Are invasive species a minor component? 9. Do invasive species dominate the sites while native life forms are missing or severely under represented? If so, active restoration is required to restore habitat. 10. Are species from drier or warmer ecological sites present? Restoration with species from the drier or warmer sites should be considered. 11. Have soils or other aspects of the physical environment been altered? Sites may have crossed a threshold and represent a new ecological site type requiring new site-specific treatment/restoration approaches.
IV. Determine post-treatment management	12. How long should the sites be protected before land uses begin? In general, sites with lower resilience and resistance should be protected for longer periods. 13. How will monitoring be performed? Treatment effectiveness monitoring includes a complete set of measurements, analyses, and a report. 14. Are adjustments to the approach needed? Adaptive management is applied to future projects based on consistent findings from multiple locations.

Ecological site descriptions: ESDs and their associated STMs provide essential information for determining treatment feasibility and type of treatment. ESDs are part of a land classification system that describes the potential of a set of climate, topographic, and soil characteristics and natural disturbances to support a dynamic set of plant communities (Bestelmeyer et al. 2009; Stringham et al. 2003). NRCS soil survey data (http://soils.usda.gov/survey/), including soil temperature/moisture regimes and other soil characteristics, are integral to ESD development. ESDs have been developed by the NRCS and their partners to assist land management agencies and private land owners with making resource decisions, and are widely available for the Sage-grouse MZs except where soil surveys have not been completed (for a detailed description of ESDs and access to available ESDs see: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/ecoscience/desc/). ESDs assist managers to step-down generalized vegetation dynamics, including the concepts of resilience and resistance, to local scales. For example, variability in soil characteristics and the local environment (e.g., average annual precipitation as indicated by soil moisture regime) can strongly influence both plant community resilience to fire as well as the resistance of a plant community to invasive annual grasses after fire (table 1). Within a particular ESD, there is a similar level of resilience to disturbance and resistance to invasive annuals and this information can be used to determine the most appropriate management actions.

State and transition models: STMs are a central component of ecological site descriptions that are widely used by managers to illustrate changes in plant communities and associated soil properties, causes of change, and effects of management interventions (Stringham et al. 2003; Briske et al. 2005; USDA NRCS 2007) including in sagebrush ecosystems (Forbis et al. 2006; Barbour et al. 2007; Boyd and Svejcar 2009; Holmes and Miller 2010; Chambers et al. *in press*). These models use ***state*** (a relatively stable set of plant communities that are resilient to disturbance) and ***transition*** (the drivers of change among alternative states) to describe the range in composition and function of plant communities within ESDs (Stringham and others 2003; see Appendix 1 for definitions). The reference state is based on the natural range of conditions associated with natural disturbance regimes and often includes several plant communities (***phases***) that differ in dominant plant species relative to type and time since disturbance (Caudle et al. 2013). Alternative states describe new sets of communities that result from factors such as inappropriate livestock use, invasion by annual grasses, or changes in fire regimes. Changes or transitions among states often are characterized by ***thresholds*** that may persist over time without active intervention, potentially causing irreversible changes in community composition, structure, and function. ***Restoration pathways*** are used to identify the environmental conditions and management actions required for return to a previous state. Detailed STMs that follow current interagency guidelines (Caudle et al. 2013), are aligned with the ecological types (table 1), and are generally applicable to MZs III (Southern Great Basin), IV (Snake River Plains), V (Northern Great Basin), and VI (Columbia Basin) are provided in Appendix 5.

A generalized STM to illustrate the use of STMs is shown in figure 32 for the warm and dry Wyoming big sagebrush ecological type. This ecological type occurs at relatively low elevations in the western part of the range and has low to moderate resilience to disturbance and management treatments and low resistance to invasion (table 1). This type is abundant in the western portion of the range, but as the STM suggests, it is highly susceptible to conversion to invasive annual grass and repeated fire and is difficult to restore. Intact sagebrush areas remaining in the reference state within this ecological type are a high priority for conservation. Invaded states or locations with intact sagebrush that lack adequate native perennial understory are a high priority for restoration where they bridge large, contiguous areas of sagebrush. However, practical methods to accomplish this are largely experimental and/or costly and further development, including adaptive science and management, is needed.

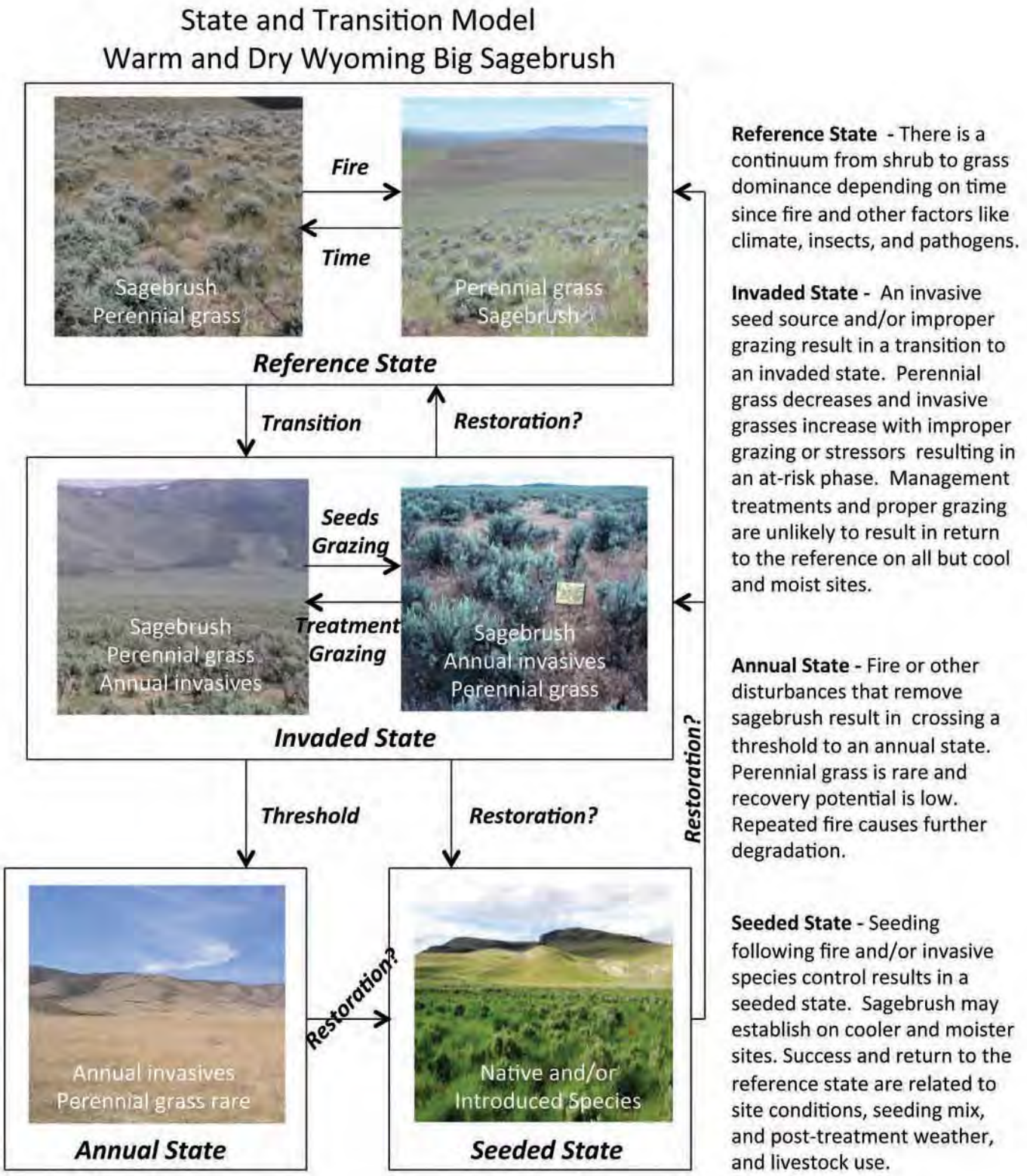

Figure 32. A state and transition model that illustrates vegetation dynamics and restoration pathways for the warm and dry, Wyoming big sagebrush ecological type. This ecological type occurs at relatively low elevations in the western part of the range and has low to moderate resilience to disturbance and management treatments and low resistance to invasion.

Monitoring and adaptive management: Monitoring programs designed to track ecosystem changes in response to both stressors and management actions can be used to increase understanding of ecosystem resilience and resistance, realign management approaches and treatments, and implement adaptive management (Reever-Morghan et al. 2006; Herrick et al. 2012). Information is increasing on likely changes in sagebrush ecosystems with additional stress and climate warming, but a large degree of uncertainty still exits. Currently, the NRCS National Resource Inventory is being used on private lands and is being implemented on public lands managed by BLM to monitor trends in vegetation attributes and land health at the landscape scale under the AIM (Assessment Inventory and Monitoring) strategy. Strategic placement of monitoring sites and repeated measurements of ecosystem status and trends (e.g., land cover type, ground cover, vegetation cover and height of native and invasive species, phase of tree expansion, soil and site stability, oddities) can be used to decrease uncertainty and increase effectiveness of management decisions. Ideally, monitoring sites span environmental/productivity gradients and sagebrush ecological types that characterize sage-grouse habitat. Of particular importance are (1) ecotones between ecological types where changes in response to climate are expected to be largest (Loehle 2000; Stohlgren et al. 2000), (2) ecological types with climatic conditions and soils that are exhibiting invasion and repeated fires, and (3) ecological types with climatic conditions and soils that are exhibiting tree expansion and increased fire risk. Monitoring the response of sagebrush ecosystems to management treatments, including both pre- and post-treatment data, is a first order priority because it provides information on treatment effectiveness that can be used to adjust methodologies.

Monitoring activities are most beneficial when consistent approaches are used among and within agencies to collect, analyze, and report monitoring data. Currently, effectiveness monitoring databases that are used by multiple agencies do not exist. However, several databases have been developed for tracking fire-related and invasive-species management activities. The National Fire Plan Operations and Reporting System (NFPORS) is an interdepartmental and interagency database that accounts for hazardous fuel reduction, burned area rehabilitation and community assistance activities. To our knowledge, NFPORS is not capable of storing and retrieving the type of effectiveness monitoring information that is needed for adaptive management. The FEAT FIREMON Integrated (FFI; https://www.frames.gov/partner-sites/ffi/ffi-home/) is a monitoring software tool designed to assist managers with collection, storage and analysis of ecological information. It was constructed through a complementary integration of the Fire Ecology Assessment Tool (FEAT) and FIREMON. This tool allows the user to select among multiple techniques for effectiveness monitoring. If effectiveness monitoring techniques were agreed on by the agencies, FFI does provide databases with standard structures that could be used in inter-agency effectiveness monitoring. Also, the National Invasive Species Information Management System (NISIMS) is designed to reduce redundant data entry regarding invasive species inventory, management and effectiveness monitoring with the goal of providing information that can be used to determine effective treatments for invasive species. However, NISIMS is currently available only within the BLM.

Common databases can be used by agency partners to record and share monitoring data. The Land Treatment Digital Library (LTDL [USGS 2010]) provides a method of archiving and collecting common information for land treatments and might be used as a framework for data storage and retrieval. Provided databases are relational (maintain a common field for connecting them), creating single corporate databases is not necessary. However, barriers that hinder database access within and among agencies and governmental departments may need to be lowered while still maintaining adequate data security. The LTDL has demonstrated how

this can work by accessing a variety of databases to populate useful information relating to land treatments.

For effectiveness of treatments to be easily useable for adaptive management, the agencies involved will need to agree on monitoring methods and a common data storage and retrieval system. Once data can be retrieved, similar treatment projects can be evaluated to determine how well they achieve objectives for sage-grouse habitat, such as the criteria outlined in documents like the Habitat Assessment Framework (Stiver et al. 2006). Results of monitoring activities on treatment effectiveness are most useful when shared across jurisdictional boundaries, and several mechanisms are currently in place to improve information sharing (e.g., the Great Basin Fire Science Delivery Project; www.gbfiresci.org).

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Appendix 1. Definitions of Terms Used in This Document

At-Risk Community Phase — A community phase that can be designated within the reference state and also in alternative states. This community phase is the most vulnerable to transition to an alternative state (Caudle et al. 2013).

Community Phase — A unique assemblage of plants and associated soil properties that can occur within a state (Caudle et al. 2013).

Ecological Site (ES) — An Ecological Site (ES) is a conceptual division of the landscape that is defined as a distinctive kind of land based on recurring soil, landform, geological, and climate characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its ability to respond similarly to management actions and natural disturbances (Caudle et al. 2013).

Ecological Site Descriptions (ESD) — The documentation of the characteristics of an ecological site. The documentation includes the data used to define the distinctive properties and characteristics of the ecological site; the biotic and abiotic characteristics that differentiate the site (i.e., climate, topography, soil characteristics, plant communities); and the ecological dynamics of the site that describes how changes in disturbance processes and management can affect the site. An ESD also provides interpretations about the land uses and ecosystem services that a particular ecological site can support and management alternatives for achieving land management (Caudle et al. 2013).

Ecological Type — A category of land with a distinctive (i.e., mappable) combination of landscape elements. The elements making up an ecological type are climate, geology, geomorphology, soils, and potential natural vegetation. Ecological types differ from each other in their ability to produce vegetation and respond to management and natural disturbances (Caudle et al. 2013).

Historical Range of Variability — Range of variability in disturbances, stressors, and ecosystem attributes that allows for maintenance of ecosystem resilience and resistance and that can be used to provide management targets (modified from Jackson 2006).

Resilience — Ability of a species and/or its habitat to recover from stresses and disturbances. Resilient ecosystems regain their fundamental structure, processes, and functioning when altered by stresses like increased CO_2 , nitrogen deposition, and drought and to disturbances like land development and fire (Allen et al. 2005; Holling 1973).

Resistance — Capacity of an ecosystem to retain its fundamental structure, processes and functioning (or remain largely unchanged) despite stresses, disturbances, or invasive species (Folke et al. 2004).

Resistance to Invasion — Abiotic and biotic attributes and ecological processes of an ecosystem that limit the population growth of an invading species (D'Antonio and Thomsen 2004**)**.

Restoration Pathways — Restoration pathways describe the environmental conditions and practices that are required for a state to recover that has undergone a transition (Caudle et al. 2013).

State — A state is a suite of community phases and their inherent soil properties that interact with the abiotic and biotic environment to produce persistent functional and structural attributes associated with a characteristic range of variability (adapted from Briske et al. 2008).

State-and-Transition Model — A method to organize and communicate complex information about the relationships between vegetation, soil, animals, hydrology, disturbances (fire, lack of fire, grazing and browsing, drought, unusually wet periods, insects and disease), and management actions on an ecological site (Caudle et al. 2013).

Thresholds — Conditions sufficient to modify ecosystem structure and function beyond the limits of ecological resilience, resulting in the formation of alternative states (Briske et al. 2008).

Transition — Transitions describe the biotic or abiotic variables or events, acting independently or in combination, that contributes directly to loss of state resilience and result in shifts between states. Transitions are often triggered by disturbances, including natural events (climatic events or fire) and/or management actions (grazing, burning, fire suppression). They can occur quickly as in the case of catastrophic events like fire or flood, or over a long period of time as in the case of a gradual shift in climate patterns or repeated stresses like frequent fires (Caudle et al. 2013).

Appendix 2. An Explanation of the Use of Landscape Measures to Describe Sagebrush Habitat

Understanding landscape concepts of plant cover relative to typical management unit concepts of plant cover is important for prioritizing lands for management of sage-grouse. Ground cover measurements of sagebrush made at a management unit (for example, line-intercept measurements) should not be confused for landscape cover and may not relate well to landscape cover since the areas of examination differ vastly (square meters for management units and square kilometers for landscapes).

A landscape is defined rather arbitrarily as a large area in total spatial extent, somewhere in size between sites (acres or square miles) and regions (100,000s of square miles). The basic unit of a landscape is a patch, which is defined as a bounded area characterized by a similar set of conditions. A habitat patch, for example, may be the polygonal area on a map representing a single land cover type. Landscapes are composed of a mosaic of patches. The arrangement of these patches (the landscape configuration or pattern) has a large influence on the way a landscape functions and for landscape species, such as sage-grouse, sagebrush habitat patches are extremely important for predicting if this bird will be present within the area (Connelly et al. 2011).

Remotely sensed data of land cover is typically used to represent landscapes. These data may combine several sources of data and may include ancillary data, such as elevation, to improve the interpretation of data. These data are organized into pixels that contain a size or grain of land area. For example, LandSat Thematic Mapper spectral data used in determining vegetation cover generally have pixels that represent ground areas of 900 m^2 (30- x 30-m). Each pixel's spectral signature can be interpreted to determine what type of vegetation dominates that pixel. Groups of adjacent pixels with the same dominant vegetation are clustered together into polygons that form patches.

Landscape cover of sagebrush is determined initially by using this vegetation cover map, but a 'rolling window' of a predetermined size (e.g., 5 km^2 or 5,556 pixels that are 30- by 30-m in size) is moved across the region one pixel at a time. The central pixel of the 'window' is reassigned a value for the proportion of pixels where sagebrush is the dominant vegetation. The process is repeated until pixels within the region are completely reassigned to represent the landscape cover of sagebrush within for the region drawn from a 5 km^2 window.

Appendix 3. An Explanation of Soil Temperature and Moisture Regimes Used to Describe Sagebrush Ecosystems

Soil climate regimes (temperature and moisture) are used in Soil Taxonomy to classify soils; they are important to consider in land management decisions, in part, because of the significant influence on the amounts and kinds of vegetation that soils support. Soil temperature and moisture regimes are assigned to soil map unit components as part of the National Cooperative Soil Survey program. Soil survey spatial and tabular data for the Sage-grouse Management Zones (Stiver et al. 2006) were obtained for each State within the zones at the Geospatial Data Gateway (http://datagateway.nrcs.usda.gov/). Gridded Soil Survey Geographic (gSSURGO) file geodatabases were used to display a 10-meter raster dataset. Multiple soil components made up a soil map unit, and soil moisture and temperature regimes were linked to individual soil map components. Soil components with the same soil moisture and temperature class regime were aggregated, and the dominant soil moisture and temperature regime within each soil map unit was used to characterize the temperature and moisture regime. Only temperature and moisture regimes applicable to sagebrush ecosystems were displayed.

Abbreviated definitions of each soil temperature and moisture regime class are listed below. Complete descriptions can be found in *Keys to Soil Taxonsomy, 11th edition*, available at ftp://ftp-fc.sc.egov.usda.gov/NSSC/Soil_Taxonomy/keys/2010_Keys_to_Soil_Taxonomy.pdf.

Soil temperature regimes	
Cryic (Cold)	Soils that have a mean annual soil temperature of <8 °C, and do not have permafrost, at a depth of 50 cm below the surface or at a restrictive feature, whichever is shallower.
Frigid (Cool)	Soils that have a mean annual soil temperature of <8 °C and the difference between mean summer and mean winter soil temperatures is >6 °C at a depth of 50 cm below the surface or at a restrictive feature, whichever is shallower.
Mesic (Warm)	Soils that have a mean annual soil temperature of 8-15 °C and the difference between mean summer and mean winter soil temperatures is >6 °C at a depth of 50 cm below the surface or at a restrictive feature, whichever is shallower.
Soil moisture regimes	
Ustic (summer precipitation)	Generally there is some plant-available moisture during the growing season, although significant periods of drought may occur. Summer precipitation allows presence of warm season plant species.
Xeric (Moist; generally mapped at >12 inches mean annual precipitation)	Characteristic of arid regions. The soil is dry for at least half the growing season and moist for less than 90 consecutive days.
Aridic (Dry; generally mapped at <12 inches mean annual precipitation)	Characteristic of arid regions. The soil is dry for at least half the growing season and moist for less than 90 consecutive days.

Note: Soil moisture regimes are further divided into moisture subclasses, which are often used to indicate soils that are transitional to another moisture regime. For example, a soil with an Aridic moisture regime and a Xeric moisture subclass may be described as "Aridic bordering on Xeric." Understanding these gradients becomes increasingly important when making interpretations and decisions at the site scale where aspect, slope, and soils affect the actual moisture regime on that site. More information on taxonomic moisture subclasses is available at http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_053576.

Appendix 4. Data Sources for the Maps in This Report

Dataset	Citation	Link
Geomac fire perimeters	Walters, S.P.; Schneider, N.J.; Guthrie, J.D. 2011. Geospatial Multi-Agency Coordination (GeoMAC) wildland fire perimeters, 2008. Data Series 612. Washington, DC: U.S. Department of the Interior, U.S. Geological Survey.6 p.	http://pubs.er.usgs.gov/publication/ds612
WFDSS fire perimeters	Butler, B. B.; Bailey, A. 2013. Disturbance history (Historical wildland fires). Updated 8/9/2013. Wildland Fire Decision Support System. Online: https://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml [Accessed 5 March 2014].	https://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml or https://wfdss.usgs.gov/wfdss/WFDSSData_Downloads.shtml
Piñon and juniper land cover	U.S. Geological Survery (USGS) National Gap Analysis Program. 2004. Provisional digital land cover map for the southwestern United States. Version 1.0. Logan, UT: Utah State University, College of Natural Resources, RS/GIS Laboratory.	http://earth.gis.usu.edu/swgap/landcover.html
Piñon and juniper land cover	U.S. Geological Survey (USGS). 2013: LANDFIRE 1.2.0 Existing Vegetation Type layer. Updated 3/13/2013. Washington, DC: U.S. Department of the Interior, Geological Survey. Online: http://landfire.cr.usgs.gov/viewer/. [Accessed 13 March 2014].	http://www.landfire.gov/NationalProductDescriptions21.php
Nevada invasive annual grass index	Peterson, E. B. 2006. A map of invasive annual grasses in Nevada derived from multitemporal Landsat 5 TM imagery. Carson City, NV: State of Nevada, Department of Conservation and Natural Resources, Nevada Natural Heritage Program.	http://heritage.nv.gov/node/167
Owhyee upland annual grass index	Peterson, E. B. 2007. A map of annual grasses in the Owyhee Uplands, Spring 2006, derived from multitemporal Landsat 5 TM imagery. Carson City, NV: State of Nevada, Department of Conservation and Natural Resources, Nevada Natural Heritage Program.	http://heritage.nv.gov/sites/default/files/library/anngrowy_text_print.pdf
Soil data (SSURGO)	Soil Survey Staff. 2014a. Soil Survey Geographic (SSURGO) Database. United States Department of Agriculture, Natural Resources Conservation Service. Online: http://sdmdataaccess.nrcs.usda.gov/. [Accessed 3 March 2014a].	http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627
Soil data (STATSGO)	Soil Survey Staff. 2014b. U.S. General Soil Map (STATSGO2) Database. United States Department of Agriculture, Natural Resources Conservation Service. Online: http://sdmdataaccess.nrcs.usda.gov/. [Accessed 3 March 2014b].	

Soil temperature and moisture regime data	Campbell, S. B. 2014. Soil temperature and moisture regime data for the range of greater sage-grouse. Data product. Portland, OR: USDA Natural Resources Conservation Service. Online: https://www.sciencebase.gov/catalog/folder/537f8be5e4b021317a872f1b?community=LC+MAP+-+Landscape+Conservation+Management+and+Analysis+Portal [Accessed 17 June 2014].	https://www.sciencebase.gov/catalog/folder/537f8be5e4b021317a872f1b?community=LC+MAP+-+Landscape+Conservation+Management+and+Analysis+Portal
Sage-grouse management zones	Stiver, S. J.; Apa, A. D.; Bohne, J. R.; Bunnell, S. D.; Deibert, P. A.; Gardner, S. C.; Hilliard, M. A.; McCarthy, C. W.; Schroeder, M. A. 2006. Greater Sage-grouse Comprehensive Conservation Strategy. Unpublished report on file at: Western Association of Fish and Wildlife Agencies, Cheyenne, WY.	
Breeding bird densities	Doherty, K. E.; Tack, J. D.; Evans, J. S.; Naugle, D. E. 2010. Mapping breeding densities of greater sage-grouse: A tool for range-wide conservation planning. BLM completion report: Agreement # L10PG00911.	http://scholar.google.com/scholar?q=doherty+2010+breeding+bird&hl=en&as_sdt=0&as_vis=1&oi=scholart&sa=X&ei=JqQbU7HUAqfD2QW8xYFY&ved=0CCUQgQMwAA
Sagebrush land cover	U.S. Geological Survey (USGS). 2013: LANDFIRE 1.2.0 Existing Vegetation Type layer. Updated 3/13/2013. Washington, DC: U.S. Department of the Interior, Geological Survey. Online: http://landfire.cr.usgs.gov/viewer/. [Accessed 13 March 2014].	http://www.landfire.gov/NationalProductDescriptions21.php

Appendix 5. State-and-transition models (STMs) for five generalized ecological types for big sagebrush (from Chambers et al. *in press*; Miller et al. 2014 a, b)

These STMs represent groupings of ecological sites that are characterized by Wyoming or mountain big sagebrush, span a range of soil moisture/temperature regimes (warm/dry to cold/moist), and characterize a large portion of Management Zones III (Southern Great Basin), IV (Snake River Plains), V (Northern Great Basin), and VI (Columbia Basin). Large boxes illustrate states that are comprised of community phases (smaller boxes). Transitions among states are shown with arrows starting with T; restoration pathways are shown with arrows starting with R. The "at risk" community phase is most vulnerable to transition to an alternative state. Precipitation Zone is designated as PZ.

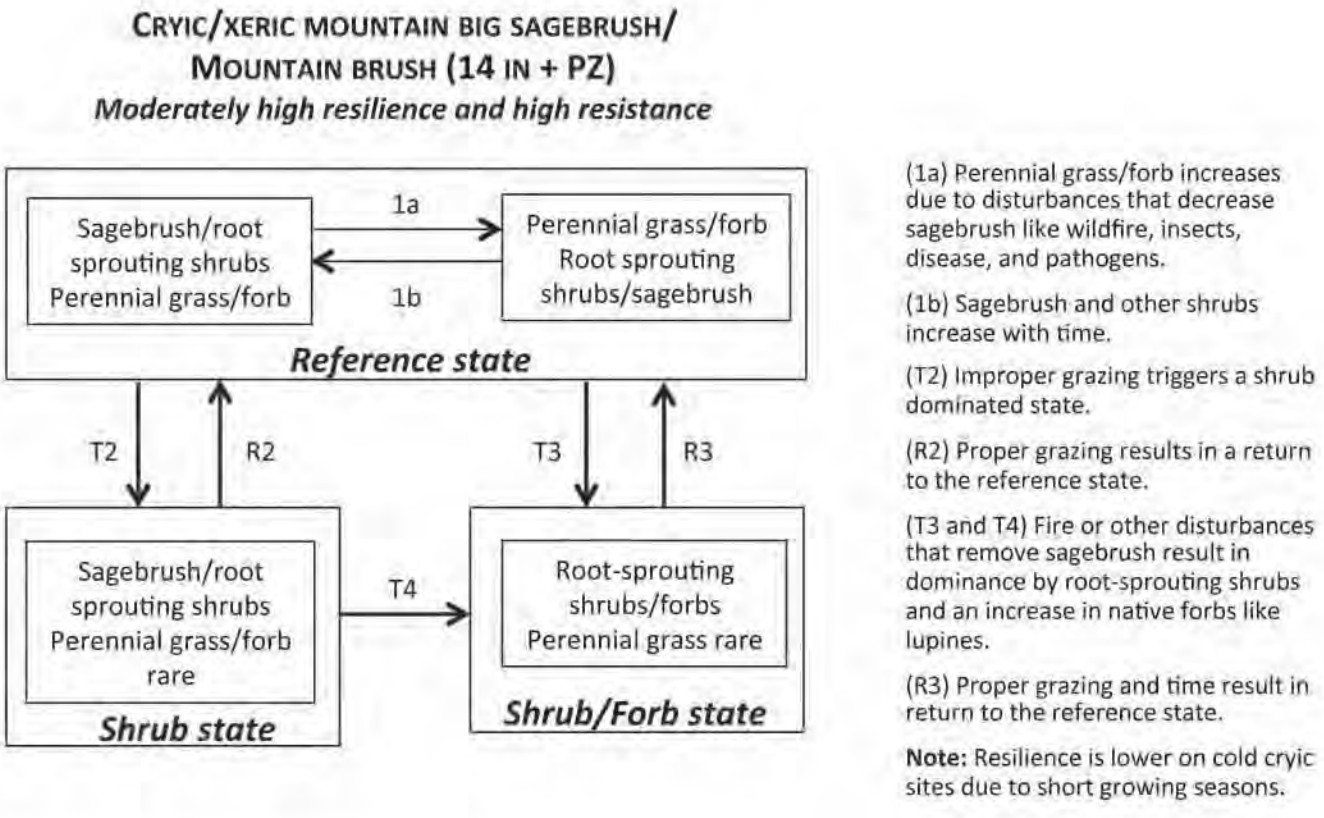
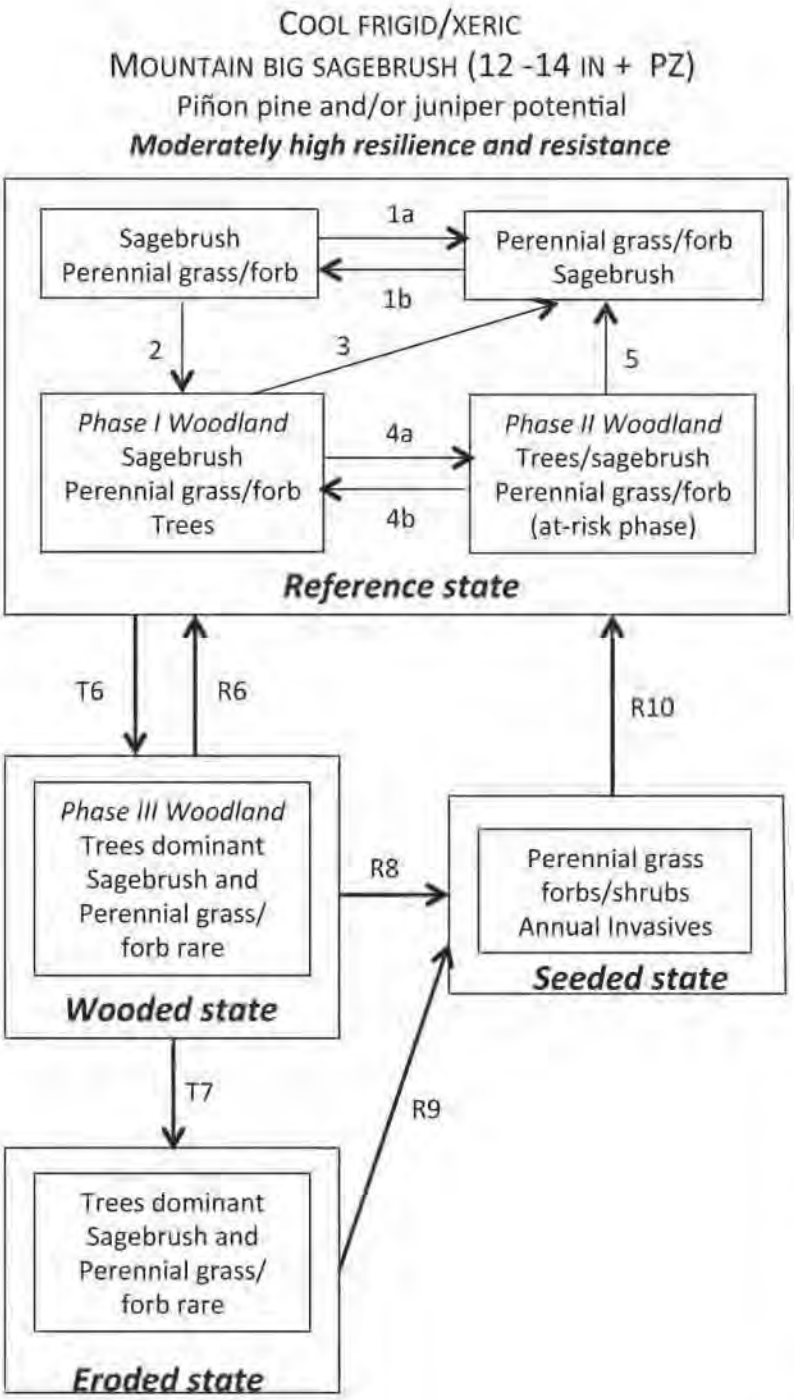


Figure A.5A. STM for a cryic/xeric mountain big sagebrush/mountain brush ecological type characterized by moderately high resilience and high resistance.



(1a) Disturbances such as wildfire, insects, disease, and pathogens result in less sagebrush and more perennial grass/forb.

(1b) Sagebrush increases with time .

(2) Time combined with seed sources for piñon and/or juniper trigger a Phase I Woodland.

(3 and 5) Fire and or fire surrogates (herbicides and/or mechanical treatments) that remove trees may restore perennial grass/forb and sagebrush dominance.

(4a) Increasing tree abundance results in a Phase II woodland with depleted perennial grass/forb and shrubs and an at-risk phase.

(4b) Fire surrogates (herbicides and/or mechanical treatments) that remove trees may restore perennial grass/forb and sagebrush dominance.

(T6) Infilling of trees and/or improper grazing can result in a biotic threshold crossing to a wooded state with increased risk of high severity crown fires .

(R6) Fire, herbicides and/or mechanical treatments that remove trees may restore perennial grass/forb and sagebrush dominance.

(T7) An irreversible abiotic threshold crossing to an eroded state can occur depending on soils, slope, and understory species.

(R8 and R9) Seeding after fire may be required on sites with depleted perennial grass/forb, but seeding with aggressive introduced species can decrease native perennial grass/forb. Annual invasives are typically rare. Seeded eroded states may have lower productivity.

(R10) Depending on seed mix and grazing, return to the reference state may be possible if an irreversible threshold has not been crossed.

Figure A.5B. STM for a cool frigid/xeric mountain big sagebrush ecological type that has piñon pine and/or juniper potential and is characterized by moderately high resilience and resistance.

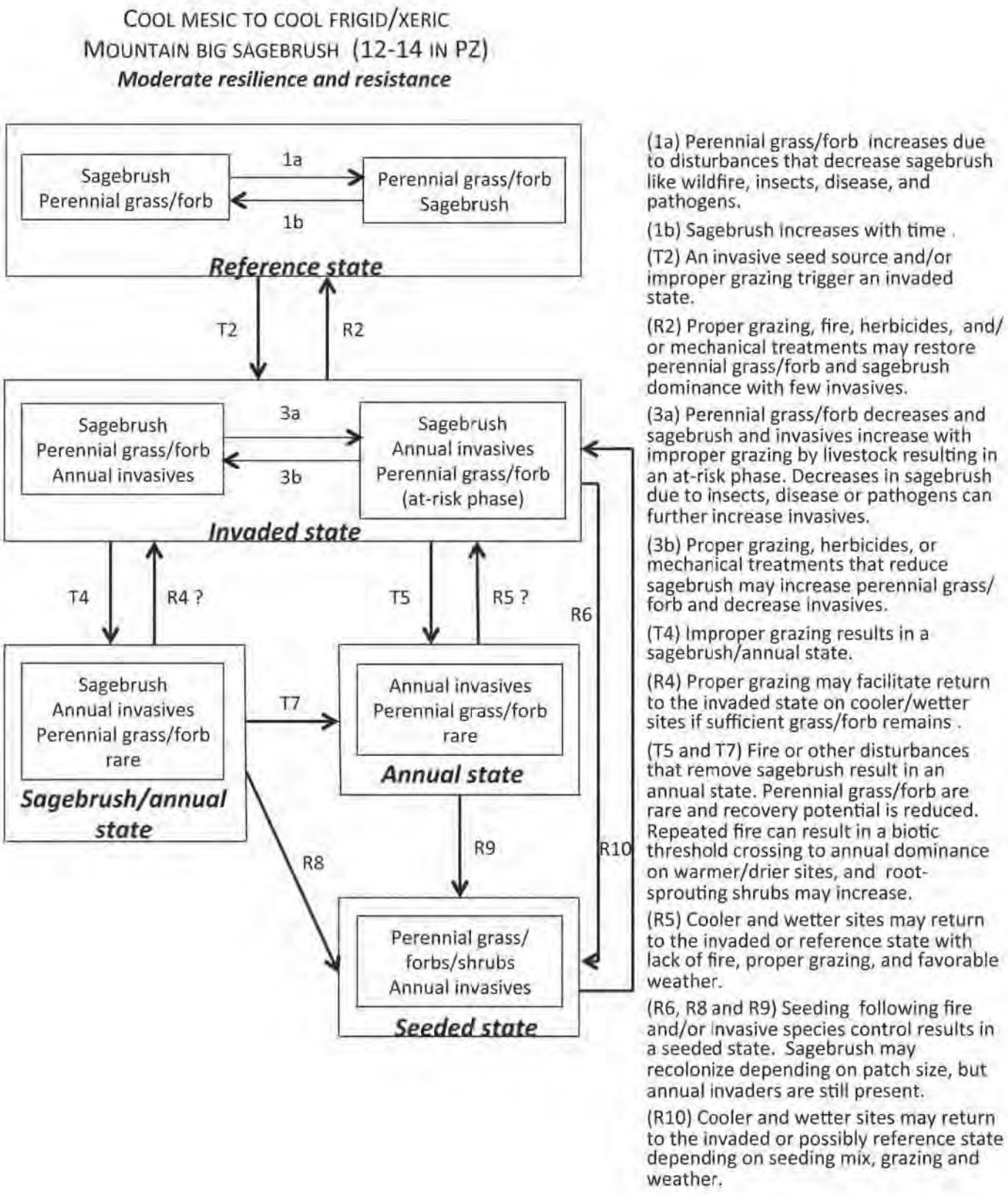


Figure A.5C. STM for a cool mesic to cool frigid/xeric mountain big sagebrush ecological type that is characterized by moderate resilience and resistance.

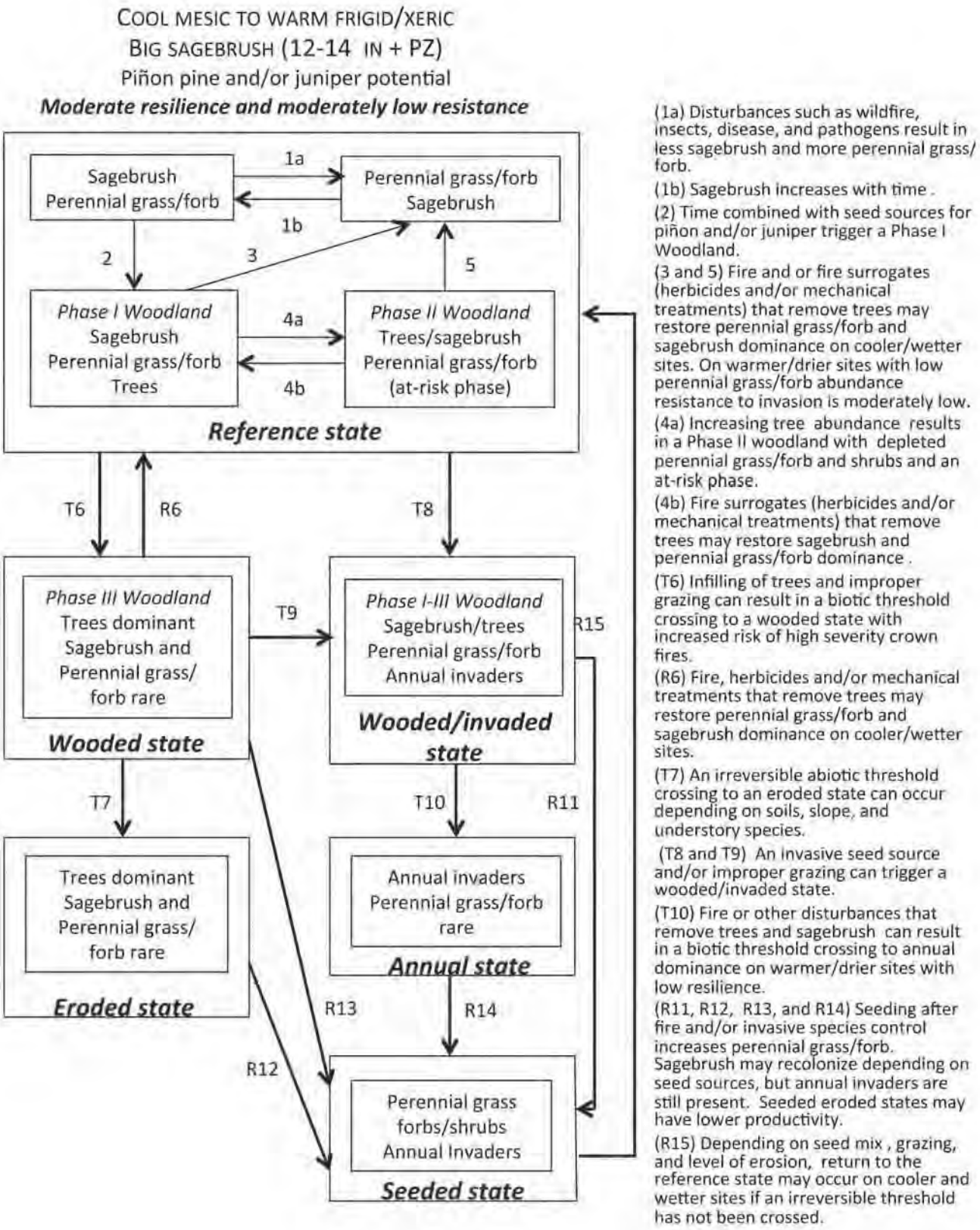


Figure A.5D. STM for a cool mesic to warm frigid/xeric mountain big sagebrush ecological type type that has piñon pine and/or juniper potential and is characterized by moderate resilience and moderately low resistance.

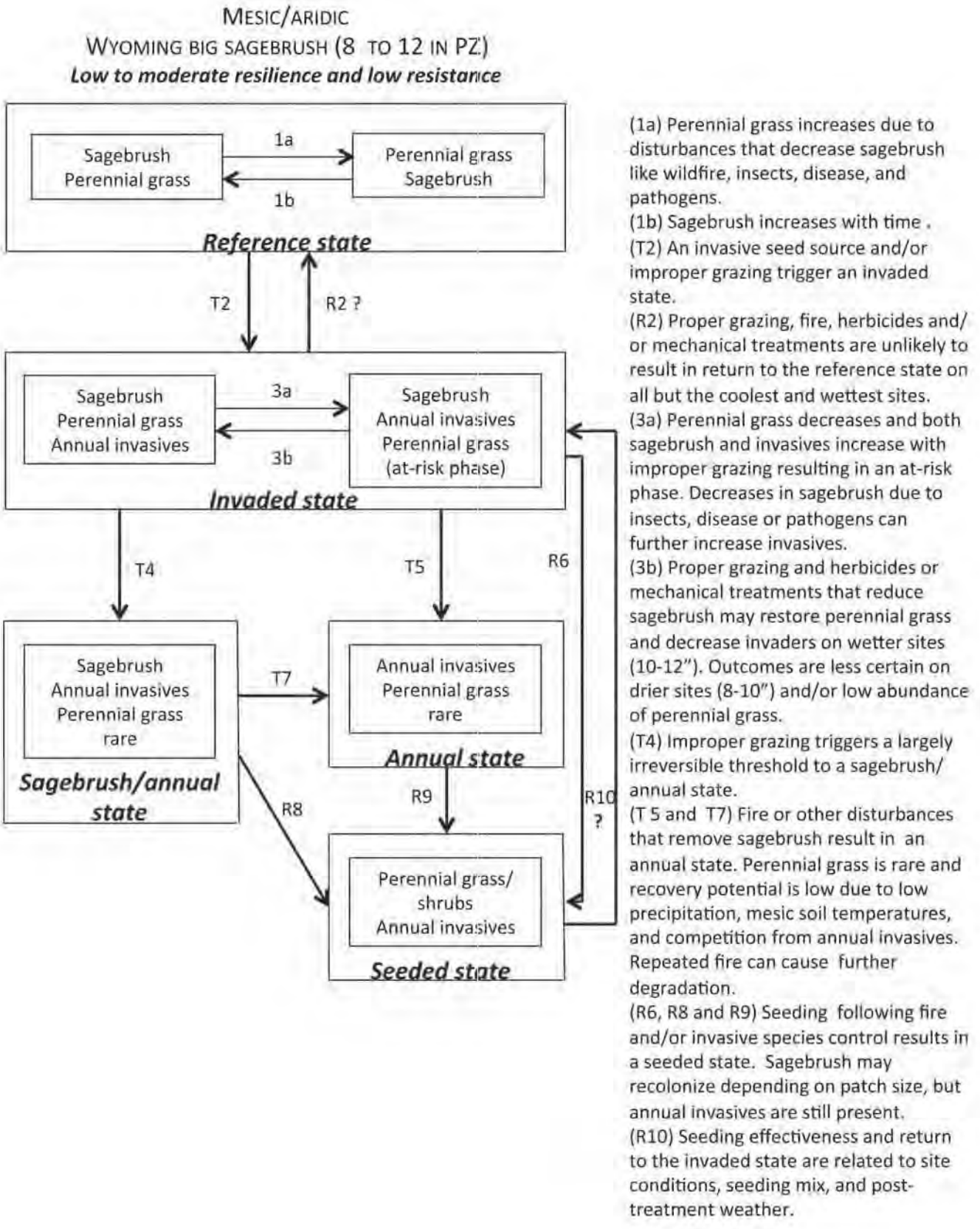


Figure A.5E. STM for a mesic/aridic Wyoming big sagebrush ecological type with low to moderate resilience and low resistance.

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www.fs.fed.us/rm/publications

www.treesearch.fs.fed.us

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Thursday, August 13, 2015 5:25 PM
To: nvca sagegrouse
Subject: Fwd: FW: Disturbance Appendix
Attachments: Disturbance Appendix Mar 31 2015.docx

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Wed, Apr 1, 2015 at 9:13 AM
Subject: FW: Disturbance Appendix
To: Quincy Bahr <qfbahr@blm.gov>, jmbeck@blm.gov, Joan Suther <jsuther@blm.gov>, "Lauren L. Mermejo" <lmermejo@blm.gov>
Cc: mdillon@fs.fed.us, Randall Sharp <sharphay@att.net>, Holly Prohaska <holly.prohaska@empsi.com>, Marguerite Adams <maadams@blm.gov>, Glen Stein <gstein@fs.fed.us>

Here is the drop in language for the Disturbance Appendix. It was sent to me yesterday, and I apologize for not getting it to you earlier.

Lauren

From: Herren, Vicki [mailto:vherren@blm.gov]
Sent: Tuesday, March 31, 2015 10:58 AM
To: Matthew Magaletti; Lauren Mermejo
Cc: Stephanie Carman; Michael Hildner; Stephen Small; Gordon Toevs
Subject: Disturbance Appendix

Matt and Lauren

Attached is the Disturbance Appendix that applies to the states that are consistent with the 3% disturbance cap (OR, UT, CO and CA). Stephanie asked that it be distributed to your project leads before tomorrow's call. My understanding is that this does not apply in full to WY, MT/DK, ID and NV although some parts of it may be useful to them.

--

Vicki Herren

BLM National Sage-Grouse Coordinator

BLM Washington Office, Division of Fish and Wildlife Conservation

202.912.7235 Desk

202.374.4597 Cell

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Appendix XXX
Greater Sage-Grouse (GRSG) Disturbance Caps

In the USFWS's 2010 listing decision for sage-grouse, the USFWS identified 18 threats contributing to the destruction, modification, or curtailment of the sage-grouse's habitat or range (75 FR 13910 2010. The 18 threats have been aggregated into three measures:

Sagebrush Availability (percent of sagebrush per unit area)
Habitat Degradation (percent of human activity per unit area)
Density of Energy and Mining (facilities and locations per unit area)

Habitat Degradation and Density of Energy and Mining will be evaluated under the Disturbance Cap and Density Cap respectively and are further described in this appendix. The three measures, in conjunction with other information, will be considered during the NEPA process for projects authorized or undertaken by the BLM.

Disturbance Cap:

This land use plan has incorporated a 3% disturbance cap within Greater Sage-Grouse (GRSG) Priority Habitat Management Areas (PHMAs) and the subsequent land use planning actions if the cap is met:

If the 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within GRSG Priority Habitat Management Areas (PHMA)in any given Biologically Significant Unit (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the 1872 hard rock mining law, valid existing rights, etc.) will be permitted by BLM within GRSG PHMAs in any given BSU until the disturbance has been reduced to less than the cap.

If the 3% disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 hard rock mining law, valid existing rights, etc.).

The disturbance cap applies to the PHMA within both the Biologically Significant Units (BSU) and at the project authorization scale. For the BSUs, west-wide habitat degradation (disturbance) data layers (Table 1) will be used at a minimum to calculate the amount of disturbance and to determine if the disturbance cap has been exceeded as the land use plans (LUP) are being implemented. Locally collected disturbance data will be used to determine if the disturbance cap has been exceeded for project authorizations, and may also be used to calculate the amount of disturbance in the BSUs.

Although locatable mine sites are included in the degradation calculation, mining activities under the 1872 mining law may not be subject to the 3% disturbance cap. Details about locatable mining activities will be fully disclosed and analyzed in the NEPA process to assess impacts to sage-grouse and their habitat as well as to BLM goals and objectives, and other BLM programs and activities.

Formulas for calculations of the amount of disturbance in the PHMA in a BSU and or in a proposed project area are as follows:

- For the BSUs:

  % Degradation Disturbance = (combined acres of the 12 degradation threats[1]) ÷ (acres of all lands within the PHMAs in a BSU) x 100.

- For the Project Analysis Area:

  % Degradation Disturbance = (combined acres of the 12 degradation threats[1] plus the 7 site scale threats[2]) ÷ (acres of all lands within the PHMA in the project analysis area) x 100.

[1] see Table 1. [2] see Table 2

The denominator in the disturbance calculation formula consists of all acres of lands classified as PHMA within the analysis area (BSU or project area). Areas that are not sage-grouse seasonal habitats, or are not currently supporting sagebrush cover (e.g., due to wildfire), are not excluded from the acres of PHMA in the denominator of the formula. Information regarding sage-grouse seasonal habitats, sagebrush availability, and areas with the potential to support sage-grouse populations will be considered along with other local conditions that may affect sage-grouse during the analysis of the proposed project area.

Density Cap:

This land use plan has also incorporated a cap on the density of energy and mining facilities at an average of one facility per 640 acres in the PHMA in a project authorization area. If the disturbance density in the PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located it into existing disturbed area (subject to applicable laws and regulations, such as the 1872 Mining Law, valid existing rights, etc.). Facilities included in the density calculation (Table 3) are:

- Energy (oil and gas wells and development facilities)

- Energy (coal mines)
- Energy (wind towers)
- Energy (solar fields)
- Energy (geothermal)
- Mining (active locatable, leasable, and saleable developments)

Project Analysis Area Method for Permitting Surface Disturbance Activities:

- Determine potentially affected occupied leks by placing a four mile boundary around the proposed area of physical disturbance related to the project. All occupied leks located within the four mile project boundary and within PHMA will be considered affected by the project.
- Next, place a four mile boundary around each of the affected occupied leks.
- The PHMA within the four mile lek boundary and the four mile project boundary creates the project analysis area for each individual project. If there are no occupied leks within the four-mile project boundary, the project analysis area will be that portion of the four-mile project boundary within the PHMA.
- Digitize all existing anthropogenic disturbances identified in Table 1 and the 7 additional features that are considered threats to sage-grouse (Table 2). Using 1 meter resolution NAIP imagery is recommended. Use existing local data if available.
- Calculate percent existing disturbance using the formula above. If existing disturbance is less than 3%, proceed to next step. If existing disturbance is greater than 3%, defer the project.
- Add proposed project disturbance footprint area and recalculate the percent disturbance. If disturbance is less than 3%, proceed to next step. If disturbance is greater than 3%, defer project.
- Calculate the disturbance density of energy and mining facilities (listed above). If the disturbance density is less than 1 facility per 640 acres, averaged across project analysis area, proceed to the NEPA analysis incorporating mitigation measures into an alternative. If the disturbance density is greater than 1 facility per 640 acres, averaged across the project analysis area, either defer the proposed project or co-locate it into existing disturbed area.
- If a project that would exceed the degradation cap or density cap cannot be deferred due to valid existing rights or other existing laws and regulations, fully disclose the local and regional impacts of the proposed action in the associated NEPA.

Table 1. Anthropogenic disturbance types for disturbance calculations. Data sources are described for the west-wide habitat degradation estimates (Table copied from the GRSG Monitoring Framework)

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (oil & gas)	Wells	IHS; BLM (AFMSS)	5.0ac (2.0ha)	BLM WO-300
	Power Plants	Platts (power plants)	5.0ac (2.0ha)	BLM WO-300
Energy (coal)	Mines	BLM; USFS; Office of Surface Mining Reclamation and Enforcement; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/ Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Energy (wind)	Wind Turbines	Federal Aviation Administration	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	3.0ac (1.2ha)	BLM WO-300
Energy (solar)	Fields/Power Plants	Platts (power plants)	7.3ac (3.0ha)/MW	NREL
Energy (geothermal)	Wells	IHS	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Mining	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
Infrastructure (roads)	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7ft (12.4m)	USGS
	Major Roads	Esri StreetMap Premium	84.0ft (25.6m)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2ft (73.2m)	USGS
Infrastructure (railroads)	Active Lines	Federal Railroad Administration	30.8ft (9.4m)	USGS
Infrastructure (power lines)	1-199kV Lines	Platts (transmission lines)	100ft (30.5m)	BLM WO-300
	200-399 kV Lines	Platts (transmission lines)	150ft (45.7m)	BLM WO-300
	400-699kV Lines	Platts (transmission lines)	200ft (61.0m)	BLM WO-300
	700+kV Lines	Platts (transmission lines)	250ft (76.2m)	BLM WO-300
Infrastructure (communication)	Towers	Federal Communications Commission	2.5ac (1.0ha)	BLM WO-300

Table 2. The seven site scale features considered threats to sage-grouse included in the disturbance calculation for project authorizations.

1. Coalbed Methane Ponds
2. Meteorological Towers
3. Nuclear Energy Facilities
4. Airport Facilities and Infrastructure
5. Military Range Facilities & Infrastructure
6. Hydroelectric Plants
7. Recreation Areas Facilities and Infrastructure

Definitions:

1. Coalbed Methane and other Energy-related Retention Ponds – The footprint boundary will follow the fenceline and includes the area within the fenceline surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (roads, well pads, etc.) will be captured in other disturbance categories.

2. Meteorological Towers – This feature includes long-term weather monitoring and temporary meteorological towers associated with short-term wind testing. The footprint boundary includes the area underneath the guy wires.

3. Nuclear Energy Facilities – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

4. Airport Facilities and Infrastructure (public and private) –The footprint boundary of will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangers, taxiways, driveways, terminals, maintenance facilities, beacons and related features. Indicators of the boundary, such as distinct land cover changes, fences and perimeter roads, will be used to encompass the entire airport or heliport.

5. Military Range Facilities & Infrastructure – The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility's perimeter.

6. Hydroelectric Plants – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

7. Recreation Areas & Facilities – This feature includes all sites/facilities larger than 0.25 acres in size. The footprint boundary will include any undisturbed areas within the site/facility.

Table 3. Relationship between the 18 threats and the three habitat disturbance measures for monitoring and disturbance calculations**.**

USFWS Listing Decision Threat	Sagebrush Availability	Habitat Degradation	Energy and Mining Density
Agriculture	X		
Urbanization	X		
Wildfire	X		
Conifer encroachment	X		
Treatments	X		
Invasive Species	X		
Energy (oil and gas wells and development facilities)		X	X

Energy (coal mines)	X	X
Energy (wind towers)	X	X
Energy (solar fields)	X	X
Energy (geothermal)	X	X
Mining (active locatable, leasable, and saleable developments)	X	X
Infrastructure (roads)	X	
Infrastructure (railroads)	X	
Infrastructure (power lines)	X	
Infrastructure (communication towers)	X	
Infrastructure (other vertical structures)	X	
Other developed rights-of-way	X	

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, September 9, 2015 4:08 PM
To: nvca sagegrouse
Subject: Fwd: GB_ROD_8 20 15_for PL review.Lauren

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Mon, Aug 24, 2015 at 3:27 PM
Subject: Re: GB_ROD_8 20 15_for PL review.Lauren
To: "Magaletti, Matthew" <mmagalet@blm.gov>

We don't even come close to meeting the PAC boundaries in Nevada/California. I want that to be clear in the ROD so that we don't have to continuously have to fight with the enviros about it in the future. They have already brought it up numerous times, and I'm afraid we will continuously be fighting over it and trying to explain it if it's not made clear now.
Thanks,
Lauren

Sent from my iPhone
Lauren

On Aug 24, 2015, at 3:00 PM, Magaletti, Matthew <mmagalet@blm.gov> wrote:

> Thank you, Lauren. I have made all of your suggested edits, except for one, which is related to the PACs in NV. We say "largely coincides with PHMA." Do you think we are covered in this statement? If not, Ill keep hunting for a spot.
>
> On Mon, Aug 24, 2015 at 3:16 PM, Lauren Mermejo <lmermejo@blm.gov> wrote:
>
> > I have some slight changes and comments throughout. (Sorry – I also made some editorial changes). This was a quick overview!!!
> >
> > Most relevant was the acres of SFAs in the Great Basin…..I identified BLM acres only.
> >
> > Also made a change to the FWS Biological Assessment language at the end of the ROD. Please look throughout carefully. If I made an insertion into the document, you will see the line on the left hand side….. otherwise, I made comment boxes. I also made a spelling change in the footnote upfront.

Call with any questions….thanks for letting me take a look.

Lauren

--
Matthew Magaletti
Planning and Environmental Analyst
Bureau of Land Management, WO-210
(202) 912-7085

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Internal Draft Document – Do Not Distribute

Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region including the Greater Sage-Grouse Sub-Regions of:

Idaho and Southwestern Montana
Nevada and Northeastern California
Oregon
Utah

Prepared by:

U.S. Department of the Interior
Bureau of Land Management
Washington, DC

September 2015

MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WO/XX/XX-XX+XXX

Internal Draft Document – Do Not Distribute

[Insert BLM WO Letterhead]

In Reply Refer To:
In Reply, Refer to:
(WO210)(1610)

Dear Reader:

Enclosed are the Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). The ROD approves the four Great Basin Region ARMPAs, which are part the National Greater Sage-Grouse Planning Strategy that was initiated on December 11, 2011. The planning strategy was initiated by the Bureau of Land Management (BLM) in response to the USFWS's March 2010 "warranted, but precluded" ESA listing petition decision. In this decision, the USFWS identified the inadequacy of regulatory mechanisms as a significant threat to GRSG. RMP conservation measures were identified as the BLM's principal regulatory mechanism.

The BLM's ARMPAs provide a landscape-level, science-based, collaborative strategy for addressing threats to the Greater Sage-Grouse (GRSG) and its habitat. This strategy was designed to address issues identified in the U.S. Fish and Wildlife Service's (FWS) 2010 "warranted but precluded" decision. In addition, the strategy was guided by over a decade of research, analyses and recommendations for GRSG conservation including the Conservation Objectives Team (COT) Report and the BLM National Technical Team and (NTT). Each of these reports was developed through a collaborative effort of state and federal biologists and scientists with extensive experience in GRSG management and research. Science-based decision-making and collaboration with the FWS, the U.S. Forest Service, and state and other partners were fundamental to the development of these ARMPAs.

It is important to note that this ROD and these ARMPAs apply only to BLM-administered lands. Throughout the GRSG planning process, the U.S. Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of the Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs for the Great Basin sub-regions included proposed GRSG management direction for National Forest System lands. The U.S. Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities.

The Federal Land Policy and Management Act (FLPMA) requires the development and maintenance, and, as appropriate, the revision of land use plans for public lands. The National Environmental Policy Act (NEPA) requires Federal agencies to prepare an Environmental Impact Statement (EIS) for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the Draft RMP Amendments/Draft EISs incorporated analysis and input provided by the public; local, State, and other Federal agencies and organizations; Native American tribes; Cooperating Agencies, and the BLM resource specialists, and were published in the fall of 2013. The 90-day public comment periods ensued, with more than 4,990 substantive comments from 1,348 letters submitted on all four sub-regional proposed LUPAs/Final EISs in the Great Basin Region. These comments were reviewed, summarized and considered in preparing the Proposed RMP Amendments/Final EISs.

The Proposed RMPAs/Final EISs were made available on May 29, 2015, for a 60-day governor's consistency review and 30-day protest period. The BLM received consistency review letters from the States of California, Idaho, Montana, Nevada, Oregon, and Utah in the Great Basin Region and has worked closely with these states to address their concerns and to resolve inconsistencies where possible. Across all four sub-regions in the Great Basin Region, 133 protest submission letters were received from government entities, private citizens, NGOs, and other stakeholders;124 of these submissions contained valid protest issues pursuant to 43 CFR 1610.5-2 and were addressed in the Director's Protest Resolution Reports. These reports are available on line at:
http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html.

The BLM now approves the attached ARMPAs as the land use plans that will guide future land and resource management within GRSG habitat in the Great Basin Region for the life of the plan amendments. The ARMPAs will benefit GRSG and over 350 other species of wildlife as well as other multiple uses, including grazing and recreation, which depend on healthy sagebrush-steppe landscapes.

Copies of the ROD and ARMPAs can be obtained from the BLM's National Greater Sage-Grouse webpage at: http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html.

The BLM extends special appreciation to the public, local, state, and other federal agencies, Native American tribal representatives, and the Cooperating Agencies, all of whom contributed to the completion of these ARMPAs. This participation informed and improved the planning process and the planning documents. Your continued involvement is encouraged as the ARMPAs are implemented and monitored for the conservation of GRSG and its habitat.

Sincerely,
X

Enclosure:
1. Record of Decision and Approved Resource Management Plan Amendments

Summary

This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse habitat on public lands administered by the Bureau of Land Management (BLM), consistent with BLM's multiple use and sustained-yield mission and the joint objective established by federal and state leaders ship through the Greater Sage Grouse Task Force to conserve GRSG habitat on federal, state, and private land such that additional protections under the Endangered Species Act (ESA) may be avoided.

In response to a 2010 determination by the U.S. Fish and Wildlife Service (FWS) that the listing of the GRSG under the ESA was "warranted but precluded" by other priorities, the BLM, in coordination with the U.S. Department of Agriculture Forest Service (Forest Service), has developed a targeted, multi-tiered, collaborative landscape-level management strategy, based on the best available science, that offers the highest level of protection for GRSG in the most important habitat areas to address the specific threats identified in the 2010 U.S. Fish and Wildlife "warranted but precluded" decision and the FWS' 2013 Conservation Objectives Team (COT) report.

This Record of Decision (ROD) and Approved Resource Management Plan Amendments (ARMPAs) for the Great Basin Region Greater Sage-Grouse (GRSG) Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon; and Utah include management direction which limits or eliminates additional disturbance in GRSG habitat management areas as well as targets restoration and improvements to the most important areas of habitat. The management direction in the ARMPAs is accomplished through land use allocations that generally apply to GRSG habitat. These allocations (1) eliminate new surface disturbance in the most highly-valued sagebrush ecosystem areas - identified as

Commented [LLM1]: This is not a correct statement.....SFAs are still just an avoidance area for ROWs, and there are many mining claims that could be yet developed.

Sagebrush Focal Areas (SFAs); (2) limit or eliminate new surface disturbance in Priority Habitat Management Areas (PHMAs), of which SFAs are a subset; and (3) minimize surface disturbance in General Habitat Management Areas (GHMA). In addition to protective land use allocations in important habitat areas, the ARMPAs include a suite of management actions, such as the establishment of disturbance limits, GRSG habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses, and other conservation measures that apply throughout designated habitat management areas. The cumulative effect of these measures is to conserve, enhance, and restore GRSG habitat across the remaining range of the species in the Great Basin and provide greater certainty that BLM land and resource management activities in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region.

The targeted land use plan protections presented in this ROD and ARMPAs not only protect the GRSG and its habitat, but also over 350 wildlife species associated with the sagebrush-steppe ecosystem, which is widely recognized as one of the most endangered ecosystems in North America. Reversing the slow degradation of this valuable ecosystem will also benefit local rural economies and a variety of rangeland uses in addition to habitat protection, including recreation and grazing, in a manner that safeguards the long term sustainability, diversity and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 states in which the ARMPAs in the Great Basin and the plans in the Rocky Mountain Region apply. In combination with additional state and federal actions underway and in development, it represents an unprecedented, collaborative effort among federal land management agencies and the states to manage an entire ecosystem and associated flora and fauna in order to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future". [Dan Ashe. Transmittal letter to COT Report. 2013].

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1. INTRODUCTION

This Record of Decision (ROD) approves the (BLM's attached approved resource management plan amendments (ARMPAs) for the Great Basin Region GRSG Sub-regions (Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah). This ROD and the attached ARMPAs provide a set of management decisions focused on specific GRSG conservation measures across the Great Basin Region on BLM-administered lands. The BLM prepared the ARMPAs under the authority of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [U.S.C.] 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR] §1601 et seq.), and other applicable laws. The BLM prepared Environmental Impact Statements (EISs) in compliance with the National Environmental Policy Act (42 U.S.C. 4321-4347) as amended (NEPA) and the Council on Environmental Quality's Regulations for implementing the procedural provisions of NEPA (40 CFR §1500.1 et seq.).

Throughout the GRSG planning process, the Forest Service has been a Cooperating Agency on the Idaho and Southwestern Montana, Nevada and Northeastern California, and the Utah planning efforts. All three of these Draft RMPAs/Draft EISs and Proposed RMPAs/Final EISs included proposed GRSG management direction for National Forest System lands. The Forest Service has completed a separate ROD and Land and Resource Management Plans under their planning authorities for the Great Basin Region, which is available at http://www.fs.usda.gov/r4/.

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1.1 Great Basin Region Planning Area

The Great Basin Region planning area is composed of four sub-regions: the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah. (see **Figure 1-1** – Great Basin Region Greater Sage-Grouse Sub-regions). A separate EIS was prepared for each of these sub-regions. Each sub-region conducted its own planning effort with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, as well as areas that shared common threats to the GRSG and their habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the Western Association of Fish and Wildlife Agencies (WAFWA) Greater Sage-Grouse Conservation Strategy to delineate management zones with similar ecological and biological issues.

[Insert **Figure 1-1** - Great Basin Region Greater Sage-Grouse Sub-regions]

The Great Basin Region planning area boundaries include all lands regardless of jurisdiction (see **Figure 1-2** - Great Basin Region Planning Area, Greater Sage-Grouse Habitat Management Areas). **Table 1-1** outlines the amount of surface acres that are administered by specific Federal agencies, states, local governments, and privately owned lands within the four sub regions that make up the Great Basin. The planning area also includes other BLM-administered lands that are not identified as habitat management

areas for GRSG. The ARMPAs do not establish any additional management for these lands which will continue to be managed according to the existing land use plan for the areas.

[Insert **Figure 1-2** - Great Basin Region Planning Area, Greater Sage-Grouse Habitat Management Areas]

Table 1-1
Land Management in the Great Basin Planning Area

Surface Land Management	NV/NE CA	ID/SW MT	Utah	Oregon	Great Basin Total
BLM	45,359,000	12,449,000	20,387,200	12,615,900	**90,811,100**
Forest Service	9,719,900	13,252,400	7,396,300	6,454,800	**36,823,400**
Private	11,857,800	13,637,700	10,818,200	10,907,900	**47,221,600**
Bureau of Indian Affairs (tribal)	922,000	343,600	1,140,000	191,900	**2,975,500**
USFWS	805,900	121,900	121,900	482,500	**1,491,700**
Other	326,100	414,400	30,400	100,700	**871,600**
State	195,600	2,646,100	5,137,200	723,100	**8,702,000**
National Park Service	160,100	511,700	1,365,600	0	**2,037,400**
Other federal	3,200	562,200	0	61,300	**626,700**
Bureau of Reclamation	431,200	116,300	800	52,700	**601,000**
Local government	17,800	0	0	900	**18,700**
Department of Defense	402,000	127,400	1,812,300	64,500	**2,406,200**
Total acres	**70,200,600**	**44,142,200**	**48,209,900**	**31,656,300**	**194,208,300**

Source: BLM GIS 2015

The decision area for the Great Basin Region ARMPAs is BLM-administered lands in GRSG habitat management areas (see **Figure 1-3** - Great Basin Region Decision Area , Greater Sage-Grouse Habitat Management Areas), including surface and split-estate lands where the BLM has subsurface mineral rights. For a description of these habitat management areas, refer to **Section 1-5**. The decisions in the Great Basin Region ARMPAs apply only to BLM-administered lands, including split-estate lands within GRSG habitat management areas (the decision area) and are limited to providing direction that incorporates appropriate measures to conserve, enhance, and/or restore GRSG and its habitat.

[Insert **Figure 1-3** - Great Basin Region Decision Area, Greater Sage-Grouse Habitat Management Areas]

1.2 Early GRSG Conservation Efforts

Currently, GRSG occupy an estimated 66% of the historically occupied range. The BLM manages the majority of the GRSG habitat on Federal lands (i.e., the range of GRSG not including the Columbia Basin or Bi-State Distinct Population Segments). Efforts to conserve GRSG habitat by the BLM and other wildlife conservation agencies and organizations have been ongoing for many years.

The WAFWA 2004 *Range-wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats* was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.

http://sagemap.wr.usgs.gov/docs/Greater_Sage-grouse_Conservation_Assessment_060404.pdf

In November 2004, the BLM released its *National Sage-Grouse Habitat Conservation Strategy*, which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the U.S. Fish and Wildlife Service (FWS), the Forest Service, the U.S. Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a *Greater Sage-Grouse Comprehensive Conservation Strategy*, with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the Strategy was to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The Strategy outlined the critical need to develop the associations among local, state, provincial, tribal, and federal agencies, non-governmental organizations, and individual citizens to design and implement cooperative actions to support robust populations of GRSG and the landscapes and habitats upon which they depend. The catalyst for this effort was widespread concern for declining populations and reduced distribution of GRSG.

http://www.wafwa.org/documents/pdf/GreaterSage-grouseConservationStrategy2006.pdf

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and summarize BLM's ongoing conservation efforts. A product of this effort was one of the first range-wide priority habitat maps for GRSG that were referred to as "key habitat". At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression efforts in GRSG habitat on BLM lands. An additional outcome of this team was the signing of a Memorandum of Understanding by the WAFWA; the BLM, FWS, USGS in the Department of the Interior; and the US Department of Agriculture Forest Service and NRCS, to provide for cooperation among the participating state and federal land managers and wildlife management and science agencies in the conservation and management of GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the Western United States and Canada.

http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/fish__wildlife_and/fwp.Par.95958.File.dat/SagegrouseMOU.pdf

In 2010, BLM commissioned an effort to map breeding densities of GRSG across the West. A conference was convened with state wildlife agencies to coordinate the lek survey data needed for this effort. This modelling project, through an agreement with the FWS, mapped known active leks across the West. This model served as a standard starting point for all states to identify priority habitat for the species.

http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/bird_density.print.html

In March 2010, the US Fish and Wildlife Service (USFWS) published its 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 Federal Register 13910(March 23, 2010)). In that finding, the USFWS concluded that GRSG was "warranted, but precluded" for listing as a threatened or endangered species under the ESA. This finding indicates that, although the species meets the criteria for listing, immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in greater need of the limited resources available to provide protection.

As part of their 2010 finding, the USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. Of the five listing factors reviewed, the USFWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 Federal Register 13910 (March 23, 2010)). The conservation measures in the BLM and Forest Service plans amended and adopted through this decision are designed to strengthen the regulatory mechanisms and limit the destruction and modification of GRSG habitat.

1.3 Threats to Greater Sage-Grouse in the Great Basin Region

Two of the factors that led to the USFWS "warranted but precluded" finding were threats to GRSG habitat and the inadequacy of existing regulatory mechanisms. The USFWS identified a number of specific threats to GRSG in the Great Basin Region. The primary threats identified by the USFWS in the Great Basin Region are the widespread present and potential impacts of wildfire and the loss of native habitat to invasive species. Other threats, some of which are more localized by nature, include habitat fragmentation due to anthropogenic disturbances associated with energy development, mining, infrastructure, recreation, urbanization and sagebrush elimination, as well as impacts to habitat impacts associated with free-roaming equids and improper livestock grazing. In 2012, the USFWS, with the support of the Western Governors Association Sage Grouse Task Force, convened the Conservation Objectives Team (COT), comprising state and federal representatives, to produce a peer-reviewed report identifying the principal threats to GRSG survival, based upon the FWS 2010 listing decision. A summary of the nature and extent of threats identified by the COT for each remaining identified population of GRSG in the Great Basin Region– as highlighted in the 2013 COT report – is provided in **Table 1-2**.

Commented [LLM4]: Conifer encroachment should also be brought forward here….it is the third most threat to GRSG in the Great Basin after fire and invasive annual grasses.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan
Rich-Morgan-Summit (UT)	9b				Y	Y	Y	Y		Y			Y	Y	UT
Uintah (UT)	9c				Y	Y	Y	L	Y	Y			Y	Y	UT
Strawberry Valley (UT)	10a	Y			Y	Y	Y	Y		Y			Y		UT
Carbon (UT)	10b	Y			Y		Y	Y	Y	Y			Y		UT
Sheeprock Mountains (UT)	11	Y			Y	L	L	Y	Y	L		Y	L		UT
Emery (UT)	12	Y			Y	Y	Y	Y	Y	Y			Y		UT
Greater Parker Mountain (UT)	13a				Y	Y	Y			Y			Y		UT
Panguitch (UT)	13b			Y	Y	Y	Y	Y	L	Y			Y	L	UT
Bald Hills (UT)	13c	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	UT
Ibapah (UT)	15a	Y			Y	Y	Y	Y	Y	Y		Y	Y		UT
Hamlin Valley (UT)	15b	Y			Y	Y	Y			Y		Y	Y		UT
Box Elder (UT)	26b			Y	Y	Y	Y	L	Y	Y			Y		UT

Table 1-2. Threats to GRSG in the Great Basin Region (Utah) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

Population	Unit Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan(s)
N. Great Basin (OR, ID, NV)	26a		L	L	Y	Y	Y	L	L	Y	Y	L	Y	Y	ID/SW MT, OR, NV/CA
Baker (OR)	17	Y	Y	Y	Y	L	Y	L	Y	L	U		L	L	OR
Central Oregon (OR)	28		L	L	Y	Y	Y	L	Y	L	Y	U	L	L	OR
W. Great Basin (OR, CA, NV)	31		L	L	Y	Y	Y	L	L	L	Y	Y	U		OR, NV/CA
Klamath (CA)	29	Y	U	U	Y	Y	Y	L		U	U	U	U	U	NV/CA
Northwest Interior (NV)	14	Y			Y		Y	U	Y	Y	Y	Y	Y		NV/CA
Southern Great Basin (NV)	15c	L	L	L	Y	Y	Y	L	L	Y	Y	Y	Y		NV/CA
Quinn Canyon Range (NV)	16	Y			Y	Y	Y			Y	Y	Y	Y		NV/CA
Warm Springs Valley (NV)	30	Y		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	NV/CA
East Central (ID)	18	Y	L	Y	L	Y	L	Y		Y	Y		L		ID/SW MT
Snake-Salmon-Beaverhead (ID)	23		L	L	Y	L	Y	Y		L	Y	Y	L		ID/SW MT
Weiser (ID)	25	Y	L	L	L	L	Y	Y		L	Y		L	L	ID/SW MT
Sawtooth (ID)	27	Y	L		L	U	L			Y	Y		L		ID/SW MT
Southwest Montana (MT)	19-22		L		L	L	Y	L	L	L	Y		L	L	ID/SW MT

Table 1-2. (cont.) Threats to GRSG in the Great Basin Region (OR, CA, NV, ID, SWMT) as identified by the Conservation Objectives Team (COT; 2013). Threats are characterized as: Y = threat is present and widespread, L = threat present but localized, and U = unknown.

In addition, the FWS found that existing local, state and federal regulatory mechanisms were not sufficient to address threats to the habitat. For the BLM, which manages approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.), the USFWS has identified the agency's Resource Management Plans (RMPs) as the primary regulatory mechanisms

Commented [LLM5]: Is this acreage figure for all 10 states, or just in the Great Basin? It needs to be clarified.

1.4 National Greater Sage Grouse Conservation Strategy

Based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a listing decision on this species, the BLM recognized the need to incorporate explicit objectives and concrete conservation measures into Resource Management Plans (RMPs) to conserve GRSG habitat and provide robust regulatory mechanisms. In August, 2011, the BLM chartered a strategy to evaluate the adequacy of BLM RMPs and revise and amend existing RMPs throughout the range of the GRSG to incorporate management actions intended to conserve, enhance, and restore the species and the habitat on which it depends. Separate planning efforts were initiated to address the conservation needs of the Bi-State population in California and Nevada, and the Washington State distinct population segment.

To help inform this planning effort, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State Agency specialists. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations focused on the threats identified in the FWS listing determination (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones (Figure 1-4). The NTT produced A Report on National Greater Sage-grouse Conservation Measures (The NTT Report) which proposed conservation measures based on habitat requirements and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed within each program area. The NTT Report also emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. To view the NTT Report, go to:

http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

In 2012, the Conservation Objectives Team (COT), composed of state and federal representatives, evaluated the principal threats to GRSG survival and the degree to which these threats need to be reduced or ameliorated to conserve the GRSG so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. The COT report also identified Priority Areas for Conservation (PACs) and emphasized that "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". Finally, the COT report identified present and widespread, as well as localized threats by GRSG population across the West (**Table 1-2)**. **Figure 1-4** from the COT

Report identifies the PACs, GRSG populations (and their names), and WAFWA Management Zones across the West. To view the COT Report, go to: http://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf

[Insert **Figure 1-4** - GRSG Priority Areas for Conservation, Populations (and names), and WAFWA Management Zones.]

In light of the 2010 "warranted" determination by the FWS, and specific threats summarized in the COT Report, the BLM found that consideration of additional management direction and specific conservation measures on federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. The BLM proposed to incorporate the management direction and conservation measures into the BLM's land use plans. The goal of incorporating these specific conservation measures into BLM land use plans, is to protect, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA may be avoided.

In December 2011, the BLM published a Notice of Intent to prepare EISs and Supplemental EISs to incorporate GRSG Conservation Measures into Land Use Plans (LUPs) across the range of the species. A total of 15 EISs were conducted to analyze the alternatives developed for each of the plan amendments and revisions across the range of the species. [1] **Figure 1-5** illustrates the National GRSG Planning Strategy planning area boundaries, along with BLM-administered priority and general habitat management areas across the Western United States.

[Insert **Figure 1-5** – National GRSG Planning Strategy Regional and Sub-regional Planning Areas Boundaries with BLM-administered PHMA and GHMA]

The planning efforts associated with the National GRSG Conservation Strategy have been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats identified by USFWS in the 2010 listing decision, along with the Western Association of Fish and Wildlife Agencies (WAFWA) Management Zones (MZs) framework (Stiver et al. 2006). Due to differences in the ecology of sagebrush across the range of the greater sage-grouse, WAFWA delineated seven Management Zones (MZs I-VII) based primarily on floristic provinces. Vegetation found within a MZ is similar and sage-grouse and their habitats within these areas are likely to respond similarly to environmental factors and management actions.

The Rocky Mountain Region is comprised of BLM planning efforts (which includes plan revisions and plan amendments) in the states of Montana, North Dakota, South Dakota, Wyoming, Colorado, and

[1] The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP has been split between the two ~~filed~~ field offices that make up the Bighorn Basin planning area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.

portions of Utah. This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin) and a portion of VII (Colorado Plateau). The Great Basin Region comprises of planning efforts (plan amendments) in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. This region falls within WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

Both the Rocky Mountain and Great Basin regions are further divided into sub-regions. The NEPA EIS analyses were done at the sub-regional level. These sub-regions are based on the identified threats to the GRSG and the WAFWA MZs from the FWS 2010 listing decision with additional detail regarding threats to individual populations and sub-regions from the USFWS's COT report. In the Rocky Mountain Region, some sub-regions correspond to BLM field/district office boundaries, specifically for planning efforts that are incorporating GRSG conservation measures through plan revisions that were initiated prior to the start of the National GRSG Conservation Strategy in December 2011.

The BLM used the best available science, including additional review from the U.S. Geological Survey, on specific issues that arose in developing the ARMPAs. Additionally, the BLM considered state conservation strategies in the planning effort and these are reflected in the final plans to the extent compatible with GRSG conservation objectives, including the need to establish management direction to conserve, enhance and restore GRSG habitat and to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

1.5 How the Approved Resource Management Plan Amendments Address the Threats Identified in the Conservation Objectives Team Report

The 2006 WAFWA *Greater Sage Grouse Comprehensive Conservation Strategy* stated goal for management of the GRSG was to "maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations". The NTT Report also endorsed this goal "as a guiding philosophy against which management actions and policies of BLM should be weighed". In establishing the COT, with the backing of the Sage Grouse Task Force, FWS Director Dan Ashe affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report -- reversing negative population trends and achieving a neutral or positive population trend -- and emphasized the following:

> "The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (WAFWA 2006 Strategy)"

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, the COT stated, "[m]aintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation". To achieve this, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT emphasized an

Commented [6]: Hotlink

"avoidance first strategy" and stressed those threats in GRSG habitat "must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

The plans were developed to address identified threats to the species and are an essential component of the effort to conserve GRSG such that the need to list the species under ESA may be avoided. Across ten western States, the Great Basin and Rocky Mountain sub-regional ARMPs/ARMPAs contain land use plan direction on approximately 66 million acres of the remaining habitat for the species (See **Figure 1-5**.). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the USFWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, priorities and approaches in each.

Commented [LLM7]: Its clarified here that the 66 million acres applies to all ten states, not just the Great Basin.

In order to protect the most important GRSG habitat areas, the planning effort began with mapping areas of important habitat across the range of the GRSG. In collaboration with state fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). The draft land use plans used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) in the Proposed RMP Amendments/Final EISs to identify the management decisions which apply to those areas. The designated GRSG Habitat Management Areas on BLM-administered lands in the decision area include: PHMA, which largely coincide with Priority Areas for Conservation (PACs) in the COT report (See **Figure 1-4**); GHMA; Other Habitat Management Areas (OHMA, applicable only to the Nevada and Northeastern California); and Important Habitat Management Areas (IHMA, applicable only to Idaho). **Table 1-4** identifies surface acres of PHMA, GHMA, OHMA, and IHMA in the decision area for the Great Basin Region.

PHMA, GHMA, OHMA, and IHMA are defined as follows:

- **PHMA**— BLM-administered lands identified as having the highest value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMA are derived from and generally follow the Preliminary Priority Habitat boundaries identified in the Draft LUPA/EIS. Areas of PHMA largely coincide with areas identified as Priority Areas for Conservation in the COT report.
- **GHMA**— BLM-administered lands where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMA are derived from and generally follow the Preliminary General Habitat boundaries identified in the Draft RMP/EIS.
- **OHMA** —BLM-administered lands in Nevada, identified as unmapped habitat in the Proposed RMP/EIS that are within the planning area and contain seasonal or connectivity habitat areas. With the generation of updated modeling data (Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California; Coates et al. 2014,) the areas containing characteristics of unmapped habitat were identified and are now referred to as OHMAs.
- **IHMA** —BLM-administered lands in Idaho that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations, but that are not as important as PHMA. These lands serve a

critical role in the adaptive management strategy developed by the State of Idaho and adopted in the ARMPA.

Table 1-3
Surface Acres of PHMA, GHMA, OHMA, and IHMA in the Decision Area for the Great Basin Region

BLM administered surface acres	PHMA	GHMA	OHMA	IHMA
Idaho and Southwestern MT	4,627,200	2,179,700	0	2,737,600
Utah	2,023,400	502,500	0	0
Oregon	4,547,000	5,660,150	0	0
Nevada and Northeastern CA	9,309,700	5,720,600	5,876,600	0
Total Acres	**20,507,300**	**14,062,950**	**5,876,600**	**2,737,600**

Source: BLM GIS 2015

This tiered habitat framework consists of a nested or layered conservation design with the goal of providing a high degree of certainty that the integrity of PHMAs can be maintained through management decisions to avoid or minimize additional surface disturbance.

The ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure 1-3** - Great Basin Region Decision Area - Greater Sage-Grouse Habitat Management Areas). Across the Great Basin Region, there are ~~9,076,948~~8,385,280 acres of BLM administered SFAs. SFAs correspond to the areas identified by the FWS as GRSG "strongholds" as detailed in an October 27, 2014 memorandum from the FWS Director to BLM Director and Forest Service Chief in response to a request to "identify a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection". (http://www.fws.gov/greaterSageGrouse/documents/ESA%20Process/GRSG%20Strongholds%20memo%20to%20BLM%20and%20USFS%20102714.pdf). SFAs maximize protection from new surface disturbance, given that they contain high-quality sagebrush habitat; highest breeding densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and in some cases are adjacent to protected areas that serve to anchor the conservation importance of the landscape.

Commented [LLM8]: These are the BLM acres only – the other figure may have included the FS acres as well. We should only be talking BLM acreages!

The combination in the ARMPAs of habitat area classifications and the land allocation decisions specifying the extent to and conditions under which certain activities is permitted to occur in those areas (these land allocation decisions are explained more fully in Section 1.6.2 of this ROD) provide the greatest protection for those areas identified as SFAs and meet the stated objective for these areas "where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species."

Protection of remaining habitats in GHMAs and IHMAs (applicable only to BLM-administered lands in Idaho) would be managed consistent with the COT Report recommendation to recognize "that important

habitats outside of PACs be conserved to the extent possible". Thus, land allocations in GHMAs and IHMAs provide for more flexibility for land use activities while minimizing impacts on existing GRSG leks. Major components of the attached ARMPAs that address the specific threats to GRSG and its habitat, as identified in the USFWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report) are listed in **Table 1-5** and summarized below.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
All threats	• Implement an Adaptive Management Strategy, which allows for more restrictive management to be implemented if habitat or population hard triggers are met. • Require mitigation that provides a net conservation gain to GRSG and its habitat. • Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.
All development threats, including mining, infrastructure, and energy development.	• PHMA: Implement an anthropogenic disturbance cap of 3% within the Biologically Significant Unit and proposed project analysis areas in PHMA (slight variations to this management component in the State of Nevada only) • PHMA and IHMA: Apply a disturbance density cap of 1 facility per 640 acres (except in the State of Nevada) • IHMA: Implement the 3% disturbance cap. Apply Anthropogenic Disturbance Development Criteria. • Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat. • Apply Required Design Features (RDFs) when authorizing actions in GRSG habitat. • Inform infrastructure siting in GRSG habitat through best available science and monitoring to minimize indirect effects
Energy development—fluid minerals, including geothermal resources	• PHMA: Open to fluid mineral leasing subject to a No Surface Occupancy (NSO) stipulation without waiver or modification, and with limited exceptions. In SFAs, a NSO stipulation would be applied without waiver, modification, or exception. In Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if certain criteria are met. • IHMA: Open to fluid mineral leasing subject to NSO stipulation without waiver or modification, and with limited exception. • GHMA: Open to fluid mineral leasing subject to Controlled Surface

Commented [MEM9]: May change based on national direction.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	Use (CSU) and Timing Limitation (TL) lease stipulations (except in the State of Utah where some portions of GHMA are open with standard lease stipulations) ● Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.
Energy development—wind energy	● PHMA: Exclusion area (not available for wind energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) ● IHMA: Avoidance area (may be available for wind energy development with special stipulations) ● GHMA: Avoidance area (may be available for wind energy development with special stipulations) (except in the States of Utah and Idaho, where these areas are open to wind energy development)
Energy development—solar energy	● PHMA: Exclusion area (not available for solar energy development under any conditions) (except in southeastern counties in the State of Oregon where portions of PHMA are avoidance areas) ● IHMA: Avoidance area (may be available for solar energy development with special stipulations) ● GHMA: Exclusion area (not available for solar energy development under any conditions) (except in the States of Oregon and Montana where these areas are avoidance areas for solar energy development and the State of Idaho, where these areas are open to solar energy development)
Infrastructure—major ROWs	● PHMA: Avoidance area (may be available for major ROWs with special stipulations) ● IHMA: Avoidance area (may be available for major ROWs with special stipulations) ● GHMA: Avoidance area (may be available for major ROWs with special stipulations) (except in the State of Utah where GHMA is open)
Infrastructure—minor ROWs	● PHMA: Avoidance area (may be available for minor ROWs with special stipulations) ● IHMA: Avoidance area (may be available for minor ROWs with special stipulations)
Mining—locatable minerals	● SFA: Recommend withdrawal from the Mining Law of 1872

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
Mining—nonenergy leasable minerals	• PHMA: Closed area (not available for nonenergy leasable minerals)
Mining—salable minerals	• PHMA: Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)
Improper Livestock grazing	• Prioritize the review and processing of grazing permits/leases in SFAs followed by PHMA. • The NEPA analysis for renewals and modifications of grazing permits/leases will include specific management thresholds, based on the GRSG Habitat Objectives Table, Land Health Standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis. • Prioritize field checks in SFAs followed by PHMA to ensure compliance with the terms and conditions of grazing permits.
Free-roaming equid management	• Prioritize gathers in SFAs, followed by other PHMAs. • Manage Herd Management Areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives. • Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of Herd Management Area Plans in GRSG habitat.
Range management structures	• Allow range improvements which do not impact GRSG, or which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats. • Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.
Recreation	• PHMA and IHMA: Do not construct new recreation facilities unless required for health and safety purposes. • Allow special recreation permits only if their effects on GRSG and its habitat are neutral or result in a net conservation gain. • PHMA & GHMA: OHV use limited to existing routes (routes to be designated through future travel management planning)
Fire	• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection.

Table 1-4
Key Responses from the Great Basin Region GRSG ARMPAs that Address the COT Report Threats

Threats to GRSG and its Habitat (from COT Report)	Key Management Responses from the Great Basin Region GRSG ARMPAs
	• Prioritize post-fire treatments in SFAs, other PHMAs, IHMAs, and GHMAs.
Nonnative, invasive plant species	• Improve GRSG habitat by treating annual grasses. • Treat sites in PHMA, IHMA, and GHMA that contain invasive species infestations through an integrated pest management approach.
Sagebrush removal	• PHMA: Maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. • All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.
Pinyon and/or juniper expansion	• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat.
Agricultural conversion and exurban development	• GRSG habitat will be retained in federal management unless: (1) the agency can demonstrate that disposal (including exchanges) of the lands will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal (including exchanges) of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.

1.6 Key Components of the BLM Greater Sage-Grouse Conservation Strategy

The ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat and consequently include three range-wide objectives consistent with guidance contained in the COT and NTT Reports: 1) avoiding or minimizing new and additional surface disturbances, 2) improving habitat conditions, and 3) reducing threats of rangeland fire to GRSG and sagebrush habitat. The land allocations and management actions included in the ARMPAs meet these objectives and are summarized below.

1.6.1 Avoid and Minimize Surface Disturbance

Allocations and Habitat Protection/Surface Disturbance Measures

The four Great Basin ARMPAs include land use allocations and management guidance for habitat management areas to avoid new disturbance and minimize any disturbance associated with proposed projects as described below and shown in **Table 1.4**. Land use plan allocations specify locations within the planning area that are available or unavailable for certain uses and are also used to prioritize conservation and restoration management actions. Surface disturbance associated with development in the Great Basin is not as significant a threat to GRSG and its habitat in the Great Basin as rangeland fire and invasive species. Nevertheless, the BLM has selected allocations and management actions that avoid and minimize surface disturbance in PHMA. These allocations and management actions are necessary because the location and extent of habitat loss to fire is difficult to predict and much of the habitat due to low precipitation in the Great Basin is difficult to restore once lost. Further, even a small amount of development in the wrong place could have an outsized impact in these landscapes.

The most restrictive allocations include requirements to avoid and minimize additional disturbance in PHMA (particularly in SFAs, which are a subset of PHMA). For example, new fluid mineral leasing would be subject to a no surface occupancy (NSO) stipulation in SFAs with no waivers, modifications, or exceptions. In the rest of PHMA, new fluid mineral leasing would be subject to NSO with no waivers or modifications. Exceptions would only be granted if it can be demonstrated that the exception would provide an overall conservation benefit to the species. In addition, SFAs include additional protection from new surface disturbance by recommending those areas for withdrawal from mineral entry.

Commented [LLM10]: Not really the truth….an exception would be allowed if there is no direct, indirect, or cumulative impact to GRSG or its habitat.

Similarly, PHMA is closed to non-energy and saleable mineral development (this does not apply to locatable minerals governed under the 1872 Mining Law). An exception may be granted for free use permits and the expansion of existing active pits for saleable minerals and expansion of existing non-energy leasable development under certain conditions. This exception is included because of the importance of these materials to local communities and their limited disturbance which will be offset by the mitigation requirements. Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat. In Utah, at the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

All PHMA will be managed as exclusion areas for commercial renewable energy development (solar and wind) with the exception of areas outside of SFAs in three counties in southeastern Oregon. The three counties in Oregon will be managed as avoidance areas. New rights-of-ways and development for transmission lines, pipelines, and related infrastructure would be avoided through restrictions on land use authorizations. In avoidance areas, exceptions would only be provided if it can be demonstrated that adverse impacts will be avoided or that residual impacts will be mitigated.

Although high voltage transmission lines will be avoided in PHMA, the planning, siting, and environmental review of a limited number of Presidential priority lines (Transwest Express and portions of Gateway South, Gateway West and Boardman to Memingway) have been underway for a several years. These lines are critical to expanding access to renewable sources of energy and to

improving the reliability of the western grid. NEPA analysis of these lines is preceding under separate authorization processes. Conservation measures for GRSG are being analyzed as part of those NEPA processes.

While restrictions on future development in PHMA are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMA are more flexible and tailored to allow projects but with restrictions to ensure compatibility with GRSG habitat needs. In addition, mitigation to avoid, minimize, and compensate for unavoidable impacts will be required for proposed projects in GHMA. Disturbance associated with oil and gas development, for example, is subject to a controlled surface use and timing limitation stipulation rather than an NSO stipulation. See **Table 1-3** for more details on GHMA management decisions. Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts to GRSG or its habitat and then compensating for unavoidable impacts to GRSG or its habitat, to a net conservation gain standard for the species. As noted in the COT Report, "Conservation of habitats outside of PACs should include minimization of impacts to sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur. …If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with federal , state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs."

In addition to allocations that limit disturbance in PHMA and GHMA, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs, and GHMAs to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to focus development into lower conflict areas and as such, reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the need for complex environmental review and analysis of potential impacts to sensitive species, and decreasing the need for compensatory mitigation.

Additionally, new recreation facilities would not be authorized in PHMAs, unless the development results in a net conservation gain to the GRSG or its habitat. In PHMA and GHMA, travel would be limited to existing routes until routes are designated through the implementation travel management planning process. Travel management plans, including route inventories, NEPA analysis, and route designation will be completed in a subsequent public planning process.

In general, all forms of new development in PHMAs and GHMAs would be closed, excluded, avoided, or developed only if the resultant effect is a net conservation gain to the GRSG or its habitat, assuring that existing habitat would be protected and providing opportunities through compensatory mitigation to restore degraded habitats.

Livestock grazing was not recognized by the USFWS as a major threat to GRSG or its habitat. Grazing is not considered a discrete surface disturbance activity for purposes of monitoring and calculating disturbance.

Disturbance Caps, Density Caps, Lek Buffers, and Required Design Features

In addition to the management actions and allocations discussed above, the ARMPAs provide further assurance that anthropogenic disturbances in PHMAs will be limited through the use of disturbance caps, density caps, and lek buffers.

A 3% disturbance cap in PHMA was established in accordance with the recommendations contained in the NTT Report. Disturbance will be calculated at two scales: first at a Biologically Significant Unit (BSU) scale determined in coordination with the state and second, for the proposed project area. BSUs are geographic units of PHMA that contain relevant and important GRSG habitat. In Oregon and Utah for example, BSUs are synonymous with PACs. These BSUs are used solely for the calculation of anthropogenic disturbance cap and in some ARMPAs, the adaptive management habitat triggers.

If 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within PHMA in any given BSU, no further discrete anthropogenic disturbances (subject to valid existing rights) will be permitted on BLM-managed lands within PHMAs in that BSU until the BSU below the cap. The Oregon and Nevada/Northeast California ARMPAs include exceptions to the disturbance cap: Oregon does not allow more than 1% new anthropogenic disturbance per decade, not to exceed 3% disturbance at any time; and in Nevada, exceeding a 3% disturbance cap can occur at the BSU and/or the project level as long as the outcome results in a net conservation benefit as approved by the BLM.

The ARMPAs also incorporate a cap on the density of energy and mining facilities to encourage co-location of structures to reduce habitat fragmentation. The cap is set at an average of one facility per 640 acres in PHMA in a project authorization area, consistent with guidance contained in the NTT Report. If the disturbance density in the PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights. The one facility per 640 density decision does not apply to Nevada, as described in **Section 1.7**.

In addition to any other relevant information determined to be appropriate, the BLM will further assess and address impacts from certain activities using the lek buffer-distances as identified in the USGS Report Conservation Buffer Distance Estimates for GRSG – A Review (Open File Report 2014-1239). The lek buffer distances will be applied at the project specific level as required conservation measures to address the impacts to leks as identified in the NEPA analysis. The lek buffer distances vary by type of disturbance (road, energy development, infrastructure, etc.) and justifiable departures may be appropriate as fully described in Appendix B of the ARMPAs. In both PHMA and GHMA, impacts should be avoided first by locating the action outside of the applicable lek buffer-distance(s) as defined in the ARMPAs. In PHMA, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed. In GHMA, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT recommendation that "conservation plans should be based on the best available science and use local data on threats and ecological conditions."

Additionally, Required Design Features (RDFs) are required for certain activities in all GRSG habitat, including oil and gas development, infrastructure, range developments, and other surface disturbing activities and are fully described in Appendix C of the attached ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts to GRSG or its habitat from threats (such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators). However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area). In Nevada and Northeastern California, RDFs are also applied to their identified OHMAs.

1.6.2 Improving Habitat Condition

In addition to prescribing land allocations and managing resource uses to minimize and avoid further surface disturbance, the ARMPAs identify management actions to restore and improve GRSG habitat.

The ARMPAs contain an overall habitat management objective that "a minimum of 70% of lands capable of producing sagebrush with a minimum of 15% sagebrush canopy cover, consistent with referenced conditions for the specific ecological sites." To move toward this goal, the ARMPAs specify GRSG habitat objectives to be incorporated into all land management programs, including wild horse and burros, grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG's life history stages within each ARMPA's sub-region. These objectives will be used to meet the applicable land health standard in GRSG habitats.

The ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives through treatment of invasive annual grasses and the removal of encroaching pinyon juniper in SFA, PHMA, and GHMA, and restoration of degraded landscapes, including those impacted by fire events (See **Section 1.6.3**.)

The BLM recognizes that improper grazing is a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report recommendation for grazing states, "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)." To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Great Basin ARMPAs include requirements for the incorporation of terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review and monitoring of grazing permits, and take numerous actions to avoid and minimize the impacts of range management structures (**see Table 1-4**).

The BLM will prioritize reviews and updates of grazing allotments in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMA, focusing first on riparian and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an

incompatible use in any given area, but rather reflects a decision to prioritize resources to ensure permittees manage grazing properly in those areas most important to the species. If the BLM finds that relevant habitat objectives are not being met due to improper grazing, the BLM will work with the permittee to ensure progress towards meeting them.

To address the localized threat due to negative influences of grazing by free-roaming equids (wild horses and burros (WHB)), the BLM will focus on maintaining WHB Herd Management Areas in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending Herd Management Area plans to ~~consider incorporating~~incorporate GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFA, then the remainder of PHMA, and then GHMA. In SFAs and PHMA, the BLM will assess and adjust AMLs through the NEPA process within HMAs when WHBs are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

Commented [LLM11]: This was a decision…we are not just going to "consider incorporating", we are going to incorporate…

During the implementation of the ARMPAs, and, consistent with valid existing rights and applicable law, in authorizing third party actions that result in GRSG habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for unavoidable impacts by applying beneficial conservation actions to offset remaining impacts associated with the action. This standard is consistent with the recommendation included in the *Greater Sage-Grouse Range-wide Mitigation Framework: Version 1.0* published by the FWS in September, 2014, which states that mitigation "be strategically designed to result in net overall positive outcomes for sage-grouse"**.** Mitigation will follow the regulations from the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20; e.g. avoid, minimize, and compensate) and be implemented on BLM-managed lands in a manner consistent with Departmental guidance for landscape mitigation pursuant to Secretarial Order 3330. If impacts from BLM and Forest Service management actions and authorized third party actions result in habitat loss and degradation that remain after applying avoidance and minimization measures (i.e. residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.

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Commented [LLM13]: Why are we referring to the FS here? This should just be BLM's ROD!

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams based on WAFWA Management Zones, including members from the respective states, Forest Service, USFWS, NRCS, and other local governments. These Conservation Teams will facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response. These Teams will convene to advise on these specific tasks and will utilize existing coordination and management structures to the extent possible.

With regard to the threat of climate change, the ARMPAs set goals and objectives and describe actions

intended to build resilience in the sagebrush steppe landscape to the impacts of climate change through habitat conservation and restoration measures. The coordinated landscape approach to addressing rangeland fire and invasive species described in the Integrated Rangeland Fire Management Strategy will further these goals and objectives. The Fire and Invasives Assessment Team (FIAT) assessments that informed the ARMPAs and supported the development of the Integrated Rangeland Fire Management Strategy are specifically designed to identify landscapes of high resistance and resilience based on research by Chambers (Chambers et al, 2014b). Additionally, by limiting or eliminating anthropogenic surface disturbance, especially in the SFAs, ensuring the integrity of the PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation efforts, connectivity and availability of sagebrush habitat are expected to increase, thus contributing to increased climate resilience.

1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat

The COT emphasized that "rangeland fire (both lightning-caused and human-caused fire) in sagebrush ecosystems is one of the primary risks to the greater sage-grouse, especially as part of the positive feedback loop between exotic invasive annual grasses and fire frequency". For this reason, the ARMPAs seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush. Prescribed fire will not be used unless the NEPA analysis for the Burn Plan addresses why alternative techniques were not selected as a viable option, how GRSG habitat management goals and objectives would be met by its use, how the COT Report objectives would be addressed and met, and a risk assessment is prepared to address how potential threats to GRSG habitat would be minimized. The BLM *Greater Sage Grouse Invasive Annual Grasses & Conifer Expansion Assessment* (FIAT 2014) modeled conifer expansion for PACs to provide an initial stratification to determine where conifer removal would benefit important sagebrush habitats.

The cornerstone of the FIAT protocol is recent scientific research on resistance and resilience of Great Basin ecosystems (Chambers, et al., 2014b). The final FIAT process report was completed in June 2014 by the Fire and Invasive Assessment Team. The BLM, the Forest Service, and FWS agreed to incorporate this approach into the final GRSG EISs. This information is being used to identify and design projects to change vegetation composition and/or structure to modify potential fire behavior for the purpose of improving fire suppression effectiveness and limiting fire spread and intensity due to invasive grasses and conifer encroachment. Consistent with this assessment, the BLM ARMPAs include management actions to remove invading conifers and other undesirable species, and prioritize vegetation treatments closest to occupied GRSG habitats and near occupied leks. Through guidance in the ARMPAs supplemented by the *Integrated Rangeland Fire Management Strategy*, a commitment has been made to address the invasion and expansion of cheatgrass, medusa head, and other invasive grasses through expanded efforts to treat impacted acres and to accelerate and expand efforts to restore lands impacted by fire with native grasses and sagebrush seedlings. Efforts are underway to increase the acreages to be treated with chemical and biological agents to kill and stem the spread of invasive species and to accelerate the registration of other biologicals useful in addressing the threat of cheatgrass invasion.

In addition to and complementing the ARMPAs described in this ROD, Secretarial Order 3336 on Rangeland Fire made clear that "**protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat, while maintaining safe and efficient operations, is a critical fire management priority for the Department".** (emphasis added) The strategy places a Departmental priority on activities to prevent, suppress, and restore fire-impacted landscapes in areas identified by the Fire and Invasives Assessment Tool (FIAT) in priority habitat, using recent information derived from a report prepared by WAFWA to assist in addressing the threat of rangeland fire. The FIAT process, applying recent science, identified highly resistant and resilient landscapes to target fire management activities to these most important lands. In addition, through the issuance of a Leaders' Intent letter, signed by the Secretaries of Agriculture and the Interior, rangeland fire was identified as an "additional priority" for the firefighting community in making strategic decisions with regard to the allocation of resources for firefighting in 2015. Additional resources have been allocated and will be targeted to fuel treatments (including invasive species control), suppression (through the prepositioning of fire-fighting resources and the training of additional Rural Fire Protection Associations, local volunteer firefighters, and veteran fire fighters), and habitat restoration in these areas. Firefighting assets (aircraft, firefighters and related equipment) will be located near areas of high priority for rangeland fire.

1.6.4 Monitoring, Evaluation, and Adaptive Management

The COT noted that "a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective." The NTT further notes that "Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats."

A rangewide monitoring and evaluation framework will be established and implemented as described in the Monitoring Framework (Appendix X of each attached ARMPA). This monitoring strategy has two parts: (1) implementation monitoring (i.e., are decisions being implemented in a timely manner, are actions taken consistent with the plan decisions), and (2) effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals). Through effectiveness monitoring, BLM can determine how management decisions and actions implemented through the ARMPAs affect GRSG habitat to determine if the desired management objectives (e.g. avoiding and minimized additional surface disturbance in PHMAs) have been achieved. Understanding the effectiveness and validating results of ARMPA management decisions is an essential part of the GRSG conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, size of patches, etc.). Ideally, monitoring attributes of GRSG habitat, in coordination with population monitoring by state wildlife agencies and other partners, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRSG populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ameliorate

negative effects with appropriate conservation actions. The WAFWA Zone GRSG Conservation Team (as described in Section 1.6.2) will also be used to advise regional monitoring strategies and data analysis ~~on~~ as described in the plans and utilize existing management structures.

Each ARMPA includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds and are based on the two key metrics that are being monitored - habitat condition and/or population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after the issuance or signature of this ROD.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the proposed ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the state, FWS, and the BLM to see if the causal factor can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines).

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger is tripped, the BLM will implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. In the event that new scientific information becomes available demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs, the BLM will immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive such as an IM or a plan amendment.

1.7 Unique Aspects of the Great Basin ARMPAs

The ARMPAs and their associated environmental impact statements were developed through four planning efforts across the Great Basin Region (as described in Section 1.1). To develop these plans, the BLM employed a landscape-scale approach to achieve a common set of management objectives across the range of GRSG recognizing, in particular, the importance of addressing the threat of rangeland fire and the challenge of restoring fire-impacted landscapes and implementing measures to limit anthropogenic disturbance in important habitats. Within this framework, management actions were developed and incorporated into the subregional plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and state-specific management approaches.

This tailored approach provided management flexibility as well as the opportunity to incorporate recommendations resulting from collaboration with local cooperators and public comments in each subregion. The subregional planning strategy will strengthen implementation efforts for each subregional plan given that the contributions of local partners will be reflected in the plans and the plans will benefit

from local knowledge, expertise, and experience. Measures incorporated into the subregional plans in this manner remain consistent with the range-wide objective of protecting, enhancing, and restoring GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Great Basin sub-regional ARMPAs.

Idaho and Southwestern Montana

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The Idaho and Southwestern Montana ARMPA adopted specific aspects of the State of Idaho's Conservation Plan for GRSG. The most significant aspect adopted from the State's plan is a third category of habitat referred to as Important Habitat Management Areas (IHMA). IHMA are BLM-administered and National Forest System lands that provide a management buffer for PHMA and connect patches of PHMA. IHMA encompasses areas of generally moderate to high conservation value habitat and/or populations. In a landscape that is most threatened by fire and invasive species, this three-tiered approach allows land managers to focus suppression and restoration resources on those areas of highest importance while providing an acceptable additional level of flexibility in IHMA and GHMA since surface disturbance due to development is not as great a threat to habitat in the subregion. The three tiers also serve as the foundation for an adaptive management approaches that includes habitat and population hard and soft triggers. The adaptive management approach requires that when a hard trigger is reached, IHMA will be managed as PHMA to maintain sufficient PHMA to support GRSG populations.

The Idaho portion of the Idaho and Southwestern Montana GRSG ARMPA also includes a unique approach to calculating disturbance to account for effective habitat, as described in Appendix J of the attached Idaho and Southwestern Montana ARMPA, which was developed by the BLM in concert with the Idaho Department of Fish and Game, Forest Service, and FWS. The Idaho and Southwestern Montana ARMPA also includes additional Required Design Features (RDFs) based on lek avoidance distances, which were developed in coordination with the Idaho Department of Fish and Game and the local U.S. Fish and Wildlife Service office. Examples include avoiding building new wire fences within 2 km of occupied leks and placing new, taller structures out of line of sight or at least one kilometer from occupied leks. The BLM will also work with the state of Idaho in setting priorities for the review and processing of grazing permits/leases in SFAs consistent with the methodology recommended by the State of Idaho in its proposed plan for the management of BLM-administered lands in the state.

The decisions affecting Southwestern Montana in the ARMPA complement the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development. Recognizing that the State of Montana efforts are just beginning, the plans include measures to incorporate aspects of the Montana Plan as it is instituted. The BLM plans will switch to a 5% disturbance cap, consistent with the Montana Plan when the process is instituted and being effectively implemented. Additionally, if the BLM finds that the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if some sage-grouse related management actions can be adjusted with coordination from the State of Montana and the USFWS to achieve consistent and effective conservation across all lands, regardless of ownership. There is no IHMA in Montana.

Nevada and Northeastern California

The Nevada portion of the Nevada and Northeastern California ARMPA is unique from other Great Basin ARMPAs because of how the sub-regional habitat map was developed. The ARPMA uses the "2014 Coates Maps", developed locally using the best available science, and included "Other Habitat Management Areas", where required design features will be applied at the project level. Decisions for BLM-administered lands in the State of California include allocations and management direction that is generally similar to other ARMPAs in the Great Basin, while carrying forward some decisions identified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Decisions for BLM-administered lands in the State of Nevada incorporate key elements of the State of Nevada Greater Sage-Grouse Conservation Plan (State of Nevada 2014) including consideration of the State of Nevada Conservation Credit System (Nevada Natural Heritage Program and Sagebrush Ecosystem Technical Team 2014) as the ARMPA is implemented and as projects are proposed within the planning area. This mitigation strategy focuses restoration efforts in the key areas most valuable to the GRSG. The ARMPA adopts a Disturbance Management Protocol (DMP) to provide for a 3% limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species, with concurrence from the BLM, State of Nevada, and FWS. The plan provides for this exception due to the development of strong mitigation tools in Nevada, including the Conservation Credit System. Given the concurrence of the State of Nevada and FWS in each exception, this approach is consistent with conservation objectives. The Disturbance Management Protocol in BLM-administered lands in Nevada was also deemed sufficient such that the Nevada ARMPA does not have density cap, which is required in the three other Great Basin Region ARMPAs.

In coordination with the USFWS, the Nevada ARMPA also allows for an exception to the geothermal NSO which is an energy development priority for the state and is projected to create very limited disturbance in predictable areas over the life of the plan. For those reasons, this exception is consistent with overall conservation objectives.

Utah

The Utah ARMPA incorporates a number of key strategies for GRSG conservation developed by the State of Utah (Conservation Plan for Greater Sage-Grouse in Utah) and the State of Wyoming (Executive Orders 2011-05 and 2013-3), which establishes conservation measures for protecting GRSG and also focuses conservation and restoration within key areas deemed most valuable to GRSG. The Utah ARMPA also integrates the state's strategic focus on increasing areas available to GRSG through vegetation treatments and reducing threats from wildfire. The ARMPA provides additional flexibility for development in GHMA because 96% of the breeding GRSG in Utah are within PHMAs where conservation measures are applied in a more targeted manner at the project-implementation stage through the use of lek buffers and required design features as well as requiring that compensatory mitigation achieve a net conservation benefit outcome. As such, the Utah ARMPA designates GHMA as open to wind energy and high voltage transmission ROW development (consistent with the mitigation framework

for the ARMPA). The Utah ARMPA also designates GHMA open to as oil and gas development with standard constraints.

Because there is no potential for coal development in the Great Basin Region outside of Utah, only the Utah ARMPA addresses this threat.

Oregon

The Oregon ARMPA incorporates key elements of the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Hagen 2011) which establishes unique conservation measures for protecting GRSG and also focuses restoration within key areas most valuable to GRSG. The BLM plan adopts the unique disturbance cap approach developed with the Oregon Department of Fish and Wildlife in which disturbance is capped at 1% per decade.

The BLM Oregon plans provide additional flexibility for wind development in PHMA in Harney, Lake, and Malheur counties by allowing for avoidance rather than exclusion within PHMAs that are outside of the SFAs. The BLM provided this flexibility after recognizing the extent of high and medium potential wind areas in these counties that is in PHMAs, the fact that wind energy is excluded in SFAs in these counties, and, after coordination with the USFWS, determining that the more rigorous disturbance cap (in which disturbance is capped at 1% per decade) and adaptive management triggers adopted by the Oregon plan would compensate for the limited wind development likely to occur in these areas. In addition, the plan encourages development of wind energy ROWs outside of PHMA first, or in non-habitat areas within PHMA, before development is permitted in higher value habitat areas. Due to these factors, the BLM finds these limited areas of flexibility for wind development are not inconsistent with overall conservation objectives of the plan. In addition, the Oregon ARMPA identifies strategic areas where habitat enhancement and restoration activities are encouraged, as well as key areas to address the impacts associated with climate change.

For additional information regarding the unique aspects of each plan, refer to Table 1-6 of the attached Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah ARMPAs, which provides a crosswalk regarding how the ARMPAs address specific threats to GRSG identified in the COT Report through these state-specific management prescriptions.

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1.8 Decision Rationale (Management Considerations)

The ARMPAs provide a comprehensive and effective conservation strategy for addressing the threats identified by the FWS such that the need for additional protections under the ESA might be avoided. The ARMPAs contain objectives which strive to conserve the GRSG and its habitat on BLM-administered lands across the remaining range of the species.

In combination with the sage-grouse conservation actions taken by the individual states within the remaining range of the bird and separate but connected initiatives to address the threat of rangeland fire to

curb the continuing spread of non-native invasive grasses, and to promote conservation measures to benefit the Greater sage-grouse on private lands, the BLM and Forest Service proposed ARMPAs are an essential component of the effort to conserve the GRSG and its habitat and may avoid the need for a listing of the species under ESA. Combined, all of the ARMPAs associated with the BLM's National GRSG Conservation Strategy would affect approximately 66 million acres of the remaining habitat for the species.

The BLM Greater Sage-Grouse Conservation Strategy is built upon the following key concepts:

- **Landscape-level**: The planning effort encompasses the remaining habitat of the GRSG on BLM-administered public lands, covering 10 western states in the Great Basin and Rocky Mountain regions. As such, the strategy provides a coherent framework across the Resource Management Plans to implement landscape-level conservation for GRSG while allowing for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple use and sustained yield mandates under FLPMA. The conservation measures included as part of this landscape -level conservation effort are -consistent with the severity of threats, recognizing local ecological conditions, and incorporating existing conservation efforts where they are consistent with the overall objective of conserving the species across its remaining range.
- **Best Available Science** – The ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, state agencies, the US Geological Survey, the FWS and other sources. The COT Report provided a "blueprint" for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The BLM National Technical Team (NTT) Report provided additional guidance for addressing the most significant threats to the GRSG. A series of subsequent reports on how to improve efforts to reduce the threats of rangeland fire and invasive species prepared in collaboration with the WAFWA, as well as a report to the Secretary of the Interior entitled "An Integrated Rangeland Fire Management Strategy" also provided crucial guidance in formulating the conservation strategy.
- **Targeted, Multi-Tiered Approach** – The ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration efforts to the most important habitat management areas as determined by state and federal sage grouse experts, largely consistent with the Priority Areas for Conservation (PACs) identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as Priority Habitat Management Areas (PHMAs). Within PHMA, the ARMPAs/ARMPs provide an added level of protection to prohibit surface disturbance through the delineation of Sagebrush Focal Areas (SFA), derived from areas identified by the FWS as "strongholds" essential for the species' survival. General Habitat Management Areas (GHMAs), is identified in the ARMPAs recognize the potential value of habitat areas outside of PACs -- as recommended by the COT -- where surface disturbance is minimized to provide greater flexibility for land use activities but where disturbance will be mitigated.
- **Coordinated**: The ARMPs and ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency). As a result, all federally-administered lands essential to the conservation of the GRSG will be managed to achieve this

objective through amendments or revisions to their land management plans. The USFWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.

- **Collaborative**: The ARMPAs reflected extensive input from the relevant states, collaborators, and stakeholders and the public from the outset. The ARMPAs d were developed with the benefit of input from the individual states and cooperators who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force (SGTF) was particularly useful in facilitating this kind of collaborative input. The ARMPAs incorporate state and local conservation measures where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG consistent with the multiple-use and sustained-yield mission of the BLM.

The conservation measures in the ARMPAs reflect over a decade of research, analysis and recommendations for GRSG conservation including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through a collaborative effort of state and federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report –which identified threats to GRSG habitat as well as the most important habitat to protect--provided an important framework for development of the conservation strategy embodied in the sub-regional ARMPAs. The COT, consisting of state and federal scientists, wildlife biologists, and resource managers, was tasked by the Director of the USFWS "with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future."

In addition, the Fire and Invasives Assessment Team (FIAT) Report and the USGS compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and infrastructure on GRSG populations -- *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review*, and the *Integrated Rangeland Fire Management Strategy: Final report to the Secretary* (Manier et al, 2014; DOI 2015b) provided important guidance in the development of critical aspects of the proposed ARMPAs/ARMPs and the overall GRSG landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG experience where consistent with the overall GRSG management objectives.

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The BLM ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies to ensure they limit or eliminate new surface disturbance as well as improve habitat condition in the most important habitat areas. The ARMPAs/ARMPs also benefit from strong collaboration with the states and reflect the unique landscapes, habitats, approaches, and priorities in each. While the effort to incorporate state-developed conservation measures in each of the subregional plans has added complexity in developing the overall conservation strategy, the body of local knowledge and expertise regarding conservation measures for the GRSG is extensive and, ultimately, strengthened the plans.

Incorporating these measures in the plans is also likely to increase the commitment of all partners to the difficult task of implementing the plans upon completion.

In his transmittal letter accompanying the final COT report, FWS Director Dan Ashe reaffirmed his charge, "I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. … Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels."

The BLM ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report and the BLM NTT. The COT Report emphasized the need to avoid or minimize additional disturbance in PACs (which largely coincide with PHMAs in the ARMPAs). As previously noted, the COT stated, "Maintenance of the integrity of PACs … is the essential foundation for sage-grouse conservation." Specifically, the COT recommended "targeted habitat management and restoration" to be achieved by "eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal". The COT further recommended an "avoidance first strategy" and stressed that "threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy."

Commented [LLM17]: Please acknowledge somewhere up front when PACs are firsts discussed that the Nevada/NE California plan does not correlate with PAC boundaries because of map changes midstream. The COT Report even references on Page 13 that the PAC boundaries do not match habitat maps in Nevada and Utah.

In order to address the identified threats, and meet the recommendations of the COT, the plans are based first on the identification of important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMA which align closely with PACs identified in the COT Report. Within PHMA, the plans identify SFAs based on the FWS analysis of strongholds for the species based on population density, habitat integrity, and resilience to climate change among other factors. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in wildlife horse and burro populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS which are most important to long-term ecosystem health and species persistence.

PHMA and GHMA boundaries are based on Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH), as represented in the Draft LUPAs/EISs. Consistent with BLM's Instruction Memorandum 2012-044, PPH and PGH are based on data and maps developed through a collaborative effort between the BLM and the respective state wildlife agency. PPH and PGH (now PHMA and GHMA in the Final EISs and now the ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding bird density (Doherty 2010), sage grouse proportionality, density of leks, and key seasonal habitats. PGH (now GHMA) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH (now PHMA).

Allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMA – from energy, to transmission lines, to recreation facilities and grazing structures are excluded, avoided, or allowed only if the resultant effect is neutral or beneficial to the GRSG. In all instances, whether in PHMA or GHMA, any adverse impacts associated with development would have to be compensated with habitat protection or restoration

activities that produce a net conservation benefit for the GRSG. The ARMPAs/ARMPs will also prioritize future oil and gas leasing and development in areas of low conflict with GRSG habitat.

In addition, the ARMPAs include measures to limit surface disturbance in PHMA through the establishment of disturbance limits or "caps" of 3%, density restriction of on average 1 energy facility per 640 acres (except for Nevada) and lek buffers. These requirements were established in accordance with recommendations contained in the NTT Report. As described in Section 1.6.1, BLM determined the appropriate buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG – A Review* (Manier et al, 2014).

The plans also include actions meant to improve habitat condition to the most important areas for conservation through additional, targeted efforts to protect and restore habitat first in SFAs, then in PHMAs, and finally in areas designated as GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMA or GHMA will be designed to a net conservation gain standard consistent with the recommendation included in the September 2013 FWS document, *Greater Sage-Grouse Range-Wide Mitigation Framework*. According to the authors, the Framework was prepared …

> "to communicate some of the factors the Service is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse".

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT to …

> "Conduct grazing management for all ungulates in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for GRSG (e.g. shrub cover, nesting cover)."

The ARMPAs also address the adverse impacts of free-roaming equids (wild horses and burros) on GRSG habitat by prioritizing gathers and removal of wild horses and burros to reach AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has made a considerable investment in concert with the National Academy of Sciences in new research of methods to reduce wild horse and burro reproduction rates. Through a combination of targeted gathers and the development of an effective agent for reducing future free-roaming equid reproductive rates, over time, this threat to GRSG may

be effectively mitigated.

Since the interaction of fire and invasive species represents the greatest threat to GRSG survival in the Great Basin region, the ARMPAs provide specific guidance for improving efforts to reduce the risk of GRSG habitat loss to wildfire, including fire prevention and the restoration of habitats impacted by fire. The Department took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat that led to Secretarial Order (S.O.) 3336 and subsequent report, *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior*.

http://www.forestsandrangelands.gov/rangeland/documents/IntegratedRangelandFireManagementStrategy_FinalReportMay2015.pdf

In accordance with the S.O. and subsequent rangeland fire management strategy, substantial changes in policy and management direction affecting all aspects of the rangeland fire management program – from better coordination between resource managers and fire management officers; to the identification and prioritization of prevention, suppression, and restoration efforts in SFAs, PHMAs, and GHMAs; to the commitment of additional equipment and crews for rangeland firefighting; to additional funding and policy direction to improve post-fire restoration; to the completion of an initiative to collect, store, and better utilize native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems. This effort, and the initiative to fight the spread of non-native invasive species that contributes to higher rangeland fire risk (e.g. cheatgrass) discussed below, has fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

The COT report – and other more recent research and analysis – amplify concern for the contribution of cheatgrass and other invasive annual species to the loss of GRSG habitat associated with increased fire frequency and intensity. Work initiated by the WAFWA and based on recent research by Chambers (Chambers et al, 2014b) led to the Fire and Invasives Assessment Tool and a subsequent assessment that identified areas of resistance and resilience to fire within SFAs, PHMAs, and GHMAs. Through use of the -FIAT Aassessment/Tool, land managers can more efficiently allocate and use fire resources at initial attack, to stop fire early and prevent catastrophic habitat loss as well as target restoration to those areas important to the species where success is more likely. The BLM is also committed to and accelerating the registration and use of chemical and biological agents to stem the spread of cheatgrass and other invasive annual species.

Even prior to completion of the FIAT assessment, BLM shifted funding for fuels management to protect landscapes of importance to the GRSG. Under the FY2014 Omnibus Appropriation, BLM prioritized the funding of treatments and activities within each state that benefit GRSG **(See Figure 1-6)**.

In addition, the Sage Grouse Initiative (SGI) launched by the Natural Resources Conservation Service in 2010 also contributes to the effort to protect and restore important GRSG habitat in the Great Basin states. In collaboration with the states and private landowners on private lands, as well as with the BLM and USFS on federally-administered public lands, NRCS has worked to reduce the encroachment of pinyon-juniper trees and restore rangeland habitat.

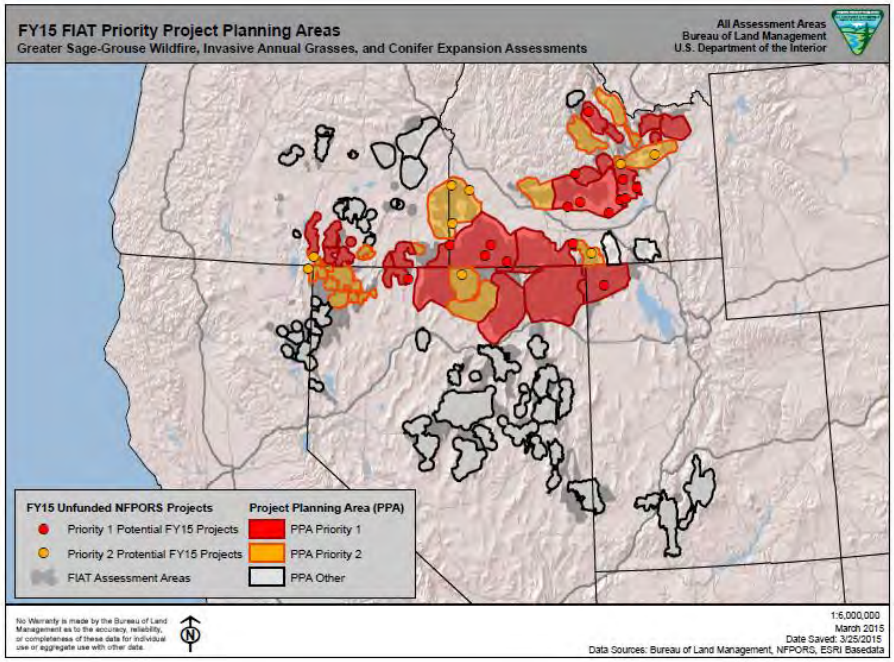

Figure 1-6. FY 2015 FIAT Priority Project Planning Areas with Focus on Invasive Annual Grasses and Conifer Expansion Assessments.

To further supplement these efforts, the Department has recently committed $7.5 million to projects in GRSG habitat to create more resilient landscapes and BLM has allocated $12 million to increase firefighting resources aimed at stopping fires while they are small in the Great Basin. The Department has identified required policy changes to increase the commitment, flexibility and timeframe for use of Emergency Stabilization and Burned Area Restoration (ES & BAR) funding on priority sagebrush-steppe habitats.

Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-wide Conservation Strategy,* the BLM and Forest Service conservation strategy places heavy reliance on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPAs-. Monitoring plans will be developed in coordination with relevant state and federal agencies and will incorporate evaluation of GRSG population trends by the states and changes in habitat condition by the federal land management agencies. As the WAFWA report states …

> Monitoring provides the "currency" necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and there, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort.

In addition, the ARMPAs incorporate an adaptive management framework that provides an "early warning system" of "soft triggers" to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes in population levels or habitat conditions occur. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and "hard triggers" are reached, more significant plan-level changes in management actions and land allocations will occur to ensure that more protective measures to conserve the species are in place.

In summary, the ARMPAs emphasize an "avoidance first strategy" consistent with the recommendations in the COT Report by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished through identification of important GRSG habitat areas and then applying allocations that exclude or avoid surface disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat. The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, are important to the long-term viability of GRSG. Restoration decisions include specific habitat objectives, and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management Strategy* as well as NRCS' Sage Grouse Initiative (SGI) investments in private landowners' conservation efforts. This strategy reflects a high level of commitment by federal partners to conserve the GRSG and its habitat. These actions on over half of the most important lands for GRSG conservation will serve as an anchor and complement the significant actions being taken by state and local governments as well as private landowners to conserve the species and its habitat.

The landscape-level strategy consisting of reinforcing conservation actions that will go into effect upon completion of the BLM and Forest Service ARMPAs as well as actions being implemented currently to conserve the species, reflect a significant change in management direction and philosophy for both resource management agencies since 2010 and a long-term commitment to assure the conservation of the species consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape and amplifies the need for collaborative conservation among federal, state, local, and private partners to conserve the GRSG. This paradigm shift is best characterized as follows:

"Land uses, habitat treatments, and anthropogenic disturbances will need to be managed below threshold necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to sage grouse habitats and populations in priority habitats. Adequacy of management adjustments will be measured by

science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future."

The conservation benefits to the sagebrush ecosystem and GRSG habitats resulting from the BLM ARMPAs provide an essential foundation for conserving the GRSG which, in conjunction with the amended Forest Service LRMPs, affect XX percent of the remaining GRSG habitat in the Great Basin Region? In conjunction with the [RockyMountain ARMPAs?] and GRSG management initiatives of other federal, state, and local partners, the cumulative benefits of these conservation actions constitute an effective strategy for conserving the GRSG and may avoid the need to list the species as threatened or endangered under the Endangered Species Act..

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2. DECISION

2.1 Summary of the Approved Management Decisions

The decision is hereby made to approve the Great Basin Region Greater Sage-Grouse ARMPAs for the Great Basin Region Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (attachments A, B, C, and D). This ROD serves as the final decision establishing the land use plan amendment decisions outlined in the ARMPAs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs amend the land use plans described in **Sections 1.3** of attachments A, B, C, and D.

The land use decisions conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to GRSG habitat. Land use plan decisions are expressed as goals and objectives (desired outcomes), and allocations, allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs are final and effective upon signing of this ROD, they generally require additional implementation decision steps before on-the-ground activities can begin. Subsequent NEPA analysis will be conducted, as necessary, for such implementation decisions.

2.2 What the Record of Decision and Approved Resource Management Plan Amendments Provide

The ARMPAs include GRSG and GRSG habitat land use plan level management decisions in the form of:

- Goals
- Objectives (Desired Future Conditions)

- Land Use Allocations and Allowable Uses
- Management Actions

Goals are the broad statements of desired outcomes, and are usually not quantifiable.

Objectives are specific desired conditions, usually quantifiable and measurable, and may have timeframes for achievement.

Land use allocations specify locations within the planning area that are available or not for certain uses and are also used prioritize conservation and restoration management actions. These include decisions such as what lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development, what lands may be available for disposal via exchange and/ or sale, and what lands are open, closed, or limited to motorized travel (please note that all acreages presented in the Approved Plan are estimations even when presented to the nearest acre).

Management actions include those provisions that help in meeting the established goals and objectives and include measures that will be applied to guide day-to-day activities on public lands..

The ARMPAs' management decisions were crafted to incorporate conservation measures into LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats (see **Section 1.3**).

Commented [LLM18]: I thought the new work was "preserve".....at least that is what I remember the WO changing the language to in my ARMPA

2.3 What the Record of Decision and Approved Resource Management Plan Amendments Do Not Provide

The attached ARMPAs do not contain decisions for public lands outside of GRSG habitat management areas, except for travel management area decisions in the Idaho and Southwestern Montana ARMPA.

Commented [19]: really? are these implementation level decisions designating routes? was this clear in the PRMP?

Commented [MEM20]: Jon Beck – is this accurate?

The ARMPAs respect valid existing rights.

The ARMPAs do not contain decisions for the mineral estates of lands located in the planning area for lands under the jurisdiction of other Federal agencies such as the Forest Service, or for private or State-owned lands and minerals that are not administered by the BLM. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions include:

- *Statutory requirements.* The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy.* The decision will not change BLM's obligation to conform to current or future National policy.
- *Funding levels and budget allocations.* These are determined annually at the National level and are beyond the control of the State/District of Field offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may exist as stand-alone decisions. These ARMPAs do not contain implementation decisions. Future activity-level plans will address the implementation of the ARMPAs. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

Commented [21]: except in Idaho for travel management decisions?

Commented [LLM22]: I just have to put my two cents in here….the travel management decisions in Idaho are area-wide decisions (open, limited, closed). All lands in the Idaho planning area were put into a limited category. Period!

Commented [MEM23]: Jon Beck – same comment as above.

2.4 Modifications and Clarifications

During preparation of the ARMPAs for all four sub-regions, minor changes were made to the Proposed RMP Amendments. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency review. Clarifications and corrections made since the Proposed RMP Amendments were published on May 29, 2015 are hereby adopted by this ROD.

Based on internal review, the following modifications/clarifications were made to all of the ARMPAs in the Great Basin. The management actions did not change as a result of these modifications/clarifications.

- The plans were reformatted for consistency across the Great Basin; the order of management actions and the prefixes for the goals, objectives, and management actions were changed in the Great Basin sub-regions in the combined Record of Decision to provide consistency between the Great Basin amendments.
- All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. This is because the U.S. Forest Service has completed a separate ROD and Land and Resource Management Plan Amendment under their planning authorities
- [Clarification - Consistent drop-in language related to habitat mapping changes will be discussed here once final drop-in language is provided.]
- [Clarification - Consistent drop-in language related to Sagebrush Focal Area prioritization for other activities language will be discussed here once final drop-in language is provided. This does not have to be included if the planning area does not have an SFA.]
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions
- As a result of internal BLM reviews, the Greater Sage-Grouse Adaptive Management Strategy in each ARMPS were slightly revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.
- ~~Wildlife~~ Wildfire ~~Suppression~~ suppression management actions was modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.

- *[Clarification – Consistent drop-in language related to the exception language for the three priority transmission projects (clarifying that these priority projects will incorporate Greater Sage-Grouse conservation measures) will be discussed here once final drop-in language is provided.] [If the planning area does not include the Gateway West, Boardman to Hemingway, and TransWest Express, or Gateway South transmission project, you can delete this bullet.]*

Commented [MEM24]: This section will updated once final drop-in language is completed.

Additional modifications and clarifications specific to each sub-region ARMPA are summarized below.

2.4.1 Idaho and Southwestern Montana

General Changes

- All exception language that was in the FEIS in various places was grouped into a stipulation appendix and added it to the ARMPA as Appendix G Stipulations.
- Appendix G Anthropogenic Disturbance and Adaptive Management from the Proposed RMPA, which is now Appendix E in the ARMPA was modified to delete the reference to Tables 2 to 7. Tables 2 to 7 were deleted from the FEIS Appendix G before it was made available to the public for protest, but the reference was not deleted in text of the Appendix. This discrepancy was identified during protest resolution and by the Governor during the Governor's Consistency Review. These values will be calculated after the signing of the ROD (see Adaptive Management below).
- Many editorial changes including, deleting repeated numbers, spelling errors, etc, were made when finalizing the ARMPA.

Special Status Species

- Greater Sage-grouse Management Areas MA- 10, third bullet from the PMPA which is now MD SSS 10 in the ARMPA had the following sentence added as an accepted recommendation made by the Governor during the Governor's Consistency Review to clarify management and conservation action prioritization in SFA and:
  "Management and conservation action prioritization will occur at the Conservation Area (CA) scale and be based on GRSG population and habitat trends: Focusing management and conservation actions first in SFAs followed by areas of PHMA outside SFAs."
- Deleted the Seasonal Timing Restrictions from Appendix C FEIS to reduce redundancy because these restrictions were already in the Required Design Features Appendix.

Lands and Realty

- Lands and Realty LR-14 from the Proposed RMPA, which is now MD LR 13 in the ARMPA, was modified to remove the statement that lands in PHMA, IHMA, and GHMA would only be available for disposal through exchange. This was removed because it was not consistent with BLM policy and the net conservation gain clause in MD LR-13 will provide assurance that disposals through any method would be beneficial to GRSG.

2.4.2 Nevada and Northeastern California

General Changes

- Editorial changes such as changing 'should' to 'shall', and 'would' to 'will' to reflect the final decision language.
- Re-categorizing some of the Management Decisions into other common resource programs. For example, all of the Fire and Fuels management decisions are all numbered under FIRE, and are not split into different sub-category names.
- Re-lettering of the critical Appendices, and deletion of those that are no longer applicable for the ARMPA.

Special Status Species

- Added clarity to MD SSS 2 A 3, by describing what energy and mining facilities to which this decision would apply; taken directly from the Disturbance Appendix E.
- Added clarity to MD SSS 3A, by including references to valid existing rights and applicable law for the requirement of a 'net conservation gain'.
- Specified in MD SSS 8 that this activity would be coordinated with NDOW or CDFW, and that breeding activity surveys would be for actions involving mineral activities and rights-of-ways.
- Deleted Action PR 4 from the Proposed LUPA because BLM does not manage landfills and transfer stations.

Adaptive Management

- Moved the Adaptive Management Strategy section out of Chapter 2 and made it into Appendix J; moved the Adaptive Management decisions under MD SSS 17 – MD SSS 22.
- Clarified under MD SSS 21 that BLM will coordinate with NDOW, and that the decision was specific to mineral activities and rights-of-way actions.

Fire and Fuels Management

- Deleted 'field offices and districts' from MD FIRE 3, as there will be a multi-layer approach to coordination, including BLM State Offices.
- In Objective FIRE 3, added 'in SFAs first' to provide more emphasis to the SFA over the rest of the PHMA for this action.
- Modified MD FIRE 26 to delete 'Districts', as there will be a multi-layer approach to identifying treatment needs for wildfire and invasive species management across the state.
- Added 'USFWS' as a coordination entity to MD FIRE 31, when ensuring that proposed sagebrush treatments are coordinated with the BLM and State fish and wildlife agencies.

Livestock Grazing

- Management Decision LG 5 was modified to add supplementary management actions and clarifies that the potential modifications include, "but are not limited to" to actions on the list.
- Management Decision LG 5 was modified to make it clear that the management strategies listed are not limited to just those listed under LG 5 by adding "but are not limited to". This was added to clarify a misunderstanding in a protest letter.
- Management Decision LG 7 was clarified to state that "AUMs cannot be applied to another pasture that is already being used by livestock."
- Management Decision LG 15 was modified to state that removing or modifying water developments must be done "In accordance with state water law and…".
- The following statement was added to LG 21 from the Proposed RMP Amendment which is still is LG 21 in the ARMPA: "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

Lands and Realty

- In order to resolve a protest, MD LR 3 was modified to state that corridors will be 3,500 feet in width… "or a different width is specified for congressional designated corridors". This is in response to the Lincoln County Conservation Recreation Development Act (2204) which included congressionally designated corridors that were not included in the plan amendment or the corridor map. The corridor map (Figure 2-10) was also modified to reflect the corridors tied to this Act.
- ~~Rewording of MD LR 19 to state that the federal and state road easements would continue to be managed as PHMA or GHMA, but the Federal Highway Administration and Nevada Department of Transportation would not be bound by the decisions in the plan amendment.~~ Action LR-LUA 21 from the Proposed Plan was deleted because the Federal Highway Administration and the Nevada Department of Transportation already have valid existing rights associated with their easements and ROWs, and this planning effort would not change the terms and conditions of their existing easements or ROWs. Making this a Management Action is repetitive and unnecessary.

Travel and Transportation

- Due to confusion that was outlined in protest letters and in the Governor's Consistency Review, MD TTM 2 was clarified that limiting off-highway travel to existing routes in PHMAs and GHMAs would be "subject to valid existing rights, such as for a mine under a plan of operations".

Commented [MEM25]: Lauren – can you rework this bullet to address Aaron's comment below?

Commented [26]: I don't think this is accurate. See our email exchange on this topic:

I think its an overstatement. It's not that nothing would apply to anything they could possibly do within the ROW, it's that we aren't changing the terms and conditions of that ROW, right? And I think the latter point is covered by the "subject to VER language". So, while I think you could clarify that separately to the cooperators, I'm not sure putting something explicit in there makes sense (and might lead others to question why BLM didn't call out their specific instruments).

Commented [LLM27]: Aaron – see if this works for you……

- Additional language was added to MD TTM 3 to make it clear that the bulleted "guidelines will be considered when undertaking future implementation-level travel planning". This was in response to protest misunderstandings. In addition, bullet three was amended by deleting "developed in this plan amendment", as the criteria is not developed through the plan amendment.

Mitigation

- In order to provide consistency across the Great Basin Regional Planning area, the two Mitigation management decisions were removed from the Adaptive Management, Monitoring, and Mitigation section of Chapter 2 in the Proposed LUPA (which are now separate Appendices) and inserted as management decisions independently under the Mitigation section.

2.4.3 Oregon

Required Design Features and Best Management Practices

- Appendix C was revised to include the statement that state-implemented conservation measures or protections may be considered as an alternative in the application of RDFs, as appropriate, on a site-specific basis.

Fire and Fuels Management

- Management action WFM 2, from the Proposed RMP Amendment, which is now MD FIRE 2 in the ARMPA, was modified to stress that the protection of human life is the single, overriding priority for fire and fuels management activities.

Livestock Grazing

- LG/RM 2 from the Proposed RMP Amendment, which is now MD LG 2 in the ARMPA, was modified to provide further clarification that changes in livestock grazing management through grazing authorization would occur only when livestock management practices are determined to not be compatible with meeting or making progress towards achieving habitat objectives and/or Land Health Standards. This modification was recommended by the Governor during the Governor's Consistency Review.
- The following statement was added to LG/RM 15 from the Proposed RMP Amendment which is now MD LG 15 in the ARMPA :"This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

Lands and Realty

- A typographical error in the socioeconomic analysis of the proposed RMPA was identified during the Protest period. Correction to this error in Section 4.20.3, page 4-345, is as follows:
- Paragraph beginning "Restrictions to ROW development under Alternatives B, C, D,E, F, and the Proposed Plan…" is replaced with: "Proposed management under Alternatives B, C, D, E, F, and the Proposed Plan could require investors to consider alternative power line ROW alignments or designs that could increase the costs of constructing new infrastructure. A 2012 WECC study, for example, provides information on transmission line construction costs per mile, which range from $927,000 to $2,967,000 depending on voltage and whether lines are single or double circuit lines. The same study provides cost multipliers for difficult terrains, reaching up to 2.25 in the case of forested lands (WECC 2012). Utilities and other infrastructure investors typically pass these costs on to consumers. Where the rate base is smaller, such as in rural areas, per-customer rate impacts associated with constructing a 10-mile, 230kV transmission line, for example, would be greater compared to the economic impacts on rate payers served by a larger metropolitan utility proposing the same line. Under Alternatives B, C, D, E, and the Proposed Plan, rate payers serviced by local utility providers with small rate bases would be impacted more by costs associated with added route lengths or infrastructure design requirements compared with rate payers serviced by larger, multi-state providers. Where technically and financially feasible, Alternatives B, D, and the Proposed Plan identify burial of power lines as a design option to mitigate impacts on GRSG. New construction costs of underground transmission lines can be between 4 and 14 times higher compared to new overhead construction (PSC 2011), depending on terrain. In rural areas, burial of new distribution lines would be more than double the cost of new overhead construction. Burying existing distribution lines would likely cost between $400,000 and $500,000 per mile in rural areas (EIA 2012). Under all alternatives, where burying new lines would be technically unfeasible or result in costs that could not be absorbed by the rate payers, infrastructure investors would explore other route or design options that avoid impacts to GRSG habitat."

Commented [MEM28]: Joan and/or Jennifer – can you complete this statement?

Special Status Species (Greater Sage-Grouse)

- Objective SSS 6 was modified to clarify that the BLM will coordinate with the State of Oregon regarding proposed management changes, the implementation of conservation measures, mitigation, and site-specific monitoring related to adaptive management and anthropogenic disturbances. This modification was recommended by the Governor during the Governor's Consistency Review.

Leasable Mineral Resources

- Based on internal review, MLS 7 from the proposed RMP/RMP amendment, which is now MD MR 7 in the ARMPA, was modified to include all fluid mineral lease development, including geothermal permits to drill.

2.4.4 Utah

General Changes

- Throughout the Proposed RMP Amendment, the use of words like "would," "could," "should," and "may" were generally removed or revised to reflect the active management direction of an ARMPA rather than potential management presented when the Proposed RMP Amendment was one of many alternatives the agency could select.
- Language was added to Objective SSS-3 (Objective GRSG-3 in the Proposed RMP Amendment), MA-SSS-4 (MA-GRSG-4 in the Proposed RMP Amendment), MA-SSS-6 (MA-GRSG-6 in the Proposed RMP Amendment), Objective VEG-1, MA-VEG-1, MA-FIRE-3 and MA-FIRE-4 to clarify that landscapes that include populations of both GRSG and Utah prairie dog (UPD), a federally listed species, be managed for the benefit of both species. This addition is included to ensure that this objective is applied to all applicable objectives and management actions, not just the five actions in the Proposed RMP Amendment where this concept and language was already present.
- Throughout the Proposed RMP Amendment there were a number of references to coordinating with the State of Utah, Division of Wildlife Resources, or state biologists. These were all revised to note that such coordination would be with "the appropriate State of Utah agency." This clarification was made at the request of the Governor during the Governor's Consistency Review.
- The Proposed RMP Amendment introduced the term "biologically significant units" (BSU) for adaptive management and the disturbance cap to provide a consistent approach for managing and monitoring across the GRSG range. In the Utah Sub-Region, the BSU concept is the same as PHMA within population areas. As part of resolving protests, the ARMP was revised to note that "BSUs" are PHMA within population areas. Whenever the term BSU was used, it was replaced with the more descriptive text, with a parenthetical reference to BSUs for the purposes of coordinating across state lines.

Special Status Species (formerly Greater Sage-Grouse)

- Objective GRSG-1 from the Proposed RMP Amendment, which is now Objective SSS-1 in the ARMPA, was changed to remove reference to WAFWA management zones when addressing designation of PHMA. This change was made during the Governor's Consistency Review to more closely reflect the management in the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah (2013).
- MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, was revised to include the following text: "The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate." This is consistent with the planning criteria contained in the sixth bullet on page 1-20 of the Final EIS. This language

was added based on an accepted recommendation made by the Governor during the Governor's Consistency Review.

- The language of MA-GRSG-1 from the Proposed RMP Amendment, which is now MA-SSS-1 in the ARMPA, regarding non-habitat areas within PHMA and GHMA was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text more accurately reflected the intent behind the management action.
- The introductory language of MA-GRSG-3 from the Proposed RMP Amendment, which is now MA-SSS-3 in the ARMPA, was revised to clarify the intent of the action. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action and to focus on land uses that have been identified as threats to GRSG.
- The language of MA-GRSG-3e from the Proposed RMP Amendment, which is now MA-SSS-3e in the ARMPA, was revised to clarify the intent of the noise restrictions. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action to focus on land uses that have been identified as threats to GRSG. Further, language was added to identify when "ambient" noise levels would be assessed to avoid managing for continual, incremental increases in noise levels.
- The language of MA-GRSG-6 from the Proposed RMP Amendment, which is now MA-SSS-6 in the ARMPA, was revised to clarify the intent of GRSG management outside PHMA/GHMA. This revision was made as a result of internal reviews to ensure the text accurately reflects the intent behind the management action. The purpose of this action is to provide direction regarding management of areas outside PHMA/GHMA that have been treated to improve GRSG habitat. The change was necessary to avoid implication of changing allocations or altering PHMA/GHMA boundaries outside a planning process while minimizing conflicting land uses in areas where an investment in increasing GRSG habitat have been made.

<u>Livestock Grazing</u>

- The language of MA-GRA-6 from the Proposed RMP Amendment, which is now MA-LG-6 in the ARMPA, was revised. The concepts and intent did not change, but the text was revised to align with similar concepts and intent that was present in the livestock grazing sections in GRSG amendments throughout the Great Basin.
- The following statement was added to MA-GRA-18 from the Proposed RMP Amendment, which is now MA-LG-18 in the ARMPA: "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3."
- Definitions for "grazing relinquishments" and "transfer of grazing preferences" were added to the glossary in order to inform readers what these statements refer to when applied to certain management decisions.

2.4.2 Protest Resolution

BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by BLM's planning decisions to protest proposed planning decisions within 30 days from the date the Notice of Availability of the Proposed

RMP/Final EIS was published in the Federal Register (May 29, 2015). Below are descriptions of the protest resolution process for each of the four Great Basin Region PRMPAs/FEISs.

The Director concluded that the BLM followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed Land Use Plan Amendments/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The BLM Director resolved the protests without making significant changes to the Proposed Land Use Plan Amendments/Final EISs, though minor clarifications were made and are summarized in Section 2.4.1. The BLM Director's decisions on the protests are summarized in each of the PRMPAs/FEISs Director's Protest Resolution Reports, which are available on the following BLM website: http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html.

2.4.2.1 Idaho and Southwestern Montana

For the Idaho and Southwestern Montana GRSG Proposed LUPA/Final EIS, the BLM Director received 20 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed as it did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty, and
- travel and transportation management.

2.4.2.2 Nevada and Northeastern California

For the Nevada and Northeastern California GRSG Proposed LUPA/Final EIS, the BLM Director received 40 timely protest submissions. All of the protesting parties had standing; however, two

submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- Air Quality,
- Climate Change,
- Noise,
- ACECs,
- solid minerals,
- special status species,
- lands with wilderness characteristics,
- lands and realty,
- tribal issues,
- wild horse and burros, and
- travel and transportation management.

2.4.2.3 Oregon

For the Oregon GRSG Proposed LUPA/Final EIS, the BLM Director received 30 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- monitoring,
- ACECs,
- fire and fuels management,
- solid minerals,
- special status species, and
- travel and transportation management.

2.4.2.4 Utah

For the Utah GRSG Proposed LUPA/Final EIS, the BLM Director received 43 timely protest submissions. All of the protesting parties had standing; however, three submissions were dismissed as they did not contain any valid protest points pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report included:

- compliance with FLPMA,
- compliance with NEPA,
- compliance with ESA,
- density and disturbance,
- adaptive management,
- land use allocations,
- GRSG habitat objectives,
- livestock grazing,
- mitigation,
- compliance with APA,
- compliance with the Energy Policy Act of 2005,
- air quality,
- climate change,
- Noise,
- ACECs,
- fire and fuels management,
- fluid minerals,
- solid minerals,
- special status species,
- lands and realty,
- travel and transportation management, and
- reasonable foreseeable development scenarios.

2.4.3 Governor's Consistency Review

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)). The general requirement in FLPMA/planning regulations is to coordinate the land use planning process with plans of other agencies, states, and local governments to the extent consistent with law (see FLPMA s. 202(c)(9) and 1610.3-1(a)); and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with federal law, or to maximum extent practical) (see 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to state, local, and tribal land use plans and provided meaningful public involvement of the Proposed RMP Amendments/Final EISs.

The BLM is aware that there are specific state laws and local plans relevant to aspects of public land management that are discrete from, and independent of, federal law. However, the BLM is bound by federal law. As a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that BLM's land use plans be consistent with officially-approved state and local plans only if those plans are consistent with the purposes, policies, and programs of federal laws and regulations applicable to public lands. Where officially-approved state and local plans or policies and programs conflict with the purposes, policies, and programs of federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially-approved state and local policies and programs (as opposed to plans), this consistency provision only applies to the maximum extent practical. While county and federal planning processes, under FLPMA, are required to be as integrated and consistent as practical, the federal agency planning process is not bound by or subject to state or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Great Basin Region, the Governors of Idaho, Nevada, Oregon, and Utah submitted letters to their respective BLM State Directors identifying inconsistencies between the BLM's proposed RMP amendments and their state's or local governments' resource-related plans, policies and/or procedures, as well as other concerns that they had with the proposed planning documents. The BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected on August 6, 2015. These Governors were then provided with 30-days to appeal the BLM State Director's decisions to the BLM Director. By September 8, 2015, the BLM Director received appeals from.

Commented [mem29]: Need to update when GCR process is towards completion.

In some instances, modifications to the ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications to the ARMPAs were made and are summarized in Section 2.4.1.

3. ALTERNATIVES

3.1 Alternatives Considered

Each of the Great Basin sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs in order to meet in the purpose and need of this effort to identify and incorporate appropriate management direction in LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. All management under any of the alternatives complied with federal laws, rules, regulations, and policies.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping, and to

maintain or increase GRSG abundance and distribution in the planning area. While the land use plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMP amendment. The goal was met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law there are typically few or no distinctions between alternatives.

3.1.1 Alternative A – No Action Alternative

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction derived from the existing field/district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

This alternative was not selected as the ARMPAs because it did not meet the purpose and need of this plan amendment. This alternative did not include changes that are needed to be made to the existing decisions based on the USFWS 2010 listing petition decision that identified inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative did not incorporate the best available science pertaining to GRSG or its habitat.

3.1.2 Alternative B: National Technical Team Report Alternative

Alternative B was based on the conservation measures contained within the National Technical Team (NTT) Report. The GRSG National Technical Team (NTT), comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed *A Report on National Greater Sage-Grouse Conservation Measures* in December, 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable sage-grouse populations, and which focused on the threats (75 FR 13910) in each of the regional WAFWA Sage-Grouse Management Zones. The NTT Report proposed conservation measures based on habitat requirements and other life history aspects of sage-grouse and described the scientific basis for the conservation measures proposed within each program area. The Report also provided a discussion and emphasized the importance of standardizing monitoring efforts across the WAFWA Sage-Grouse Management Zones. The Report can be accessed at:

http://www.blm.gov/style/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSG%20Tech%20Team%20Report.pdf

The BLM's Washington Office Instructional Memorandum (IM) Number 2012-044 directed the sub-regional planning efforts to analyze the conservation measures developed by the NTT, as appropriate, through the land use planning process and NEPA.

Alternative B would exclude ROW development in PHMA and avoid development in GHMA, would close PHMA to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals, and would recommend withdrawal from locatable mineral entry in all PHMA. These management actions would reduce surface disturbance in PHMA and would minimize disturbance in GHMA, thereby maintaining GRSG habitat. Management actions for wildfire would focus on suppression in PHMA and GHMA, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue with similar impacts under Alternative B as under Alternative A. The best management practices (BMPs) proposed in the NTT report would be included as required design features as part of Alternative B and are listed in Appendix C, Required Design Features (RDFs), of each of the attached ARMPAs.

This alternative was not selected in its entirety as the ARMPAs because the majority of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMA, and few conservation measures in the Report were provided for in GHMA. As a result, this alternative did not provide adequate conservation in GHMA. .

3.1.3 Alternative C: Citizen Groups' Recommended Alternative One

Alternative C was based on a citizen groups' recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and was applied to all occupied GRSG habitat (PHMA and GHMA. Alternative C limited commodity development in areas of occupied GRSG habitat, and closed or excluded large portions of the planning area to many land uses. This included all PHMA and GHMA as being closed to livestock grazing, recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and non-energy leasable mineral development, and exclusion areas for right-of-ways. The Utah LUPA/Draft EIS combined this alternative with Alternative F (discussed below).

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture. For example, this alternative closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

3.1.4 Alternative D: Draft RMP Amendments' Preferred Alternative

Alternative D, which was identified as the Preferred Alternative in the Draft EISs, balanced opportunities to use and develop the planning area as well as conserving, maintaining, and enhancing GRSG and their habitat. Protective measures were applied to GRSG habitat, while still allowing for anthropogenic disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions based on BLM's analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMP Amendments/EISs, this alternative was modified to become the Proposed RMP Amendments and analyzed in the FEISs. The Preferred Alternatives, with slight variations, became the Proposed Plans in the FEISs.

In PHMA under Alternative D, there would be limitation on disturbance in GRSG habitat by excluding wind and solar energy development (except for certain counties in Southeastern Oregon where avoidance is applied), avoiding all other ROW development, applying no surface occupancy stipulations to fluid mineral development, and closing PHMA to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMA under Alternative D, allocations are less stringent, but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMA).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMA and GHMA, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

3.1.5 Alternative E: State/Governor's Alternative

Alternative E is the alternative provided by the State or Governor's offices for inclusion and analysis in the EISs. It incorporates guidance from specific state conservation strategies, if developed or recommendations from the state on management of Federal lands and emphasizes management of GRSG seasonal habitats and maintaining habitat connectivity to support population objectives. This alternative was identified as a co-Preferred Alternative in the Idaho and Southwestern Montana Draft EIS. California did not provide the BLM with a state GRSG conservation plan and under this alternative, reverted back to Alternative A, the no-action alternative.

For Nevada, Alternative E would apply an avoid, minimize, and mitigate strategy to reduce direct and indirect impacts on GRSG from surface-disturbing activities on BLM-administered lands. Effects on GRSG habitat from certain resource programs, such as grazing, lands and realty, wildfire management, and minerals, would not be directly addressed because allocation decisions were not part of the state's plan.

For Oregon, Alternative E contains GRSG conservation guidelines from Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. This document describes the Oregon Department of Fish and Wildlife's proposed management of GRSG on Federal lands. It also provides guidance for public land management agencies and land

managers for GRSG conservation. GRSG conservation guidelines in the state plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. The guidelines would also assist resource managers in achieving the population and habitat objectives of the state plan.

For Idaho, Alternative E incorporates proposed GRSG protection measures recommended by the State of Idaho. Management in Montana would remain unchanged from the current RMPs (Alternative A). Alternative E addresses the following primary threats: fire, invasive weeds, and infrastructure development. It also includes guidance for several secondary GRSG threats such as recreation, improper livestock grazing, and West Nile virus for BLM and Forest Service programs that affect GRSG or its habitat.

For Utah, the planning area includes all occupied GRSG habitat in Utah. Alternative E1 is based on the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah and would apply to all BLM-administered lands in Utah. In alternative E1 conservation measures would be applied to 11 areas that the state identified, called Sage-Grouse Management Areas (SGMAs). Emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species. Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMAs. Occupied habitat outside of the state-identified SGMAs would not receive new management protection. They would continue to be managed according to the GRSG actions in existing RMPs and conservation measures associated with existing activity-level plans.

This alternative was not selected in its entirety as the ARMPAs because some components of the state's plans were not consistent with the purposes, policies and programs of Federal laws and regulations applicable to public lands. However, many goals, objectives, and management actions in the alternative were carried forward.

3.1.6 – Alternative F: Citizen Groups' Recommended Alternative Two

Alternative F is also based on a citizen group recommended alternative. This alternative emphasizes improvement and protection of habitat for GRSG and defines different restrictions for PHMA and GHMA. Alternative F would limit commodity development in areas of occupied GRSG habitat, and would close or designate portions of the planning area to some land uses. This alternative does not apply to the Utah sub-regional planning effort, as it was combined with Alternative C. Under Alternative F, wildfire suppression would be prioritized in PHMA. Concurrent vegetation management would emphasize sagebrush restoration and enhancement. Alternative F would reduce livestock and wild horse and burro management utilization by 25 percent within PHMA and GHMA.

This alternative was not selected in its entirety as the ARMPAs because it limited the use of public land in PHMA and GHMA to such as extent that it did not give adequate accommodation to local needs, customs, and culture.

3.1.7 – Proposed Plan Amendment

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft RMP Amendments/EISs, the BLM developed the Proposed Amendments/Final EISs for managing BLM-administered lands. The Proposed Amendments/Final EISs focused on addressing public comments, while continuing to meet the BLM's legal and regulatory mandates. The Proposed Amendments/Final EISs are a variation of the preferred alternatives (Alternative D) and are within the range of alternatives analyzed in the DEISs. The Proposed Plans, with slight variations (as outlined in Section 2.5 of this ROD), became ARMPAs.

3.1.8 Environmentally Preferable Alternative

Council on Environmental Quality (CEQ) regulations require that a ROD state which alternatives were considered to be "environmentally preferable" (40 CFR 1505.2(b)). Question 6A of CEQ's 40 most-asked questions regarding CEQ's NEPA regulations defines that term to ordinarily mean the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMP Amendments/Final EISs is the most environmentally preferable. However, NEPA expresses a continuing policy of the federal government to "use all practicable means and measures…to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (Section 101 of NEPA).

3.2 Alternatives Considered But Not Analyzed in Detail

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations;
- They did not meet the purpose and need;
- The alternative was already captured within the range of alternative analyzed in the EIS;
- They were already part of an existing plan, policy, or administrative function; or
- They did not fall within the limits of the planning criteria.

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Section 2.11of each of the sub-regional Proposed Amendments/Final EISs.

<u>Idaho and Southwestern Montana</u>

- USFWS-Listing Alternative

- Elimination of Recreational Hunting Alternative
- Predation Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Consideration of Coal Mining Alternative

Nevada and Northeastern California

- Close All or Portions of PHMA or GHMA to OHV Use Alternative
- Elko County Sage-Grouse Plan Alternative
- Increase Grazing Alternative

Oregon

- USFWS-Listing Alternative
- Elimination of Livestock Grazing from all BLM Lands Alternative
- Increase Livestock Grazing Alternative
- Close All or Portions of PHMA or GHMA to OHV Use Alternative

Utah

- USFWS-Listing Alternative
- Increase Livestock Grazing Alternative
- Make GRSG Habitat Available for Oil Shale and Tar Sands Alternative
- Citizen Proposed Alternatives (in their entirety)
- Adoption of the State of Utah's Sage-Grouse Management Areas as PHMA for all Alternatives
- Use of Other Habitat Maps Alternatives
- County Sage-Grouse Management Plans Alternative
- Conservation Objectives Team (COT) Report Alternative
- BLM Policies and Regulations Alternative

4. PUBLIC INVOLVEMENT, CONSULTATION AND COORDINATION

BLM land use planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures implementing NEPA, as well as specific BLM planning and NEPA policies. The NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed alternatives.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Great Basin Region ARMPAs. These efforts were achieved through Federal Register notices, public formal and informal meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related Web sites. This section documents the outreach efforts that have occurred to date.

4.1 Public Involvement

The scoping period for the National GRSG Planning Strategy, including the four sub-regional planning areas in the Great Basin Region, began with the publication of the NOI in the Federal Register on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February of 2012, the BLM hosted a series of public open house scoping meetings across Northeastern California, Idaho, Southwestern Montana, Nevada, Oregon and Utah. A final National GRSG Planning Strategy Scoping Report was released in May 2012.

A Notice of Availability (NOA) for the Idaho and Southwestern Montana, Nevada and Northeastern California, and Utah Draft RMP Amendments/EISs were published in the Federal Register on November 1, 2013. The Oregon Draft RMP Amendment/EIS was released to the public on November 26, 2013.

For the Great Basin Region GRSG Proposed RMP Amendments/FEIS, Idaho and Southwestern Montana conducted seven public meetings, Nevada and Northeastern California conducted seven public meetings, Oregon conducted seven public meetings, and Utah conducted eight public meetings between November 2013 and January 2014.

Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were considered and incorporated, as appropriate, into the Proposed Plan Amendments. The Great Basin Region received approximately 4,990 substantive comments, contained in 74,240 submissions during the four Draft EISs' comment periods. Comments on the Draft RMP Amendments/EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed Plan Amendments. Public comments resulted in the addition of clarifying text, but did not significantly change Proposed RMP Amendments.

A Notice of Availability (NOA) for the Great Basin Region GRSG Proposed RMP Amendments and Final EISs for the Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah Sub-Regions were released on May 29, 2015. The release of the EPA's NOA initiated a 30 day public protest period and a 60 day governor'' consistency review. Refer to **Section 2.5** for a full description of the protest period and governor's consistency review outcomes.

4.2 Cooperating Agencies

A cooperating agency is any federal, state, or local government agency or Native American tribe that enters into a formal agreement with the lead federal agency to help develop an environmental analysis. Cooperating Agencies and tribes "work with the BLM, sharing knowledge and resources, to achieve

desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other federal, state, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal Memorandum of Understanding (MOU) for the National GRSG Planning Strategy with the USFWS and the U.S. Forest Service. In addition, the Great Basin sub-regions also invited local, state, other federal, and tribal representatives to participate as Cooperating Agencies for these RMP Amendments/EISs. In total, there were 13 MOUs signed with Federal agencies, 10 MOUs signed with state agencies, 55 MOUs signed with counties, and 5 MOUs signed with tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and also outlines their respective roles and responsibilities in the planning and NEPA processes. Additional information can also be found in Chapter 6 of each of the Proposed Amendments/FEISs. These cooperating agencies divided by sub-region are provided below:

Great Basin Region-Wide
US Fish and Wildlife Service
US Forest Service

Idaho and Southwestern Montana
Beaverhead County Commissioners
Bingham County Commissioners
Blaine County Commissioners
Cassia County Commissioners
Clark County Commissioners
Craters of the Moon National Monument
Custer County Commissioners
Fremont County Commissioners
Idaho Association of Counties
Idaho Department of Fish and Game
Idaho Governor's Office of Species Conservation
Idaho National Guard
Jefferson County Commissioners
Lemhi County Commissioners
Madison County Commissioners
Montana Fish, Wildlife and Parks
Natural Resources Conservation Service
Owyhee County Commissioners
Power County Commissioners
Twin Falls County Commissioners

US Department of Defense
US Department of Energy (INL)

Nevada and Northeastern California
Churchill County
Elko County
Eureka County
Humboldt County
Lander County
Lassen County
Lincoln County
Mineral County
Modoc County
Natural Resources Conservation Service
Nevada Department of Transportation
Nevada Department of Wildlife
Nevada Department of Conservation and Natural Resources
Nye County
Pershing County
Pyramid Lake Paiute Tribe
Storey County
Summit Lake Paiute Tribe
Susanville Indian Rancheria
US Department of Defense
US Federal Highway Planning Administration
Washoe County
Washoe Tribe
White Pine County

Oregon
Crook County
Deschutes County
Harney County
Harney Soil and Water Conservation District US
Lake County
Malheur County
Natural Resources Conservation Service
Oregon Department of Fish and Wildlife
Oregon State University
US Federal Energy Regulatory Commission

Utah
Beaver County

Box Elder County
Carbon County
Confederated Tribes of the Goshute Indian Reservation
Duchesne County
Emory County
Garfield County
Grand County
Iron County
Kane County
Lincoln County
Miller County
Piute County
Rich County
San Pete County
Sevier County
State of Utah (PLPCO)
Sweetwater County
Sweetwater County Conservation District
Tooele County
Uinta County (UT and WY)
Utah County
US Department of Defense
Wayne County
Natural Resources Conservation Service

4.2 FWS Section 7 Consultation

Consultation with FWS is required under Section 7(c) of the ESA before the start of any BLM project that may affect any federally listed or endangered species or its habitat. These planning processes are considered a major project, and the four Great Basin sub-regional Final EISs defined potential impacts on threatened and endangered species as a result of management actions proposed in the alternatives analyzed in the FEISs. The FWS is a cooperating agency in this planning process. FWS staff participated in interdisciplinary team meetings and has been provided drafts of alternative decisions and analyses for discussion and input.

The BLM formally initiated Section 7 consultation with a letter to the USFWS prior to the release of the Draft RMP Amendments/EISs, and requested concurrence on which species would require consideration during consultation. Over the ensuing months, regular meetings were held to identify the species that would be analyzed in the biological assessment, to address which actions could affect those species, and to determine whether the implementation of the Proposed Plan Amendments "may affect" the species for which this consultation occurred.

Prior to the release of the Proposed Amendments/FEISs, the BLM formally submitted the biological assessments to the USFWS for review. The USFWS evaluated the biological assessments and concurred with ~~the~~ either a "no affect" or a "may affect, but will not adversely affect" determination via memorandum for Oregon, Nevada and Northeastern California, and Idaho and Southwestern Montana, which are appendices to each of these ARMPAs. For Utah, formal consultation was required with the FWS due to a "likely to adversely affect" determination associated with the Utah Prairie Dog, a threatened species under the ESA. The biological opinion from the FWS is attached to the Utah ARMPA (Appendix K).

4.3 Native American Consultation

In accordance with the National Historic Preservation Act and several other legal authorities (see BLM Manual 8120), and in recognition of the government-to-government relationship between individual tribes and the federal government, the BLM initiated Native American consultation efforts related to preparation of the four Great Basin sub-regional RMP Amendments/EISs. Coordination with Native American tribes occurred throughout the planning process. In December 2011, the BLM sent letters to 65 tribal governments providing initial notification of the RMP Amendments/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation efforts related to the planning process. Tribes have been participating in the RMP Amendments/EISs processes through numerous meetings and through personal BLM contacts.

The Draft RMP Amendments/EISs were provided to the Idaho, Montana, Nevada, California, Oregon, and Utah State Historic Preservation Offices (SHPO) concurrently with its release to the public. The Proposed Plan RMP Amendments/FEISs were also provided to the SHPOs.

5. REFERENCES

Commented [30]: EMPSi will develop.

6. APPROVAL

Land Use Plan Amendment Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Great Basin Region Approved Resource Management Plan (RMP) Amendments for the Nevada and Northeastern California, Oregon, Utah, and Idaho and Southwestern Montana sub-regions, as described in this Record of Decision. Notices of the public availability of the Proposed Plan Amendments and related Final Environmental Impact Statements (EIS) were published in the Federal Register on May 29, 2015. in the (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:

Neil Kornze Director Bureau of Land Management	Date

Secretarial Approval

I hereby approve the land use plan amendment decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Department regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

Janice Schneider Assistant Secretary for Land and Minerals Management Department of the Interior	Date

7. ATTACHMENTS

Appendix A. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix B. Nevada and Northeastern California Greater Sage Grouse Approved Resource Management Plan Amendment

Appendix C. Oregon Greater Sage-Grouse Approved Resource Management Plan Amendment

Appendix D. Utah Greater Sage-Grouse Approved Resource Management Plan Amendment

GBR_PUB_0316
7.7

Sarah Crump

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Tuesday, September 08, 2015 11:52 AM
To: nvca sagegrouse
Subject: Fwd: Standardized Maps

---------- Forwarded message ----------
From: **Anthony Titolo** <atitolo@blm.gov>
Date: Fri, Jul 17, 2015 at 12:39 PM
Subject: RE: Standardized Maps
To: Kevin Kovacs <kkovacs@blm.gov>
Cc: Diane McConnaughey <dmcconnaughey@blm.gov>, Stephanie Carman <scarman@blm.gov>, Jeremiah Rich <jrich@blm.gov>, Brett Fahrer <bfahrer@blm.gov>, Eva Karau <ekarau@blm.gov>, Brian Hockett <blhocket@blm.gov>, Brian Mueller <bmueller@blm.gov>, Christina O'Connell <coconnell@blm.gov>, Carolyn Sherve-Bybee <csherveb@blm.gov>, Jeanne Debenedetti Keyes <jkeyes@blm.gov>, Adam Carr <acarr@blm.gov>, Joan Suther <jsuther@blm.gov>, Jonathan Beck <jmbeck@blm.gov>, Leisa Wesch <lwesch@blm.gov>, Mary Bloom <mbloom@blm.gov>, Pamela Murdock <pmurdock@blm.gov>, Quincy Bahr <qfbahr@blm.gov>, Ruth Miller <ramiller@blm.gov>, Jennifer Fleuret <jfleuret@blm.gov>, John Carlson <jccarlso@blm.gov>, Kathleen Bockness <kbocknes@blm.gov>, Randall Schardt <rschardt@blm.gov>, Todd Yeager <todd_yeager@blm.gov>, Douglas Diekman <ddiekman@blm.gov>, Jennifer Frazer <jfrazer@blm.gov>, Sheila Cain <scain@blm.gov>, Claudia Campbell <c2campbe@blm.gov>, Michele Johnson <srjohnso@blm.gov>, Johanna Munson <jmunson@blm.gov>, Matthew Magaletti <mmagalet@blm.gov>, Frank Quamen <fquamen@blm.gov>, Lauren Mermejo <lmermejo@blm.gov>

We have resolved Kevin's question. He was limiting the display of habitat on the allocation maps to just BLM decision space. *The allocation maps should be depicting all habitat (outline for PHMA, gray for GHMA).* Although we discussed this on the calls, it is not explicitly outlined in the document. Apologies for the confusion that may have caused anyone.

Oregon has provided all of their maps, feel free to take a look (\\blm\dfs\loc\EGIS\OC\Wildlife\Transfers\Incoming\Plan_Maps\Oregon). If you have questions on their maps, please contact me directly and I will bring any items to their attention as needed.

Thanks again,

Anthony

Anthony Titolo

Natural Resources Assessment Project Manager

BLM National Operations Center

Denver Federal Center, Building 40

303-236-0446

From: Kovacs, Kevin [mailto:kkovacs@blm.gov]
Sent: Friday, July 17, 2015 12:47 PM
To: Anthony Titolo
Cc: Diane McConnaughey; Stephanie Carman; Jeremiah Rich; Brett Fahrer; Eva Karau; Brian Hockett; Brian Mueller; Christina O'Connell; Carolyn Sherve-Bybee; Jeanne Debenedetti Keyes; Adam Carr; Joan Suther; Jonathan Beck; Leisa Wesch; Mary Bloom; Pamela Murdock; Quincy Bahr; Ruth Miller; Jennifer Fleuret; John Carlson; Kathleen Bockness; Randall Schardt; Todd Yeager; Douglas Diekman; Jennifer Frazer; Sheila Cain; Claudia Campbell; Michele Johnson; Johanna Munson; Matthew Magaletti; Frank Quamen; Lauren Mermejo
Subject: Re: Standardized Maps

Doing that would leave the PHMA as the only habitat type visible (because of the outline). Would we still want to leave the other 2 habitat types in the legend if they are not visible in the map? We had only talked about removing the patches from the allocation decision but it seems inconsistent to remove some (not visible) things form the legend but leave others.

~~~~~~

Kevin L. Kovacs
Natural Resource Specialist (GIS)
Bureau of Land Management

Eastern Montana/Dakotas District

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111 Garryowen Rd
Miles City, MT 59301
Ph: 406.233.2864 Fax: 406.233.2921
Email: kkovacs@blm.gov
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“There is a theory which states that if ever anyone discovers exactly what the universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable.

There is another theory which states that this has already happened."

-Douglas Adams-

On Fri, Jul 17, 2015 at 12:39 PM, Anthony Titolo <atitolo@blm.gov> wrote:

So your decision space (allocation data) covers all habitat. My advice would be to remove the "Outside the BLM Decision Area" text and leave the habitat patches.

Perhaps you can shoot me an example?

Thanks Kevin,

Anthony

Anthony Titolo

Natural Resources Assessment Project Manager

BLM National Operations Center

Denver Federal Center, Building 40

303-236-0446

From: Kovacs, Kevin [mailto:kkovacs@blm.gov]
Sent: Friday, July 17, 2015 12:33 PM
To: McConnaughey, Diane
Cc: Carman, Stephanie; Anthony Titolo; Jeremiah Rich; Brett Fahrer; Eva Karau; Brian Hockett; Brian Mueller; Christina O'Connell; Carolyn Sherve-Bybee; Jeanne Debenedetti Keyes; Adam Carr; Joan Suther; Jonathan Beck; Leisa Wesch; Mary Bloom; Pamela Murdock; Quincy Bahr; Ruth Miller; Jennifer Fleuret; John Carlson; Kathleen Bockness; Randall Schardt; Todd Yeager; Douglas Diekman; Jennifer Frazer; Sheila Cain; Claudia Campbell; Michele Johnson; Johanna Munson; Matthew Magaletti; Quamen, Frank R; Lauren Mermejo
Subject: Re: Standardized Maps

I regards to the habitat on allocation maps (habitat outside of the decision area), if a habitat type (say PHMA) is completely covered by an allocation decision (thus not visible except for the outline), would that habitat type need to be displayed in the legend with the outside of the blm decision area label? The direction so far has been to remove legend items that are not visible in the map extent. Of the habitat areas, only the PHMA would be displayed if covered by an allocation because of the outline. Would only that item need to stay in the

legend? Also, since PHMA has an outline and it's placed above the allocation data, it's visible in all areas, so the label outside of the blm decision area is inaccurate to the reader. Any ideas?

~~~~~~
Kevin L. Kovacs
Natural Resource Specialist (GIS)
Bureau of Land Management

Eastern Montana/Dakotas District

Miles City Field Office
111 Garryowen Rd
Miles City, MT 59301
Ph: 406.233.2864 Fax: 406.233.2921
Email: kkovacs@blm.gov
~~~~~~

"There is a theory which states that if ever anyone
discovers exactly what the universe is for and why
it is here, it will instantly disappear and be replaced
by something even more bizarre and inexplicable.
There is another theory which states that this has
already happened."

-Douglas Adams-

On Fri, Jul 17, 2015 at 12:13 PM, Kovacs, Kevin <kkovacs@blm.gov> wrote:

The way I read it, the disclaimer only pertains to allocations where a decision was made about a resource. Fig 2-1 and 2-2 seem like they're giving context, not making decisions.

Kevin L. Kovacs
Natural Resource Specialist (GIS)
Bureau of Land Management

Eastern Montana/Dakotas District

Miles City Field Office
111 Garryowen Rd
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-Douglas Adams-

On Fri, Jul 17, 2015 at 12:09 PM, McConnaughey, Diane <dmcconnaughey@blm.gov> wrote:

Should Figures 2-1, and 2-2 also have the disclaimer ? And would BSU also refer to HMAs in the disclaimer ?

"Note: This map depicts Habitat Management Areas decisions for Greater Sage-Grouse protection as well as all other Habitat Management Areas decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding Habitat Management Areas decisions."

Diane McConnaughey

GIS Analyst

BLM, Idaho State Office

1387 S. Vinnell Way

Boise, ID 83709

voice 208-373-3967

email dmcconnaughey@blm.gov

On Fri, Jul 17, 2015 at 10:50 AM, Carman, Stephanie <scarman@blm.gov> wrote:
~~~~~~

Good catch - you are correct that the plans don't make allocations for grazing for GRSG. As such, yes, the language should be amended as you suggestion. Thanks!

Stephanie Carman

Bureau of Land Management

Sage-Grouse Project Coordinator

office 202-208-3408

mobile 202-380-7421

scarman@blm.gov

On Fri, Jul 17, 2015 at 12:46 PM, Kovacs, Kevin <kkovacs@blm.gov> wrote:

I have a question about the disclaimer being added within the allocation maps:

"Note: This map depicts XXX decisions for Greater Sage-Grouse protection as well as all other XXX decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding XXX decisions."

If the allocation decision is not at all based on SG, should I remove the portion of the statement relating to SG so as not to mislead the reader that the decisions being displayed pertain to SG habitat. The new statement might read something like this:

"Note: This map depicts XXX decisions for the management of all resources. Please refer to the ARMPA for details regarding XXX decisions."

My example is for livestock grazing where there were decisions made but SG was not a factor.

~~~~~~
Kevin L. Kovacs
Natural Resource Specialist (GIS)
Bureau of Land Management

Eastern Montana/Dakotas District

Miles City Field Office
111 Garryowen Rd
Miles City, MT 59301
Ph: 406.233.2864 Fax: 406.233.2921
Email: kkovacs@blm.gov
~~~~~~

"There is a theory which states that if ever anyone discovers exactly what the universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened."

-Douglas Adams-

On Thu, Jul 16, 2015 at 4:46 PM, Anthony Titolo <atitolo@blm.gov> wrote:

Hello everyone,

Thanks to those who called in today. We reviewed the modifications to the guidance document (sent late yesterday "_v2") and discussed a few additional items. Below is a summary of the decisions that were made on the call today:

1. If you do not have an allocation decision in a habitat category on the map, remove the corresponding legend patch.

2. If you do not have an allocation decision in *any* habitat category on the map, remove the entire row and readjust the legend entries to close gaps.

3. Figure 2-13 {EIS Name} Trails and Travel Management – Add (OHV) to the end of the map title ***if your plan only addresses OHV use.***

4. Section h., subsection i. the RGB values should read: "156, 156, 156" NOT "204, 204, 204"

5. In the template examples, IHMA was shown between PHMA and GHMA. If you have three habitat categories, place the third category where it makes sense in the hierarchy (Between PHMA and GHMA, after GHMA). Just be consistent for all maps.

6. I will set up a location in EGIS where you can drop your completed jpegs. I will circulate this path tomorrow am.

If you feel I have missed something, mischaracterized something, or just have additional questions do not hesitate to email or call!

Thanks again for everyone patience and efforts in this!

Anthony

Anthony Titolo

Natural Resources Assessment Project Manager

BLM National Operations Center

Denver Federal Center, Building 40

303-236-0446

From: Anthony Titolo [mailto:atitolo@blm.gov]
Sent: Wednesday, July 15, 2015 5:41 PM
To: Kevin Kovacs; Jeremiah Rich; Brett Fahrer; Eva Karau; Brian Hockett; Brian Mueller; Christina O'Connell; Carolyn Sherve-Bybee; Diane McConnaughey; Jeanne Debenedetti Keyes; Adam Carr; Joan Suther; Jonathan Beck; Leisa Wesch; Mary Bloom; Pamela Murdock; Quincy Bahr; Ruth Miller; Jennifer Fleuret; John Carlson; Kathleen Bockness; Mitchell Iverson; Randall Schardt; 'Todd Yeager'; Adam Carr; Brian Hockett; bmueller@blm.gov; Douglas Diekman; Jennifer Frazer; Kevin Kovacs; Leisa Wesch; Sheila Cain; 'Todd Yeager'
Cc: Johanna Munson; Matthew Magaletti; Stephanie Carman; Quamen, Frank R (fquamen@blm.gov); Lauren Mermejo
Subject: Standardized Maps

Attached is the modified document with changes highlighted. Also are two map packages (1 Portrait/ 1 Landscape) illustrating a four decision allocation map legend with 3 habitat categories.

If I have missed anyone, please forward. If you can't make the call tomorrow let me know and we can go through things at a time that will work for you.

Thanks,

Anthony

Anthony Titolo

Natural Resources Assessment Project Manager

BLM National Operations Center

Denver Federal Center, Building 40

303-236-0446

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, August 12, 2015 4:28 PM
To: nvca sagegrouse
Subject: Fwd: FW: Livestock - updated language question

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Wed, Feb 18, 2015 at 5:35 PM
Subject: FW: Livestock - updated language question
To: jmbeck@blm.gov, Quincy Bahr <qfbahr@blm.gov>, Randall Sharp <sharphay@att.net>
Cc: Joan Suther <jsuther@blm.gov>, holly.prohaska@empsi.com, Peter Gower <peter.gower@empsi.com>, jvialpando@blm.gov, Kathryn Dyer <kdyer@blm.gov>

Please see the WO response to a question on the WO grazing language concerning defined responses where NEPA would not have to be done again….Follow the trail from the bottom….this will be very helpful at the implementation phase.

Lauren

From: Carman, Stephanie [mailto:scarman@blm.gov]
Sent: Wednesday, February 18, 2015 1:14 PM
To: Suther, Joan; Vicki Herren; Matthew Magaletti; Michael Hildner; Lauren Mermejo
Subject: Re: Livestock - updated language question

I think that would be fine. We can also share this example/question with the rest of the regions to help them better understand.

Stephanie Carman

Bureau of Land Management

Sage-Grouse Project Coordinator (Acting)

office 202-208-3408

mobile 202-380-7421

scarman@blm.gov

On Wed, Feb 18, 2015 at 3:59 PM, Suther, Joan <jsuther@blm.gov> wrote:

Thanks. Yes, it does. Is there any reason not to include such an example in our narrative?

Joan Suther

Greater Sage-grouse Project Manager

Oregon Sub-region

541-573-4445 Office

541-589-0251 Cell

541-573-4411 Fax

On Wed, Feb 18, 2015 at 11:42 AM, Carman, Stephanie <scarman@blm.gov> wrote:

Hi Joan -

I have checked with Vicki, who checked with Kimberley Hackett in the Range Program, and we offer the following suggestion. In short, the potential response needs to be in the alternative that is chosen for the decision. Kim offers up other actions that could be in an alternative. Does this clarify?

For a permit renewal EA, riparian habitat in a few areas is not meeting desired conditions. Within a couple different alternatives, several approaches were considered to resolve the issue. For Alternative A, modification of the grazing season was applied ***and included a provision for fencing if the desired conditions were not met****. In this case,* ***the fencing is included as part of the decision, but no additional analysis or decision would be needed.***

In another example,

For Alternative A, modification of the grazing season was applied ***and included a provision for temporarily closing all or a portion of a pasture/allotment if the desired conditions were not met****. In this case,* ***the closure is included as part of the decision, but no additional analysis or decision would be needed.***

Stephanie Carman

Bureau of Land Management

Sage-Grouse Project Coordinator (Acting)

office 202-208-3408

mobile 202-380-7421

scarman@blm.gov

On Tue, Feb 17, 2015 at 6:55 PM, Suther, Joan <jsuther@blm.gov> wrote:

Hi all - this direction regarding NEPA is still unclear to me.

> - *The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMAs will include specific management thresholds based on GRSG Habitat Objectives Table and Land Health Standards (43 CFR 4180.2) and defined responses that will allow the authorizing officer to make adjustments to livestock grazing without conducting additional NEPA.*

Here is a short example of how we think this would be applied by having an adequate range of alternatives initially. Is this along the lines of what you are intending?

> *For a permit renewal EA, riparian habitat in a few areas is not meeting desired conditions. Within a couple different alternatives, several approaches were considered to resolve the issue. For Alternative A, modification of the grazing season was applied. In Alternative B, fencing was considered. Alternative A was the decision. Subsequent monitoring revealed that desired conditions were still not found. In this case, the fencing alternative would be a new decision, but no additional analysis would be needed.*

Joan Suther

Greater Sage-grouse Project Manager

Oregon Sub-region

541-573-4445 Office

541-589-0251 Cell

541-573-4411 Fax

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

From: Mermejo, Lauren [lmermejo@blm.gov]
Sent: Wednesday, September 02, 2015 4:46 PM
To: nvca sagegrouse
Subject: Fwd: Standardized Maps

---------- Forwarded message ----------
From: **Anthony Titolo** <atitolo@blm.gov>
Date: Thu, Jul 16, 2015 at 3:46 PM
Subject: RE: Standardized Maps
To: Kevin Kovacs <kkovacs@blm.gov>, Jeremiah Rich <jrich@blm.gov>, Brett Fahrer <bfahrer@blm.gov>, Eva Karau <ekarau@blm.gov>, Brian Hockett <blhocket@blm.gov>, Brian Mueller <bmueller@blm.gov>, Christina O'Connell <coconnell@blm.gov>, Carolyn Sherve-Bybee <csherveb@blm.gov>, Diane McConnaughey <dmcconnaughey@blm.gov>, Jeanne Debenedetti Keyes <jkeyes@blm.gov>, Adam Carr <acarr@blm.gov>, Joan Suther <jsuther@blm.gov>, Jonathan Beck <jmbeck@blm.gov>, Leisa Wesch <lwesch@blm.gov>, Mary Bloom <mbloom@blm.gov>, Pamela Murdock <pmurdock@blm.gov>, Quincy Bahr <qfbahr@blm.gov>, Ruth Miller <ramiller@blm.gov>, Jennifer Fleuret <jfleuret@blm.gov>, John Carlson <jccarlso@blm.gov>, Kathleen Bockness <kbocknes@blm.gov>, Randall Schardt <rschardt@blm.gov>, Todd Yeager <todd_yeager@blm.gov>, Douglas Diekman <ddiekman@blm.gov>, Jennifer Frazer <jfrazer@blm.gov>, Sheila Cain <scain@blm.gov>, Claudia Campbell <c2campbe@blm.gov>, Michele Johnson <srjohnso@blm.gov>
Cc: Johanna Munson <jmunson@blm.gov>, Matthew Magaletti <mmagalet@blm.gov>, Stephanie Carman <scarman@blm.gov>, "Quamen, Frank R" <fquamen@blm.gov>, Lauren Mermejo <lmermejo@blm.gov>

Hello everyone,

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Thanks again for everyone patience and efforts in this!

Anthony

Anthony Titolo

Natural Resources Assessment Project Manager

BLM National Operations Center

Denver Federal Center, Building 40

303-236-0446

From: Anthony Titolo [mailto:atitolo@blm.gov]
Sent: Wednesday, July 15, 2015 5:41 PM
To: Kevin Kovacs; Jeremiah Rich; Brett Fahrer; Eva Karau; Brian Hockett; Brian Mueller; Christina O'Connell; Carolyn Sherve-Bybee; Diane McConnaughey; Jeanne Debenedetti Keyes; Adam Carr; Joan Suther; Jonathan Beck; Leisa Wesch; Mary Bloom; Pamela Murdock; Quincy Bahr; Ruth Miller; Jennifer Fleuret; John Carlson; Kathleen Bockness; Mitchell Iverson; Randall Schardt; 'Todd Yeager'; Adam Carr; Brian Hockett; bmueller@blm.gov; Douglas Diekman; Jennifer Frazer; Kevin Kovacs; Leisa Wesch; Sheila Cain; 'Todd Yeager'
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Thanks,

Anthony

Anthony Titolo

Natural Resources Assessment Project Manager

BLM National Operations Center

Denver Federal Center, Building 40

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--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

						Natural Disturbance Return In		
Model	Class	Class code	Starting Age	Ending Age	Succeeds to Class	Wildfire - Lethal (1)	to Class	Wildfire - Lethal (2)
Basin Upland	Early	A	0	20	B		A	
Basin Upland	Mid	B	21	70	C		A	
Basin Upland	Late	C	71	200	C		A	
Basin Upland	Annual	D	0	200	D		D	no
Wyo Semidesert	Early	E	0	25	F		E	
Wyo Semidesert	Mid	F	26	75	G		E	
Wyo Semidesert	Late	G	76	200	G		E	
Wyo Semidesert	Annual	H	0	200	H		H	no
Wyo Upland	Early	I	0	15	J		I	
Wyo Upland	Mid	J	16	60	K		I	
Wyo Upland	Late	K	61	200	K		I	
Wyo Upland	Annual	L	0	200	L		L	no
Wyo Upland w/tree	Early	M	0	15	N		M	
Wyo Upland w/tree	Mid	N	16	60	O		M	
Wyo Upland w/tree	Late	O	61	200	O		M	
Wyo Upland w/tree	w/Con	P	61	200	P		M	
Wyo Upland w/tree	Annual	Q	0	200	Q		Q	no
Mtn Upland	Early	R	0	10	S		R	
Mtn Upland	Mid	S	11	50	T		R	
Mtn Upland	Late	T	51	200	T		R	
Mtn Upland	Annual	U	0	200	U		U	no
Mtn Upland w/tree	Early	V	0	10	W		V	
Mtn Upland w/tree	Mid	W	11	50	X		V	
Mtn Upland w/tree	Late	X	51	200	X		V	
Mtn Upland w/tree	w/Con	Y	51	200	Y		V	
Mtn Upland w/tree	Annual	Z	0	200	Z		Z	no
Low Sage Group	Early	AA	0	35	AB		AA	
Low Sage Group	Mid	AB	36	100	AC		AA	
Low Sage Group	Late	AC	101	200	AC		AA	
Low Sage Group	Annual	AD	0	200	AD		AD	no

ıtervals (YEARS) and the class that results (A, B, C, etc.)										
to Class	Wildfire - Mixed (1)	to Class	Wildfire - Mixed (2)	to Class	Drought	to Class	Insects & Disease	to Class	Conifer Encroach.	to Class
D				D					no	no
D				D					no	no
D				D					no	no
no			no	no					no	no
H				H					no	no
H				H					no	no
H				H					no	no
no			no	no					no	no
L				L					no	no
L				L					no	no
L				L					no	no
no			no	no					no	no
Q				Q					no	no
Q				Q					no	no
Q				Q						P
Q				Q					no	no
no			no	no					no	no
U				U					no	no
U				U					no	no
U				U					no	no
no			no	no					no	no
Z				Z					no	no
Z				Z					no	no
Z				Z						Y
Z				Z					no	no
no			no	no					no	no
AD				AD					no	no
AD				AD					no	no
AD				AD					no	no
no			no	no					no	no

Acres by Class by Population Area (Initial Conditions)							
Area 0	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7

Sage Grouse Habitat Modeling - Data Catalog

This is where we keep track of what we have and what we don't.

Update: 5-Dec-12 C.Morris

Analysis Area Shortname	Sub-population	Population	Mgt Zone	Sta	
				CA	ID
901	Central NV	Great Basin Core	3		
902	E-Central OR	Great Basin Core	4		X
903	Lake Area OR/NE CA/NW NV	Great Basin Core	5	X	
904	N-Central NV/SE OR/SW ID	Great Basin Core	4		X
905	NE NV/S-Central ID/NW UT	Great Basin Core	4		X
906	S-Central OR/N-Central NV	Great Basin Core	5		
907	SE NV/SW UT	Great Basin Core	3		
3001	Big Lost ID	Snake, Salmon, and Beaverhead	4		X
3002	Lemhi-Birch ID	Snake, Salmon, and Beaverhead	4		X
3003	Little Lost ID	Snake, Salmon, and Beaverhead	4		X
3004	N Side Snake ID	Snake, Salmon, and Beaverhead	4		X
3006	Upper Snake ID	Snake, Salmon, and Beaverhead	4		X
3807	SW WY/NW CO/NE UT/SE ID	Wyoming Basin	2		X
P0		Twin Bridges, MT	4		
P01		OR	4		
P02		MT	4		
P03		MT	4		
P04		OR	5		
P08		East Central, ID	4		X
P12		OR-CA	5	X	
P18		UT	3		
P20		NV	3		
P24		MT	4		
P27		UT	3		
P28		Sawtooth, ID	4		X
P29		UT	3		
P31		UT	3		
P32		UT	3		
P34		Weiser, ID	4		X
P37		MT	4		

NOTES: For details of each analysis area dataset, click on the analysis area tabs below.
For details of each sage type model, click on the model tabs below.

tes Involved					Ready to	Models Used (list is incomplete)							
MT	NV	OR	UT	Approx. Acres	model ?	Wyo1	Wyo2	Wyo3	Wyo4	Bas1	Bas2	Bas3	Bas4
	X			11,062,214	No								
				3,742,292	No								
	X	X		9,739,955	No								
	X	X		5,754,025	No	X	X			X			
	X		X	14,352,635	No	X	X			X			
	X	X		992,304	No								
	X		X	6,893,710	No								
				551,442	No							X	
				323,496	No							X	
				610,753	No							X	
				3,945,527	No			X					
				994,569	No								
			X	11,068,281	No						X		
X				176,644	No								
		X		435,267	No								
X				264,602	No								
X				1,054,770	No								
		X		4,048,133	No								
				1,580,779	No						X		
		X		1,210,357	No								
			X	3,248,195	No								
	X			3,263,957	No								
X				1,167,423	No								
			X	549,363	No								
				233,019	No								
			X	4,501,690	No								
			X	789,090	No								
			X	644,070	No								
				423,724	No			X			X		
X				212,565	No								

[MODEL TABS ARE NOT FINISHED YET]

Mtn1	Mtn2	Mtn3	Mtn4	Low1	Low2	Low3	Low4

901 Central Nevada

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
5	List of natural disturbances to include in the models (anything that is not a management act
6	Applicability of each disturbance to each class in each model (some disturbances don't occu
7	Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring
8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
9	List of disturbances which will have probability distributions applied to them (typically, this v
10	Fire history (necessary to calculate the probability distribution for wildfire, may also be used
11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

12	List of scenarios/alternatives to be modeled
13	List of management disturbances (i.e., treatments or activities) that define each scenario or
14	Applicability of management disturbances to EACH class in EACH veg type (which treatment
15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details
eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

ctivity and will disturb the natural successional pathway in terms of conditions or timing
ur in all classes of all models - we must specify which ones happen where
g in EACH class in EACH mode
eral Mtn Sage sends all acres back to early seral
s will be wildfire, but may also be drought and/or bugs
ed for drought and/or bugs, etc
s the classes in that veg type, e.g., 20% early seral, 50% mid-seral, 30% late sera

ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

902 East Central Oregon

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
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3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
5	List of natural disturbances to include in the models (anything that is not a management act
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8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
9	List of disturbances which will have probability distributions applied to them (typically, this v
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11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

12	List of scenarios/alternatives to be modeled
13	List of management disturbances (i.e., treatments or activities) that define each scenario or
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15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
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17	Cost for treatments (e.g., $ per acre for herbicide application)
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names for details
eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

ctivity and will disturb the natural successional pathway in terms of conditions or timing
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g in EACH class in EACH mode
eral Mtn Sage sends all acres back to early seral
s will be wildfire, but may also be drought and/or bugs
ed for drought and/or bugs, etc
s the classes in that veg type, e.g., 20% early seral, 50% mid-seral, 30% late sera

ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

903 Lake Area OR/NE CA/NW NV

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

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r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

904 N-Central NV/SE OR/SW ID

Data needed to model sage grouse habitat for this area:

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Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1 Area boundary (a GIS polygon)

2 List of veg type models needed(sagebrush species or species groups) [see tabs with Model n

- Wyo1
- Wyo2
- Bas1
- others needed but not yet identified

3 Class definitions for each class in each veg type (number of years from early seral to mid-ser

- see Wyo1
- see Wyo2
- see Bas1
- others needed but not yet identified

4 Acreage for each class in each veg type (number only, no polygons needed)

5 List of natural disturbances to include in the models (anything that is not a management act

- see Wyo1
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- see Wyo1
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7 Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring

- see Wyo1 return intervals are inconsistent
- see Bas1 return intervals are inconsistent
- others needed but not yet identified

8 Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser

- see Wyo1
- see Wyo2
- see Bas1
- others needed but not yet identified

9 List of disturbances which will have probability distributions applied to them (typically, this v

- wildfire
- drought ? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
- insects/disease? [either a Yes or a No; if Yes, is it the same as wildfire or different? If

10 Fire history (necessary to calculate the probability distribution for wildfire, may also be used

We have history for the ID portion. Is it OK to use that for the NV and OR portions as well?

11 Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

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names for details

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r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari

rnative or scenari

Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

905 NE NV/S-Central ID/NW UT

Data needed to model sage grouse habitat for this area:

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10 Fire history (necessary to calculate the probability distribution for wildfire, may also be used
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r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari

rnative or scenari

Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

906 S-Central OR/N-Central NV

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
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emova

907 SE NV/SW UT

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emova

3001 Big Lost River, Idaho

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	Wyo, but no valid model yet
	Bas3
	others needed but not yet identified
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names for details

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r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

3002 Lemhi River and Birch Creek, Idaho

Data needed to model sage grouse habitat for this area:

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emova

3003 Little Lost River, Idaho

Data needed to model sage grouse habitat for this area:

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ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

3004 North side, Snake River, Idaho

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
	Wyo3
	Bas1 or Bas2 ? or some acreage of both?
	others needed but not yet identified
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
	see Wyo3
	Bas1 or Bas2 ?
	others needed but not yet identified
4	Acreage for each class in each veg type (number only, no polygons needed)
5	List of natural disturbances to include in the models (anything that is not a management act
	see Wyo3
	Bas1 or Bas2 ?
	others needed but not yet identified
6	Applicability of each disturbance to each class in each model (some disturbances don't occu
	see Wyo3
	Bas1 or Bas2 ?
	others needed but not yet identified
7	Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring
	see Wyo3
	Bas1 or Bas2 ?
	others needed but not yet identified
8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
	see Wyo3
	Bas1 or Bas2 ?
	others needed but not yet identified
9	List of disturbances which will have probability distributions applied to them (typically, this v
	wildfire
	drought ? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
	insects/disease? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
10	Fire history (necessary to calculate the probability distribution for wildfire, may also be used
11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

12	List of scenarios/alternatives to be modeled
13	List of management disturbances (i.e., treatments or activities) that define each scenario or
14	Applicability of management disturbances to EACH class in EACH veg type (which treatment
15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren

19 Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details

eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

ctivity and will disturb the natural successional pathway in terms of conditions or timing

ur in all classes of all models - we must specify which ones happen where

g in EACH class in EACH mode

eral Mtn Sage sends all acres back to early seral

s will be wildfire, but may also be drought and/or bugs

f different, we need a data source similar to fire history
f different, we need a data source similar to fire history
ed for drought and/or bugs, etc
s the classes in that veg type, e.g., 20% early seral, 50% mid-seral, 30% late sera

ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

3006 Upper Snake River, Idaho

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1 Area boundary (a GIS polygon)
2 List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3 Class definitions for each class in each veg type (number of years from early seral to mid-ser
4 Acreage for each class in each veg type (number only, no polygons needed)
5 List of natural disturbances to include in the models (anything that is not a management act
6 Applicability of each disturbance to each class in each model (some disturbances don't occu
7 Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring
8 Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
9 List of disturbances which will have probability distributions applied to them (typically, this v
10 Fire history (necessary to calculate the probability distribution for wildfire, may also be used
11 Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

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16 Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17 Cost for treatments (e.g., $ per acre for herbicide application)
18 Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
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r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

3807 SW WY/NW CO/NE UT/SE ID (Utah and Bear Lake, Idaho, portions only; ignoring Wyoming a

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
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Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
	Bas2
	others needed but not yet identified
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
	see Bas2
	others needed but not yet identified
4	Acreage for each class in each veg type (number only, no polygons needed)
5	List of natural disturbances to include in the models (anything that is not a management act
	see Bas2
	others needed but not yet identified
6	Applicability of each disturbance to each class in each model (some disturbances don't occu
	see Bas2
	others needed but not yet identified
7	Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring
	see Bas2
	others needed but not yet identified
8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
	see Bas2
	others needed but not yet identified
9	List of disturbances which will have probability distributions applied to them (typically, this v
	wildfire
	drought ? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
	insects/disease? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
10	Fire history (necessary to calculate the probability distribution for wildfire, may also be used
11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

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16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

and Coloradc

e., natural disturbances onl

names for details

eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needec

ctivity and will disturb the natural successional pathway in terms of conditions or timing

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ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P0 Twin Bridges, MT

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
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8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
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10	Fire history (necessary to calculate the probability distribution for wildfire, may also be used
11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

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13	List of management disturbances (i.e., treatments or activities) that define each scenario or
14	Applicability of management disturbances to EACH class in EACH veg type (which treatment
15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details
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ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P01 Oregon

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
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Needed to evaluate current conditions and projected trends for a "no management" scenario, i.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model
3	Class definitions for each class in each veg type (number of years from early seral to mid-se
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11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additi

12	List of scenarios/alternatives to be modeled
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15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alte
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ re
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances only

names for details]
eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed)

ctivity and will disturb the natural successional pathway in terms of conditions or timing)
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eral Mtn Sage sends all acres back to early seral)
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ion to the 11 data items above)

r alternative
nts will apply to which classes in which veg types) for each alternative or scenario
rnative or scenario
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass)

moval)

P02 Montana

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
5	List of natural disturbances to include in the models (anything that is not a management act
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7	Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring
8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
9	List of disturbances which will have probability distributions applied to them (typically, this v
10	Fire history (necessary to calculate the probability distribution for wildfire, may also be used
11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

12	List of scenarios/alternatives to be modeled
13	List of management disturbances (i.e., treatments or activities) that define each scenario or
14	Applicability of management disturbances to EACH class in EACH veg type (which treatment
15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details
eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

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ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P03 Montana

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
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8	Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
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Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

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13	List of management disturbances (i.e., treatments or activities) that define each scenario or
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15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details
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ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P04 Oregon

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
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11	Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

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16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

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eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

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r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P08 East Central Idaho

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1 Area boundary (a GIS polygon)

2 List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
- Wyo, but no valid model yet
- Bas2
- others needed but not yet identified

3 Class definitions for each class in each veg type (number of years from early seral to mid-ser
- Wyo, but no valid model yet
- see Bas2
- others needed but not yet identified

4 Acreage for each class in each veg type (number only, no polygons needed)

5 List of natural disturbances to include in the models (anything that is not a management act
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- others needed but not yet identified

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7 Annual probability (or, inversely, the return interval in years) for EACH disturbance occuring
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- see Bas2
- others needed but not yet identified

8 Effects of each disturbance as applied to each class in each veg type (e.g., wildfire in mid-ser
- Wyo, but no valid model yet
- see Bas2
- others needed but not yet identified

9 List of disturbances which will have probability distributions applied to them (typically, this v
- wildfire
- drought ? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
- insects/disease? [either a Yes or a No; if Yes, is it the same as wildfire or different? If

10 Fire history (necessary to calculate the probability distribution for wildfire, may also be used

11 Desired conditions, expressed as a percentage distribution of the acres in a veg type across t

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16 Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17 Cost for treatments (e.g., $ per acre for herbicide application)

18 Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren

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e., natural disturbances onl

names for details

eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

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eral Mtn Sage sends all acres back to early seral

s will be wildfire, but may also be drought and/or bugs

f different, we need a data source similar to fire history
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ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P12 Oregon/California

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
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Needed to evaluate projected trends for "management" scenarios, i.e., EIS alternatives (in additio

12	List of scenarios/alternatives to be modeled
13	List of management disturbances (i.e., treatments or activities) that define each scenario or
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15	Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16	Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17	Cost for treatments (e.g., $ per acre for herbicide application)
18	Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19	Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details
eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

ctivity and will disturb the natural successional pathway in terms of conditions or timing
ur in all classes of all models - we must specify which ones happen where
g in EACH class in EACH mode
eral Mtn Sage sends all acres back to early seral
s will be wildfire, but may also be drought and/or bugs
ed for drought and/or bugs, etc
s the classes in that veg type, e.g., 20% early seral, 50% mid-seral, 30% late sera

ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

P18 Utah

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
Yellow	means we've got it, but it hasn't been verified, is incomplete, or has problems
Red	means it's missing and we're stuck until we get it

Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

1	Area boundary (a GIS polygon)
2	List of veg type models needed(sagebrush species or species groups) [see tabs with Model n
3	Class definitions for each class in each veg type (number of years from early seral to mid-ser
4	Acreage for each class in each veg type (number only, no polygons needed)
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emova

P20 Nevada

Data needed to model sage grouse habitat for this area:

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emova

P24 Montana

Data needed to model sage grouse habitat for this area:

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emova

P27 Utah

Data needed to model sage grouse habitat for this area:

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emova

P28 Sawtooth, Idaho

Data needed to model sage grouse habitat for this area:

Green	means we've got it, checked it, and it's ready to roll
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emova

P29 Utah

Data needed to model sage grouse habitat for this area:

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emova

P31 Utah

Data needed to model sage grouse habitat for this area:

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emova

P32 Utah

Data needed to model sage grouse habitat for this area:

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emova

P34 Weiser, Idaho

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Needed to evaluate current conditions and projected trends for a "no management" scenario, i.e.

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	Wyo3
	Bas2
	others needed but not yet identified
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	wildfire
	drought ? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
	insects/disease? [either a Yes or a No; if Yes, is it the same as wildfire or different? If
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r alternativ
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rnative or scenari
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emova

P37 Montana

Data needed to model sage grouse habitat for this area:

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14 Applicability of management disturbances to EACH class in EACH veg type (which treatment
15 Initial rate of application for EACH disturbance in EACH class in EACH veg type in EACH alterr
16 Effects of each management disturbance as applied (e.g., herbicide in Annual Grass/ Basin B

Optional data

17 Cost for treatments (e.g., $ per acre for herbicide application)
18 Outputs from treatments or activities (e.g., AUMs from grazing, or biomass tons from PJ ren
19 Values for outputs (e.g., $ per biomass ton from PJ removal)

e., natural disturbances onl

names for details
eral to late seral, and % canopy closure in each, plus annual grass and conifer, if needed

ctivity and will disturb the natural successional pathway in terms of conditions or timing
ur in all classes of all models - we must specify which ones happen where
g in EACH class in EACH mode
eral Mtn Sage sends all acres back to early seral
s will be wildfire, but may also be drought and/or bugs
ed for drought and/or bugs, etc
s the classes in that veg type, e.g., 20% early seral, 50% mid-seral, 30% late sera

ion to the 11 data items above

r alternativ
nts will apply to which classes in which veg types) for each alternative or scenari
rnative or scenari
Big Sage sends 50% of the acres to early seral and 50% back to Annual Grass

emova

Model Wyo1: Wyoming Big Sage

Analysis Areas that use this model:
904
905

Class A
Early Seral
0% to 10% canopy closure
0 to 20 years

Disturbances:	Return:	Goes to:	%:
wildfire (split effect)	20	A	?
		D	?
drought	100	A	100%
AG invasion	100	D	100%

Class B Mid Seral 10% to 25% canopy closure 21 to 60 years			
Disturbances:	Return:	Goes to:	%:
wildfire (split effect)	20	A	?
		D	?
drought	100	A	100%
AG invasion	125	D	100%

Class C Late Seral 25%+ canopy closure 61 to 999 years	
Disturbances:	Return:
wildfire (split effect)	20
drought (split effect)	100
I & D (split effect)	80

Class D
Annual Grass

0 to 999 years

Goes to:	%:
A	?
D	?
A	20%
B	80%
B	?
C	?

Disturbances:	Return:	Goes to:	%:
wildfire	10	D	100%
drought	67	D	100%

Model Wyo2: Wyoming Big Sage with conifer

Model Bas1: Basin Big Sage

Greater Sage-Grouse Population Dynamics and Probability of Persistence

Final Report to Pew Charitable Trusts
18 March 2015

Edward O. Garton[1], *Adam G. Wells*[2], *Jeremy A. Baumgardt*[3] *and John W. Connelly*[4]

Abstract. We updated our earlier comprehensive analysis of Greater Sage-Grouse (*Centrocercus urophasianus*) population dynamics and probability of persistence from 1965 to 2007 throughout the species range by accumulating and analyzing additional counts of males from 2008 to 2013. A total of 89,749 counts were conducted by biologists and volunteers at 10,060 leks from 1965 through 2013 in 11 states occupied by Greater Sage-Grouse. In spite of survey effort increasing substantially (12.6%) between 2007 and 2013 in 10 of the 11 states, the reconstructed estimate for minimum number of breeding males in the population fell by 55% from 98,616 (SE 3,736) to 44,297 (SE 1,019). Using standard approximations for missing values from Colorado suggests that the range-wide population fell 56% from109,990 breeding males in 2007 to 48,641 breeding males in 2013. The best model of annual rates of change of populations estimated across the Sage-Grouse Management Zones was a stochastic density dependent Gompertz model with 1-year time lags and declining carrying capacities through time. Weighted mean estimates of carrying capacity for the minimum number of males counted at leks for the entire range-wide distribution, excepting Colorado, were 40,505 (SE 6,444) in 2013 declining to 19,517 (SE 3,269) in 30 years and 8,154 (SE 1,704) in 100 years. Starting with the estimated abundance of males counted at leks in 2007 a simple effort to evaluate the validity of future forecasts of abundance was conducted by forecasting abundance in 2013 from Gompertz density dependent models with 1-year time lag and declining carrying capacity models of 6 of the 7 management zone populations. Estimated mean abundance in 2013 predicted 97.8% of the variation in true abundance in management zones. Concerted efforts across both public and private land ownerships that are intended to benefit Greater Sage-Grouse show little current evidence of success but more will be required to stabilize these declining populations and ensure their continued persistence in the face of ongoing development and habitat modification in the broad sagebrush region of western North America.

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Introduction

The Greater Sage-Grouse (*Centrocercus urophasianus*; hereafter, sage-grouse) is considered a "landscape species" with annual ranges that can encompass > 2,700 km^2 (Leonard et al. 2000, Holloran and Anderson 2005, Knick and Connelly 2011). Movements within breeding habitat can exceed 25 km, and seasonal ranges can be > 80 km apart (Connelly et al. 1988, Holloran and Anderson 2005). Populations throughout the species' range have been negatively affected by loss and fragmentation of habitat largely due to wildfire, invasive species and energy development (Doherty et al. 2008, Miller et al. 2011). Moreover, some populations have declined as a result of west Nile virus (Walker et al. 2004, 2007). Schroeder et al. (2004) estimated that sage-grouse have been extirpated from 44% of the species' likely historic range.

Despite substantial evidence indicating population declines and habitat loss (Braun 1998, Connelly et al. 2004, Schroeder et al. 2004), in 2005, the U.S. Fish and Wildlife Service (USFWS) determined that listing greater sage-grouse under the Endangered Species Act (ESA) was not warranted (Stiver 2011). However, a complaint filed in July 2006 by Western Watersheds alleged the 2005 finding was incorrect, arbitrary, and unwarranted (Ashe 2010). The U.S. District Court for Idaho subsequently ruled the USFWS determination was arbitrary and capricious and remanded the finding to the USFWS. In March 2010, the USFWS concluded that the sage-grouse was warranted for protection under ESA, but listing was precluded because of higher priorities (Ashe 2010); this agency agreed to issue a final determination by September 2015. The listing decision identified habitat loss/fragmentation, including habitat treatments, and lack of adequate regulatory mechanisms as the major factors contributing to declines in sage-grouse populations (Connelly 2014).

In addition to the work by Schroeder et al. (2004), other publications have assessed sage-grouse population change. Connelly and Braun (1997) concluded that by 1994 breeding populations had declined by 17-47% from long-term averages. Connelly et al. (2004) reported that sage-grouse populations declined at an overall rate 2.0% per year from 1965-2003. Similarly, an analysis by the Western Association of Fish and Wildlife Agencies (WAFWA 2008) indicated range wide declining trends for sage-grouse from 1965-2007. The most recent analysis (Garton et al. (2011) assessed long-term changes in sage-grouse populations by sage-grouse management zone (Stiver et al. 2006), reconstructed population abundance, and evaluated the likelihood of long-term persistence of populations. These authors' findings generally agreed with previous studies documenting declining populations of sage-grouse. Moreover, Garton et al. (2011) generated models that suggested at least 3 of 23 populations but no Sage-Grouse Management Zones (SMZs) may decline below effective population size of 50 within the next 30 years and at least 18 of 23 populations and 2 of 7 SMZs are likely to decline below effective population size of 500 within 100 years if current conditions and trends persist.

Recently, state and federal agencies have implemented a variety of conservation plans and programs to improve sage-grouse populations and habitats (NTT 2011, Baruch-Mordo et al. 2013, Copeland et al. 2013, Connelly 2014). Although federal conservation actions have been criticized (Connelly 2014) and some positive impacts of CRP on sage-grouse populations in Washington had been documented through 2010 (Schroeder and Vander Haegen 2011), no current evaluations of the status of sage-grouse at the population, SMZ, or range-wide scales exist that provide insight into current status of sage-grouse or that may allow an evaluation of effectiveness of conservation actions to date. If implementation of current conservation programs were effective and sufficient, we would expect that trends for many sage-grouse over the last 6 years would have begun to stabilize or in some cases may have begun to increase. With availability of 6 additional years of data since the Garton et al. (2011) publication, our objectives were to update the analyses of Garton et al. (2011) and evaluate our predictions. Thus, we 1) assess recent changes (2007-2013) in sage-grouse populations by SMZ; 2) reconstruct population abundance back to 1965 for each population, SMZ and range-wide; 3) evaluate the probability of persistence of sage-grouse populations; and 4) validate forecasts of future sage-grouse population abundance critical to estimating probability of persistence. We then examine these findings for evidence of stabilizing or increasing populations that could be attributed to recent conservation programs.

Methods

We obtained lek counts from 2007 to 2013 from each state fish and game agency except Colorado to reconstruct the sage-grouse populations for 6 additional years and use these estimates of the minimum number of males attending leks to model population changes and project probabilities of persistence for each population, SMZ population and the entire metapopulation using an analogous approach to that presented in Garton et al. (2011) and in a similar analysis for Lesser Prairie Chickens (Garton et al. in press). All states except Colorado contributed data on lek surveys that were combined with earlier data (Garton, et al. 2011:293) yielding a total of 89,749 surveys conducted from 1965 to 2013 at 10,060 individual leks. Detailed descriptions of each population and SMZ are provided in Garton et al. 2011.

Population Reconstruction

Leks surveyed in previous years (1965-2007) as well as leks added to the counts or discovered since 2007 were used to reconstruct an index of population abundance for each population (Fig. 1) and SMZ population ($N(t)$) based on the maximum count of males out of 3 or more surveys at each lek. The population index was estimated from the total number of males counted and the associated standard error from mean counts in 2007 to 2013, finite rates of change ($\lambda(t)$) and relative sizes of the previous years' populations ($\theta(t)$) in each pair of years using ratio estimators (Garton et al. 2011:301) to extend earlier estimates from 1965 to 2013. Only repeated counts of

leks from consecutive years were included in the estimates to insure that they produce unbiased estimates of population size and rates of change. New leks added to the surveys or missed leks were included in estimation once they had been counted in successive years. New leks substantially increased the precision of the most recent estimates of minimum male abundance because of a 50% increase in the number of leks counted in most areas over the last 10 years of surveys. Confidence intervals for the reconstructed populations were calculated from the variance of mean lek counts in 2013 combined with the variances of successive ratios of previous year to current year abundance ($\theta(t)$) back to the year in question as in Garton et al. (2011:302). Thus we began at 2013 and reconstructed population sizes for each population and SMZ back to the earliest lek counts available to us, typically 1965. Finite rates of change ($\lambda(t)$) were transformed to instantaneous rates of change ($r(t)=\ln\lambda(t)$) to model population growth. These estimates provided an index of population abundance from 1965-2013 for modeling changes in population, population projections, and identifying the probability of the species persistence.

Modeling Population Growth

We fit the same suite of 26 stochastic population growth models as described by Garton et al. (2011:302) to the time series of reconstructed minimum male population indices for each SMZ and population. The first 2 models are a more efficient and realistic version of the classic trend models (WAFWA 2008) assuming no density dependence in the rates of population change but either a single trend through time portraying exponential growth with process error (EGPE; Dennis et al. 1991) or exponential growth with differing mean rates of change between two time periods (period 1 = 1967–1987, period 0 = 1987–2013). We also fit density-dependent models of annual rates of change based on either Ricker-type density dependence in population growth (Dennis and Taper 1994) in which rates of change decline in proportion to abundance, or Gompertz-type density dependence in population growth (Dennis et al. 2006) in which rates of change decline logarithmically in proportion to abundance. Because of the apparent cyclic pattern of population growth observed in come populations and management zones (Rich 1985, Garton et al. 2011) we incorporated either 0,1 or 2 year time lags (Δ)into the density dependent Ricker and Gompertz models. To portray the apparent difference in growth patterns through time as either a difference between the 2 time periods identified above or as a continuously changing carrying capacity, each density dependent model was combined with a period effect (period, as described above), and a time trend in population carrying capacity (year) or both (Garton et al. 2011:302). Letting $N(t)$ be the observed population index at time t ,$Y(t) = \log[N(t)]$, and the annual growth rate $r(t) = Y(t+1) - Y(t)$. The global stochastic model incorporating Ricker-type density dependence was

$$r(t) = a + b \times N(t-\Delta) + c \times Year + d \times Period + E(t), \qquad (1)$$

and the analogous model for Gompertz-type density dependence was

$$r(t) = a + b \times \ln\left(N(t-\Delta)\right) + c \times Year + d \times Period + E(t) \quad (2)$$

where $Y(t) = \log[N(t)]$, the annual growth rate $r(t) = Y(t+1) - Y(t)$.

The global statistical model incorporated a difference in time periods by setting Period = 1 if Year = 1965 – 1996 and Period = 0 if Year = 1997 – 2013. E(t) represented environmental (i.e., process) variation in realized growth rates and was a normally distributed random deviate with mean = 0 and variance = σ^2. These models yielded five parameters (i.e., *a, b, c, d,* and σ^2) that were estimated via maximum likelihood using the indices to past abundance data estimated from the population reconstruction.

The only difference between the Ricker and Gompertz models is that the Ricker assumes growth rates are a linear function of population size and the Gompertz assumes growth rates are a linear function of the natural log of population size. Density dependent models such as Gompertz and Ricker provide an objective approach to estimate a carrying capacity or quasi-equilibrium (hereafter carrying capacity), which is defined as the population size at which the growth rate is 0. This carrying capacity represents a turning point in abundance below which population size tends to increase and above which population size tends to decrease. Adding period or year effects to these density dependent models evaluate the possibility that carrying capacity varied between the early time period and more recently or that it has changed through the years or both. This set of 24 density dependent models produce an efficient approach to evaluate and estimate 2 types of density dependence (arithmetic vs logarithmic for Ricker vs Gompertz) with 3 lags (0, 1 or 2 years) with potential differences in periods of time (2 periods) with constant or continuously changing carrying capacities (changing or constant, i.e. year or no year effect) yielding 2 by 3 by 2 by 2 combinations or 24 total density dependent models that we would hypothesize might best describe the observed reconstructed population abundance indices through time. Note that the 2 density independent models appear superficially similar to classic trend models obtained by simply converting reconstructed annual abundance indices to logarithms and regressing log abundance on year to "fit a trend line" through the data or as done by WAFWA (2008) fitting separate trend lines to the 2 time periods but at the conceptual level they differ fundamentally. Fitting a single or 2 trend lines is far less efficient (Humbert et al. 2009) and falsely treats error around the regression line as errors in observation, while our approach to estimating trend estimates logarithmic rates of change *r(t)* in each year and then estimates the average or an average for each time period as an efficient estimator of trend, treating errors in the estimates as estimates of process error rather than observation error. Estimating process error in this way provides a straight-forward approach to forecast future abundance incorporating process error (see below) whereas observation error estimated by regression is not useful for forecasting future patterns of abundance.

Parameter Estimation

To each set of observed abundance data, we fit these 26 models using general linear mixed models in the statistical computing program R (R Development Core Team 2014) and mixed procedure of Program SAS (SAS Institute 2003) in the same manner as applied earlier to sage-grouse (Garton et al. 2011:303 eq. 15.10) and applied to Lesser Prairie Chicken (*Tympanuchus pallidicinctus*, Garton et al. in press). These stochastic growth models treat annual rates of

change (r_t) as mixed effects of fixed effects (year and period) and random effects (reconstructed population index with or without log transformation and time lags). Residual annual rates of change (r_t) were consistently described well by a normal distribution. We used Akaike's Information Criteria corrected for small sample size (AICc) to rank the relative performance (i.e., predictive ability) of each model (Burnham and Anderson 2002). Likewise, we followed Akaike (1973,), Buckland et al. (1997) and Burnham and Anderson (2002:75) in calculating AICc weights (w_i), which we treated as relative likelihoods for a model given the data

$$w_i = \frac{\exp(-0.5 \times \Delta_i)}{\sum_{i=1}^{R} \exp(-0.5 \times \Delta_i)} \quad (3)$$

where Δi was the difference between the AICc for model i and the lowest AICc of all R models. For a given analysis unit, we report a 95% confidence set of models based on the best model using the sum of model weights ≥0.95 (Burnham and Anderson 2002). This approach reduced the number of models reported for all analysis units to those models with some potential of explaining the data but did not necessarily drop all models with ΔAICc less than 2 or 3. All models and resulting parameter estimates are reported in Appendices 1 and 2.

We used this same approach based on maximum likelihood estimation of general linear mixed models to estimate a weighted mean carrying capacity for each population where weights were based on Akaike weights defined above. We combined SMZ population estimates into a range-wide estimate by treating SMZ populations as strata within a stratified random population estimate of range-wide abundance and carrying capacity. From these base models, several plausible scenarios for population growth can be realized. Models involving time trends (+ Year) and period differences (+ period) can be interpreted as inferring that the carrying capacity is changing through time (i.e., negative slopes imply declines through time) or differs between time periods. For example, the parameter estimates from the Ricker model with a time trend (Year) and period effect (Period) can be used to estimate a carrying capacity as follows:

$$\hat{K} = -\hat{b}^{-1}(\hat{a} + \hat{c}Year + \hat{d}Period) \quad (4)$$

The hat (^) notation over a parameter indicates this value was the maximum likelihood estimate for that parameter when fit to past abundance data. When parameters *b* and *c* are set to 0, these models reduce to the EGPE model (Dennis et al. 1991) and including Period simply allows for differing carrying capacities between the two time periods. All forecasts assume that period effects estimated for the final time period and future year effects continue into the future at constant annual rates of change.

Stochastic population projections

For each population, we used parametric bootstraps in SAS and R by projecting 4,000 replicate abundance trajectories for 30 and 100 years post 2013 using

$$N(t+1) = N(t) + e^{\hat{r}(t)} \quad (5)$$

where $\hat{r}(t)$ was the stochastic growth rate calculated using maximum likelihood parameter estimates for the given model. For example, to project based on the Ricker model with no time lag, a time trend in carrying capacity and a difference between periods, we used

$$N(t+1) = N(t) \times e^{\hat{a}+\hat{b}N(t)+\hat{c}Year+\hat{d}Period+E(t)} \quad (6)$$

where $N(0)$, the initial abundance for the projections, was the final observed population size index (i.e., male sage-grouse counted in 2013), Period = 0 indicating that future change (growth or decline) would be analogous to what occurred from 1987 to 2013 and $E(t)$ was a random deviate drawn from a normal distribution with mean 0 and standard deviation equal to $\hat{\sigma}$ (square root of maximum likelihood estimate of mean squared error remaining from mixed model). These parametric bootstraps (replicate stochastic time series) were then used to calculate the probability that the population would decline below a quasi-extinction threshold corresponding to minimum counts of 20 and 200 males for comparison to earlier estimates (Garton et al. 2011) or 77 and 767 males at leks (effective population sizes of 50 and 500 of Franklin (1980) and Soule (1980); see next paragraph for details). Probability of quasi-extinction was the proportion of replications in which population abundance fell below the quasi-extinction threshold at some point during the time horizon (30 or 100 years).

We calculated thresholds for estimation of probability of persistence in two different manners for this analysis. First, for comparison to earlier bootstraps of probability of persistence we used the same thresholds of quasi-extinction of 20 and 200 males representing breeding lek attendance of 50 and 500 sage-grouse (Garton et al. 2011:304). Secondly, we estimated persistence defined as probability of falling below effective population size (N_e) of 50 and 500 as proposed by Franklin (1980) and Soule (1980), respectively. We used the average of three independent approaches to estimating breeding sex ratio applied to Sewall Wright's (1938) estimator of effective population size:

$$N_e = \frac{1}{\frac{1}{N_m} + \frac{1}{N_f}} \qquad (7)$$

where N_m = number of males successfully breeding and N_f = female breeders. Patterson's (1952) historic work in Wyoming suggested that sex ratio at leks is 2.5 adult plus yearling females per male producing an estimate of 70 males counted at leks corresponding to an effective population size of 50 or 699 males for N_e of 500. Aldridge (2001) estimated N_e of 88 for sage-grouse in Alberta based on estimates of breeding success applied to his counts of 140 males and 280 females attending 8 leks. This suggests a count of 79 males required for an effective population size of 50 and 795 for N_e of 500. Schroeder et al. (1999) reviewed banding data on 3671 females and 5468 males banded in Colorado, Idaho and Wyoming indicating average annual survival rates of yearlings and adults combined of 61.7% for females and 49.2% for males. Applying these average rates in a simple lifetable for yearlings and adults yields an estimate of 1.64 females per male in the populations of breeding age sage-grouse. Using Wright's formula, this sex ratio implies 80 males are required at leks for an effective population size of 50 and 804 males for an effective population size of 500. Averaging these 3 independent estimates of effective population size yields thresholds of counts of 77 males at leks required for an effective population size of 50 and 767 for N_e of 500.

Based on our comparison of AICc values, most populations had >1 model that could be considered a competing best model by scoring within the 95% set; this generally meant ΔAICc < 3. Therefore, to incorporate model selection uncertainty into forecasts of population viability, we projected future population abundances using each of the 26 models and used model averaging (Burnham and Anderson 2002:159) to generate an overall (i.e., based on all fitted

models) estimate of the probability of quasi-extinction. Generally, a "model averaged" prediction can be obtained by calculating the predicted value of a parameter of interest (e.g., probability of quasi-extinction) for each model and taking a weighted average of the predictions where the weights are the relative likelihoods of each model,

$$\hat{\Pr}(Extinction) = \sum_{i=1}^{R} \left\langle \hat{\Pr}(Extinction \left| Model_i \right\rangle \times w_i \right) \quad (8)$$

Probability of extinction under a particular model is conditional on that model and its maximum likelihood parameter estimates. To assess the precision of model averaged probabilities of quasi-extinction, we calculated a weighted variance for these probabilities of extinction (Krebs 1999:276) similar to the variance of a mean for grouped data (Remington and Schork 1970:46)

$$\hat{Var}\left[\hat{\Pr}(Extinction)\right] = \sum_{i=1}^{R} w_i^2 \times [\hat{\Pr}(Extinction) - \hat{\Pr}(Extinction \left| Model_i \right.)]^2 \quad (9)$$

Metapopulation Analyses

We analyzed viability of the metapopulation of sage-grouse across all 6 management zones similarly to the analysis for individual SMZs with three exceptions. First, instead of basing population projections on all 26 models, we used only the highest ranked AICc model across all 6 SMZ populations, Gompertz density dependent models with one year time lag and declining trend in carrying capacity through time. Second, the metapopulation model required estimated dispersal rates among SMZs. Movements were modeled using the same approach developed in earlier work (Garton et al. 2011:367) with the modification that Colorado Parks and Wildlife's failure to participate required dropping those potential movements and connections. Lastly, correlated dynamics among SMZs were modeled by including a covariance in the random deviates used to portray environmental stochasticity.

Specifically, the metapopulation was projected through time using

$$N_{Meta}(t+1) = \sum_{j=1}^{7} N_j(t+1) \quad (10)$$

where *Nj* is the abundance of SMZj. Abundance of each SMZ was projected using

$$N_j(t+1) = N_j(t) \times e^{r_j(t)} + \sum_{i=1 \neq j}^{7} N_i(t) \times D_{ij} - \sum_{i=1 \neq j}^{7} N_j(t) \times D_{ji} \quad (11)$$

where *Dij* is the dispersal rate between SMZ i and j. We followed the approach developed by Knick and Hanser (2011) to estimate dispersal rates between populations within SMZs. The probability of connectivity between every pair of leks was estimated using graph theory, based on distance between known leks, the difference in size between adjacent leks, and the product of all probable steps (dispersal limited to 27 km) between the pair of leks (Knick and Hanser 2011). We expressed the estimated number of probable connective links between leks in adjacent SMZs, based on graph theory, as a proportion of all the links shown between any pair of SMZs

(N = 112). These proportions were standardized to an estimated maximum dispersal rate at a distance of 27 km of 0.05 (Knick and Hanser, 2011). The random deviate, *Ej(t)*, for the growth rate of the jth SMZ, $r_j(t)$, was drawn from a multivariate normal distribution with mean = 0 and the six by six variance/covariance matrix estimated from past abundance trajectories. We obtained estimates of covariance by correlating the residuals of the information-theoretic best model for each management zone pair. We used a program similar to the SAS and R routines performing parametric bootstraps in SAS for metapopulation projections.

Data Considerations and Limitations

A key issue in analyzing lek data concerns the magnitude of sampling error in sage-grouse lek counts as sampling error could inflate estimates of process error leading to stochastic forecasts of future population viability that are excessively conservative. We evaluated this question by analyzing each reconstructed population time series using an approach that simultaneously estimates observation and process error (Dennis et al. 2006) and found that the population reconstruction time series provide unbiased estimates of process error just as they did for sage-grouse and for Lesser Prairie Chicken in earlier analyses (Garton et al. 2011, Garton et al. in press) with sampling error from combining counts at tens to hundreds of leks approaching 0. Only 3 small populations with limited numbers of leks indicated a non-zero value for observation error and those were exceedingly small (σ^2<0.002). Thus, we were able to take the same approach applied successfully to sage-grouse earlier (Garton et al. 2011) of estimating parameters and likelihoods for models including observation error within a single error term combining both process (stochastic environmental and demographic) error and sampling error. Consequently, forecasts from these models of probability of persistence will be slightly conservative, implying that probability of persistence is at least as large as our estimates or slightly larger.

All US states supporting populations of sage-grouse (Fig. 1) provided results of lek surveys they conducted except Colorado. Colorado Parks and Wildlife denied requests for results of lek counts (email from Jeffrey M. Ver Steeg, Assistant Director Research, Policy and Planning, Colorado Parks and Wildlife, dated 19 January 2015) making it necessary to substitute the best reasonable estimate of current numbers of breeding males counted at leks in 2013 in Colorado for the observed counts. We used a standard approach for missing values by replacing them with the best available estimate closest in time to the missing value. For 307 leks in Colorado included in the Wyoming Basin population and Wyoming Basin SMZ, we used the last available abundance of sage-grouse counted at these 307 leks: 4103 males were counted in Colorado at 213 of the leks in 2007 (Garton et al. 2011:35). The final estimate for abundance of males in this region in 2013 was then corrected to include both the total number of males observed in surveys in Wyoming and Utah in 2013 plus this estimated number of males present on the Colorado leks not reported, 4103 in 2007. This corrected estimate of male attendance at surveyed leks in 2013 was used as the base survey for population reconstruction back to 2007 and beyond to the earliest surveys in 1965 for Wyoming Basins population and SMZ II. For the Colorado Plateau (SMZ VII) we noticed that the earlier analysis of lek data (Garton et al. 2011:363) identified 2 best models of stochastic growth with no time trend, i.e., stochastic density dependent Ricker and

Gompertz models. Therefore we used an average of the predicted stochastic carrying capacity from each of these models and the last population estimate in 2007 at 73 leks as a best estimate of the missing abundance for this SMZ in 2013.

Results

Great Plains Management Zone

Dakotas Population

Sampling effort for leks in this population occupying western portions of North and South Dakota and small parts of southeastern Montana and northeastern Wyoming increased 16.5%. The average number of leks counted per year from 2008-2013 was 83 leks, up from 56 leks counted per year on average from 2000-2007. The estimated minimum population size was 311 males (SE = 55) which represented a 72% decline from the reconstructed estimate of 1,112 males (SE = 307) based on counts at 85 leks in 2007. The last 6 years showed a continuous (Fig. 2a) decline to reach abundances lower than ever observed before and approximately 16% of average values of about 1,917 males counted in the 1970s and 1980s (Fig. 2a). The best model characterizing the dynamics of this population was a Gompertz model (r_t = 35.8948 – 0.3942 ln(N_t)– 0.017 year, r^2 = 0.189) with a declining year trend of 1.7% per year which successfully portrayed 19% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 32%. Quasi-equilibriums were estimated at 280 males (SE 79.2) in 2013, 97 males (SE 30.6) in 30 years and 45 males (SE 17.7) in 2113. Parametric bootstraps imply that the minimum count of males has a 21.5% (SE 7.7%) chance of declining below 20 males in 30 years, lower than estimated with data through 2007 (29%) but not significantly lower. Model weighted probabilities of declining below effective population sizes of 50 (35.4%, SE 7.4%) in 30 and 100 years (72.5%, SE 8.5%) were higher.

Northern Montana Population

Sampling effort for leks in this population occupying parts of north-central Montana, southeast Alberta, and southwest Saskatchewan declined 11.4 %. This is partially due to Canadian counts included in the 2007 data and analysis but excluded from our current data set. If Canadian counts are removed, sampling effort increased by 6.2%. The average number of leks counted per year from 2008-2013 was 138 leks per year, down from 162 leks counted per year on average from 2000-2007. The estimated minimum population size was 1,667 males (SE = 165) which represented a 54% decline from the reconstructed estimate of 3,615 males (SE = 573) based on counts at 175 leks in 2007. The last 6 years showed a continuous (Fig. 2b) decline to reach abundances as low as those in the 1970s and early 1980s of approximately 1,600 males. Current estimates are about 40% lower than the average counts shown from 1984-2007, which showed a slight increase in abundance males over the preceding 10 years (Fig. 2b). The best model for the dynamics of this population was a Gompertz model with a one year time-lag and a period effect (r_t = 2.8591 – 0.3347 ln(N_{t-1})– 0.3066 period, r^2 = 0.352) and showed a probability of being the correct model of 36%. Quasi-equilibrium estimated at 4353 (SE 1,394) in 2013, 3,714 (SE 1,122) in 30 years and 3,380 (SE 992) in 2113. Parametric bootstraps imply that the minimum count of males has a 2.7% (SE 2.1%) chance of declining below 20 males in 30 years. Model

weighted probabilities of declining below effective population sizes of 50 (5.6%, SE 4.4%) in 30 and 100 years (7.2%, SE 5.1%) are all quite low.

Powder River Basin Population

Sampling effort for leks in this population, occupying parts of southeastern Montana and northeastern Wyoming, remained fairly steady between 2007 and 2013, with only a 2.1% increase in the number of leks counted. The average number of leks counted per year, however, from 2008-2013 was 395 leks per year, up from 239 leks counted per year on average from 2000-2007, a 65% increase between the 2 periods. The estimated minimum population size was 1651 males (SE = 155) which represented a 76% decline from the reconstructed estimate of 6804 males (SE = 919) based on counts at 384 leks in 2007. The last 6 years showed a continuous (Fig. 2c) decline to reach abundances lower than ever observed before and approximately 4% of average values close to 38,500 males counted in the 70s and 80s. The best model for the dynamics of this population was a Gompertz model with a one-year time lag and an effect of year ($r_t = 67.1015 - 0.396 \ln(N_{t-1}) - 0.0318$ year, $r^2 = 0.317$) with a declining year trend of 0.3% per year which successfully portrayed 32% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 63%. Quasi-equilibriums were estimated about 2,273 (SE 618) in 2013, 240 (SE 78) in 30 years and 36 (SE 24) in 2113. Parametric bootstraps imply that the minimum count of males has a 2.9% (SE 2.3%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (98.7%, SE 2.2%) in 30 and 100 years (98.8%, SE 2.1%) suggest that is fairly certain to happen.

Yellowstone Watershed Population

Sampling effort for leks in this population occupying southeastern Montana and northeastern Wyoming increased 83% from 327 leks in 2007 to 625 leks counted in 2013. The estimated minimum population size was 3045 males (SE = 106) which represented a 29% decline from the reconstructed estimate of 8747 males (SE = 949) based on counts at 327 leks in 2007. The last 6 years showed a continuous (Fig. 2d) decline to reach abundances lower than ever observed before and approximately one quarter of average values close to 12,000 males estimated in the 70s and 80s. The best model for the dynamics of this population was a Ricker model ($r_t = 32.4125 - 0.00006027 N_t - 0.016$ year, $r^2 = 0.364$) with a declining year trend of 1.6% per year as in earlier analyses (Garton et al. 2011:313) which successfully portrayed 36% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 68%. An estimate of carrying capacity for the population in 2013 is 3,087 (SE =788) but the estimate for 2043 indicates a decline to 241 (SE =172) and to 136 (SE =97) in 2113. Compared to results in 2007 when there was negligible chance of the population count falling below 20 males at leks in the short term (30 years, Garton et al. 2011:313) declines during the last 6 years have increased the probability to 15.6% (SE = 2.1%) with the probability of declining below effective population size of 50 now above half (54.5 % with SE = 7.2%). Long term probabilities (in 100 years) of declining below counts of either 20 or 200 males attending leks or effective population sizes of 50 or 500 all exceed 89% (Table 6).

Great Plains Management Zone Comprehensive Analysis

Biologists dramatically increased their efforts (33% increase) to count sage-grouse leks from 2007 (957 leks) to 2013 (1,271 leks) producing a reconstructed population estimate of the minimum number of male sage-grouse of 20,016 (SE = 1462) in 2007 which was almost 50% larger than the estimate obtained from counting fewer leks earlier (Garton et al. 2011:314). In spite of this dramatic increase in effort, the estimated minimum male numbers attending leks fell by two-thirds to 6,674 (SE = 312) in the 6-year interval to 2013. This population is continuing its downward trajectory (Figure 2e) with an irregular pattern of peaks separated by periods varying in length from 3 to 16 years. As before (Garton et al. 2011:315) the 4 best models all include Gompertz and Ricker models with declining time trends with and without 1-year time lags that are not significantly better than each other by likelihood ratio tests (Appendix 1). The very top model by information criteria was a Ricker with decreasing time trend ((r_t = 30.2053 – 0.0.00001673 N_t – 0.015 year, σ = 0.148, r^2 = 0.239) implying a 1.5% decrease in carrying capacity each year. Across the best models carrying capacity was estimated as a minimum count of males of 3798 (SE 1378) currently, declining to 1,444 (SE 546) in 2043 and further to 481 (SE 193) in 100 years. With 6 additional years of declining counts at leks the estimates of carrying capacity for this management zone have decreased by half. Forecasts of probability of persistence suggest likelihood of falling below counts of 20 or 200 males have risen to almost 50% (Table 6) while long term probability of falling below effective population sizes of 50 or 500 are now in the range 55% (SE 9.8%) to 93% (SE 5.1%).

Wyoming Basin Management Zone

Wyoming Basin Population

Sampling effort to count leks in this population occupying much of Wyoming, part of southern Montana, northeast Utah and northern Colorado increased by 5% excluding Colorado data. The estimated population size was 15,767 males (SE = 644) in 2013 based on counts at 1158 leks which represented a 63% decline from the reconstructed estimate of 43,040 males (SE = 2727) based on counts at 1,106 leks in 2007, again excluding Colorado. The last 6 years showed a continuous (Fig. 3c) decline to reach abundances lower than ever observed before and approximately 25% of average values approximating 63,000 males counted in the 70s and 80s. The best model for the dynamics of this population was a Gompertz model with a one year time lag and a year effect (r_t = 23.619 – 0.2946 ln(N_{t-1})– 0.0103 year, r^2 = 0.246) indicating a declining trend of 1.0% per year which successfully portrayed 25% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 36%. Quasi-equilibriums were estimated about 16,078 (SE 4,982) in 2013, 6,158 (SE 2,020) in 30 years and 2,209 (SE 913) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.1% (SE 0.06%) chance of declining below 20 males in 30 years but model weighted probabilities of declining below effective population sizes of 50 (4.7%, SE 1.9%) in 30 and 100 years (21.0%, SE 8.1%) are somewhat higher though still well below 50%.

Wyoming Basin Management Zone Comprehensive Analysis

This enormous population constituting a minimum of 54,282 (SE 2636) males in 2007 has dropped precipitously (63% decline) through 2013 to a minimum of 20,006 males (SE 646) counted at 1258 leks if we replace the missing surveys of Colorado leks with the last count available to us in 2007 of 4103 males counted at 213 leks. Alternately, simply ignoring the missing lek surveys from Colorado produces an estimate for this SMZ of 43,149 males declining 63% to 15,903 males in 2013. Sampling effort appeared to decrease by 5.2% between 2007 and 2013 due to failure to report by Colorado, but excluding the 213 Colorado leks counted in 2007 reveals effort in the other states actually increased by 13%. The average number of leks counted from 2007-2013 was 1,161 leks per year a decrease from 1,321 from 2000-2007, again due to failure to report by Colorado. Excluding the 307 total Colorado leks suggests increased effort of 14% in average number of leks surveyed in the recent time interval. The last 6 years showed a continuous (Fig. 3d) decline to reach abundances lower than ever observed before and approximately 33% of average values close to 62,368 males counted in the 70s and 80s. From a reconstructed minimum male population estimate approaching 175,000 birds in the late 1960s the last minimum male population estimate has fallen by an order of magnitude (Fig. 3d). The 10-year interval between peaks in this population appears to have shortened to an 8 or 9 year interval and the low estimate in 2013 is approximately 2000 males below the previous low in the cycle in 1996 though this difference is not statistically significant because of the large SE (4,798) of that earlier low estimate in the cycle.

The best stochastic growth model for this management zone population is a Gompertz model with one year time lag and a carrying capacity declining at approximately 1% per year (r_t = 23.58 – 0.298 ln(N_{t-1}) – 0.0102 year, σ = 0.148, r^2 = 0.247). This model has a relative likelihood of 37% followed closely by the comparable Ricker model with declining year trend in carrying capacity. The best stochastic growth models imply that the population of sage-grouse will fluctuate around the current carrying capacity of 18,899 (SE 5518) which will decline to 8,285 (SE 2,619) in 2043 and 2,798 (SE 1,147) in 2113 if this yearly rate of decline persists. Parametric bootstraps forecasting the likelihood of this management zone population falling below 20 or 200 males attending leks are less than 25% (Table 7) but chances for declines below effective population sizes of 50 and 500 in 100 years have grown to 22.1% (SE 8.2%) and 65.3% (SE 7.6%) respectively. These probabilities of extinction are two to three times as large as they were at the end of 2007.

Southern Great Basin Management Zone

Mono Lake, California-Nevada, Population

Sampling effort for leks in this small population straddling the California-Nevada border increased by 138% to 50 leks in 2013. The average number of leks counted increased to 46 leks per year, up from 24 leks per year from 2000-2007. The estimated minimum population size was 543 males (SE = 157) which represented a 25% increase from the reconstructed estimate of 435 males (SE = 266) based on counts at 21 leks in 2007. The last 6 years showed an increase until 2013 (Fig. 4a) to reach abundances approximately 83% larger than average values close to 300 males counted in the 1970s and 1980s. The best model for the dynamics of this population was the Gompertz model (r_t = 3.1176 – 0.5521 ln(N_t), r^2 = 0.267) and showed a probability of being

the correct model of 37%. Quasi-equilibriums reached about 330 (SE 120) in 2013, 576 (SE 216) in 30 years and 4,059(SE 1,678) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.09% (SE 0.25%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (7.7%, SE 1.6%) in 30 and 100 years (21.5%, SE 4.3%) are low.

South Mono Lake, California, Population

Sampling effort for leks in this small population in eastern California increased 16.7% from 12 leks in 2007 to 14 leks in 2013. The estimated minimum population size was 264 males (SE = 102) which represented a 6% decline from the reconstructed estimate of 282 males (SE = 161) based on counts at 12 leks in 2007. The last 6 years showed slight overall (Fig. 4b) decline to reach abundances approximately equal with average values close to 270 males counted in the 1970s and 1980s. The best model for the dynamics of this population was a Gompertz model ($r_t = 2.491 - 0.4528 \ln(N_t)$, $r^2 = 0.228$) and garnered a 38% probability of being the correct model. Quasi-equilibriums reached about 258 (SE 84.5) in 2013, 275 (SE 91.7) in 30 years and 336 (SE 118.3) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.26% (SE 0.42%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (7.9%, SE 2.1%) in 30 and 100 years (21.3%, SE 3.9%) are fairly low.

Northeast Interior Utah Population

Sampling effort for leks in this population decreased 18% from 32 leks in 2007 to 26 leks in 2013. The average number of leks counted from 2007-2013 was 27 leks per year an increase from 25 from 2000-2007. The estimated minimum population size was 241 males (SE = 71) which represented a 42% decline from the reconstructed estimate of 412 males (SE = 192) based on counts at 32 leks in 2007. The last 6 years showed a continuous (Fig. 4c) decline to reach abundances 50% of average values close to 486 males counted in the 1970s and 1980s. The best model for the dynamics of this population was a Ricker model with period effect ($r_t = 0.2812 - 0.0012(N_t) + 0.3498$ period, $r^2 = 0.222$) and showed a probability of being the correct model of 19%. Quasi-equilibriums reached about 241 (SE 67) in 2013, 304 (SE 85) in 30 years and 705 (SE 204) in 2113. Parametric bootstraps imply that the minimum count of males has a 1.4% (SE 1.0%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (13.9%, SE 4.5%) in 30 and 100 years (27.5%, SE 6.7%) are fairly low.

Sanpete-Emery Counties, Utah, Population

From 2007 to 2013, only 2 to 3 leks were counted, consistent with counts since approximately 1987. The estimated minimum population size was 48 males (SE = 19) which represented a 100% increase from the reconstructed estimate of 24 males (SE = 26) based on counts at 2 leks in 2007. The last 6 years showed a slight increase (Fig. 4d) for this small, isolated population.

South-Central Utah Population

Sampling effort for leks in this population decreased 18% from 51 leks in 2007 to 42 leks in 2013. The average number of leks counted from 2007-2013 was 51 leks per year, an increase from 38 from 2000-2007. The estimated minimum population size in 2013 was 737 males (SE = 208) which represented a 51% decline from the reconstructed estimate of 1501 males (SE = 570) based on counts at 51 leks in 2007. The last 6 years showed an overall (Fig. 4e) decline to reach abundances approximately 53% of average values close to 1382 males counted in the 1970s and 1980s. The best model characterizing the dynamics of this population was a Gompertz model ($r_t = 2.2129 – 0.3196 \ln(N_t)$, $r^2 = 0.186$) and garnered a probability of being the correct model of 19%. Quasi-equilibriums reached about 944 (SE 248.1) in 2013, 802 (SE 209.4) in 30 years and 680 (SE 177.2) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.11% (SE 0.16%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (0.9%, SE 0.7%) in 30 and 100 years (18.7%, SE 7.6%) are low.

Summit-Morgan Counties, Utah, Population

Sampling effort for leks in this population decreased 14% from 7 leks in 2007 to 6 leks in 2013. The average number of leks counted from 2007-2013 was 8 leks per year, a decrease from 9 from 2000-2007. The estimated minimum population size was 65 males (SE = 19) which represented a 25% decline from the reconstructed estimate of 87 males (SE = 67) based on counts at 7 leks in 2007. The last 6 years showed a decline (Fig. 4f) to reach abundances approximately 85% of average values close to 77 males counted in the 1970s and 1980s.

Toole-Juab Counties, Utah, Population

Sampling effort for leks in this population increased 29% from 7 leks in 2007 to 9 leks in 2013. The average number of leks counted from 2007-2013 was 9 leks per year an increase from 6 from 2000-2007. The estimated minimum population size was 57 males (SE = 18) which represented a 78% decline from the reconstructed estimate of 257 males (SE = 237) based on counts at 7 leks in 2007. The last 6 years showed a decline (Fig. 4g) to reach abundances approximately 23% of average values close to 244 males estimated in the 2000.

Southern Great Basin Population

Sampling effort for leks in this population decreased in 2013 by 12.1% to 269 leks, down from 306 in 2007. Since 2007 however, the average number of leks counted per year increased from 233 leks per year from 2000-2007 to 281 leks per year from 2008-2013 and overall showed a greater sampling effort. The estimated minimum population size was 3,388 males (SE = 259) which represented a 33% decline from the reconstructed estimate of 5,084 males (SE = 691) based on counts at 306 leks in 2007. The last 6 years showed an overall (Fig. 4h) decline to reach abundances approximately 43% of average values close to 7,855 males counted in the 1970s and 1980s. The best model for the dynamics of this population was a Gompertz model with a 2-year time lag and a year effect ($r_t = 28.088 – 0.4317\ln(N_{t-2}) – 0.0123$ year, $r^2 = 0.357$) with a declining year trend of 1.2% per year which successfully portrayed 36% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 50%. Quasi-equilibriums reached about 2,702 (SE 961) in 2013, 1,417 (SE 551) in 30 years and 543

(SE 267) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.14% (SE 0.16%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 are 1.3% (SE =1.5%) and 10.4% (SE =3.5%) in 30 and 100 years.

Southern Great Basin Management Zone Comprehensive Analysis

The population estimate for the entire Southern Great Basin Management Zone declined from a peak in the 6-9 year cycle exceeding 15,000 males in 1970 to a low point of less than 4,000 males in mid-1990s. The 33% decline from an estimated minimum number of males of 8202 (SE 971) in 2007 to 5485 males (SE 382) in 2013 exemplifies the observed declines over the last 2 decades (Fig. 4i). Sampling effort fell 4.0% in that same period. The best stochastic growth model of dynamics of this management zone population was a Gompertz model of density dependence with a 1-year time lag and declining carrying capacity through time (r_t = 15.2114 – 0.3777 ln(N_{t-1}) – 0.006 year, σ = 0.13, r^2 = 0.34). This best model implies that the carrying capacity for sage-grouse in the Southern Great Basin Management Zone is declining very slowly at 0.6% per year. Weighted mean estimates of carrying capacity for the management zone across all 24 density dependent models is 4862 (SE 1514) for 2013, 3722 (1175) for 2043 and 2649 (SE 875) for 2113. Parametric bootstraps of probability of declining below counts of 20 and 200 males in 30 years are nil (0%) but grow somewhat for declining below effective population sizes of 50 and 500 in100 years (10.0% with SE 6.0% and 25.3% with SE 6.3%).

Snake River Plain Management Zone

Baker, Oregon, Population

Sampling effort for leks in this small population in eastern Oregon increased by 6.3% to 49 leks in 2013. The average number of leks counted per year increased to 21 leks per year from 2008-2013 up from 15 leks per year from 2000-2007. The estimated minimum population size was 49 males (SE = 18) which represented a 64% decline from the reconstructed estimate of 137 males (SE = 92) based on counts at 16 leks in 2007. The last 6 years showed a continuous (Fig. 5a) decline to reach abundances lower than ever observed before and approximately 25% of average values close to 200 males counted from 1993-2007.

Bannack, Montana, Population

The small population in Bannack, Montana, estimated at a minimum of 219 (SE 81) males in 2007 declined 19% to a minimum of 177 (SE 35) males observed at 15 leks in 2013, a 37.5% decline in leks counted since 2007 (Fig. 5b). The best models of the dynamics of this small population were Gompertz models with a combination of Period and Year effects (r_t = 16.2963 – 0.4031 ln(N_t) –0.0071 year– 0.1995 period, r^2 = 0.212) indicating a very slow decline at approximately 0.7% per year to a quasi-equilibrium about 146 (SE 40.1) in 2013, 109 (SE 30.2) in 30 years and 86 (SE 24.6) in 2113. Parametric bootstraps imply that the minimum count of males has a 6.6% (SE 4.2%) chance of declining below 20 males in 30 years but is already below 200. Model weighted probabilities of declining below effective population sizes of 50 (37.3%, SE 8.3%) in 30 and 100 years (48%, SE 9.0%) are uncomfortably large while long-term persistence based on probability of declining below an effective population size of 500 is nil.

Red Rocks Lake, Montana, Population

Sampling effort for leks in this small population occupying southwestern Montana just north of the Idaho border decreased by 30% from 30 leks counted in 2007 to 21 leks counted in 2013. The average number of leks counted per year from 2008-2013 was 18 leks per year, down slightly from 20 leks counted per year on average from 2000-2007. The estimated minimum population size was 357 males (SE = 113) which represented a 37% increase from the reconstructed estimate of 260 males (SE = 202) based on counts at 30 leks in 2007 (Fig. 5c). The last 6 years showed an increase (Fig. 5c) to reach abundances approximately 35% larger than average values of 265 males counted in the 1970s and 1980s.

Snake-Salmon-Beaverhead, Idaho, Population

Sampling effort for leks in this population increased by 67.1% to 620 leks up from 321 leks in 2007. The average number of leks counted per year from 2008-2013 was 505 leks, up from 323 leks counted per year on average from 2000-2007. The estimated minimum population size was 6,126 males (SE = 229) which represented a 30% decline from the reconstructed estimate of 8,734 males (SE = 1157) based on counts at 371 leks in 2007 (Fig. 5e). The last 6 years showed a decline (Fig. 5e) to reach abundances approximately 39% of average values of approximately 16,000 males counted in the 70s and 80s. The best model characterizing the dynamics of this population was a Gompertz model with a one-year time lag and a period effect ($r_t = 3.0269 - 0.3423 \ln(N_{t-1}) + 0.2949$ period, $r^2 = 0.371$) and showed a probability of being the correct model of 36%. Estimated quasi-equilibriums reached about 5,727 (SE 1,823) in 2013, 5,074 (SE 1,538) in 30 years and 4,719 (SE 1394) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.36% (SE 0.3%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (3.3%, SE 2.7%) in 30 and 100 years (16.5%, SE 7.4%) are low.

Northern Great Basin Population

Sampling effort for leks in this population occupying portions of Nevada, southeastern Oregon, southwestern Idaho, and Northwestern Utah declined by 9.4% to 951 leks down from 1,008 in 2007. The average number of leks counted per year from 2008-2013 was 951 leks per year, up from 595 leks counted per year on average from 2000-2007. The estimated minimum population size was 6,580 males (SE = 376) which represented a 34% decline from the reconstructed estimate of 9,927 males (SE = 1,144) based on counts at 1,008 leks in 2007. The last 6 years showed a decline (Fig. 5f) to reach abundances lower than ever observed before and approximately 23% of average values close to 28,618 males counted in the 1970s and 1980s. The best model for the dynamics of this population was a Gompertz model with a one-year time lag and a year effect ($r_t = 49.056 - 0.5015\ln(N_{t-1}) - 0.0222$ year, $r^2 = 0.514$) with a declining year trend of 0.2% per year which successfully portrayed 51% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 77%. Quasi-equilibriums reached about 6,214 (SE 1,565) in 2013, 1,664 (SE 424) in 30 years and 77 (SE 20.3) in 2113. Parametric bootstraps imply that the minimum count of males has a 0.05% (SE 0.4%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (0.06%, SE 0.5%) in 30 and 100 years (83.6%, SE 2.8%) differ dramatically.

Snake River Plain Management Zone Comprehensive Analysis

The estimated minimum number of males attending leks in the Snake River Plain Management Zone declined 31% from 2007 (19,510 SE 1404) to an estimated 13,371 (SE 550) in 2013 (Figure 5h). Sampling effort in this interval increased 9.9% from counting 1480 leks in 2007 to 1,627 leks in 2013 and this increased effort substantially increased the estimated minimum number of males attending leks from the population reconstruction by almost 4,000 males compared to the earlier population estimate (Garton et al. 2011:351). The best stochastic growth model for the reconstructed population was a Gompertz with 1-year time lag and both year and period effects on carrying capacity ($r_t = 25.4738 - 0.4124 \ln(N_{t-1}) - 0.0107\ year + 0.1566\ period$, $\sigma = 0.1319$, $r^2 = 0.448$) which estimated carrying capacities for the management zone declining at 1.07% per year from 13,275 (SE 4,008) in 2013, to 6,420 (SE 2,083) in 2043 and further to 2,330 (SE 1,111) in 100 years.

Northern Great Basin Management Zone

Central Oregon Population

The Central Oregon population of sage-grouse has declined 33% since 2007 to a minimum estimated number of males attending leks of 559 (SE 95) along with a 17% decrease in number of leks counted to 80 down from 97 in 2007. The average number of leks counted per year from 2008-2013 was 86.8 leks per year, down from 96 leks counted per year on average between 2000 and 2007. The last 6 years showed a decline to reach abundances lower than ever observed before and approximately 23% of average values close to 2,424 males counted in the 1970s and 1980s (Fig 6a). This final survey is less than one tenth of the peak estimates for the late 1960s which reflects fairly continuous declines through time. The best models characterizing dynamics of this population were Gompertz density-dependent models with either period or year or both parameters indicating a 1.1% decline per year but the best of these models only described slightly more than 20% of the variation in annual estimates of abundance and suggested a carry-capacity currently less than half of current numbers (146, SE 40). Consequently parametric bootstraps imply a 6.6% (SE 4.2%) probability of falling below male counts of 20 and 100% probability below 200 in the short term. Probabilities of declining below effective population sizes of 50 in the long term climb to 48% (SE 9%) while long-term persistence is unlikely if the population continues this pattern of decline.

Northwest-Interior Nevada Population

Sampling effort for leks in this small, scattered population, occurring in north-central Nevada decreased by 23.1% to 50 leks down from 65 leks counted in 2007. The average number of leks counted per year from 2008-2013 was 30.2 leks per year, down from 40 leks counted per year on average from 2000-2007. The estimated minimum population size was 79 males (SE = 29) which represented a 32% decline from the reconstructed estimate of 117 males (SE = 102) based on counts at 65 leks in 2007. The last 6 years showed a decline (Fig. 6b) to reach abundances

lower than ever observed before and approximately 52% of average values close to 153 males counted from 1999-2007 (Fig. 6d). The best model for the dynamics of this population was a Gompertz model ($r_t = 4.9614 – 1.0683 \ln(N_t)$, $r^2 = 0.70$) and showed a probability of being the correct model of 69%. . Parametric bootstraps imply that the minimum count of males has a 100% (SE 0%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (100%, SE 0%) in 30 and 100 years (100%, SE 0%) imply that is certain.

Western Great Basin Population

Sampling effort for leks in this population decreased by 1.7% to 396 leks in 2013 down from 403 leks in 2007. The average number of leks counted per year from 2008-2013 was 330 leks per year, up from 285 leks counted per year on average from 2000-2007. The estimated minimum population size was 1,934 males (SE = 212) which represented a 69% decline from the reconstructed estimate of 6,327 males (SE = 1,345) based on counts at 403 leks in 2007 (Fig. 6d). The last 6 years showed a decline (Fig. 6c) to reach abundances lower than ever observed before and approximately 16% of average values close to 11,765 males counted in the 1970s and 1980s. The best model characterizing the dynamics of this population was a Gompertz model with a one-year time lag and period effect ($r_t = 2.5868 – 0.3036 \ln(N_{t-1}) + 0.2514$ period, $r^2 = 0.241$) and showed a probability of being the correct model of 44%. Quasi-equilibriums reached about 2,548 (SE 812) in 2013, 701 (SE 228) in 30 years and 40 (SE 14.8) in 2113. Parametric bootstraps imply that the minimum count of males has a 13.1% (SE 6.7%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (13.1%, SE 6.75%) in 30 and 100 years (96.2%, SE 1.1%) are polar opposites.

Northern Great Basin Management Zone Comprehensive Analysis

From an abundance of an estimated 40,000 males attending leks in 1965 this management zone population has shown a continuing decline overlaid on 10-year or longer cycles which extended dramatically in length in the most recent period (Figure 6d). The estimated minimum abundance in 2007 of 7,429 (SE 1,312) males, declined 65% by 2013 to 2,573 (SE 468) males even though sampling effort was close to 500 leks counted in both of those years. The best stochastic growth model for the Great Basin management zone population is again a Gompertz model with 1-year lag and a decreasing trend through time ($r_t = 27.4378 – 0.33 \ln(N_{t-1}) – 0.0123$ year, $\sigma = 0.1947$, $r^2 = 0.221$). Weighted mean estimates of carrying capacity for this management zone suggest that the abundance will fluctuate around 2,796 (SE 835) males in 2013, 1,027 (SE 330) males in 2043 and 382 (SE 152) males in 2113. Parametric bootstraps forecast that chances of declining below male attendance at leks of 20 and 200 in the short term (30 years) are only 9.9% (SE 5.3%) and 13.6% (SE 6.7%) but long term extinction defined as falling below effective population sizes of 50 and 500 are very likely at 72.2% (SE 6.2%) and 92.3% (SE 4.9%).

Columbia Basin Management Zone

Moses Coulee, Washington, Population

Sampling effort for leks in this small population decreased by 46.9% to 17 leks in 2013, down from 32 leks in 2007. The average number of leks counted per year from 2008-2013 was 20.2 leks per year, down from 33 leks counted on average from 2000-2007. The estimated minimum population size was 202 males (SE = 39) which represented a 12% decline from the reconstructed estimate of 230 males (SE = 84) based on counts at 32 leks in 2007. The last 6 years showed a decline (Fig. 7a) to reach abundances approximately 33% of average values of approximately 609 males counted in the 1970s and 1980s. The best model for the dynamics of this population was a Gompertz model with a one-year time lag and a year effect (r_t = 27.7956 – 0.3647 ln(N_{t-1})– 0.0129 year, r^2 = 0.199) with a declining year trend of 1.2% per year which successfully portrayed 20% of the variation in the data from 1965 to 2013 and garnered a probability of being the correct model of 31%. Quasi-equilibriums were about 172 (SE 49.9) in 2013, declining to107 (SE 34.6) in 2043 years and 77 (SE 27.7) in 2113. Parametric bootstraps imply that the minimum count of males has a 7.4% (SE 3.6%) chance of declining below 20 males in 30 years. Model weighted probabilities of declining below effective population sizes of 50 (71.6%, SE 7.8%) in 30 and 100 years (81.0%, SE 6.2%) are both greater than 50%.

Yakima, Washington, Population

Sampling effort for leks in this small population increased by 55% to 17 leks in 2013, up from 11 leks in 2007. The average number of leks counted per year from 2008-2013 was 13 leks per year, up from 10 leks counted per year on average from 2000-2007. The estimated minimum population size was 89 males (SE = 36) in 2013 which represented an 11.7% increase from the reconstructed estimate of 80 males (SE = 50) based on counts at 10 leks in 2007. The last 6 years showed small fluctuations (Fig. 7b) but typical numbers of males attending leks reached abundances lower than ever observed before and approximately 24% of average values close to 350 males counted in the 1970s and 1980s.

Columbia Basin Management Zone Comprehensive Analysis

Estimated numbers of males attending leks in the Columbia Basin management zone were close to 2,000 in 1965 but showed an approximately 10-year cyclic pattern imposed over a continuous decline to the present. From a 2007 reconstructed, male population estimate of 310 (SE 98) the population declined approximately 6% to an estimated 291 (SE 56) males in 2013 (Fig. 7c). Surveying effort fell to 34 leks counted in 2013 compared to 43 counted in 2007. The best stochastic growth model for the Columbia Basin management zone population is again a Gompertz model with 1-year time lag and declining year trend in carrying capacity (r_t = 27.8921 – 0.3956 ln(N_{t-1}) – 0.0128 year, σ = 0.209, r^2 = 0.208). Weighted mean estimates of carrying capacity for this management zone suggest that the abundance will fluctuate around 233 (SE 69.7) males in 2013, 12 (SE 38.9) males in 2043 and 64 (SE 24.2) males in 2113. Parametric bootstraps forecast that chances of declining below male attendance at leks of 20 and 200 in the short term (30 years) are only 11.8% (SE 6.1%) and 85.2% (SE 6.0%) but long term extinction,

defined as falling below effective population sizes of 50 and 500 in 100 years are almost certain at 80.2% (SE 7.5%) and 100% (SE 0%).

Colorado Plateau Management Zone

Colorado Plateau Management Zone Comprehensive Analysis

Colorado Parks and Wildlife denied our requests for results of lek counts on 4 separate occasion because of a decision of the leadership team (3 emails and 1 conversation with Kathy Griffin on 1/6/15) making it necessary to substitute the best reasonable estimate of current numbers of breeding males counted at leks in 2013: 244 calculated as average of last count (241 in 2007), estimated carrying capacity from best model (248 from Ricker model, Garton et al. 2011:381) and second best model (241 from Gompertz model, Garton et al. 2011:381) based on earlier studies (Garton et al. 2011:363). This lack of cooperation makes it impossible to provide any improved estimates or discussion of changes from 2007 to 2013.

Range-wide Summary Including All Sage-Grouse Management Zones

Comparing the estimated minimum male population size between 2007 and 2013 from population reconstructions of all evaluated populations showed declines in population size from 6% to 100% except for 4 small populations of less than 500 males which exhibited increases of 2% to 100% (Table 1). The total numbers estimated by summing across all 27 populations with sufficient data to analyze but excluding Colorado leks, suggest a minimum total of 98,740 males breeding in 2007 declined 55% to a total of 44,209 males breeding in 2013 (Table 1) whereas corrected total estimates including Colorado suggest a 56% decline from 109,990 in 2007 to 48,641 in 2013 (Figure 8). Placing the declines during these last 6 years in proper perspective requires looking more broadly at range-wide population changes over the last 5 decades (Fig. 9) which strongly suggests that this last 6-7 years represent the latest downward swing in the cycles of approximately 10-11 year intervals (statistically significant lows in 1965, 1975, 1985, 1996, 2002 and 2013) with the periodic low in 2002 coming 4 years early. The last 3 decades period appear to represent a multi-decadal periodic pattern where relative magnitude of change between highs and lows has decreased during an overall decline until 2013 where lek counts reached their lowest magnitude (48,641 males counted) in 50 years of records. Examination of SMZ population reconstructions reveal fairly, but not perfectly, simultaneous peaks and lows at 9-11 year intervals excepting the missing peak around 2000.

Estimated minimum male sage-grouse attending leks in various SMZs declined from 6% to 67% between 2007 and 2013 with largest declines occurring in the more northern regions excepting the Columbia Basin where numbers were already quite low in 2007(Table 2). Combining estimates across all the regions except Colorado Plateau the range-wide population declined 55% from an estimated 98,603 (SE 3,736) males in 2007 to 44,252 (SE 1,019) males in 2013.

The best stochastic growth model to describe annual changes in sage-grouse populations (Appendix 1) and SMZ populations (Appendix 2) was a stochastic density dependent Gompertz model with 1-year time lag and declining yearly trend in most cases (36% of populations and 66% of SMZ populations). Combining information theoretic measures across SMZs for all 26

models (Table 3) identified this model as significantly better than any of the alternative models (AICc difference > 2.0 indicates significant difference by likelihood ratio test at α=0.05, Burnham and Anderson 2002). When these best models are used to forecast present and future carrying capacity of each population (Table 4) and SMZ (Table 5) they estimate that current populations of SMZs exceed carrying capacity by 3,800 males and that future SMZ carrying capacities will decline from approximately 40,000 males to 20,000 in 30 years and 8,000 males in 100 years if current trends portrayed by stochastic growth models hold that far into the future (Table 5).

Validation

Results of a validation test comparing predicted abundances in 2013 (Z_{2013}) to observed abundances (N_{2013})based on forecasts from Gompertz models with one-year lag and long-term annual trend in carrying capacities (Gompertz t-1 with year models) for each SMZ starting with abundances in 2007 (Fig. 8) indicated that the models (Z_{2013}=256 + 0.9585 N_{2013}, r^2=0.978) predicted 97.8% of the variation in 2013 SMZ population abundances.

Parametric bootstraps forecasting future abundance of each population (Table 6) and SMZ population (Table 7) yielded higher probabilities of the minimum count of males attending leks falling below 20 or 200 compared to earlier projections based on models and parameters estimated in a previous analysis for lek surveys through 2007 (Garton et al. 2011:293 ff.). Only the Great Plains and Columbia Basin SMZs showed high probability of declining below these levels of abundance but the likelihoods increase for effective population sizes of 50 and 500 for both of these SMZs. Long-term (100 year) probability of abundance less than these levels are higher than 50% for the Wyoming Basin and Northern Great Basin as well as for the Great Plains and Columbia Basin management zones.

Metapopulation Persistence

Metapopulation projections of the probability of persistence depended on the level of independence in demographic rates amongst SMZ populations (Table 8) which were similar to measures in earlier studies (Garton et al. 2011:369) and imply that the Columbia Basin SMZ effectively fluctuates independently of the remaining portions of the metapopulation. Most of the highest correlations in population changes amongst SMZs were associated with the Snake River Plain which was utilized as the primary SMZ to generate correlated rates for other zones. Movements were modeled using the same approach developed in earlier work (Garton et al. 2011:367) with the modification that Colorado Parks and Wildlife's failure to participate required dropping those potential movements and connections (Table 9). The Columbia Basin SMZ population was effectively independent of other SMZs. Parametric bootstraps to forecast individual SMZ population persistence and overall persistence of the metapopulation consisting of all the populations produced more extreme forecasts (Table 7) in which probability of declining below effective population sizes of 50 in either short of long term approach 0, excepting the already low Columbia Basin, while long term (100 year) probabilities of declining below effective population sizes of 500 were 100% or close to it. The metapopulation model forecasts virtually no chance of the entire metapopulation declining below effective population sizes of 50 or 500 in either short- or long-term periods.

Discussion

All previously published analyses of sage-grouse populations have documented decreases throughout the species' range (Connelly and Braun 1997, Connelly et al. 2004, Schroeder et al. 2004, WAFWA 2008, Garton et al. 2011). Our results support these findings and provide compelling evidence that most populations have continued to decline over the last 6 years reaching a low in 2013 below 50,000 males attending leks range-wide, an 8 fold decline from the late 1960s. Moreover, our findings compliment conclusions of a recent USFWS report (U.S. Fish and Wildlife Service 2013) and other recent research that document ongoing threats to sage-grouse populations.

Great Plains Management Zone

This zone contains four sage-grouse populations (Garton et al. 2011), including the Dakotas, Northern Montana, Powder River Basin, and Yellowstone Watershed populations. Sage-grouse populations within the Great Plains management zone declined by two-thirds in the last 6 years with the entire management zone most likely declining below effective population sizes of both 50 and 500 within 30 years and with 90% certainty within 100 years. Individual populations all declined more than 50% in the last 6 years with both the Dakotas and Powder River Basin declining more than 70% raising a concern that they may be dropping into an extinction vortex. Even the largest population within the Yellowstone watershed fell by two-thirds with parametric bootstraps implying that every population except Northern Montana is virtually certain to go extinct (96% to 100% probabilities) unless recent patterns of decline change.

The Dakotas population is strongly influenced by energy development; moreover conversion of native rangeland to cropland is a major threat to the persistence of this sage-grouse population. Overall, this population is small and at high risk (U.S. Fish and Wildlife Service 2013). Additionally, Taylor et al. (2012) reported that sage-grouse viability in the Powder River Basin is impacted by multiple stressors including West Nile virus and energy development. Their research suggested that if development continues, future viability of sage-grouse populations in northeast Wyoming will be compromised. The expanding threat of energy development across the Powder River Basin and declining sage-grouse numbers makes this overall an at-risk population (U.S. Fish and Wildlife Service 2013). Finally, cropland conversion continues to take place in the Yellowstone Watershed and this population is potentially at risk (U.S. Fish and Wildlife Service 2013).

Wyoming Basin Management Zone

The Wyoming Basin management zone, containing the largest population of sage-grouse in the United States, has declined 60% in the last 6 years from almost 50,000 males attending leks in 2007 to less than 20,000 in 2013. Nevertheless the likelihood of the management zone population declining below effective population sizes of 50 or 500 are all less than 50% except for a three-quarters chance of declining below an effective population size of 500 in 100 years.

Here again we wonder about the role of drought in addition to fires and expanding oil and gas development on sage-grouse habitat as primary drivers behind these precipitous declines. Primary threats to sage-grouse populations in this zone are energy development and transfer, drought, and sagebrush eradication programs (U.S. Fish and Wildlife Service 2013). Sage-grouse population declines near energy developments in this area have been well documented (Lyon 2000; Holloran 2005; Holloran and Anderson 2005; Kaiser 2006). Residential development has also been identified as a threat (U.S. Fish and Wildlife Service 2013).

Southern Great Basin Management Zone

The Southern Great Basin is one of two major management zones showing the least precipitous population declines of only one-third. This management zone includes populations in California, Nevada, and Utah. A large portion of this zone is managed by the Bureau of Land Management. However, large areas of sagebrush habitat are at considerable risk due to wildfire, cheatgrass (*Bromus tectorum*) invasion, drought, and conifer expansion (U.S. Fish and Wildlife Service 2013) and many areas have burned over the last 10 years. Some of the historic habitat available to sage-grouse within this zone has transitioned to pinyon-juniper woodlands. The area of pinyon-juniper woodlands has increased approximately 10-fold throughout the western United States since the late 1800s (Miller and Tausch 2001).

Snake River Plain Management Zone

The Snake River Plain is the other major management zone showing relatively small population declines of only one-third. This zone contains one of the largest landscapes of connected sage-grouse habitat, and supports the largest sage-grouse population outside of the Wyoming Basin (Garton et al. 2011, U.S. Fish and Wildlife Service 2013). However, the Southern Great Basin and Snake River Plain combined represent a decline of almost 9,000 less males attending leks across the region over the last six years. Three small populations representing less than 500 males counted on leks in Sanpete-Emory Counties, Utah, Mono Lake, California-Nevada and Red-rock Lakes, Montana showed increases in males counted. In contrast, most of the remaining populations within these two zones had moderate declines except Toole-Juab Counties, Utah and Weiser, Idaho which may be dropping into extinction vortices. However every population is so low that its long-term probability of persistence is low except for the Snake-Salmon-Beaverhead population in Idaho which has high probability of persistence over both long- and short-term periods. The Snake River Plain Zone contains a large amount of land managed by BLM and USFS. Within some areas, wildfires and invasive species have continued to reduce the quality of habitat. The mountain Valley portions of this population appear to have relatively stable habitats (U.S. Fish and Wildlife Service 2013). Thus far, energy development is very limited and there are few wild horses.

The Northern Great Basin population of the Snake River Plain SMZ represents a large sage-grouse population in Oregon, Idaho, Nevada, and Utah. Wildfires and invasive species have

reduced the quality and quantity of habitat in many portions of this area. The Murphy Fire Complex in Idaho and Nevada recently burned about 600,000 acres of habitat. The 2012 Long Draw fire in Oregon affected 582,000 acres. Since 2000, over 800,000 acres of sagebrush habitats have burned in the Nevada portion of this zone. In conjunction with fire, invasive weeds are also one of the greatest risks (U.S. Fish and Wildlife Service 2013). Other threats in this region include mining development, renewable energy development, transmission, and juniper encroachment at higher elevations (U.S. Fish and Wildlife Service 2013). West Nile virus has also been consistently detected in this region and in 2006 the population was subjected to the largest known West Nile virus mortality event involving sage-grouse in Oregon (U.S. Fish and Wildlife Service 2013).

Northern Great Basin Management Zone

BLM lands comprise a major portion of sagebrush landscapes in the Northern Great Basin (62%) followed by private (21%). This zone has experienced a 65% decline over the last six years with a 9.9% chance of falling below effective population size of 50 and a 72.2% chance of falling below effective population size of 500. These populations are subject to a broad suite of threats, including juniper encroachment, invasive weeds, renewable energy development, transmission lines, roads, OHV recreation, and residential development (U.S. Fish and Wildlife Service 2013). The central Oregon population within this zone is estimated to have only 53 percent of historic sagebrush habitat (U.S. Fish and Wildlife Service 2013) and its extinction appears likely. The Western Great Basin population within this zone is shared among southeastern Oregon, northeastern California and northwestern Nevada. Invasive weeds, fire, and juniper encroachment (particularly on the western edge) represent the greatest risks to this population (U.S. Fish and Wildlife Service 2013). In 2012, the Rush Fire burned more than 313,000 acres of key sage-grouse habitat in California and Nevada. Most of the largest leks and important nesting habitats were within the fire perimeter (U.S. Fish and Wildlife Service 2013). The Western Great Basin population has declined by 69% over the last 6 years and appears to be experiencing an extinction vortex.

Columbia Basin Management Zone

This zone contains two extant populations, Moses Coulee and Yakima Training Center. The Moses Coulee population has been maintaining its population for about the last 30 years, largely due to the Conservation Reserve Program. Major issues in Moses Coulee are the lack of habitat stability due to the abundant private land, habitat fragmentation, and dependence on farm programs (U.S. Fish and Wildlife Service 2013). The Yakima population is much smaller than Moses Coulee, but occurs mostly on public land. A substantial amount of the sage-grouse habitat on the area has been negatively affected by military activities and resulting wildfires. Despite efforts to manage wildfire risks, wildfires have continued to reduce the quantity of habitat for this population (U.S. Fish and Wildlife Service 2013). This zone declined by 6% over the last

year and has an 82% chance of falling below effective populations sizes of 50 and 500. Extinction is probable for both the Moses Coulee and Yakima populations.

Colorado Plateau Management Zone

This management zone contains two populations; Parachute-Piceance Basin and Meeker-White River Colorado. Risks to sage-grouse in the zone include small size of existing populations, energy development and associated infrastructure, as well as pinyon-juniper. The USFWS considers these populations to be at high risk but no current data were provided by Colorado so population analyses were not possible.

Sage-grouse and Cycles

The range-wide and SMZ population reconstructions suggest that the dynamics of sage-grouse may be another example of the widely reported 10-year cycle in wildlife populations (Keith 1987, Blasius et al. 1999, Watson et al. 2000, Krebs et al. 2001) that are widely believed to result from time delays in the dynamics of herbivores and their interactions with their plant resources and/or predator populations. Blasius et al. (1999) found from a model based on a spatial lattice of patches that only small amounts of local migration are required to induce broad-scale phase synchronization with all patches locking onto the same collective rhythm. This phase synchronization leads to emergence of complex chaotic travelling wave synchronization which may be crucial to species persistence. Watson et al. (2000) found similar approximately 10-year cycles in Rock Ptarmigan (*Lagopus mutus*) and Red Grouse (*Lagopus lagopus scoticus*) synchronous over landscapes in Scotland that were successfully modeled without plant or predator community interactions from one-year lagged weather events combined with fourth-order delayed density dependence with emigration critical to synchrony across regions.

The figures plotting population reconstruction estimates suggest that every SMZ population is apparently at the bottom of an approximately 10-year cycle. What does this mean in terms of future sage-grouse population trends? In 3-4 years these populations could increase again or the cycle may be disappearing and the precipitous drops since 2007 may be the start of a complete population collapse. Biologists from Idaho, Oregon, Nevada, Utah and Wyoming felt that 2013 was a particularly bad year for lek counts as it followed multiple years of poor productivity due to the multi-year drought along with the associated wildfires.

Modeling Population Dynamics

With 6 more years of data every single SMZ population analysis picked the Gompertz model with a one year time lag and annually-declining carrying capacity as the best or second best model (Appendix 2). Zeng et al. (1998) demonstrated the power of the stochastic growth models we applied in detecting density dependence, complex dynamics and time lags. Lande et al. (2002) demonstrated that interpreting the coefficients of delayed density dependence are quite complex involving the negative elasticity of population growth rate per generation with respect to change in population size. Brook and Bradshaw (2006) found that Gompertz density dependent models were most frequently selected in a similar multi-model inferential analysis

across 1198 species including birds, mammals, fish, insects and invertebrates. A similar comprehensive analysis was conducted for Lesser Prairie-Chicken populations throughout this species range. Garton et al. (In press) accumulated and analyzed counts of mostly males from 504 individual leks and 28 lek routes conducted from 1964 to 2012 (Garton et al. In press) and found a similar 57% decline in range-wide estimates of abundance from 80,000 in 2008 to 34,000 in 2012. Three of four ecoregional populations (analogous to SMZs for sage-grouse) showed precipitous declines with only the most northern population remaining approximately stable during that period. Even that population which has been supported by habitat improvements under the CRP program may now be at risk because of major cut-backs in funding for CRP in the region and conversion of habitat into corn fields.

The Powder River population in Wyoming represents one of the large populations early in the data set that has declined most dramatically within the last 6 years (-76%). In 2013 it reached a low of approximately 1600 males attending leks, a figure roughly 4% of the estimates in 1970-1990. Dave Naugle and his students have documented the impact of a "perfect storm" of habitat loss and disturbances through energy development combined with impacts of added water sources spreading West Nile Virus (Naugle, et al. 2004, 2005 Walker, et al. 2004, 2007a) in this population that portends serious negative consequences for sage-grouse populations experiencing expanded energy development throughout the multistate region containing minable energy sources (Doherty et al. 2008, Naugle, et al. 2011, Walker et al. 2007b).

Evidence for Stabilized or Increasing Populations

Every management zone and almost all populations have declined substantially except the sage-grouse population in Washington which exhibited a relatively small overall decline associated with reasonably stable populations in north-central Washington that was likely the result of more extensive development and use of CRP lands (Schroeder and Vander Haegen 2011). In contrast, the Yakima population continued a long-term decline. Beck et al. (2012) advocated eliminating sagebrush control management actions in sagebrush communities until new studies can demonstrate their positive consequences for sage-grouse and other wildlife species yet these still persist (Connelly 2014).

Given continued populations declines and ongoing loss of habitat quality and quantity in every SMZ, the conclusion seems pretty straightforward that current policies and programs are accomplishing little. Claims to the contrary notwithstanding (Connelly 2014), our analyses suggest it is far too early to proclaim various conservation programs are "successful". However, it is possible that it is still too early to detect effects of habitat improvement and that efforts cast in an experimental framework with random assignment of treatments and controls will demonstrate substantial positive effects in the future. Connelly (2014) noted that current sage-grouse conservation efforts appear to be getting sage-grouse conservation "nowhere fast", largely because of bureaucratic approaches and continued reliance on rhetoric and dogma. Similarly, Braun (2014) stated conservation plans overall in Colorado have been ineffective. Copeland et al. (2013) predicted that the core area policy of Wyoming plus a targeted $250 million easement investment could reduce possible population losses to 9–15% (95% CI: 3–32%), decreasing anticipated losses by roughly half statewide and nearly two-thirds within core areas. However, this finding apparently means the population will continue to decline, just at a slower rate. Many conservation efforts (e.g., fence marking, conifer control, enhanced fire protection) have recently

been put in place. It may be too early to detect effects and this population analysis should be repeated at approximately 5-year intervals to broadly assess success of conservation efforts. Treating the entire sage-grouse population as a single metapopulation suggests that loss of the entire species across this enormous range is extremely unlikely over the short term though loss of individual populations is very likely. Overall persistence of the species into the far distant future is not assured or even likely without maintenance of the essential connectivity amongst populations and without substantial changes in the current trajectories of the populations occupying this broad region.

Management Implications

Studies of widely distributed species reinforce the extreme importance of collaborative studies across multiple land ownerships, political entities, and spatial scales in assessing the cumulative effects of myriad factors impacting natural communities and their key wildlife components. Failure of Colorado Parks and Wildlife to support this collaborative effort has placed substantial barriers to successful completion of a solid population assessment. Likewise no single governmental or private entity has the financial resources to devote to critical large-scale experimental research to evaluate the causal factors determining persistence of landscape species such as sage-grouse but multiple organizations, together, might succeed in developing solid understanding of the causal pathways required to maintain productive sage-steppe communities while simultaneously supporting productive rural communities in the landscape. Regular assessment of the status and prospects for landscape species such as sage-grouse will provide an invaluable assessment of the success of conservation actions throughout the region. Application of classic adaptive management would move this process forward substantially but is nowhere in evidence at present.

The total number of sage-grouse estimated by summing across all 27 populations with sufficient data to analyze but excluding Colorado leks, indicate a minimum total of 98,740 males in 2007 declined 55% to a total of 44,209 males in 2013. Overall, our results combined with findings from other recent studies suggest sage-grouse populations that are quite small or exposed to continuing severe threats (wildfire, energy development) are faring poorly. The evidence is clear that these populations continue to decline in spite of various conservation efforts. Populations occupying landscapes where wildfire is relatively rare and energy development limited have fared better over the last 6 years but nowhere have we found evidence that any larger populations are stable to increasing. Conservation efforts that emphasize protecting remaining habitats over broad landscapes are necessary to insure sage-grouse persistence on these lands.

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Appendix 2. Top models of annual rates of change with estimates of carrying capacity in 2013, 2043 and 2113 for SMZs

Table 1. Summary of estimated minimum male population attending leks in each population

Sage-Grouse Population	Estimated Minimum No. Males 2007	SE	No. Males 2013	SE	Change
I Great Plains Management Zone					
Dakotas	1,112	307	311	55	-72%
Northern Montana	3,615	573	1,667	165	-54%
Powder River Basin	6,804	919	1,651	155	-76%
Yellowstone Watershed	8,747	949	3,045	196	-65%
II Wyoming Basin Management Zone					
Jackson Hole	133	82	136	44	2%
Wyoming Basin	43,040	2,727	15,767	644	-63%
III Southern Great Basin Management Zone					
Mono Lake, Californai-Nevada	435	266	543	157	25%
South Mono Lake, California	282	161	264	102	-6%
Northeast Interior Utah	412	192	241	71	-42%
Sanpete-Emery Counties, Utah	24	26	48	19	100%
South-Central Utah	1,501	570	737	208	-51%
Summit-Morgan Counties, Utah	87	67	65	19	-25%
Toole-Juab Counties, Utah	257	237	57	18	-78%
Southern Great Basin	5,087	691	3,388	259	-33%
IV Snake River Plain Management Zone					
Baker, Oregon	137	92	49	18	-64%

Bannack, Montana	219	81	177	35	-19%
Red Rocks Lake, Montana	260	202	357	113	37%
East Central Idaho	179	NA	86	35	-52%
Snake-Salmon-Beaverhead, Idaho	8,734	1,157	6,126	229	-30%
Northern Great Basin	9,927	1,144	6,580	376	-34%
Weiser, Idaho	153	73	51	15	-67%
V Northern Great Basin Management Zone					
Central Oregon	829	222	559	95	-33%
Klamath-Oregon-California	11	NA	0	0	-100%
Northwest-Interior Nevada	117	102	79	29	-32%
Western Great Basin	6,327	1,345	1,934	212	-69%
VI Columbia Basin Management Zone					
Moses-Coulee, Washington	230	84	202	39	-12%
Yakima, Washington	81	50	89	36	10%
VII Colorado Plateau Management Zone	NA	NA	NA	NA	NA
Total Across All Zones except CO	98,740		44,209		

Table 2. Summary of estimated minimum male population attending leks in each Sage-Grouse Management Zone

Sage-Grouse Management Zone	Estimated Minimum No. Males 2007	SE	No. Males 2013	SE	Change
I Great Plains	20,016	1,462	6,674	312	-67%
II Wyoming Basin[1]	54,282	2,636	20,006	646	-63%
III Southern Great Basin	8,202	1,085	5,485	38	-34%
IV Snake River Plain	19,510	1,404	13,371	550	-32%
V Northern Great Basin	7,429	1,312	2,573	468	-65%
VI Columbia Basin	310	98	291	56	-6%
VII Colorado Plateau[1]	241	52	241	NA	NA
Total Across All Zones except CO	98,616	3,736	44,297	1,019	-55%
Total Across All Zones	109,990		48,641		-56%

[1] Missing estimates for Colorado portions of range replaced by last available estimates from 2007.

Table 3. Information Theoretic Measures of Best Models Across All SMZs

Model	K	Total AICc	ΔAICc
EGPE	3	-911.2	47.6
Period	4	-885.5	73.3
Gompertz	4	-894	64.8
Ricker	4	-894	64.8
Gompertz + Year	5	-910.6	48.2
Ricker + Year	5	-905.8	53
Gompertz + Period	5	-893.5	65.3
Ricker + Period	5	-891	67.8
Gompertz + Year, Period	6	-900.7	58.1
Ricker + Year, Period	6	-894	64.8
Gompertz t-1	4	-907.6	51.2
Ricker t-1	4	-906.5	52.3
Gompertz t-1 + year	5	-958.8	0
Ricker t-1 + Year	5	-941	17.8
Gomperz t-1 + Period	5	-929.1	29.7
Ricker t-1 + Period	5	-921	37.8
Gomperz t-1 + Year,Period	6	-951	7.8
Ricker t-1 + Year,Period	6	-930	28.8
Gompertz t-2	4	-903.4	55.4
Ricker t-2	4	-901.4	57.4
Gompertz t-2 + Year	5	-935.5	23.3
Ricker t-2 + Year	5	-918.2	40.6
Gomperz t-2+ Period	5	-918.8	40
Ricker t-2+ Period	5	-909.6	49.2
Gomperz t-2 + Year,Period	6	-926.5	32.3
Ricker t-2 + Year,Period	6	-907.9	50.9

Table 4. Estimated minimum number of males counted at leks in 2013 compared to estimated carrying capacities for individual populations in 2013, 2043 and 2113.

Sage-Grouse Population	Estimated Males		Estimated Carrying Capacity of Minimum No. of Males					
	2013	SE	2013	SE	2043	SE	2113	SE
I Great Plains Management Zone								
Dakotas	311	55	280	79	97	31	45	18
Northern Montana	1,667	165	4,353	1,394	3,714	1,123	3,380	992
Powder River Basin	1,651	155	2,273	618	240	78	36	24
Yellowstone Watershed	3,045	106	3,087	14,671	241	1,138	136	644
II Wyoming Basin Management Zone								
Jackson Hole	NA	NA	NA	NA	NA	NA	NA	NA
Wyoming Basin	15,767	644	16,078	4,983	6,158	2,021	2,209	913
III Southern Great Basin Management Zone								
Mono Lake, Californai-Nevada	543	157	330	120	576	216	4,059	1,679
South Mono Lake, California	264	102	258	84	275	92	336	118
Northeast Interior Utah	NA	NA	NA	NA	NA	NA	NA	NA
Sanpete-Emery Counties, Utah	NA	NA	NA	NA	NA	NA	NA	NA
South-Central Utah	737	208	944	248	802	209	680	177
Summit-Morgan Counties, Utah	NA	NA	NA	NA	NA	NA	NA	NA
Toole-Juab Counties, Utah	NA	NA	NA	NA	NA	NA	NA	NA
Southern Great Basin	3,388	259	2,702	962	1,417	551	543	268
IV Snake River Plain Management Zone								
Baker, Oregon	NA	NA	NA	NA	NA	NA	NA	NA
Bannack, Montana	177	35	146	40	109	30	86	25

Red Rocks Lake, Montana	NA	NA	NA	NA	NA	NA	NA	NA
East Central Idaho	NA	NA	NA	NA	NA	NA	NA	NA
Snake-Salmon-Beaverhead, Idaho	6,126	229	5,727	1,823	5,074	1,539	4,719	1,394
Northern Great Basin	6,580	376	6,214	1,566	1,664	425	77	20
Weiser, Idaho	NA	NA	NA	NA	NA	NA	NA	NA
V Northern Great Basin Management Zone								
Central Oregon	559	95	509	178	148	58	28	17
Klamath-Oregon-California	NA	NA	NA	NA	NA	NA	NA	NA
Northwest-Interior Nevada	79	29						
Western Great Basin	1,934	212	2,548	812	701	228	40	15
VI Columbia Basin Management Zone								
Moses-Coulee, Washington	202	39	172	50	107	35	77	28
Yakima, Washington	NA	NA	NA	NA	NA	NA	NA	NA
VII Colorado Plateau Management Zone	NA	NA	NA	NA	NA	NA	NA	NA
Total Across All Populations* except CO	43,030		43,349		21,084		16,416	

*(> 25 leks counted)

Table 5. Estimated minimum number of males counted at leks in each management zone in 2013 compared to estimated carrying capacities in 2013, 2043 and 2113.

	Estimated Males		Estimated Carrying Capacity of Minimum No. of Males					
Sage-Grouse Management Zone	2013	SE	2013	SE	2043	SE	2113	SE
I Great Plains	6,674	312	3,798	1,378	1,444	546	481	193
II Wyoming Basin	15,903	646	15,541	4,536	6,784	2,135	2,248	918
III Southern Great Basin	5,485	38	4,862	1,514	3,722	1,175	2,649	875
IV Snake River Plain	13,371	550	13,275	4,008	6,420	2,083	2,330	1,111
V Northern Great Basin	2,573	468	2,796	835	1,027	330	382	152
VI Columbia Basin	291	56	233	70	120	39	64	24
VII Colorado Plateau	NA	NA	NA	NA	NA	NA	NA	NA
Total Across All Zones except CO	44,297	1,019	40,505	6,444	19,517	3,269	8,154	1,704

Table 6. Summary Presentation of results of parametric bootstraps to forecast probability (percentage) of populations falling below counts (N) of 20 and 200 and effective population sizes (Ne) of 50 and 500.

	30-year				100-year			
Sage-Grouse Population	N< 20	N< 200	Ne< 50	Ne< 500	N< 20	N< 200	Ne< 50	Ne< 500
I Great Plains Management Zone								
Dakotas	21.5	73.1	35.4	100.0	69.1	77.1	72.4	100.0
Northern Montana	2.7	6.2	5.6	11.5	16.7	24.0	7.2	13.7
Powder River Basin	2.9	77.6	5.8	99.0	98.7	98.9	98.8	99.3
Yellowstone Watershed	15.6	68.6	54.5	74.9	89.5	95.6	89.5	96.0
II Wyoming Basin Management Zone								
Jackson Hole	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Wyoming Basin	0.1	14.4	4.7	20.3	20.7	21.4	21.0	74.9
III Southern Great Basin Management Zone								
Mono Lake, Californai-Nevada	0.1	65.2	7.7	100.0	0.3	67.1	21.5	100.0
South Mono Lake, California	0.3	87.5	7.9	100.0	0.8	88.8	21.3	100.0
Northeast Interior Utah	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sanpete-Emery Counties, Utah	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South-Central Utah	0.1	8.2	0.9	100.0	17.9	36.9	18.7	100.0
Summit-Morgan Counties, Utah	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toole-Juab Counties, Utah	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Southern Great Basin	0.1	2.6	1.3	36.8	3.3	77.0	10.4	90.5
IV Snake River Plain Management Zone								
Baker, Oregon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bannack, Montana	6.6	100.0	37.2	100.0	34.8	100.0	47.9	100.0
Red Rocks Lake, Montana	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

East Central Idaho	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Snake-Salmon-Beaverhead, Idaho	0.4	5.3	3.3	6.7	16.1	18.6	16.5	20.7
Northern Great Basin	9.9	13.6	12.6	46.7	35.3	90.2	72.2	92.3
Weiser, Idaho	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
V Northern Great Basin Management Zone								
Central Oregon	2.7	49.7	3.4	100.0	50.1	51.2	50.5	100.0
Klamath-Oregon-California	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Northwest-Interior Nevada								
Western Great Basin	13.1	13.2	13.1	78.1	54.6	99.9	96.2	99.9
VI Columbia Basin Management Zone								
Moses-Coulee, Washington	13.1	13.2	13.1	78.1	54.6	99.9	96.2	99.9
Yakima, Washington								
VII Colorado Plateau Management Zone	n/a		n/a		n/a		n/a	n/a
Average Across All Zones except CO	6	37	14	68	33	68	46	85

Table 7. Probabilities of extinction with standard errors (SE) estimated by parametric bootstraps across all models weighted by the probability that each models is the correct (best) model within the set of 26 models and the probability of extinction under a metapopulation model based on the best stochastic growth model across all SMZs incorporating movement between SMZ populations and correlated environmental perturbations amongst SMZ populations.

						Probability Under Metapopulation	
	Time	Probability (as %) for each SMZ individually (SE)					
Sage-Grouse Management Zone	Horizon	N<20	N<200	Ne<50	Ne<500	Ne<50	Ne<500
I Great Plains	30 yr	39.6 (7.6)	54.5 (9.9)	52.6 (9.6)	55.2 (9.9)	0%	0%
	100 yr	55.1 (9.9)	74.5 (6.5)	55.6 (9.8)	92.6 (5.1)	0%	100%
II Wyoming Basin	30 yr	0.1 (0)	14.2 (5.5)	4.1 (1.6)	21.4 (8.1)	0%	0%
	100 yr	21.8 (8.2)	22.5 (8.2)	22.2 (8.2)	76.2 (8.0)	0%	78%
III Southern Great Basin	30 yr	0 (0)	0 (0)	0 (0)	0.3 (0.2)	0%	0%
	100 yr	9.9 (6.0)	10.4 (6.1)	10.1 (6.0)	25.3 (6.3)	0%	91%
IV Snake River Plain	30 yr	0.5 (0.6)	2.6 (3.1)	2.1 (2.6)	4.5 (3.7)	0%	0%
	100 yr	10.1 (6.0)	20.6 (6.4)	6.5 (4.9)	46.7 (7.3)	0%	100%
V Northern Great Basin	30 yr	9.9 (5.3)	13.6 (6.7)	12.6 (6.5)	46.7 (7.3)	0%	2%
	100 yr	35.3 (8.1)	90.2 (5.7)	72.2 (6.2)	92.3 (4.9)	25%	100%
VI Columbia Basin	30 yr	11.8 (6.1)	85.2 (6.0)	42 (6.1)	100 (0)	85%	100%
	100 yr	77.7 (8.0)	90.5 (5.3)	80.2 (7.5)	100 (0)	100%	100%
VII Colorado Plateau		NA	NA	NA	NA	NA	NA
Range-wide Population						0%	0%

Table 8. Correlations in residuals among sage-grouse management zones from predictions of the overall best AICc Gompertz type model of density dependence in annual rates of change with 1-year time lag and declining trend in carrying capacity through time.

	Great Plains	Wyoming Basin	Southern Great Basin	Snake River Plain	Northern Great Basin	Columbia Basin
Great Plains	1	0.51	0.126	0.375	0.051	0.163
Wyoming Basin		1	0.299	0.348	0.083	0.061
Southern Great Basin			1	0.604	0.573	0.219
Snake River Plain				1	0.407	0.281
Northern Great Basin					1	0.278

Table 9. Dispersal rates among sage-grouse management zones representing the proportion of the population dispersing to another management zone each year.

	Wyoming Basin	Southern Great Basin	Snake River Plain	Northern Great Basin
Great Plains	0.050			
Wyoming Basin		0.020	0.011	
Southern Great Basin			0.024	0.004
Snake River Plain				0.035

Connections between management zones not presented are assumed to be zero.
Taken from Garton et al. 2011:367 Table 15.71.

Appendix 1. Top models of annual rates of change with estimates of carrying capacity in 2013, 2043 and 2113 for Populations.

Populations	Best Models	a	$b_1 lnNt$	$b_2 Nt$	$b_2 lnN_{t-1}$	$b_3 lnN_{t-2}$	c(period)	d(year)	S	r^2	K_{2013}	K_{2043}	K_{2113}
I Great Plains Management Zone													
Dakotas	Gompertz + Year	35.8948	-0.3942					-0.0167	0.256	0.189	323	91	5
Northern Montana	Gompertz t-1 + Period	2.8591			-0.3347		0.3066		0.1847	0.352	5127	5127	5127
Powder River Basin	Gompertz t-1 + year	67.1015			-0.396			-0.0318	0.2769	0.317	2436	219	1
Yellowstone Watershed	Ricker + Year	32.4125		-6E-05				-0.016	0.218	0.364	3393	0	0
II Wyoming Basin Management Zone													
Jackson Hole	NA[+]												
Wyoming Basin	Gompertz t-1 + year	23.619			-0.2946			-0.0103	0.1485	0.246	17913	6275	543
III Southern Great Basin Management Zone													
Mono Lake, Californai-Nevada	Gompertz	3.1176	-0.5521						0.465	0.267	283	283	283
South Mono Lake, California	Gompertz	2.491	-0.4528						0.3431	0.228	245	245	245
Northeast Interior Utah	NA[+]												
Sanpete-Emery Counties, Utah	NA[+]												
South-Central Utah	Gompertz	2.2129	-0.3196						0.2779	0.186	1016	1016	1016
Summit-Morgan Counties, Utah	NA[+]												
Toole-Juab Counties, Utah	NA[+]												
Southern Great Basin	Gompertz t-2 + Year	28.088				-0.4317		-0.0123	0.1853	0.357	2229	948	129
IV Snake River Plain Management Zone													
Baker, Oregon	NA[+]												
Bannack, Montana	Gompertz + Period	1.651	-0.3144				0.2848		0.1959	0.172	191	191	191

Red Rocks Lake, Montana	NA[+]										
East Central Idaho	NA[+]										
Snake-Salmon-Beaverhead, Idaho	Gompertz t-1 + Period	3.0269		-0.3423	0.2949		0.1794	0.371	6925	6925	6925
Northern Great Basin	Gompertz t-1 + year	49.0596		-0.5015		-0.0222	0.1251	0.514	6099	1616	73
Weiser, Idaho	NA[+]										
V Northern Great Basin Management Zone											
Central Oregon	Gompertz + Year, Period	60.8892	-0.5485		-0.1821	-0.0286	0.1881	0.321	423	89	2
Klamath-Oregon-California	NA[+]										
Northwest-Interior Nevada	NA[+]										
Western Great Basin	Gompertz t-1 + Year,Period	2.5868		-0.3036	0.251		0.2602	0.241	5016	5016	5016
VI Columbia Basin Management Zone											
Moses-Coulee, Washington	Gompertz t-1 + year	27.7956		-0.3647		-0.0129	0.2795	0.199	150	52	4
Yakima, Washington	NA[+]										
VII Colorado Plateau Management Zone	NA*										

*NA - Not Available because Colorado Parks and Wildlife Denied 4 requests to participate in this study.

NA[+] - Not Estimated because fewer than 26 leks counted

Appendix 2. Top models of annual rates of change with estimates of carrying capacity in 2013, 2043 and 2113 for SMZs.

Sage-Grouse

Management Zone	Best Models	a	*lnNt*	b_1Nt	b_2lnN_{t-1}	c(period)	d(year)	S	r^2	K_{2013}	K_{2043}	K_{2113}
I Great Plains	Ricker + Year	30.2053	.	-1.7E-05	.	.	-0.015	0.2082	0.239	616	0	0
	Gompertz t-1 + year	31.6958	.	.	-0.3949	.	-0.014	0.2103	0.223	7317	2526	211
II Wyoming Basin	Gompertz t-1 + year	23.5212	.	.	-0.2978	.	-0.0102	0.1479	0.247	22825	8169	743
III Southern Great Basin	Gompertz t-1 + year	15.2114	.	.	-0.3777	.	-0.006	0.1299	0.339	4008	2488	818
IV Snake River Plain	Gomperz t-1 + Year,Period	25.4738	.	.	-0.4124	0.1566	-0.0107	0.1319	0.448	13919	6391	1039
	Gompertz t-1 + year	35.0669	.	.	-0.407	.	-0.0155	0.1367	0.393	13324	4250	296
V Northern Great Basin	Gompertz t-1 + year	27.4378	.	.	-0.33	.	-0.0123	0.1947	0.221	3344	1093	80
	Gomperz t-1 + Year,Period	40.9475	.	.	-0.367	-0.1634	-0.0189	0.1926	0.256	2716	579	16
VI Columbia Basin	Gompertz t-1 + year	27.8921	.	.	-0.3956	.	-0.0128	0.209	0.208	216	82	8
	Gompertz + Year	26.9596	-0.3979	.	.	.	-0.0123	0.2102	0.199	252	100	11
VII Colorado Plateau	NA*											

*NA - Not Available because Colorado Parks and Wildlife denied 4 requests to participate in this study.

Figure 1. Greater sage-grouse populations and management zones in western North America.

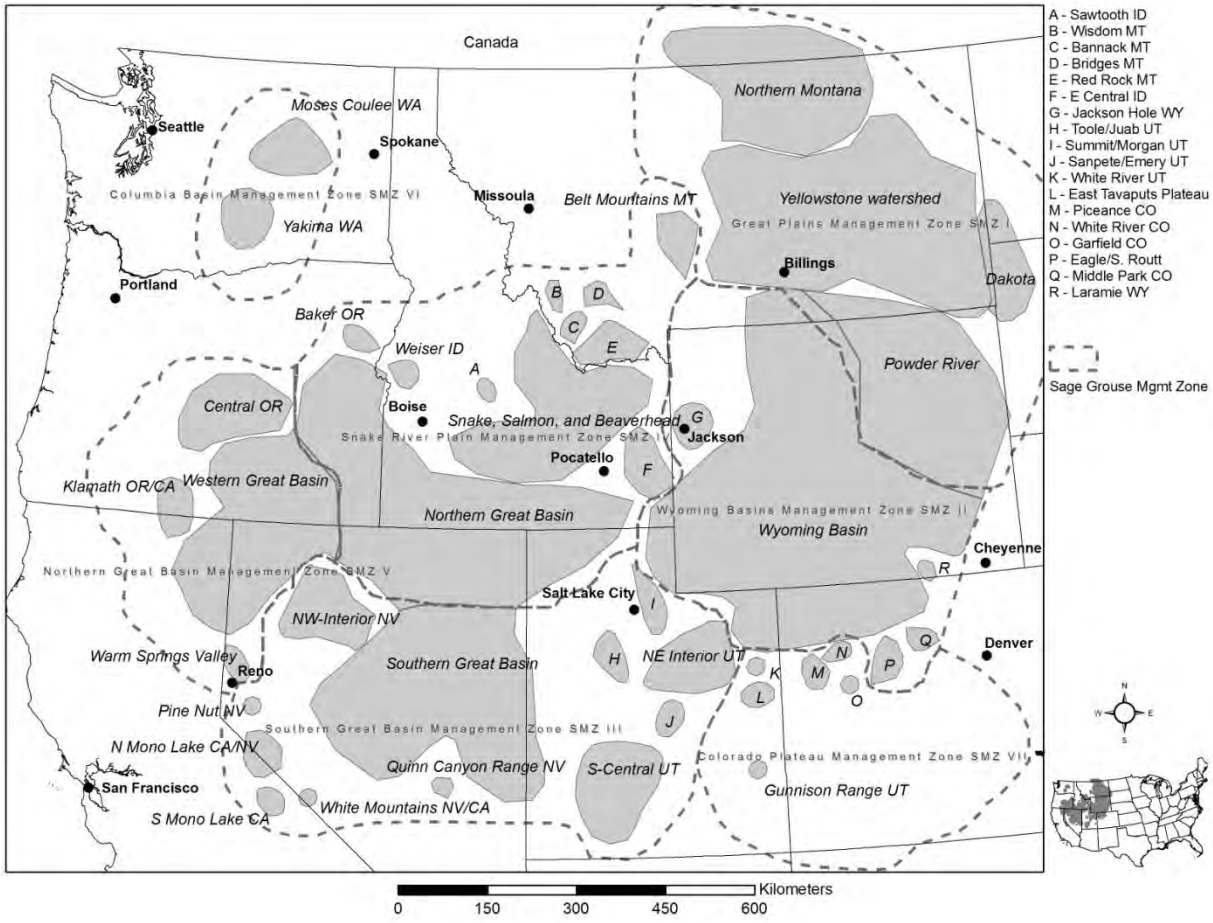
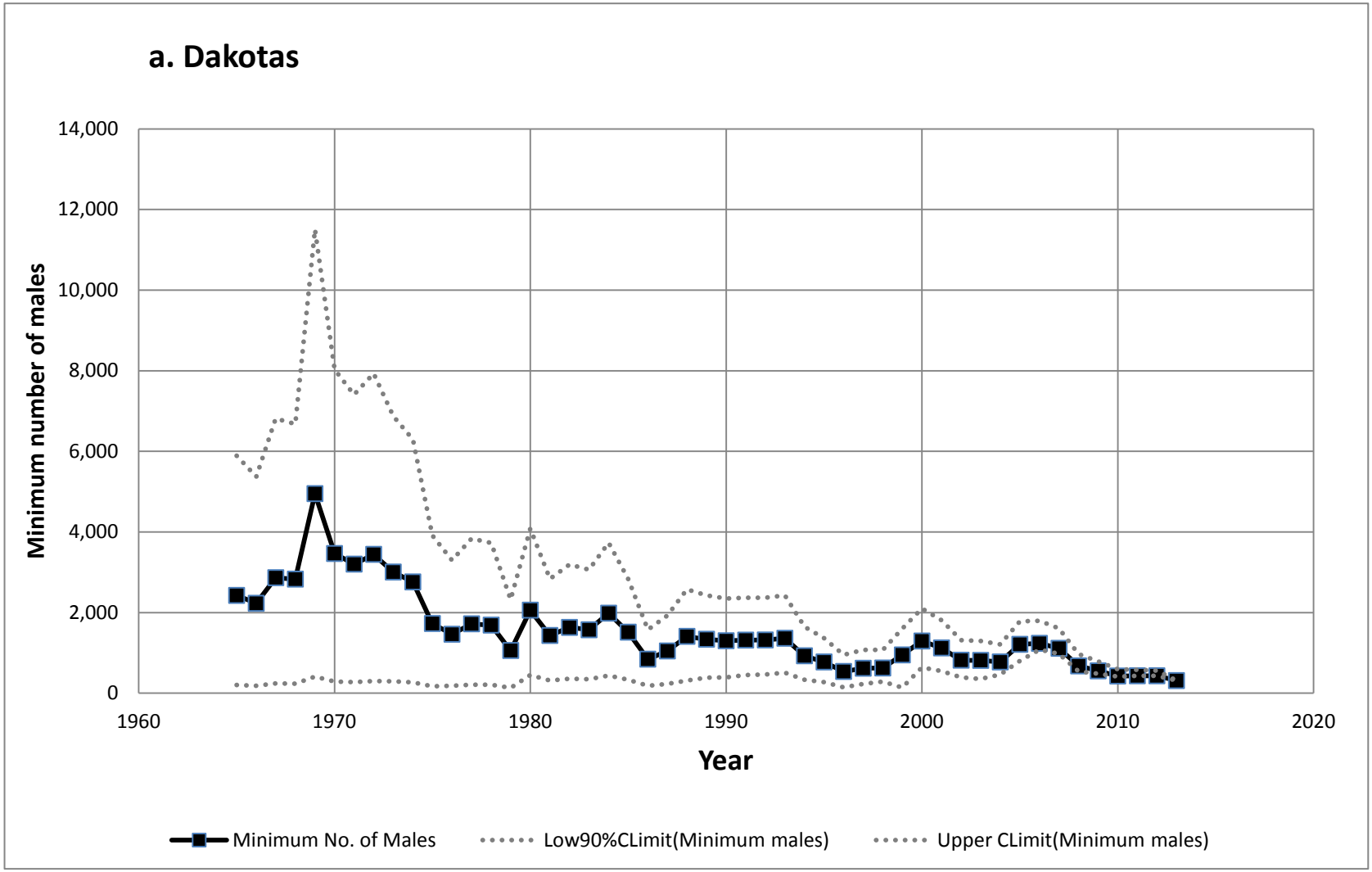
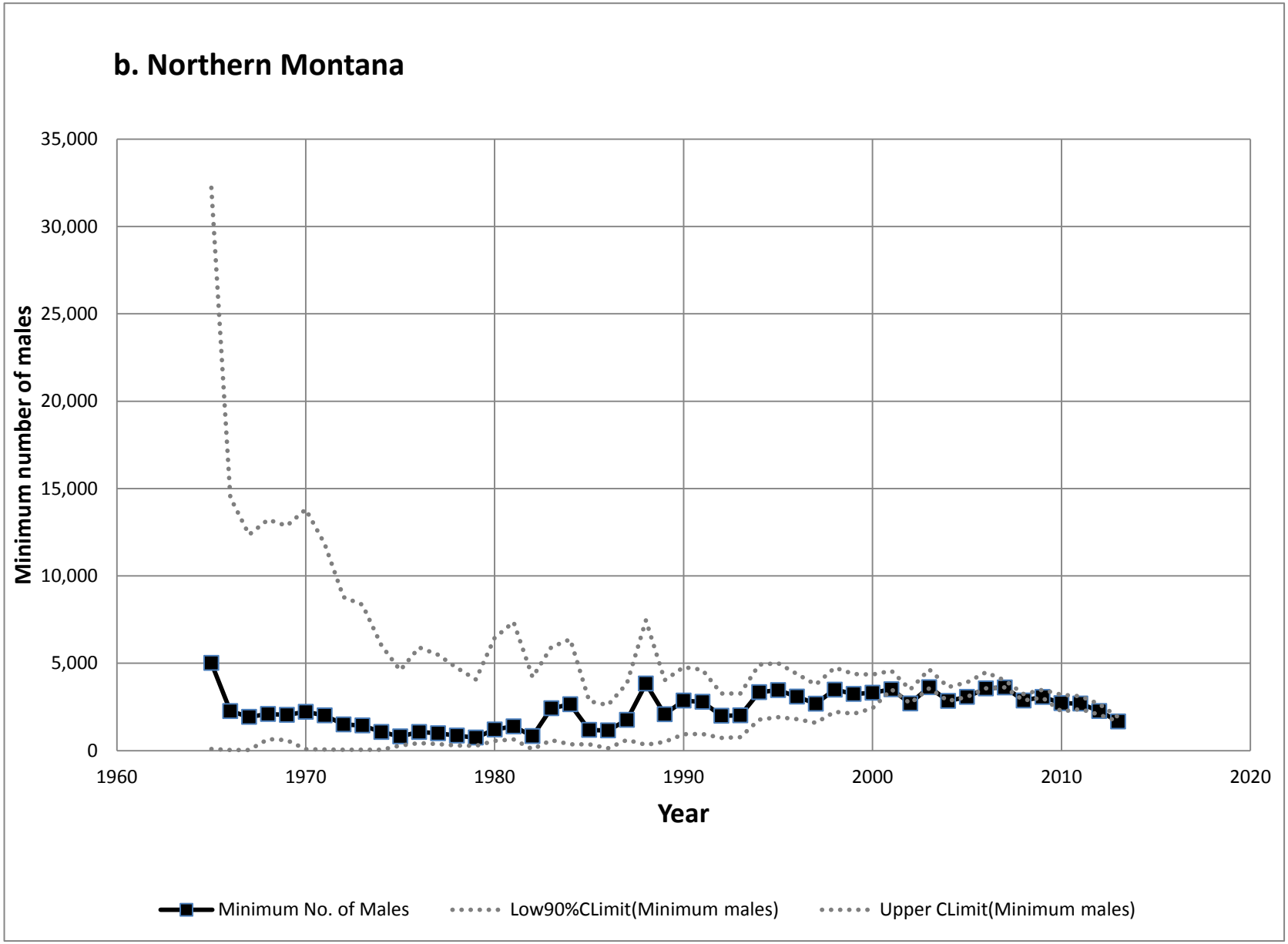
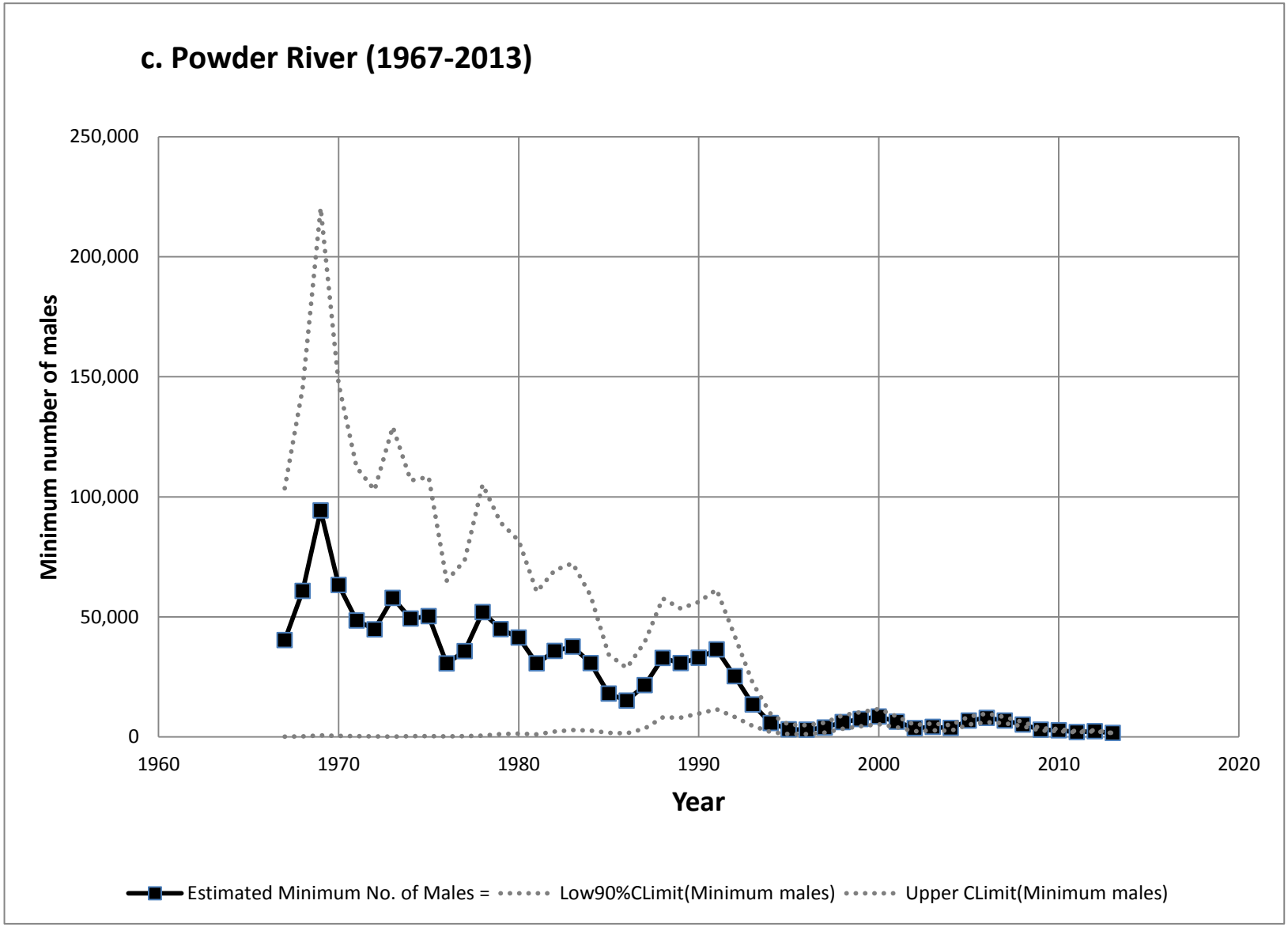
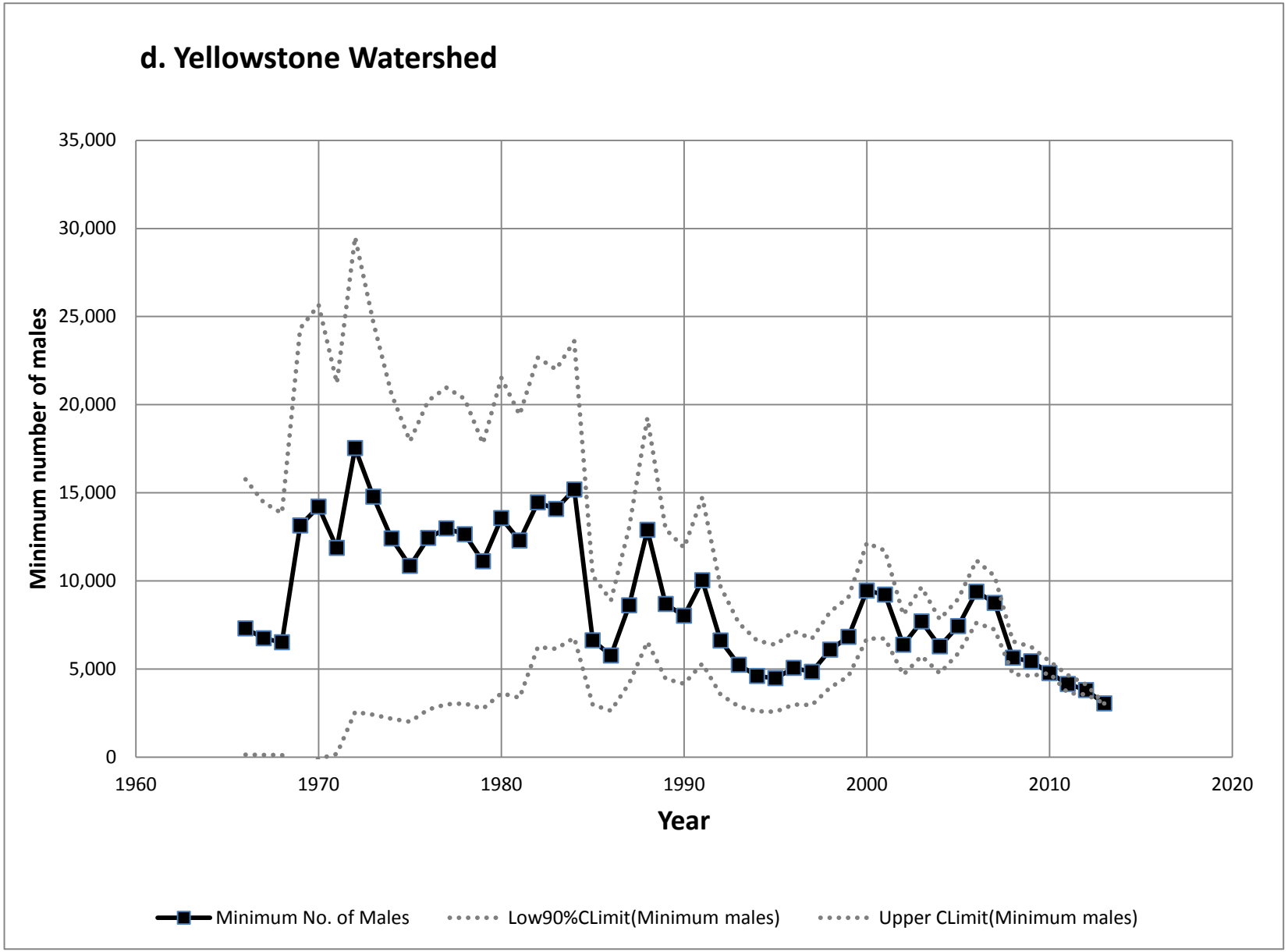


Figure 2. Population reconstructions for Great Plains populations and Management Zone I: a. Dakotas b. Northern Montana c. Powder River Basin d. Yellowstone Watershed e. Great Plains Management Zone I.


a. Dakotas
Minimum number of males
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Minimum No. of Males
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


b. Northern Montana
Minimum number of males
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Minimum No. of Males
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


c. Powder River (1967-2013)
Minimum number of males
250,000
200,000
150,000
100,000
50,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


d. Yellowstone Watershed
Minimum number of males
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Minimum No. of Males
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

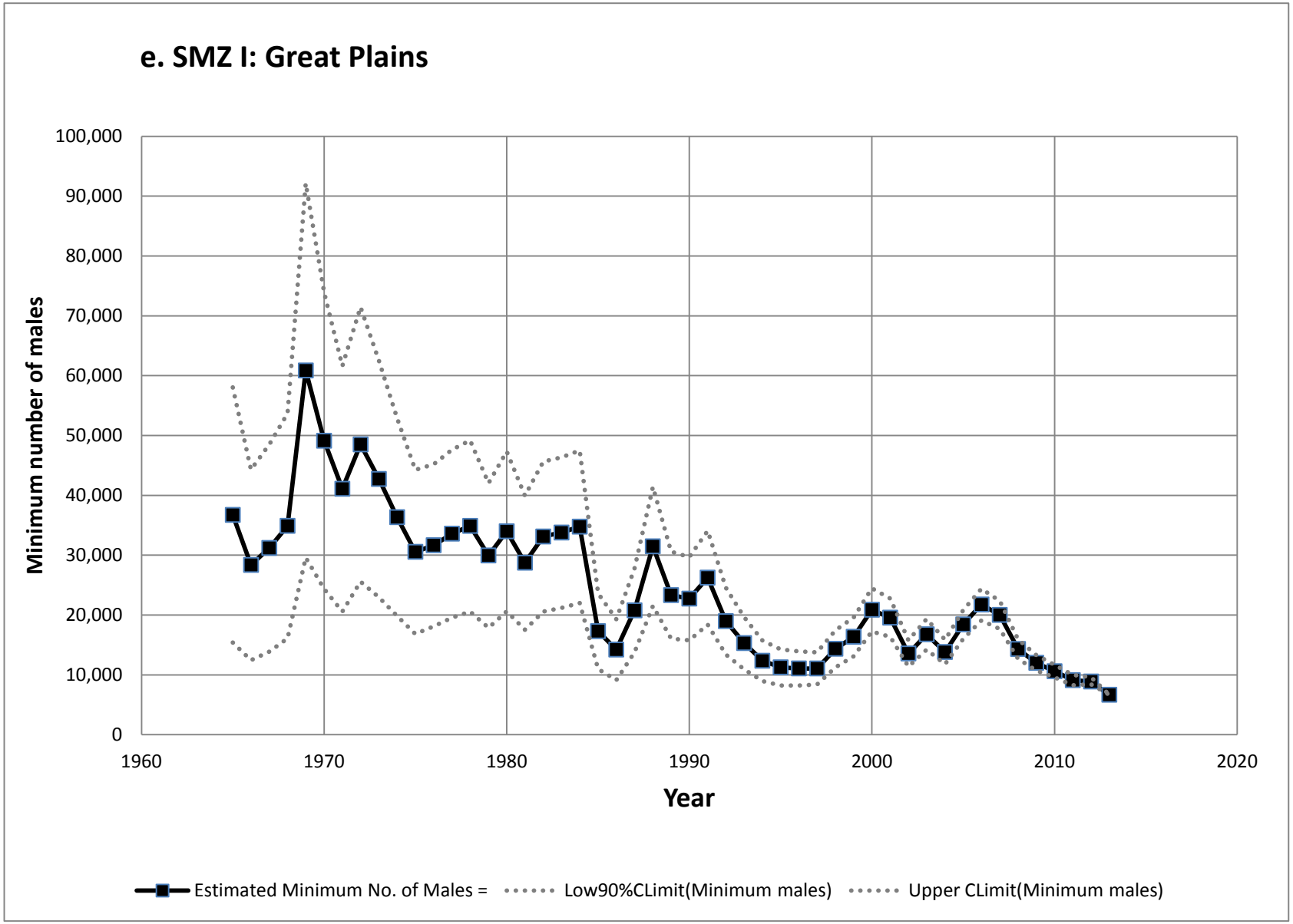
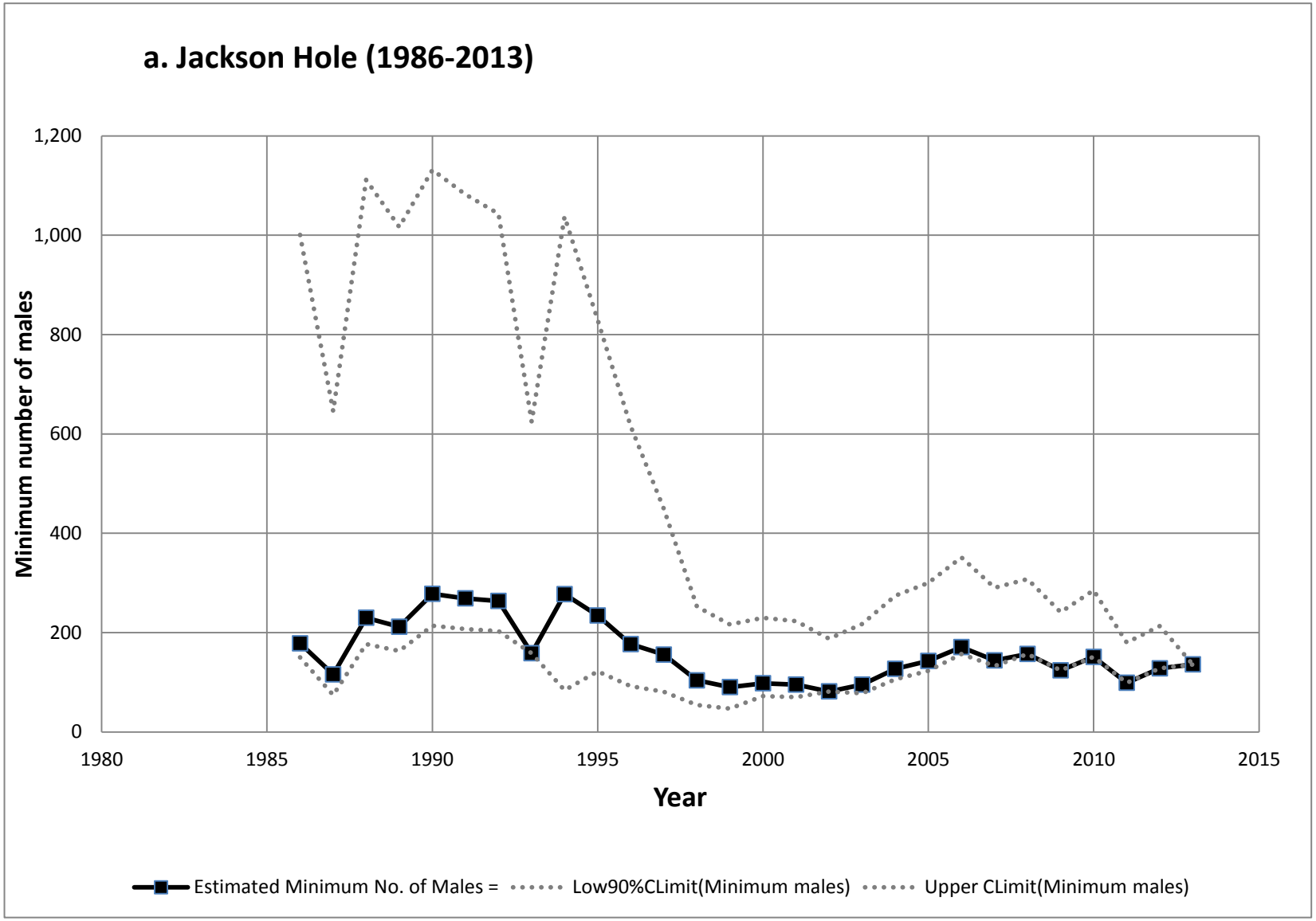
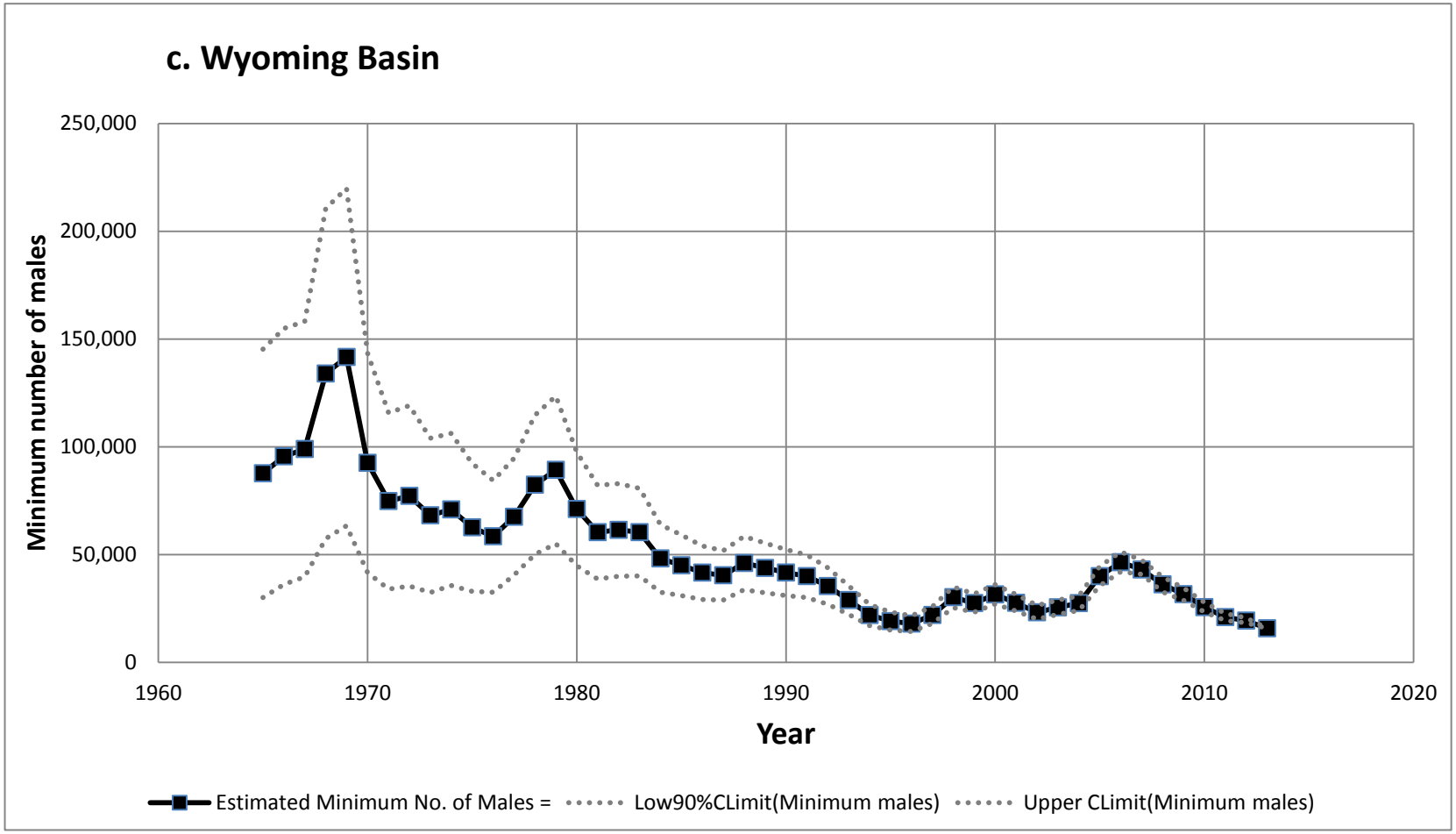

e. SMZ I: Great Plains
Minimum number of males
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

Figure 3. Population reconstructions for Wyoming Basins populations and Management Zone II: a. Jackson Hole, Wyoming; b. Middle Park, Colorado; c. Wyoming Basins; d. Management Zone II.


a. Jackson Hole (1986-2013)
Minimum number of males
1,200
1,000
800
600
400
200
0
1980
1985
1990
1995
2000
2005
2010
2015
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

NO UPDATED COLORADO DATA YET


c. Wyoming Basin
Minimum number of males
250,000
200,000
150,000
100,000
50,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

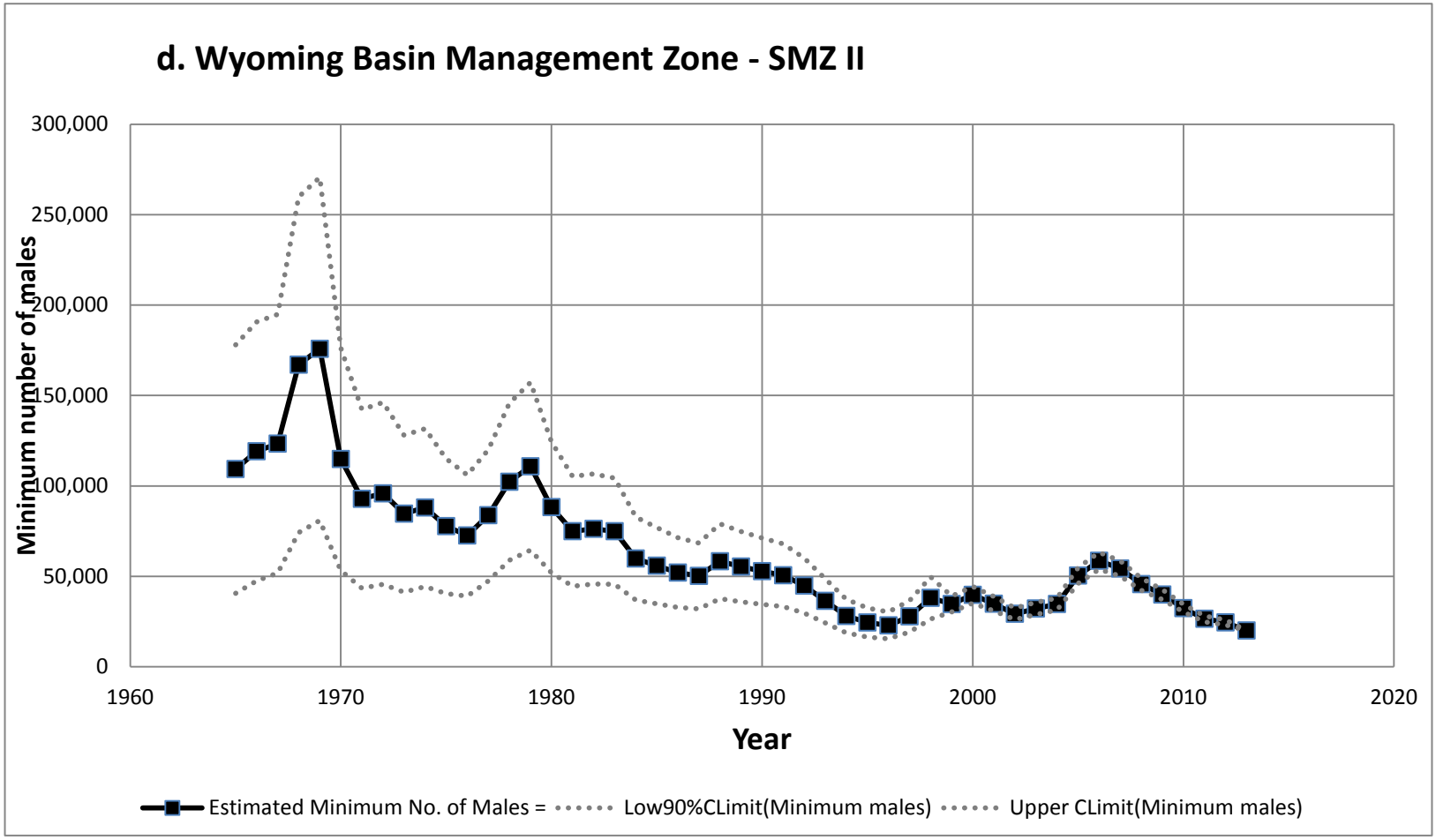
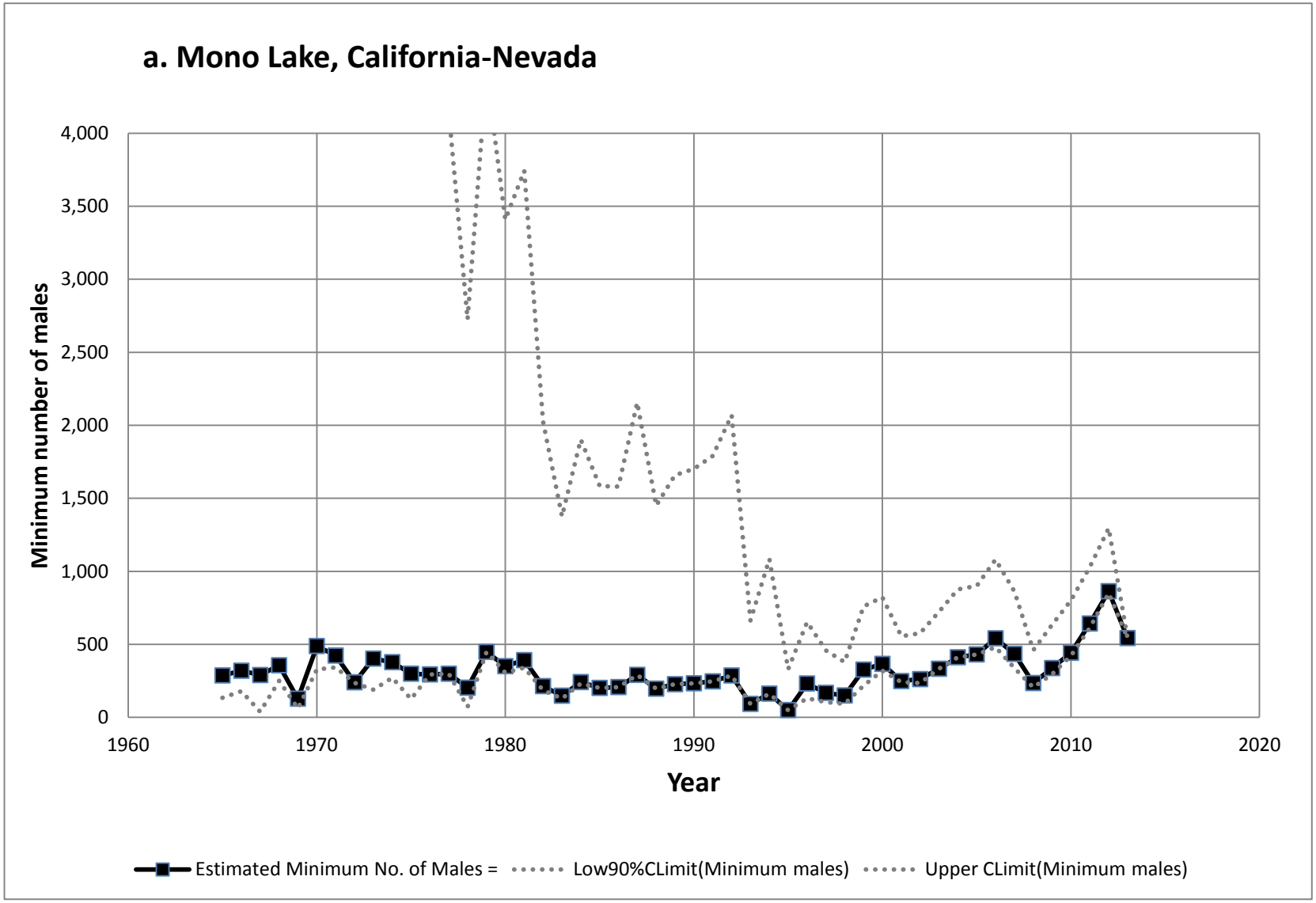
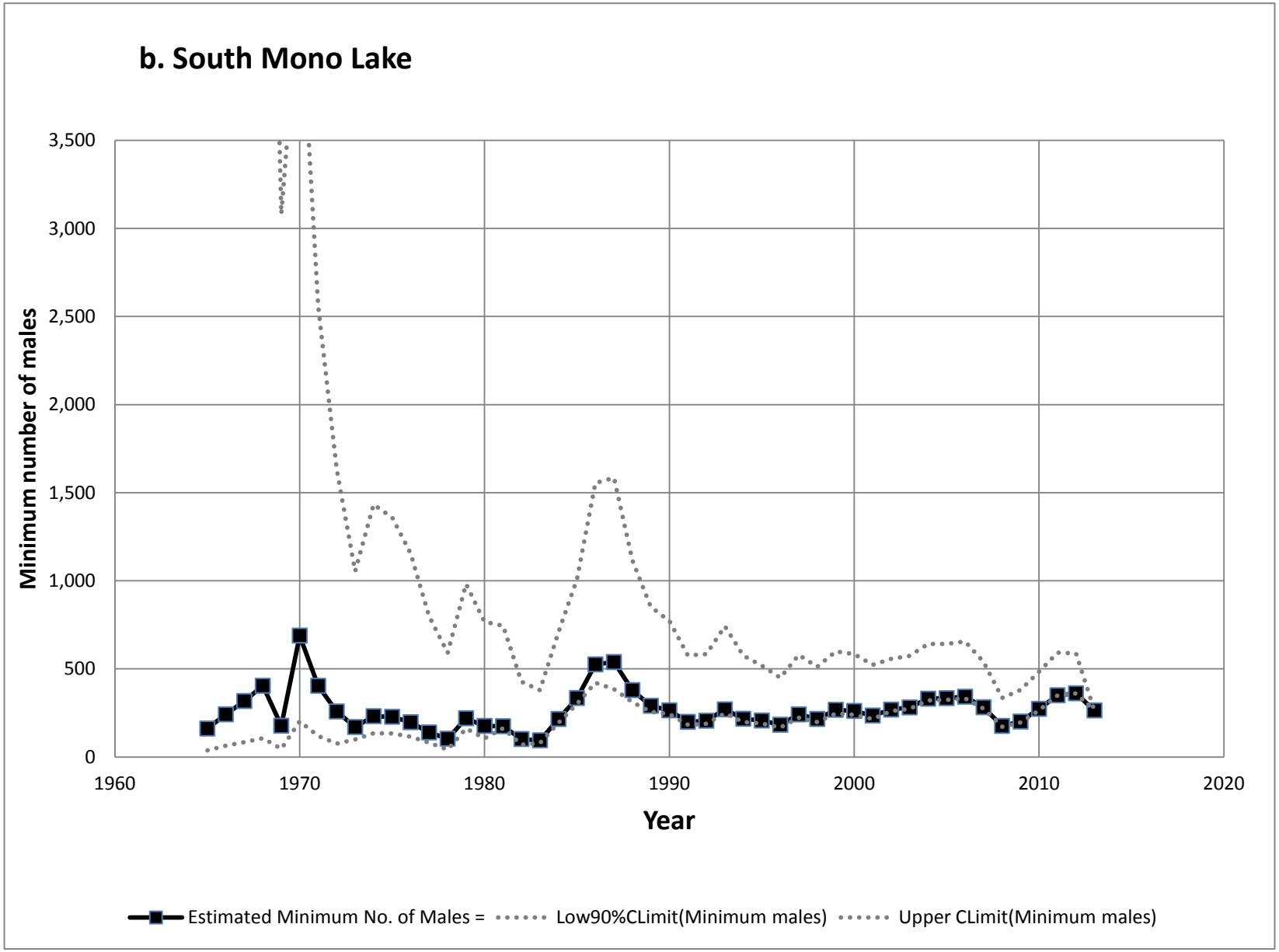
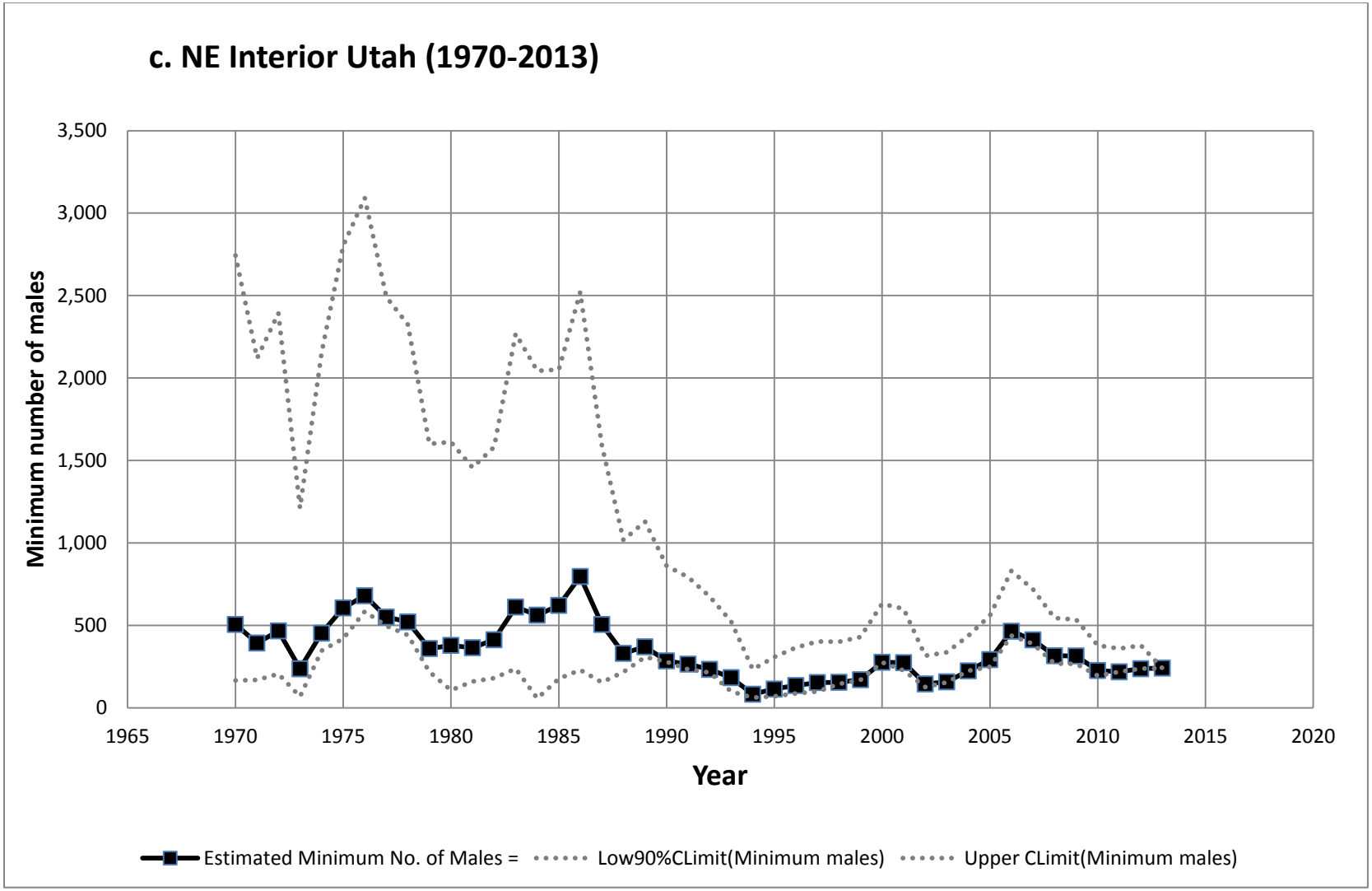
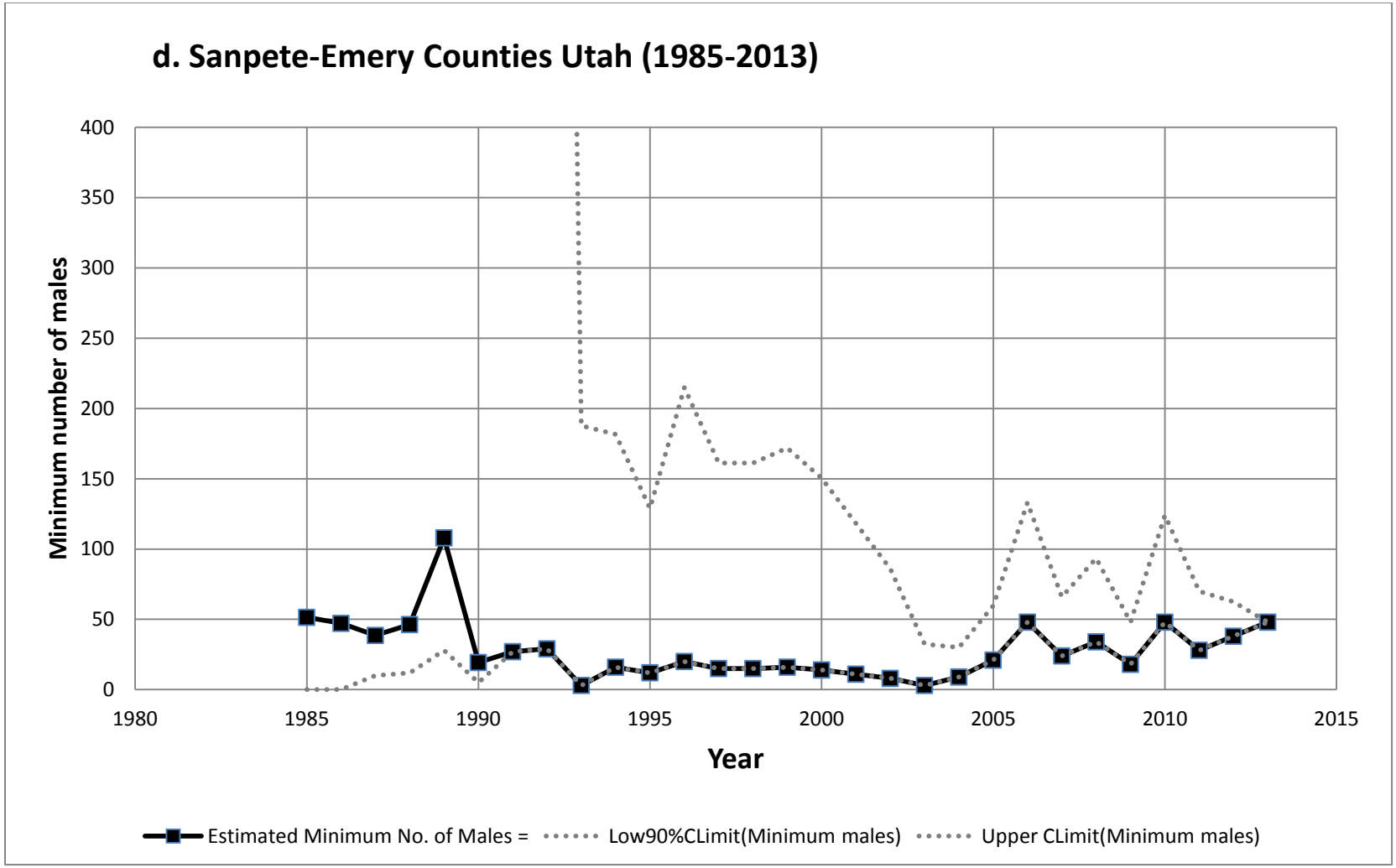

d. Wyoming Basin Management Zone - SMZ II
Minimum number of males
300,000
250,000
200,000
150,000
100,000
50,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

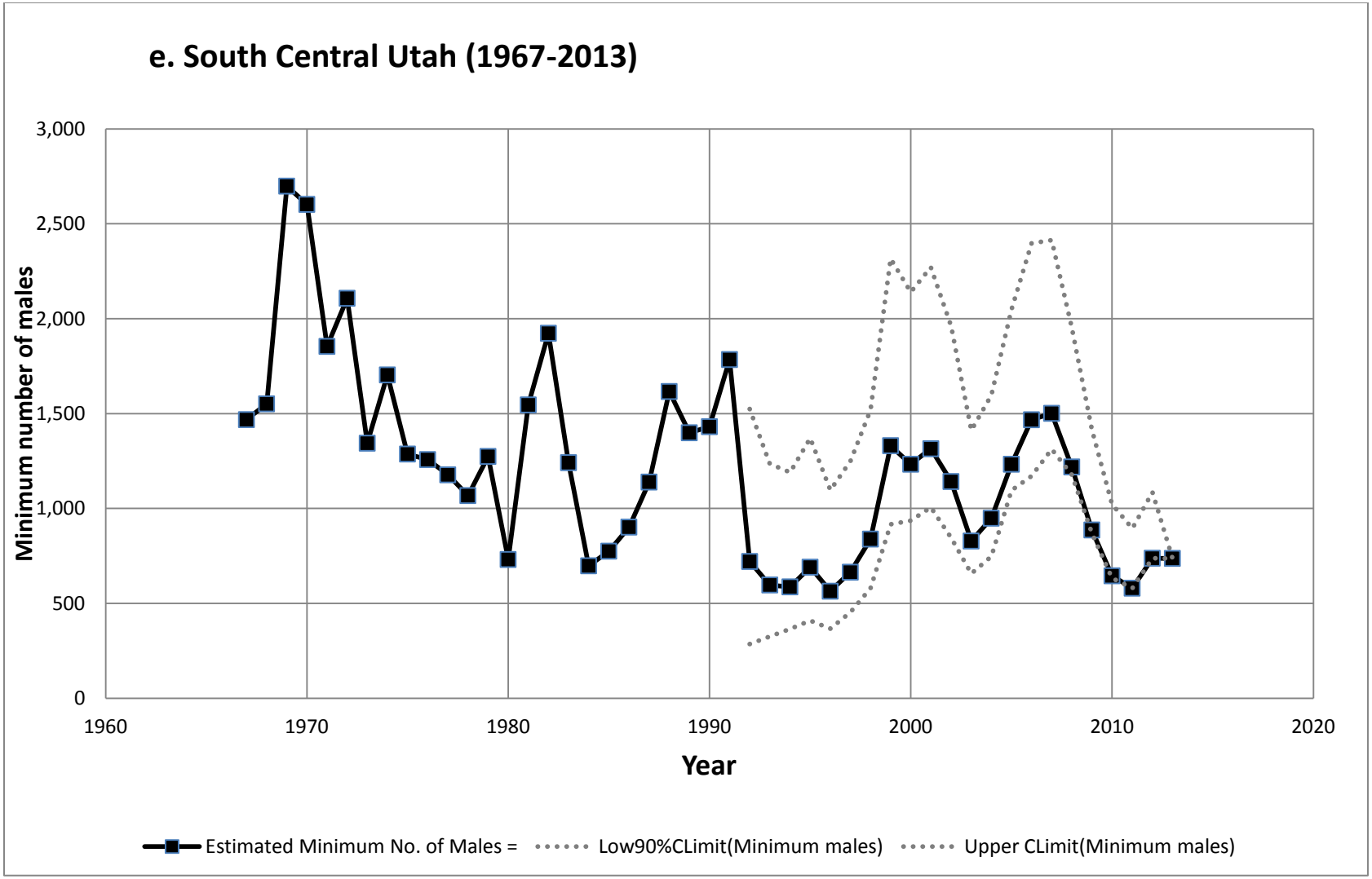
Figure 4. Population reconstructions for Southern Great Basin populations and Management Zone III: a. Mono Lake, California-Nevada; b. South Mono Lake; c. Northeast Interior, Utah; d. Sanpete-Emery; e. South-central Utah; f. Summit-Morgan, g. Toole-Juab Utah; h. Southern Great Basin; i. Management Zone III.

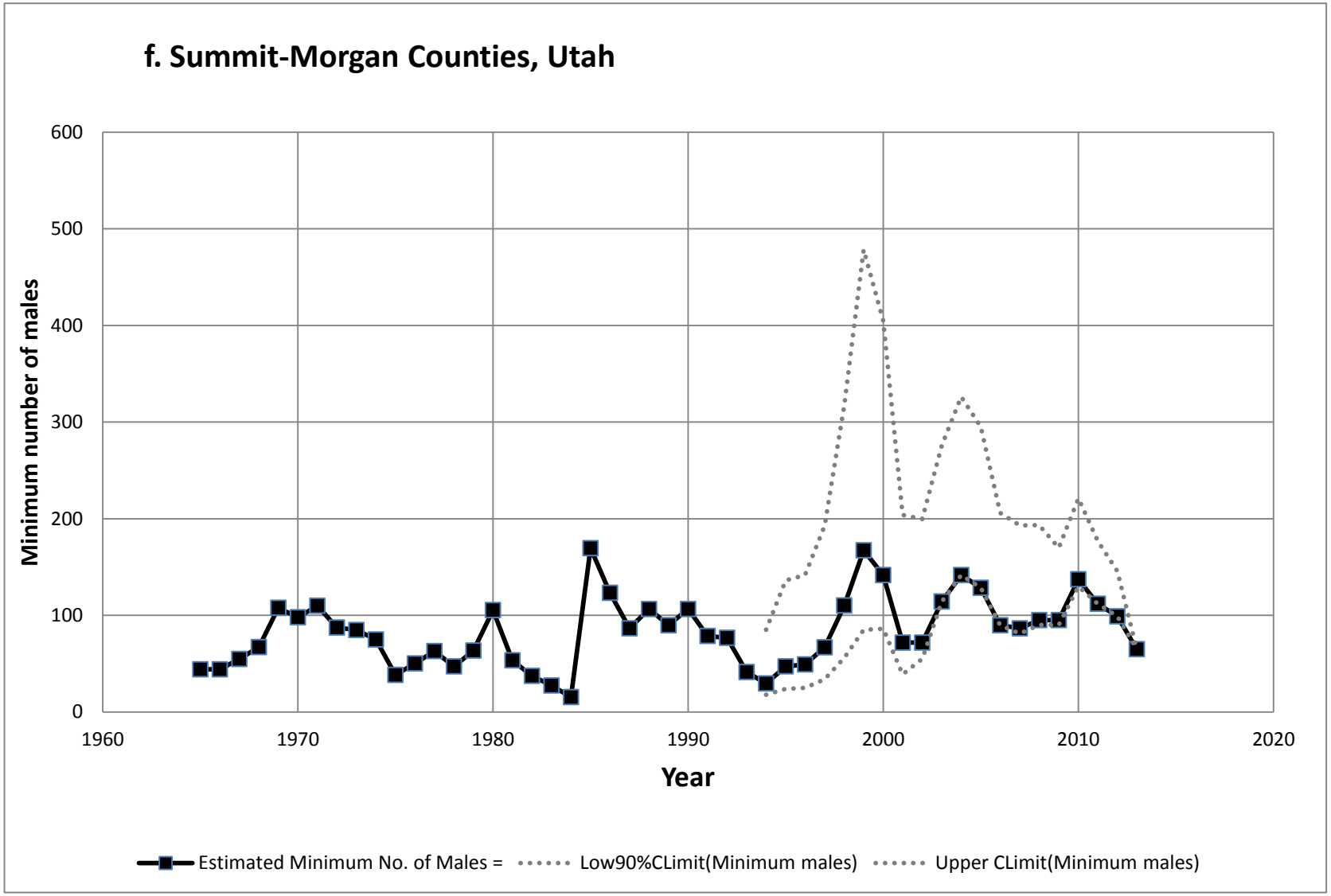

a. Mono Lake, California-Nevada
Minimum number of males
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

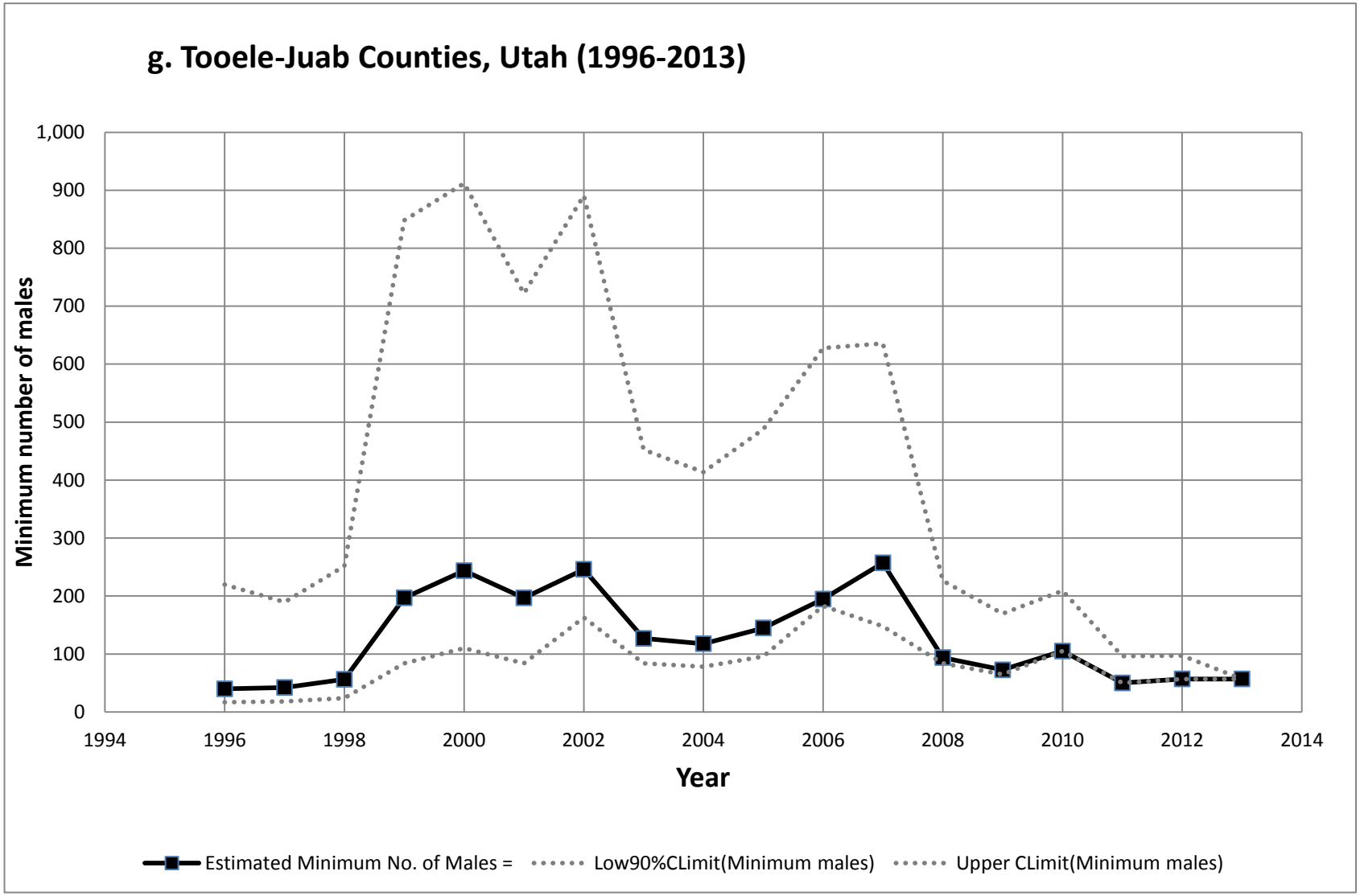

b. South Mono Lake
Minimum number of males
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

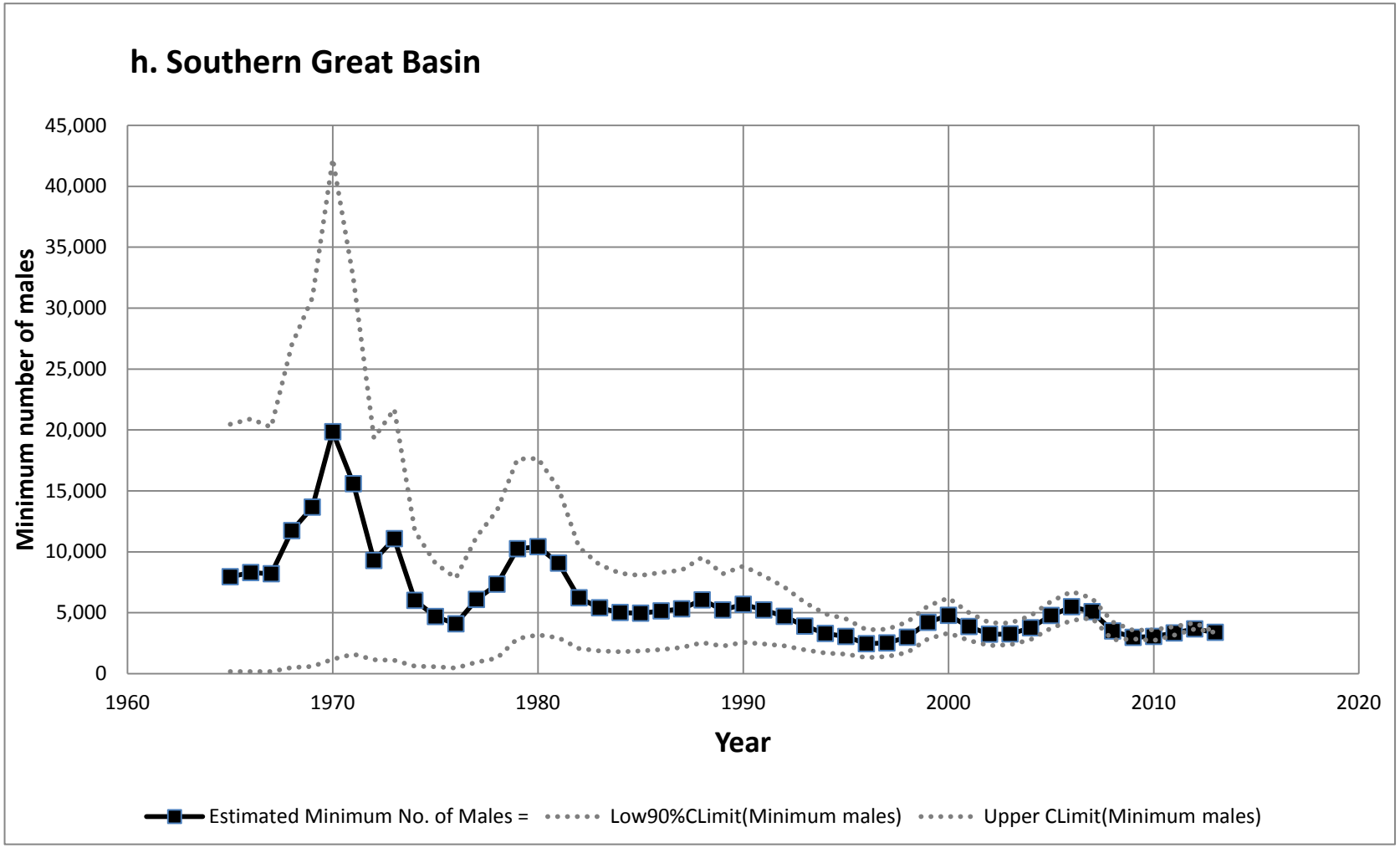

c. NE Interior Utah (1970-2013)
Minimum number of males
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


d. Sanpete-Emery Counties Utah (1985-2013)
Minimum number of males
400
350
300
250
200
150
100
50
0
1980
1985
1990
1995
2000
2005
2010
2015
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


e. South Central Utah (1967-2013)
Minimum number of males
3,000
2,500
2,000
1,500
1,000
500
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


f. Summit-Morgan Counties, Utah
Minimum number of males
600
500
400
300
200
100
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


g. Tooele-Juab Counties, Utah (1996-2013)
Minimum number of males
1,000
900
800
700
600
500
400
300
200
100
0
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


h. Southern Great Basin
Minimum number of males
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

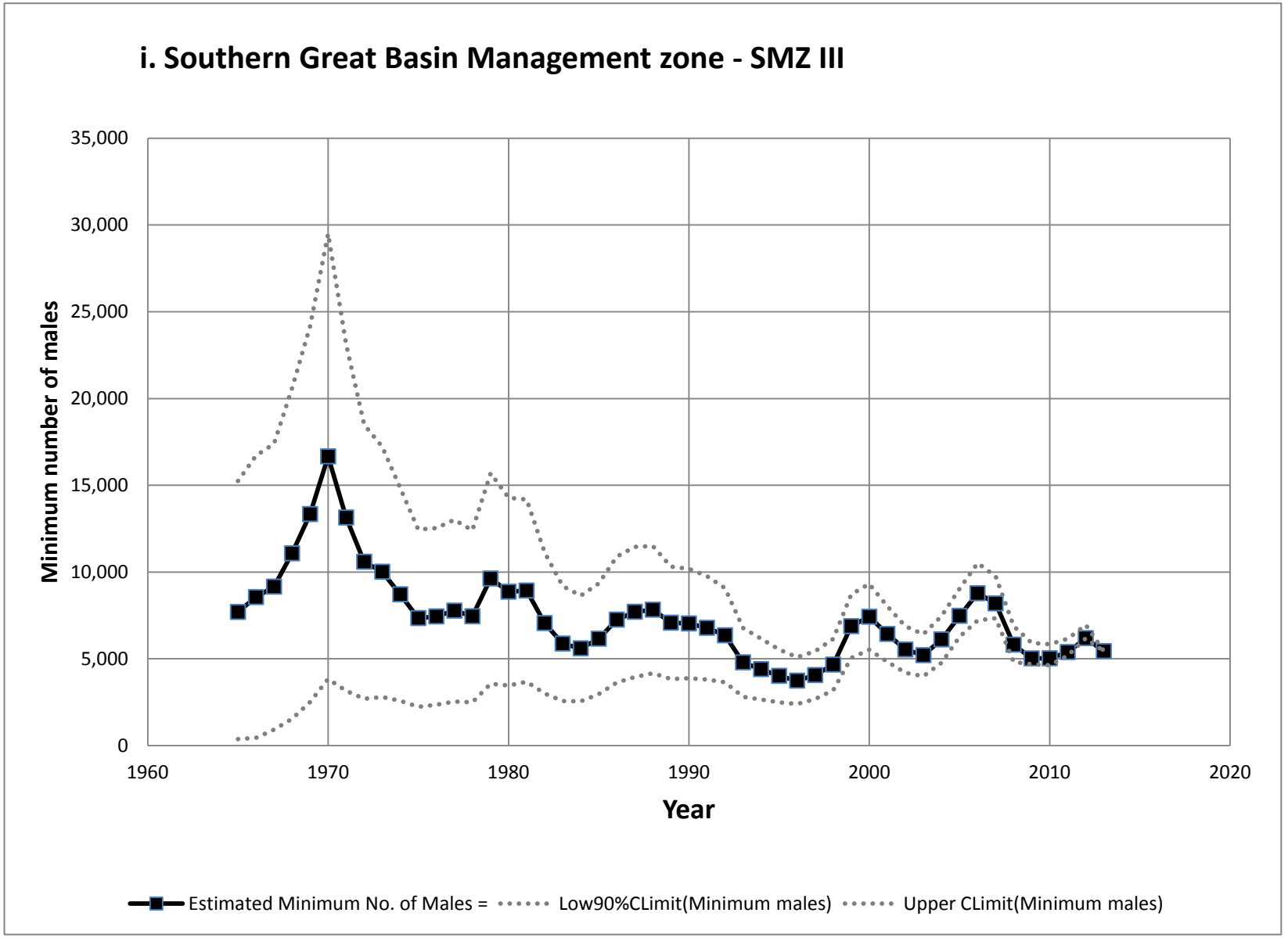
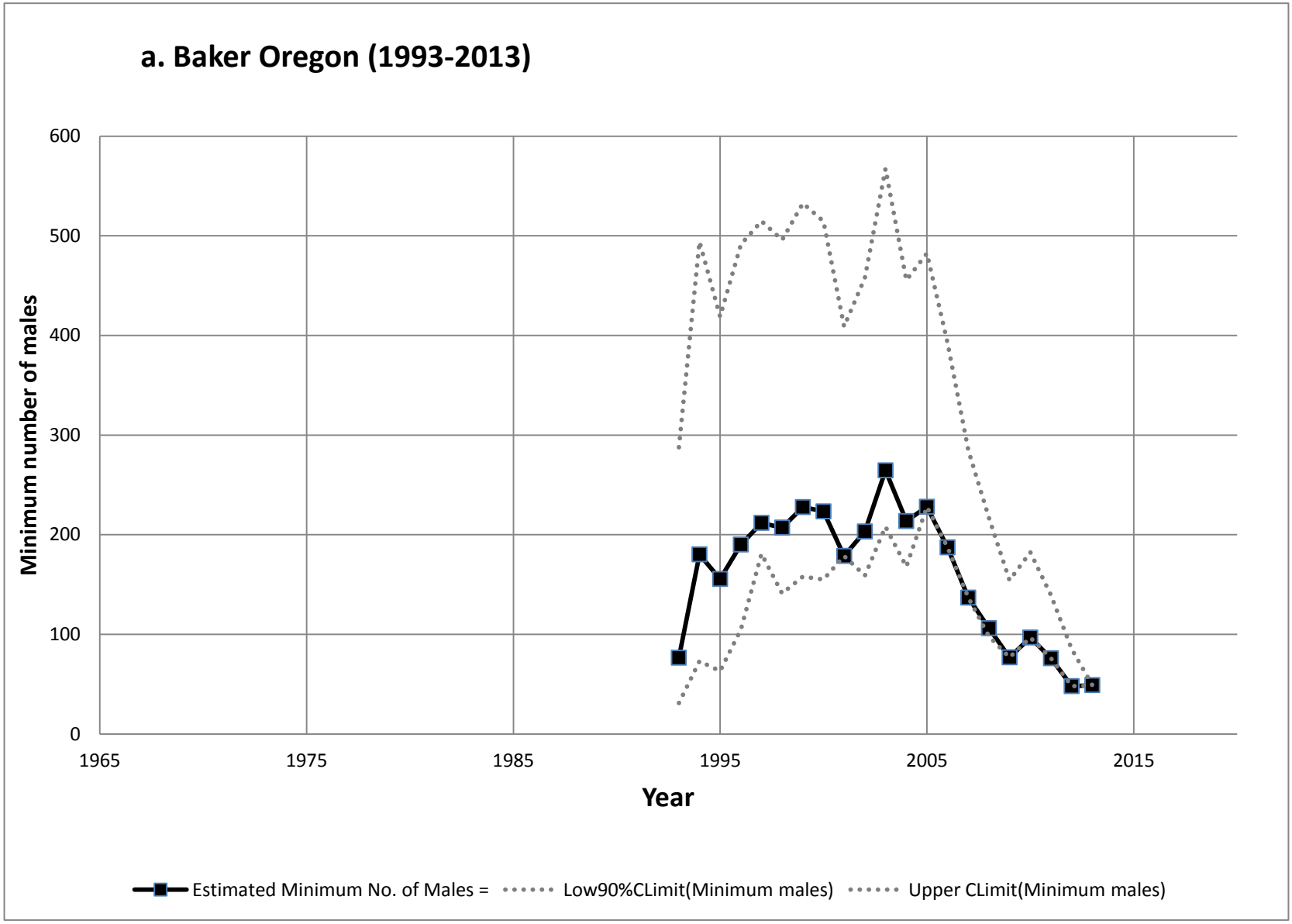
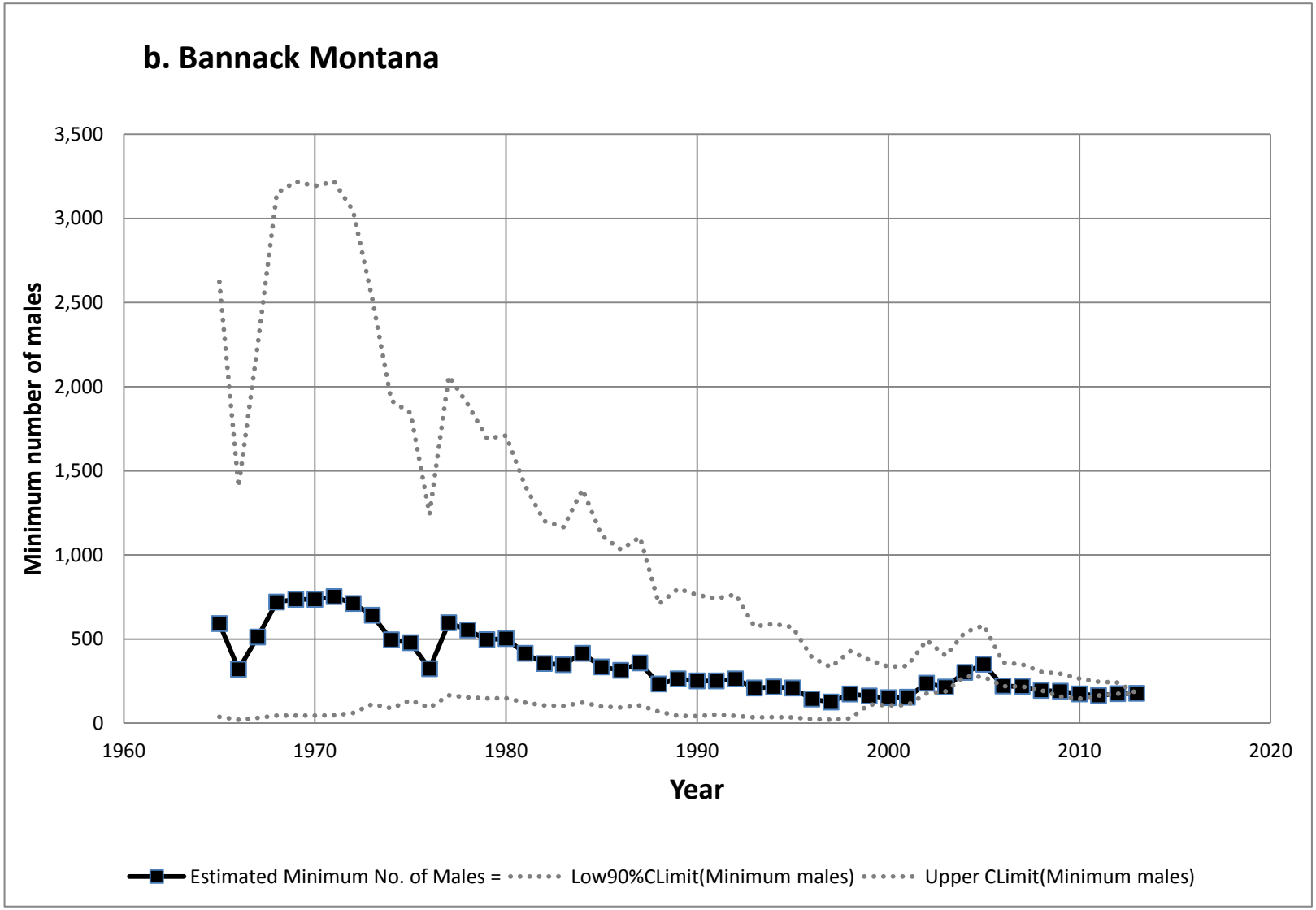
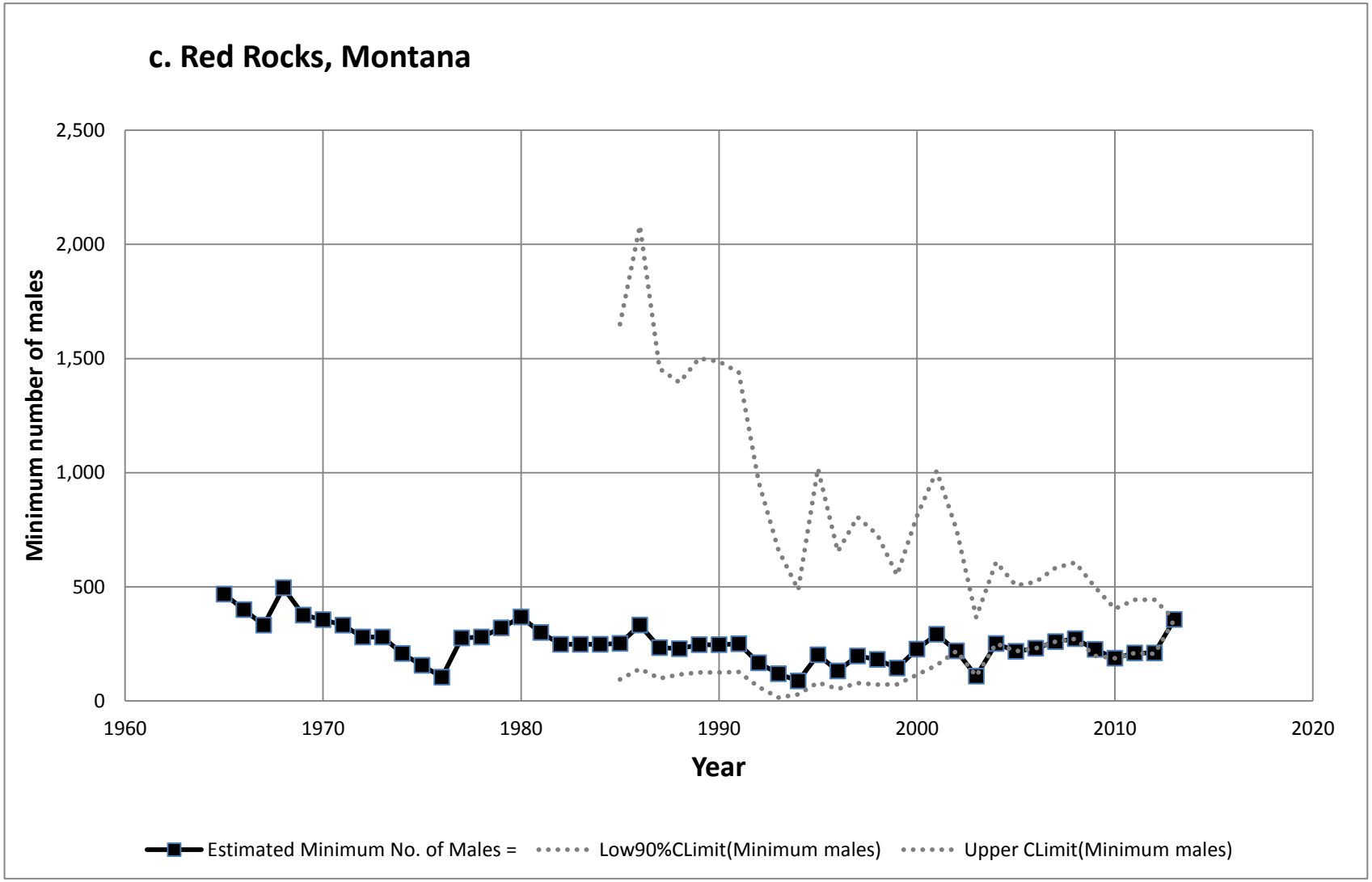
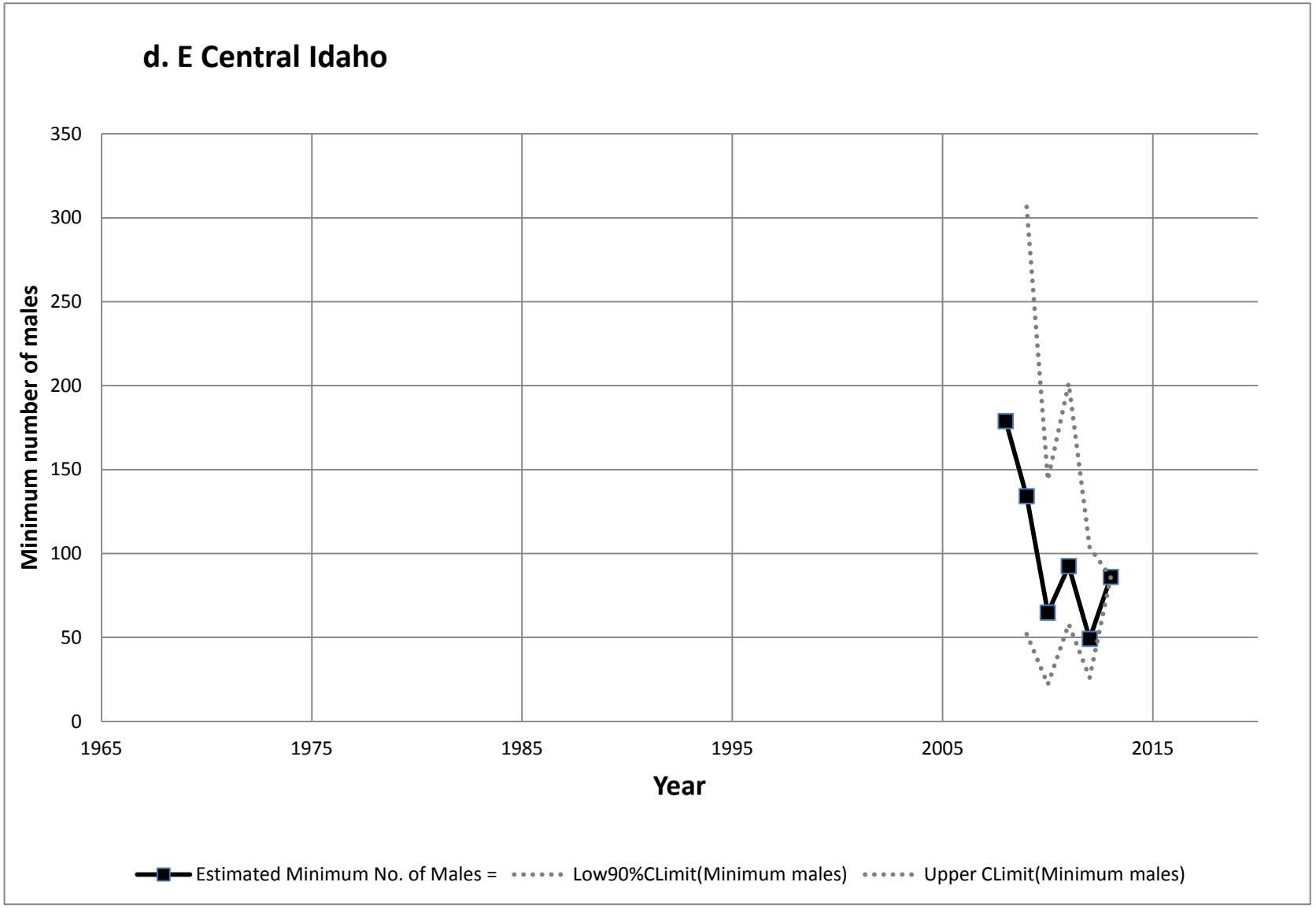

i. Southern Great Basin Management zone - SMZ III
Minimum number of males
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

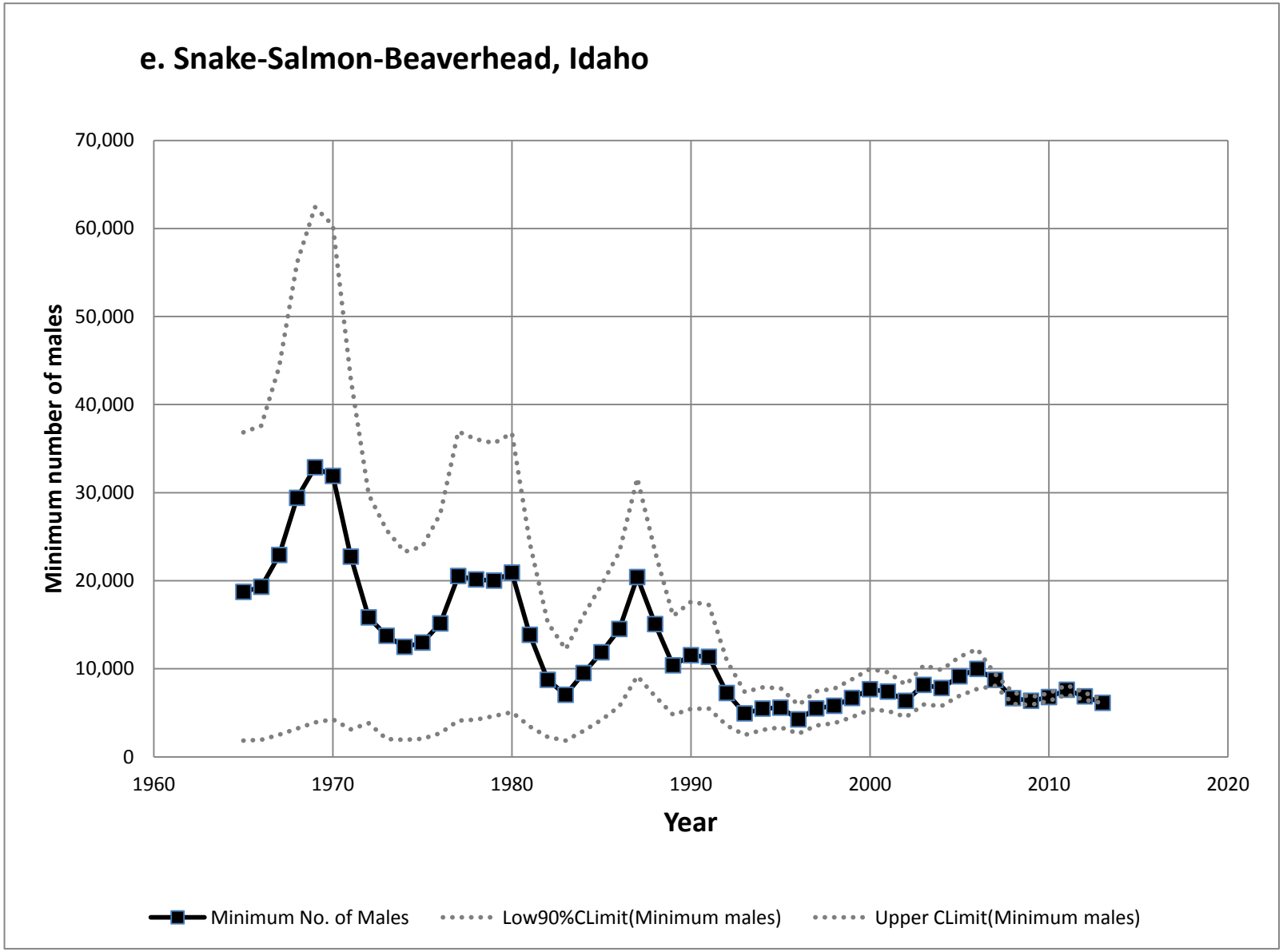
Figure 5. Population reconstructions for Snake River Plain populations and Management Zone IV: a. Baker, Oregon; b. Bannack, Montana; c. Red Rocks, Montana; d. East-central Idaho; e. Snake-Salmon-Beaverhead; f. Northern Great Basin; g. Weiser Idaho; h. Management Zone IV.

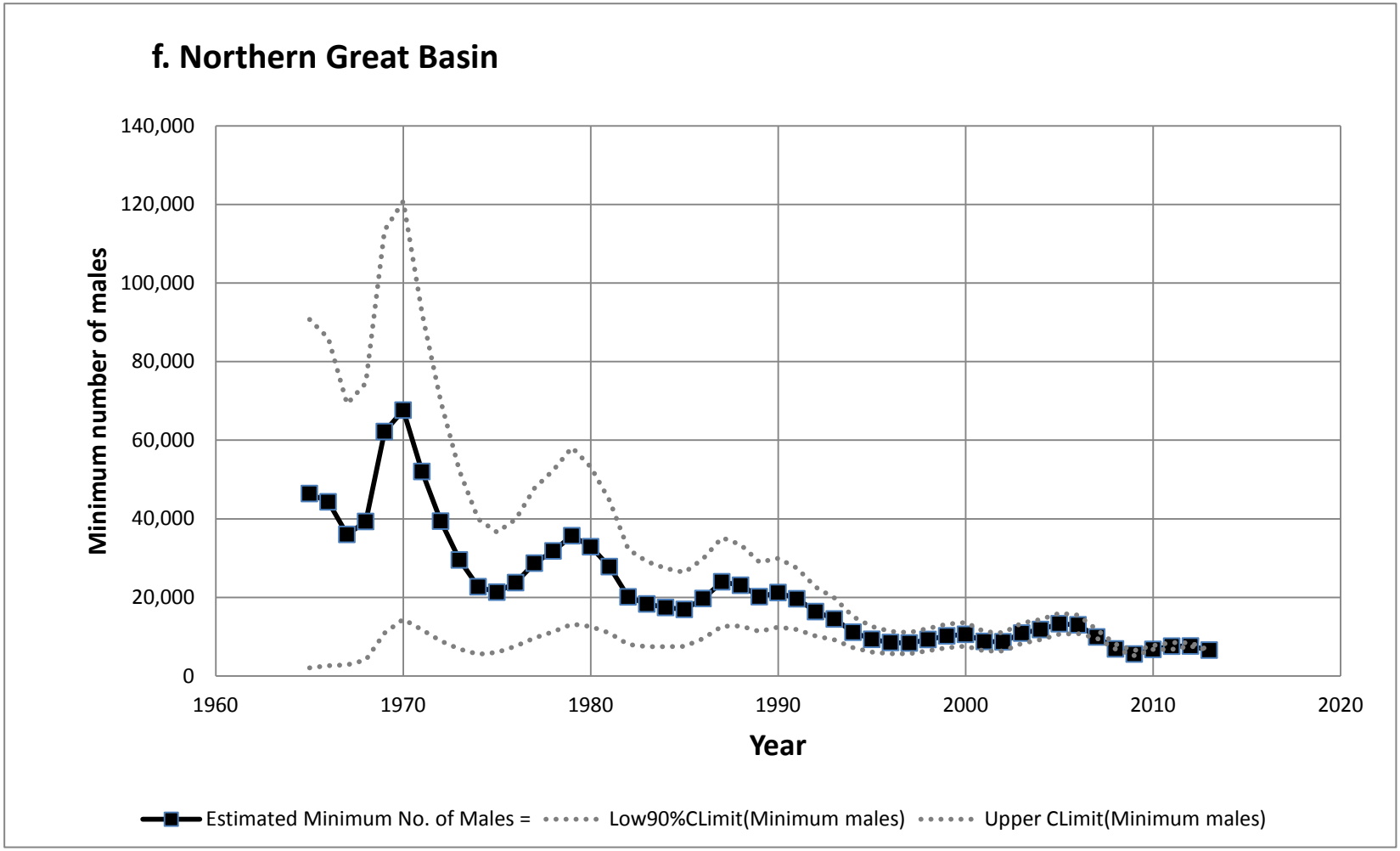

a. Baker Oregon (1993-2013)
Minimum number of males
600
500
400
300
200
100
0
1965
1975
1985
1995
2005
2015
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

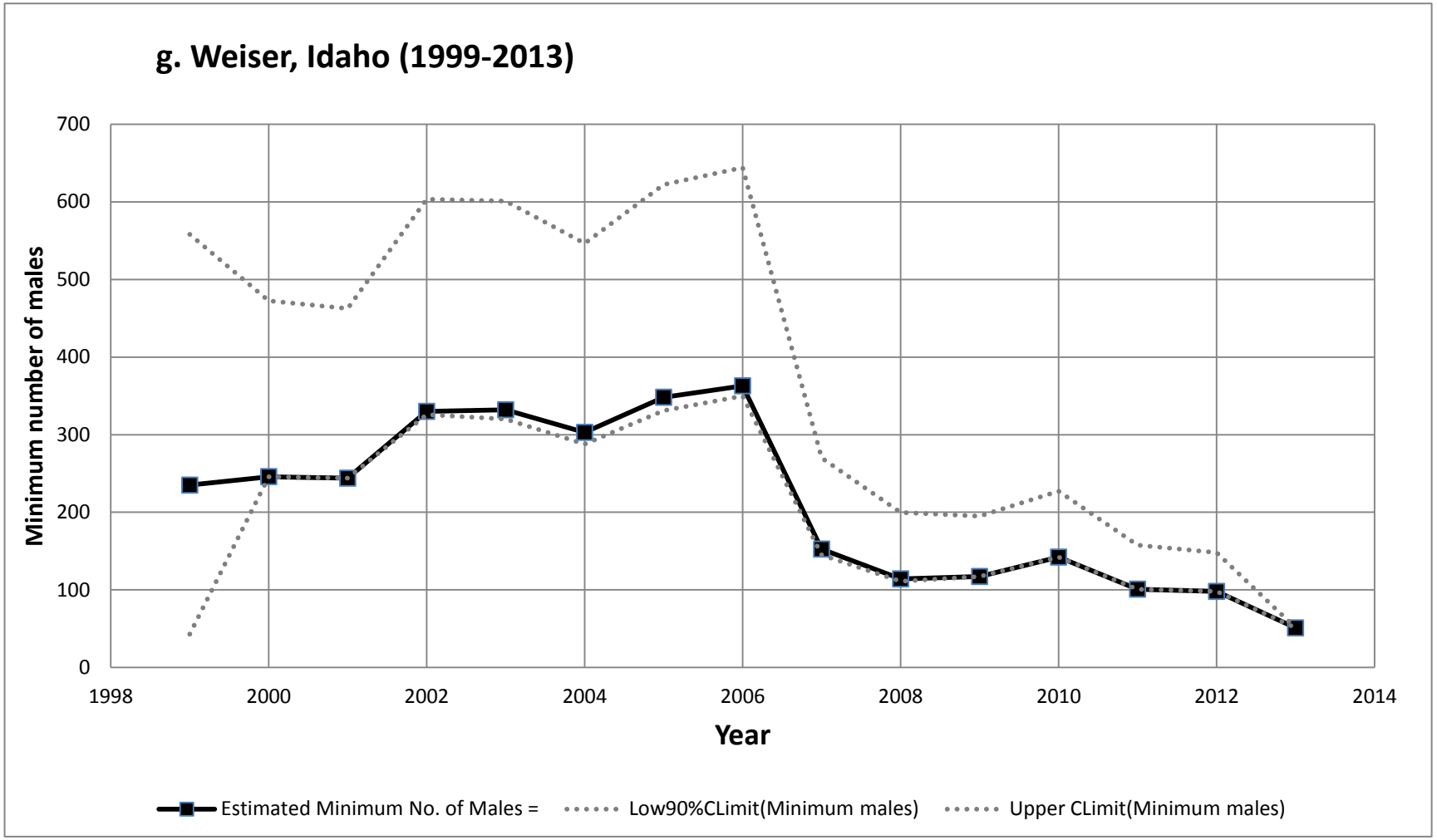

b. Bannack Montana
Minimum number of males
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


c. Red Rocks, Montana
Minimum number of males
2,500
2,000
1,500
1,000
500
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


d. E Central Idaho
Minimum number of males
350
300
250
200
150
100
50
0
1965
1975
1985
1995
2005
2015
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


e. Snake-Salmon-Beaverhead, Idaho
Minimum number of males
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Minimum No. of Males
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


f. Northern Great Basin
Minimum number of males
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


g. Weiser, Idaho (1999-2013)
Minimum number of males
700
600
500
400
300
200
100
0
1998
2000
2002
2004
2006
2008
2010
2012
2014
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

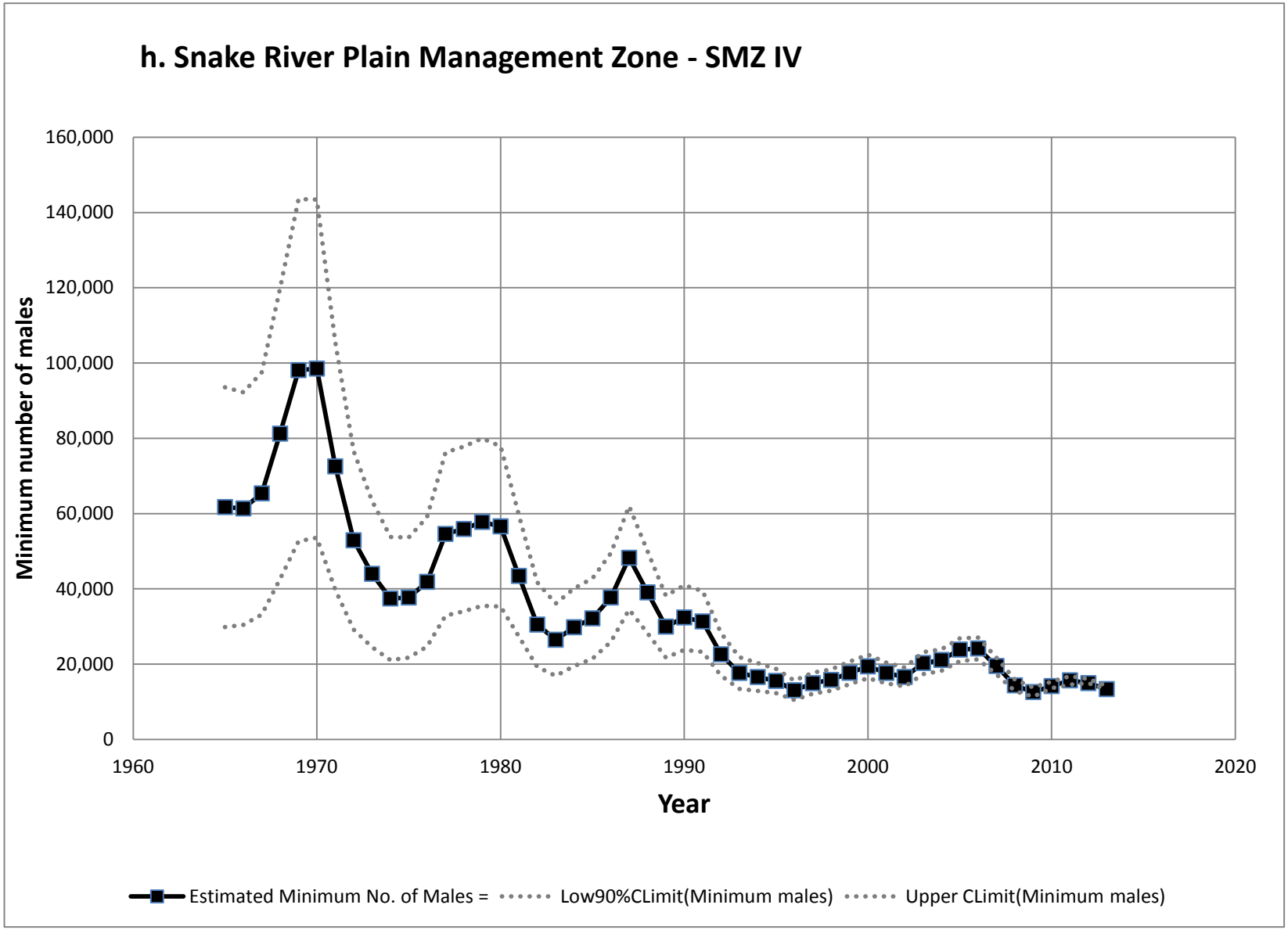
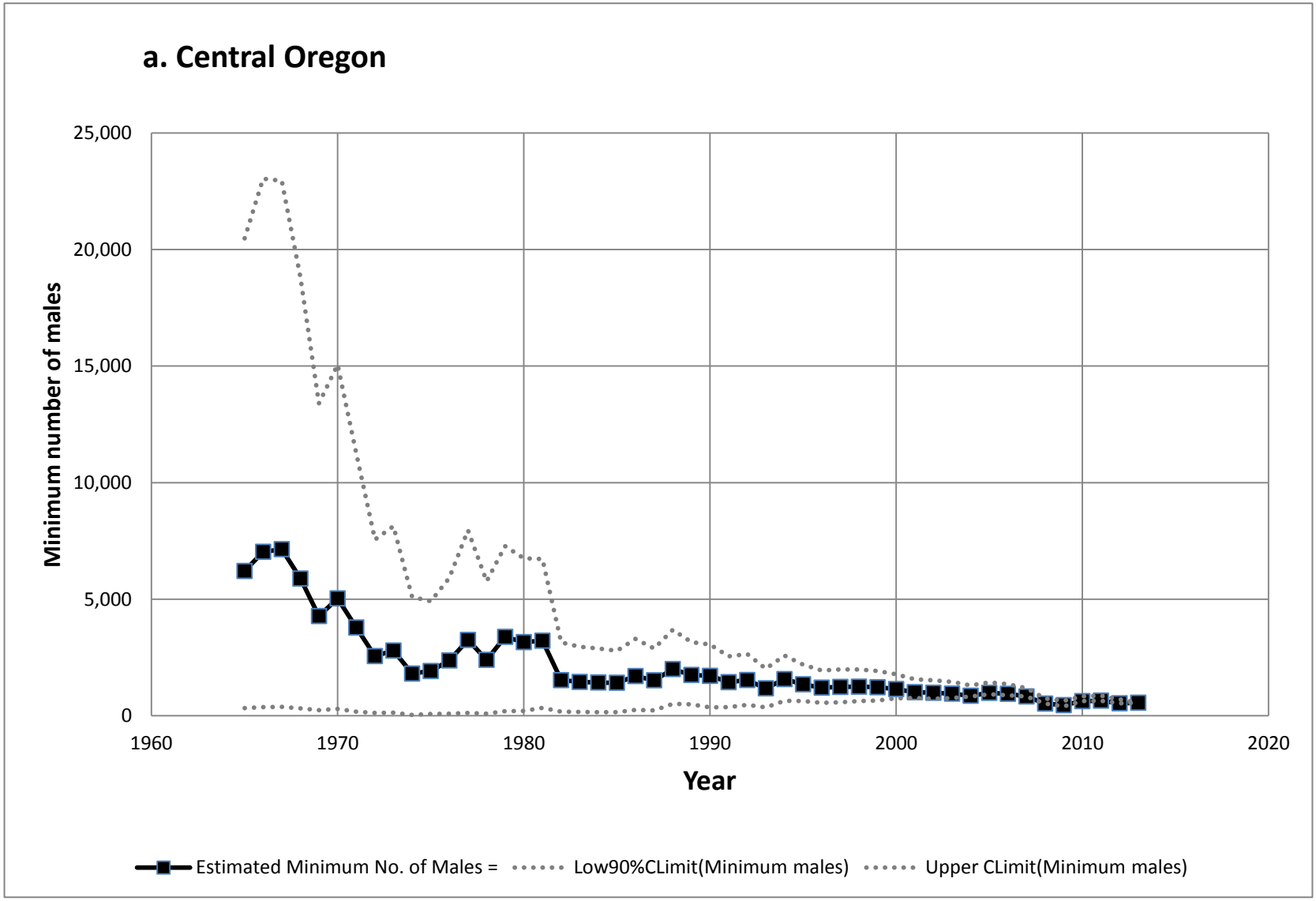
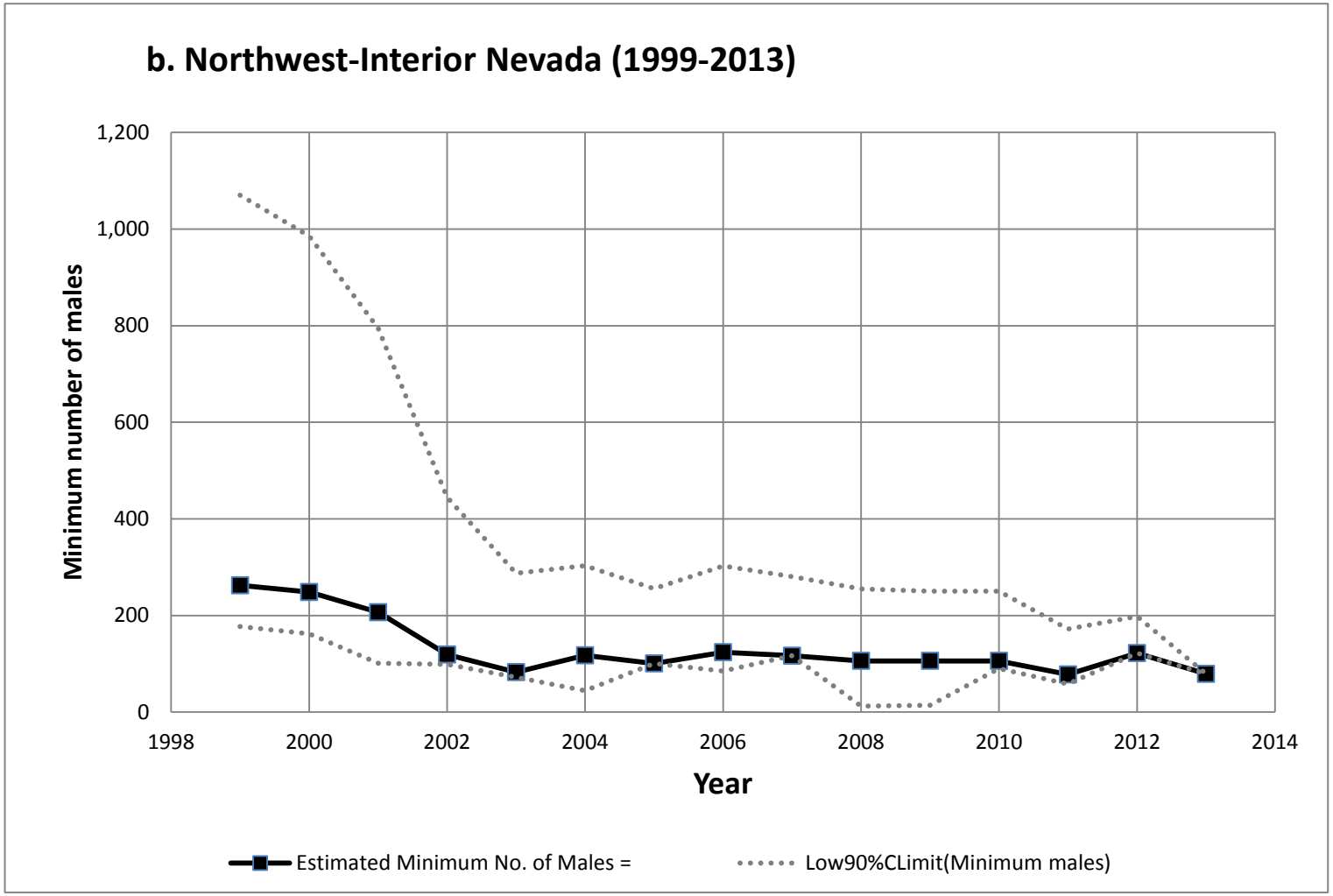
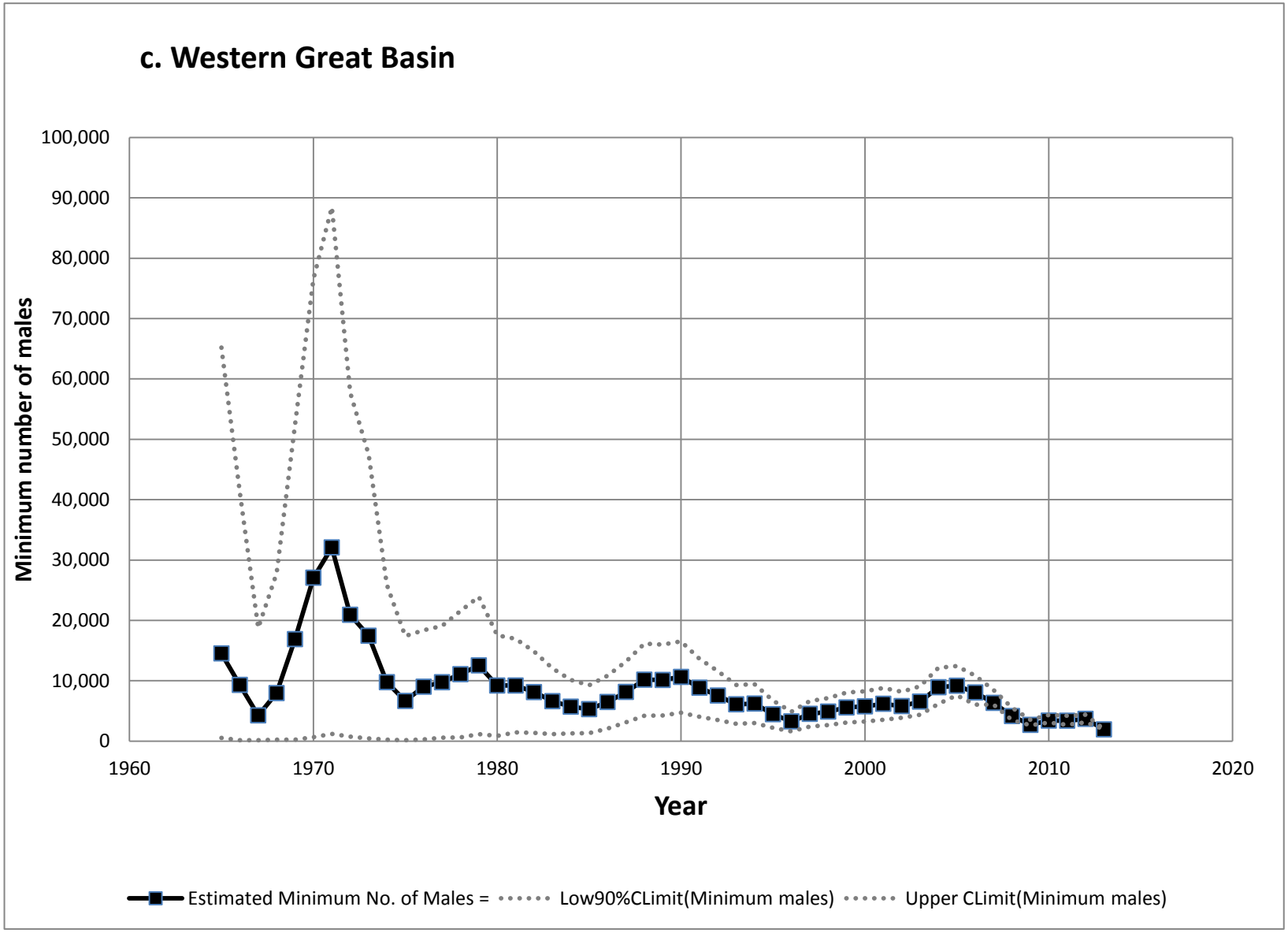

h. Snake River Plain Management Zone - SMZ IV
Minimum number of males
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

Figure 6. Population reconstructions for Northern Great Basin populations and Management Zone V: a. Central Oregon. b. Northwest-Interior Nevada; c. Western Great Basin Core; d. Management Zone V.


a. Central Oregon
Minimum number of males
25,000
20,000
15,000
10,000
5,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


b. Northwest-Interior Nevada (1999-2013)
Minimum number of males
1,200
1,000
800
600
400
200
0
1998
2000
2002
2004
2006
2008
2010
2012
2014
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)


c. Western Great Basin
Minimum number of males
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

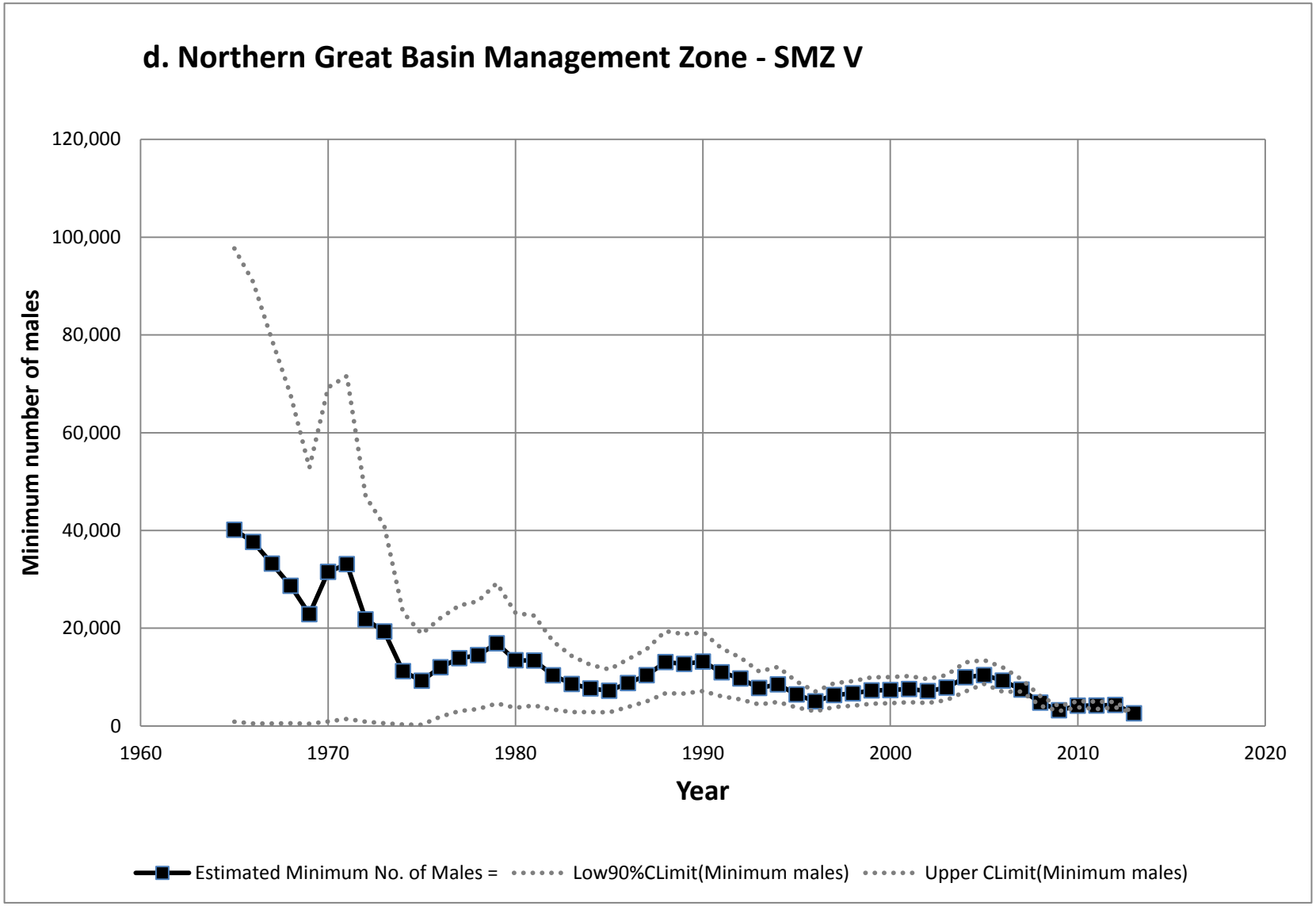
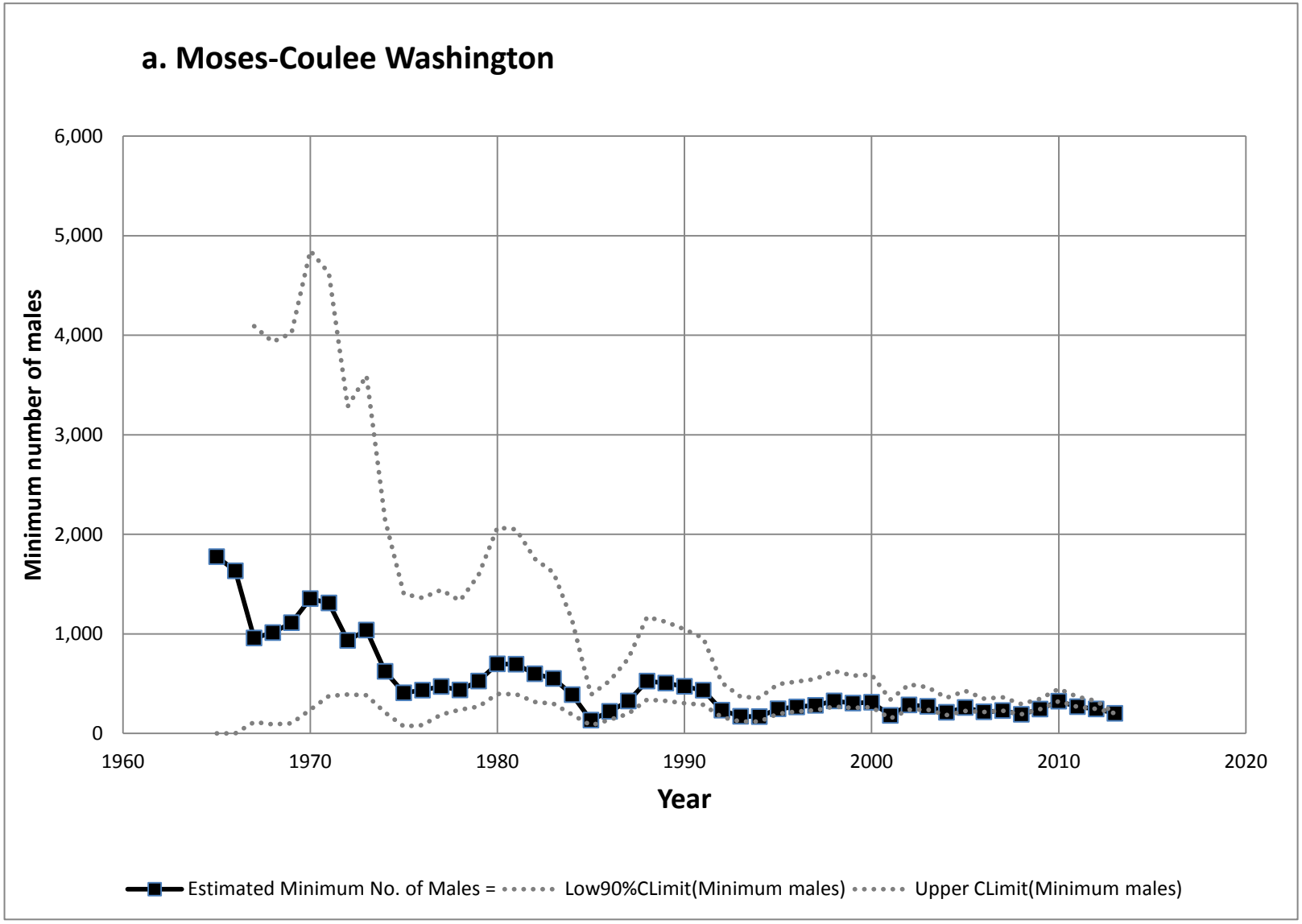
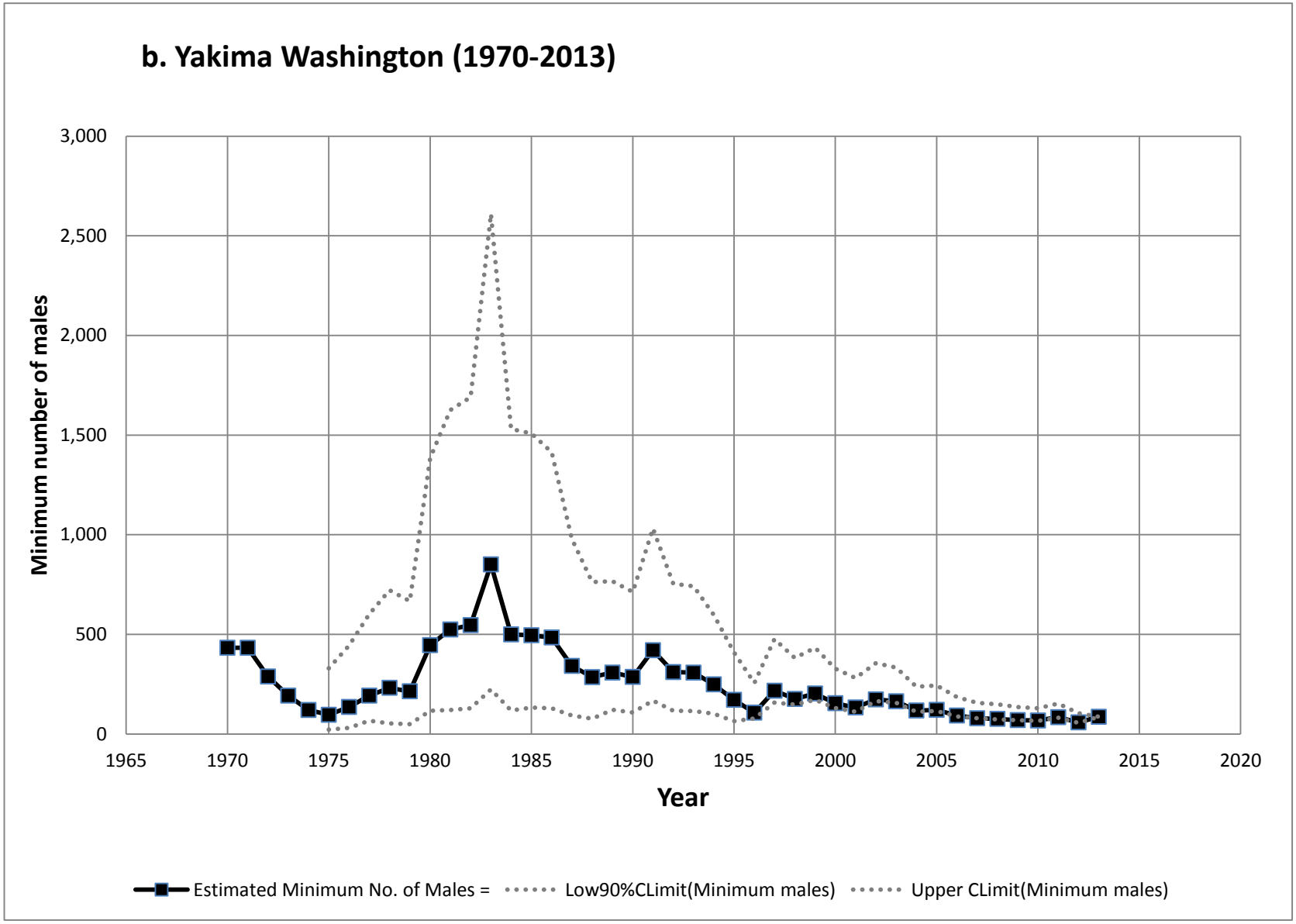

d. Northern Great Basin Management Zone - SMZ V
Minimum number of males
120,000
100,000
80,000
60,000
40,000
20,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

Figure 7. Population reconstructions for Columbia Basin populations and Management Zone VI: a. Moses-Coulee, Washington. b. Yakima, Washington. c. Management Zone VI.


a. Moses-Coulee Washington
Minimum number of males
6,000
5,000
4,000
3,000
2,000
1,000
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)


b. Yakima Washington (1970-2013)
Minimum number of males
3,000
2,500
2,000
1,500
1,000
500
0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

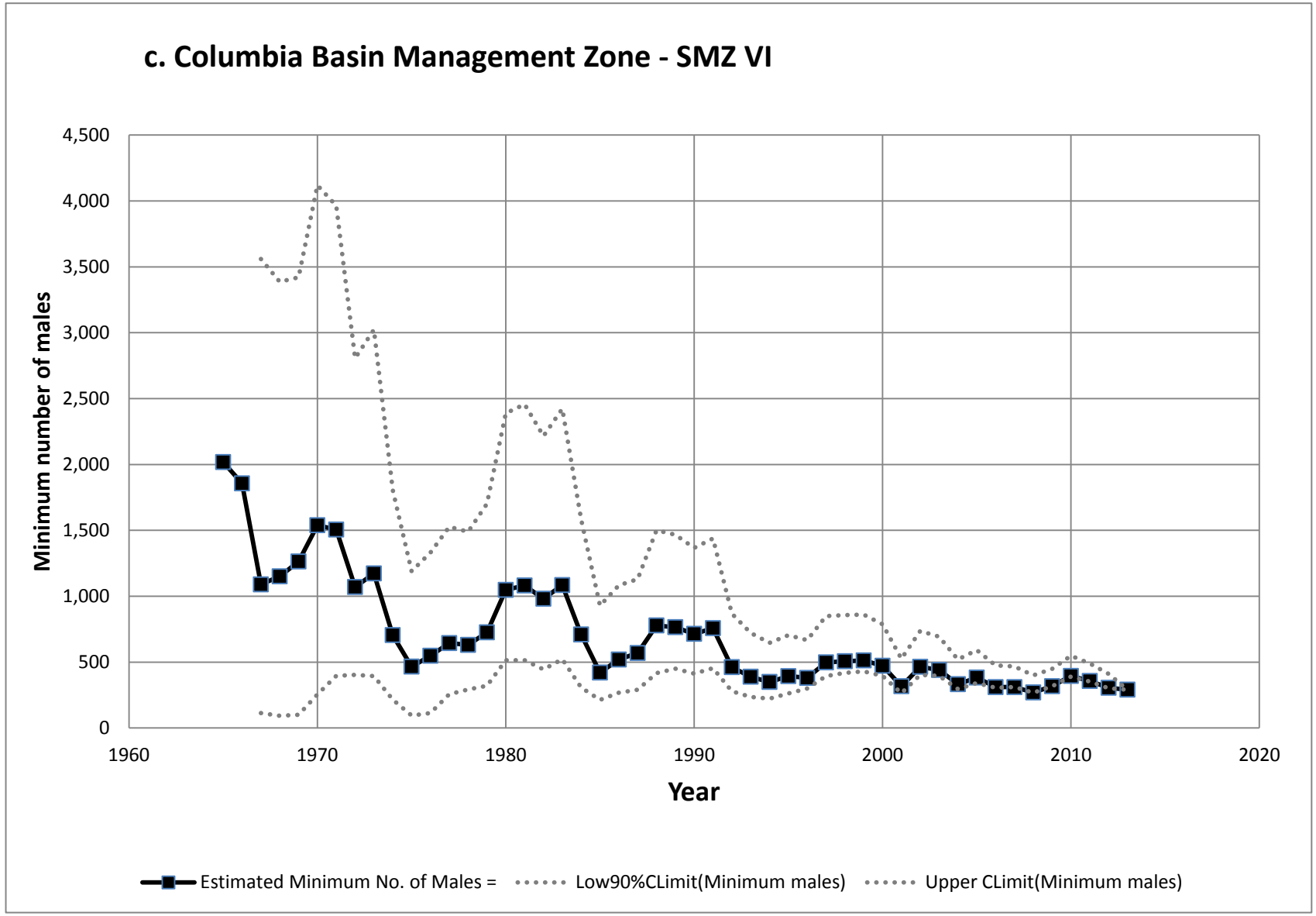

c. Columbia Basin Management Zone - SMZ VI
Minimum number of males
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1960
1970
1980
1990
2000
2010
2020
Year
Estimated Minimum No. of Males =
Low90%CLimit(Minimum males)
Upper CLimit(Minimum males)

Figure 8. Estimated minimum number of males attending leks from population reconstructions for each management zone and range-wide population of Greater Sage-Grouse from combining total estimates across all Sage-Grouse Management Zones I-VI for period 2007 to 2013. SMZ I –Great Plains = navy blue; SMZII Wyoming Basin =red; SMZIII Southern Great Basin=chartreuse; SMZIV Snake River Plain = black; SMZ V Northern Great Basin = pink; SMZ VI Columbia Basin = light blue; Range-wide = purple.

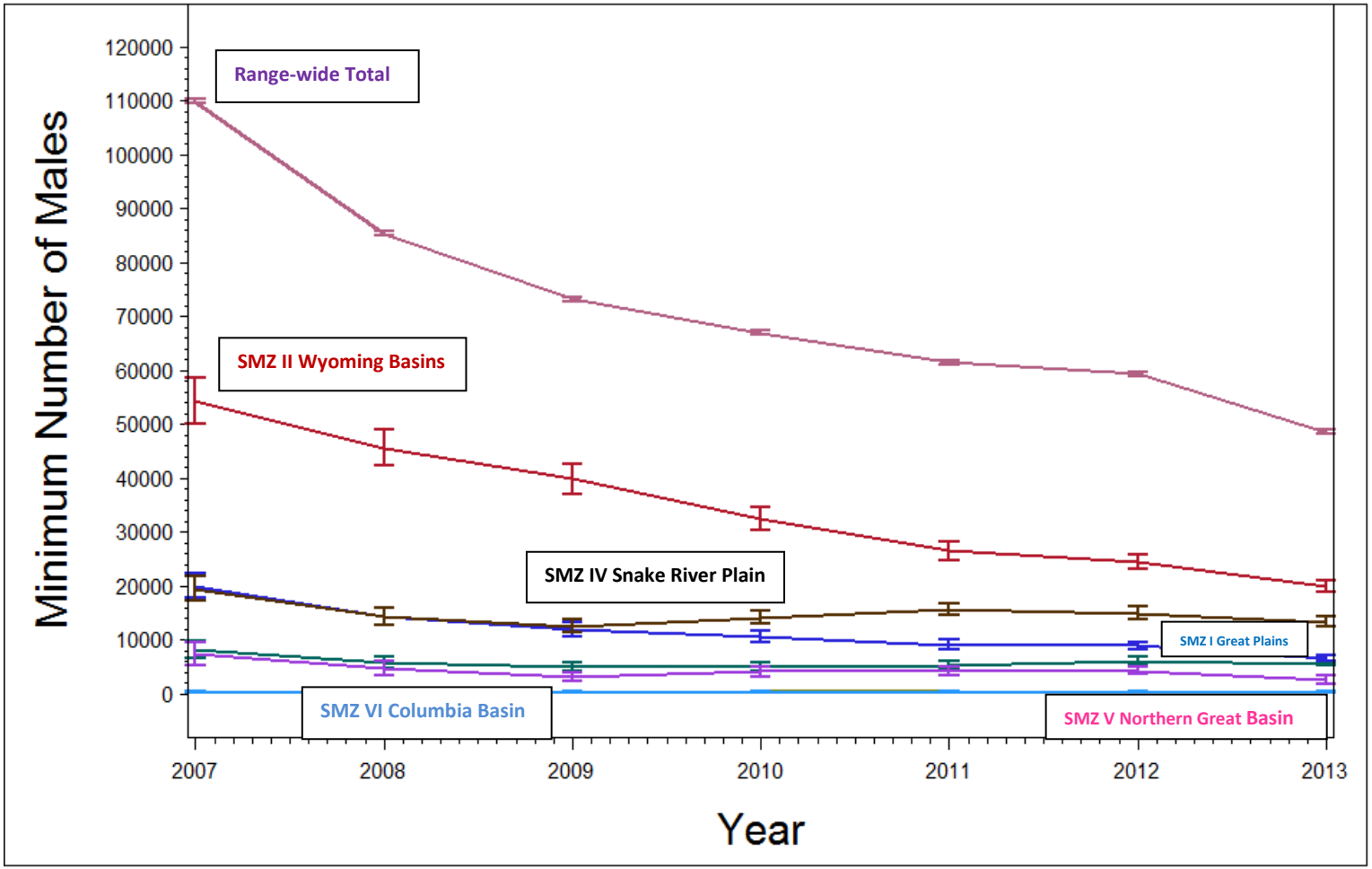


Figure 9. Population reconstruction for range-wide population of Greater Sage-Grouse from combining total estimates across all Sage-Grouse Management Zones I-VI.

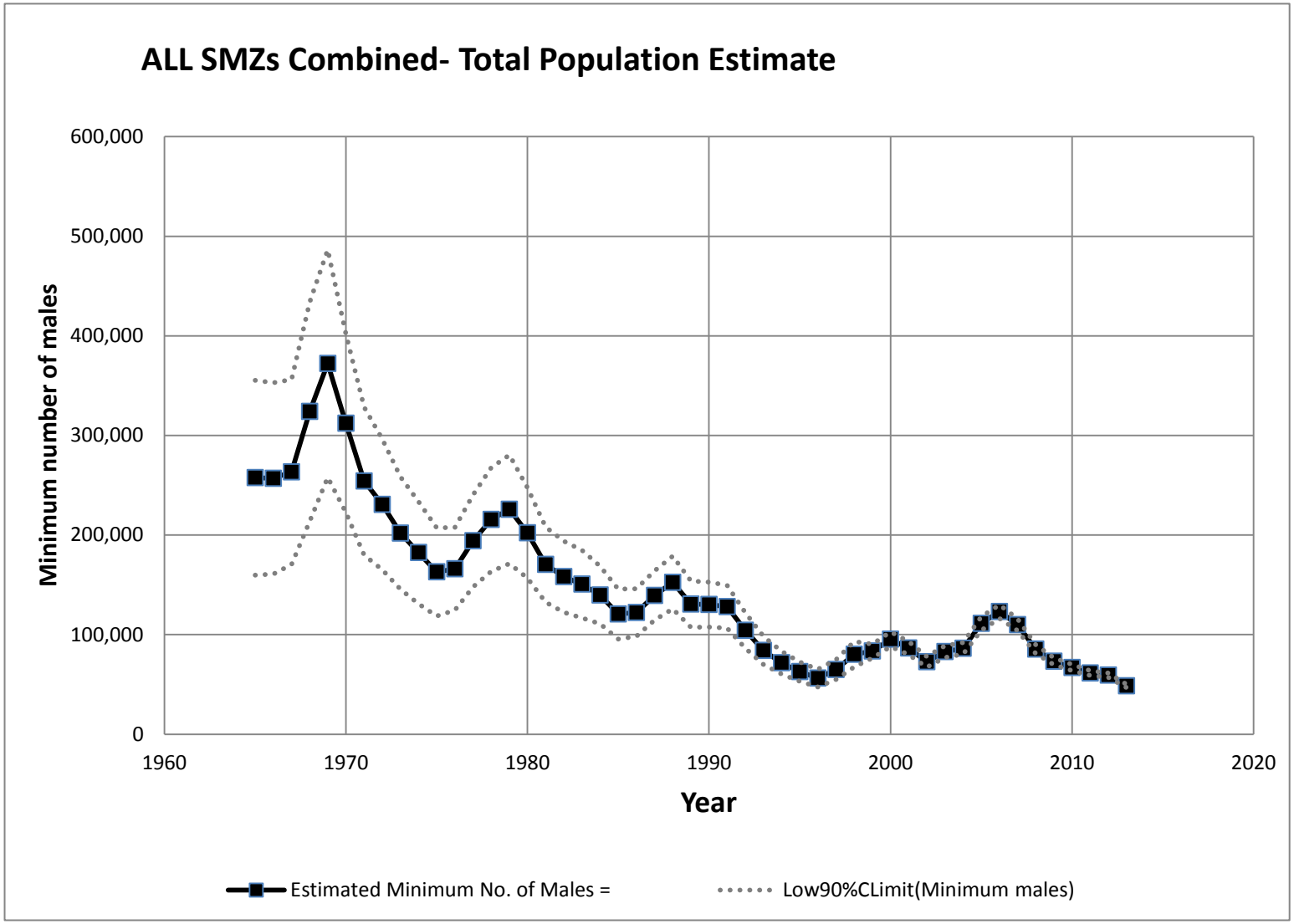
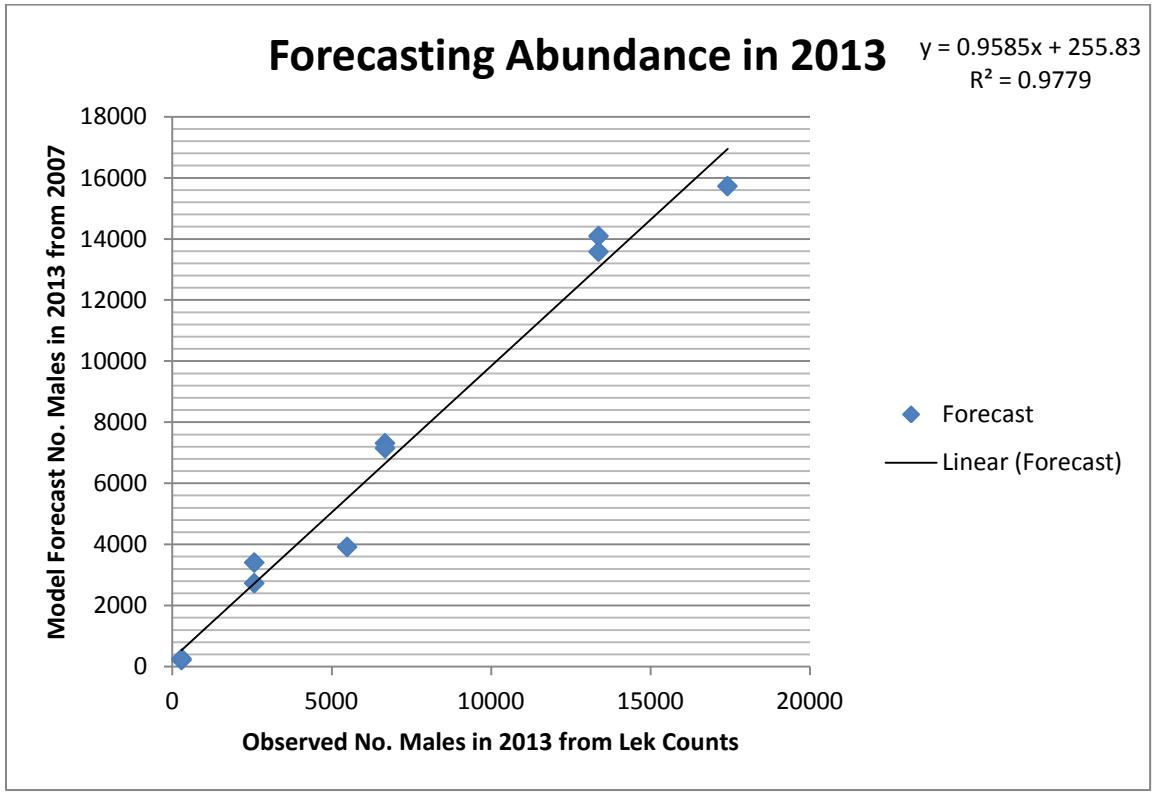


Figure 10. Validation of model predictions by comparing observed abundance in 2013 to forecasts of best models for 2013 estimated from mean rates of change forecast from 2007 to 2013. Note that predictions were tested from the 10 best models in Appendix 2 for all management zones except Colorado Plateau.

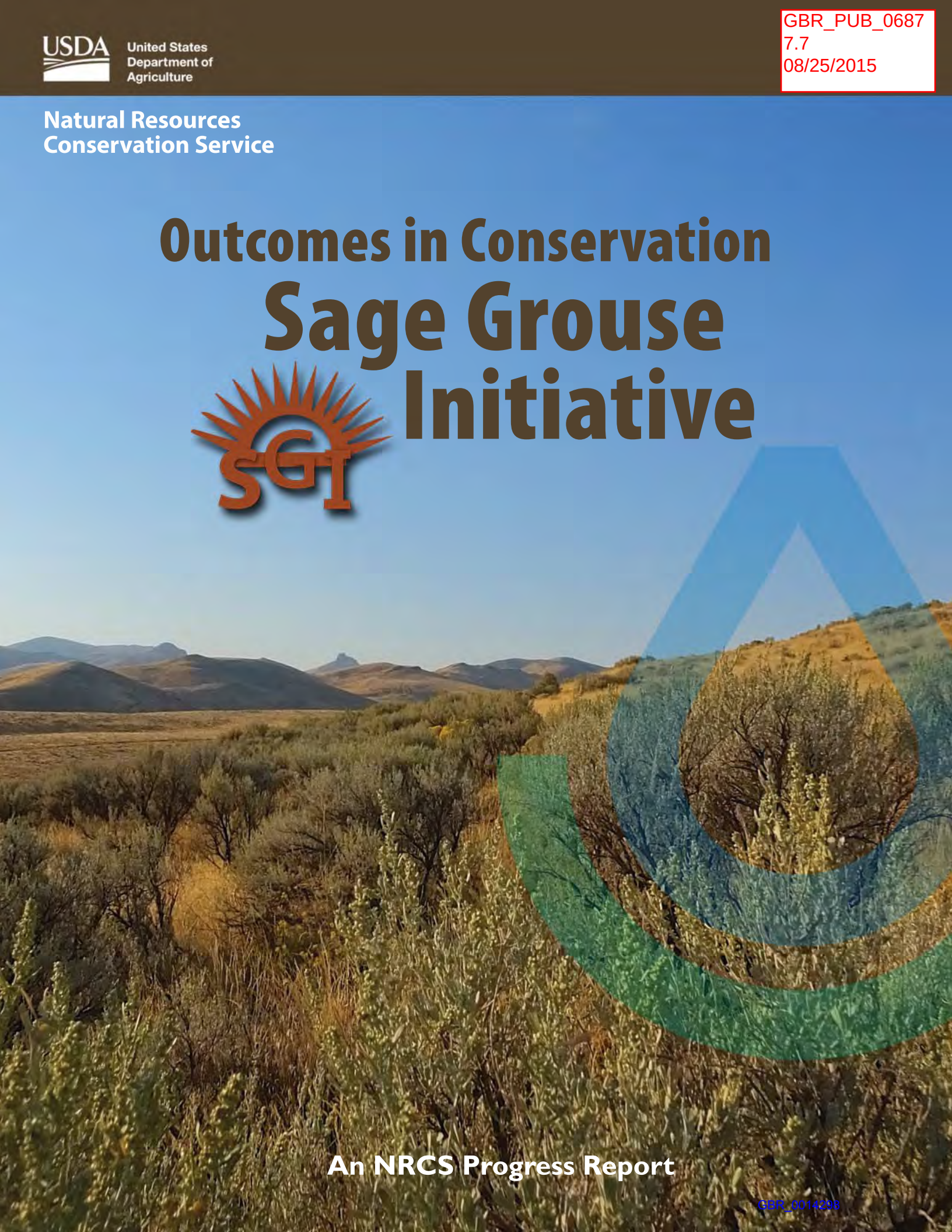


USDA United States Department of Agriculture

Natural Resources Conservation Service

Outcomes in Conservation

Sage Grouse Initiative



An NRCS Progress Report

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Executive Summary

In 2010, the U. S. Fish and Wildlife Service (FWS) designated the greater sage-grouse a Candidate species for protection under the Endangered Species Act (ESA). In 2015, FWS will decide whether to list the species under the ESA. This report provides FWS with the first-ever comprehensive evaluation of the Sage Grouse Initiative (SGI) and its contributions to threat reduction for sage-grouse and enhanced ecosystem function on private lands. The report's findings seek to answer two fundamental questions: *What has changed since 2010 when sage-grouse was designated as a Candidate for listing*, and *with what certainty will conservation efforts continue beyond 2015*.

In 2010, the Natural Resources Conservation Service (NRCS) launched SGI to voluntarily reduce threats facing sage-grouse on private lands. Over the past 5 years, SGI has matured into a primary catalyst for sagebrush conservation across the West. SGI focuses on the shared vision of wildlife conservation through sustainable ranching, providing win-win solutions for producers, sage-grouse and 350 other obligate species. With 1,129 participating ranches in 11 western states, SGI and its partners have already invested $424.5 million and conserved 4.4 million acres, an area that is twice the size of Yellowstone National Park.

This report evaluates NRCS practices that address the non-regulatory threats established in the SGI Conference Report and prioritized in FWS's Conservation Objectives Team Report. This report describes the conservation benefits over the past five years by quantifying the threat reduction SGI achieved through the targeting of resources on priority landscapes, which optimized the acreage of new conservation.

SGI has proved efficient in its threat reduction practices. Since 2010, SGI has focused its attention on large populations by successfully targeting 75 percent of investments inside of Priority Areas for Conservation (PACs). The remaining investments bolster populations and maintain connectivity within occupied sage-grouse range.

Conservation easement acreage has increased eighteen-fold under SGI, which has reduced subdivision and agricultural conversion threats. Of the more than 450,000 acres of easement, more than 80 percent occur inside occupied habitats, and 94 percent provide permanent protection. Outcome-based science shows that the Wyoming Governor's core area policy and easements results in a two-thirds reduction in sage-grouse losses that would have otherwise occurred in PACs. In Montana, easements help maintain the longest-known sage-grouse migration by reducing by a third the threat of agricultural conversion. In the Great Basin, where new satellite mapping shows that more than 80 percent of brood rearing areas are privately owned, easements maintain requisite habitats on working ranches. Critically, these practices provide benefits to other species, such as in Wyoming's Daniel Core, where protective measures put in place for sage-grouse also are conserving 75 percent of migratory mule-deer habitat.

The new 'Sodsaver' provision in the 2014 Farm Bill reduces the federal crop insurance subsidies on cropland recently converted from native sagebrush habitats, which is particularly important within Sage Grouse Management Zone I (MZI). This reduction eliminates some benefits producers receive as part of their risk management strategy making conversion of marginal lands less economically viable. This has in turn cut in half the risk to the 13 percent of sage-grouse at risk of conversion in MZI, where 70 percent of the land is privately owned and wheat production is the top-ranked industry.

Conifer removal maintains existing sage-grouse populations by removing early encroaching trees. Cuts have reclaimed 405,241 acres of otherwise suitable habitat. Nearly half of reclaimed acres are in Oregon, where conifer removal during SGI has increased by 1,411 percent and alleviated 68% of their threat on private lands inside PACs. Studies by The Nature Conservancy show the effectiveness of rapid restoration of early conifer-invaded sage-steppe in maintaining existing sage-grouse populations. Similar research by the U.S. Geological Survey confirms that the conifer treatments employed by SGI also benefit sagebrush songbirds, which will reoccupy cut sites during the spring following treatment. This practice also significantly decreases fuel load, increasing the sagebrush ecosystem's resistance to catastrophic wildfire.

SGI has also enhanced rangeland health inside PACs by applying grazing systems, re-vegetating former rangeland with sagebrush and perennial grasses, and controlling invasive weeds. SGI-sponsored science demonstrates the effectiveness of fence-marking by quantifying its benefit and targeting its application. Conservative estimates show that SGI fence-marking prevents 2,600 fence collisions annually, which is more than twice the number of male sage-grouse counted annually on leks in Washington, North and South Dakota, and Canada combined. Partners are now scaling up fence-marking to reduce collisions.

Since 2010, SGI has boosted sage-grouse conservation on private lands, and a new infusion of $198 million from NRCS starting in 2015 provides partners with unprecedented certainty that conservation will continue well into the future. This additional commitment, combined with partner contributions, will bring the total SGI investment to an estimated $751 million. Already underway in 2015, additional resources are enabling SGI to nearly redouble past achievements, resulting in an estimated 8 million acres conserved by 2018. It is an exciting time for sage-grouse conservation and NRCS is proud to provide increased certainty for additional conservation through the life of the 2014 Farm Bill.

Background and Purpose

In March 2010, the U. S. Fish and Wildlife Service (FWS) designated greater sage-grouse (*Centrocercus urophasianus*; hereafter sage-grouse) as a Candidate species for possible listing under the federal Endangered Species Act (ESA). September 30, 2015, is the court-mandated deadline for FWS to decide whether to withdraw their warranted finding or list the species under ESA.

On the heels of the candidate designation in 2010, the Natural Resources Conservation Service (NRCS) launched the Sage Grouse Initiative (SGI) as a highly-targeted and science-based landscape approach to proactively conserve sage-grouse and sustain the working rangelands that support western ranching economies. Conservation practices are designed to be win-win solutions addressing threats facing both sage-grouse and rangelands. Rather than funding 'random acts of environmental kindness', SGI highly targets implementation to apply the right conservation practices in the right places, thus maximizing biological return-on-investment. Farm Bill programs provide the mechanism for accelerating on-the-ground conservation across private lands representing 40 percent of the species' range.

NRCS and FWS used the 'conferencing' provisions under section 7 of the ESA to assess the potential benefits and adverse effects of specific NRCS conservation practices to be implemented and maintained by landowners under SGI. The FWS's Conference Report (CR) conditioned 40 NRCS conservation practices to ensure their benefits to sage-grouse (FWS 2010). NRCS requires that all SGI participants adhere to conservation measures as conditioned in the CR. If the species is listed under ESA, participating ranchers know they can continue implementing their SGI conservation plans without increased restrictions or regulations.

NRCS used a variety of programs authorized by the 2008 Farm Bill in its sage-grouse conservation efforts. Restoration and enhancement activities were carried out under the Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentive Program (WHIP). Conservation easements were acquired through the Farm and Ranch Lands Protection Program (FRPP), Grassland Reserve Program (GRP), and the Wetlands Reserve Program (WRP). The 2014 Farm Bill consolidated NRCS easement authority under the Agricultural Conservation Easement Program (ACEP) and folded WHIP activities under EQIP.

State experts and FWS representatives developed the Conservation Objectives Team (COT) Report (FWS 2013) as a goal post defining the extent to which threats must be reduced for the species to be conserved. The overarching directive in the report is two-fold: modify policy to alleviate anthropogenic threats and actively manage habitats to restore ecosystem function

(Boyd et al. 2014). To accomplish this, the COT Report spatially identified threats and prioritized threat reduction inside Management Zones (MZs), populations and bird abundant habitats known as Priority Areas for Conservation (PACs; Appendix A [FWS 2013]).

Conservation partners are each doing their share to reduce threats identified in the COT Report (FWS 2013). As State and Federal policy makers finalize regulatory changes to reduce anthropogenic threats, they now embark on a public lands campaign to restore ecosystem function. Since 2010, NRCS has been working in earnest through SGI to accelerate threat reduction on private lands that comprise the other 40 percent of the species range. In the midst of their 2015 listing determination, FWS is asking all these partners to help them answer two central questions:

1. *What has changed since 2010, when sage-grouse was designated as a Candidate species?*

2. *What are projected conservation efforts beyond September 2015?*

The purpose of this report is to provide FWS with the first-ever comprehensive evaluation of SGI contributions to sage-grouse conservation. Evaluated practices address the non-regulatory threats agreed to in the CR (FWS 2010) and prioritized by the COT Report (FWS 2013). Change since 2010 is quantified by level of new investment, acreage of additional conservation and the extent of targeting within priority landscapes. Outcome-based assessments evaluate effectiveness of resulting conservation actions. Future conservation efforts are projected based on NRCS commitments made through 2018, the life of the current Farm Bill.

Section I: SGI Impacts on Sage-Grouse Conservation

Outcome #1: NRCS Created SGI to Accelerate Private Lands Conservation

SGI launched in 2010, and 5 years later is a primary catalyst for sage-steppe conservation, conserving 4.4 million acres across 11 western states.

Absent a major role in sage-grouse conservation, NRCS answered the call in 2010 by launching the Sage Grouse Initiative (SGI), a highly-targeted and science-based approach for implementing wildlife conservation through sustainable ranching. Five years later, SGI has matured into a primary catalyst for sage-steppe conservation, providing win-win solutions to non-regulatory threats facing ranching, sage-grouse and 350 other species. SGI has enacted beneficial conservation in each of the 11 western states (Figure 1)

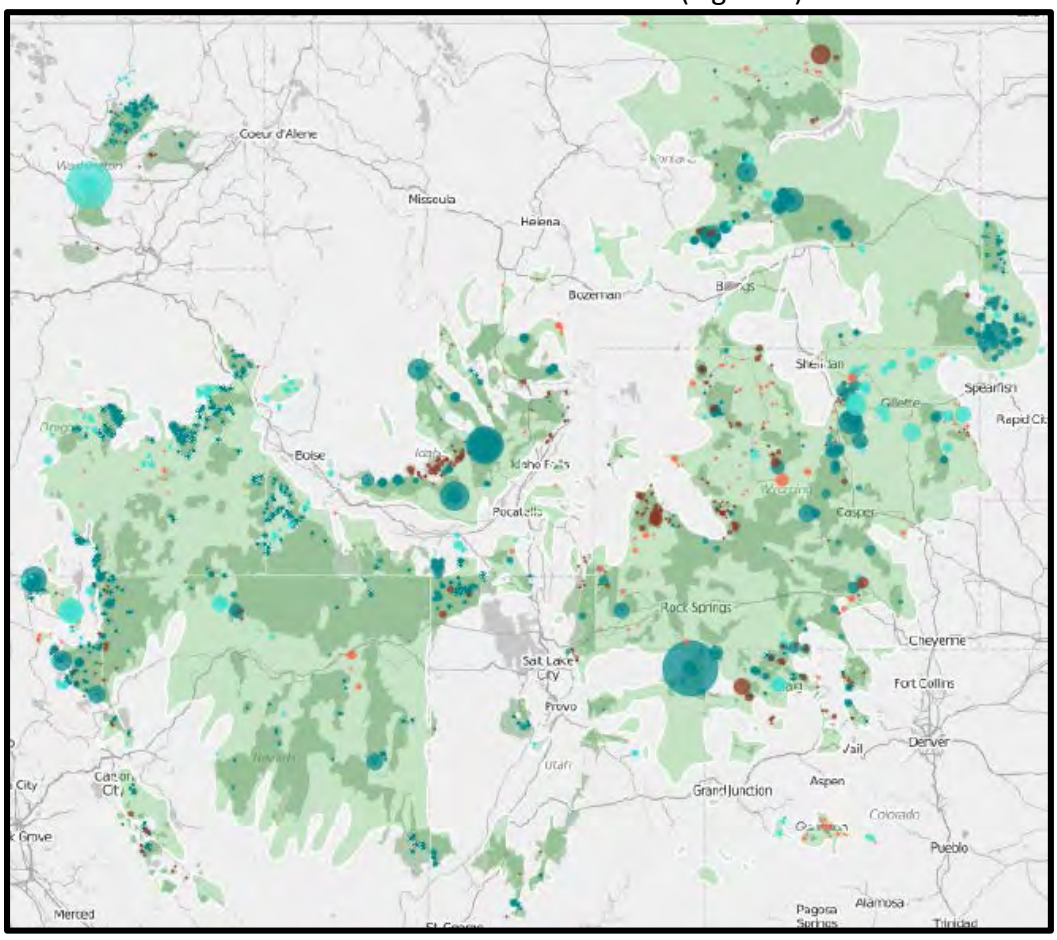

Figure 1. SGI (EQIP and WHIP; 2010-2014) contract locations are shown in blue. NRCS easements (WRP, GRP and FRPP; 1992-2013) are shown in brown. Light colors signify locations outside of PAC boundaries, and dark colors are located within PAC boundaries.

SGI has exponentially expanded the diversity of partners participating in conservation by focusing on the shared vision of achieving wildlife conservation through sustainable ranching. SGI participation is voluntary, but legally binding contracts underpin most implementation. To date, 1,129 ranches participate in SGI, conserving 4.4 million acres across 11 western states – an area equivalent to two Yellowstone National Parks. To accelerate conservation, NRCS has invested $296.5 million, and partners and landowners have provided an additional $128 million, bringing the total SGI investment to $424.5 million[1] (Table 1).

Table 1. Past (FY 2010 - FY 2014) SGI funding and acreage conserved (in millions).

Past Accomplishments	NRCS	Partner Match	Total ($)	Total (Ac)
Restoration and enhancement	102.4	34.1	136.5	4.0
Conservation easements	164.7	85.7	250.4	0.4
Human capacity	29.4	8.2	37.6	
Subtotal	296.5	128.0	424.5	4.4

SGI targets conservation activities based on the critical threats outlined in the COT report (FWS 2013). This report summarizes resulting acreage for each activity within States, Management Zones, Populations and PACs (Appendices B and C). Overall NRCS has acquired 451,884 acres of conservation easements[2], implemented 2,437,645 acres in grazing systems, and removed invasive conifer from 405,241 acres. Additional benefits include re-vegetating 48,120 acres[3] of former rangeland, marking or moving of 350 miles of high-risk fence to reduce collisions, 15,509 acres of weed management and 179 acres of wet meadow restoration.

[1] Restoration and enhancements represent NRCS cost-share programs (i.e., EQIP and WHIP) with partner match estimated at 25 percent. Partner match for conservation easements calculated at 50 percent for FRPP and ACEP easements programs. Additional NRCS easement funds exclude partner match (i.e., WRP and GRP). Human capacity to deliver conservation includes NRCS technical assistance estimated at 7 percent of financial assistance. Additional human capacity under NRCS and partner match includes contributions from the Conservation Effects Assessment Project (CEAP) and SWAT.

[2] NRCS easements acquired before and during SGI are included because all reduce the same fragmenting threats regardless of timing or purpose of acquisition.

[3] Half of new acres are native seeding (23,253 acres); remaining acres were primarily former cropland restored back to tame pastures.

Outcome #2: NRCS Strategically Targeted SGI Conservation Practices

Through SGI, NRCS maximizes conservation benefits by targeting Farm Bill resources to sage-grouse-abundant centers or 'core areas' (Doherty et al. 2010, 2011). More than 75 percent of all SGI acres are located inside PACs, regardless of conservation activity (Appendices B and C). The remaining quarter is in surrounding occupied habitat, expanding habitat opportunities and increasing connectivity.

> *SGI overwhelmingly benefited large populations by targeting 75 percent of investments inside Priority Areas for Conservation or 'PACs'.*

SGI targets conservation activities in each population based on the critical threats outlined in the COT report (FWS 2013) and clusters implementation to achieve landscape benefits (Figure 1; Appendices 2 and 3). NRCS has acquired 451,884 acres of conservation easements, of which 72% are targeted to four populations at risk from urbanization[4] or agricultural conversion[5]. NRCS easements acquired before and during SGI are included because all reduce the same fragmenting threats regardless of timing or purpose of acquisition. Of the 2,437,645 acres in grazing systems, 76% are clustered within five populations[6]. SGI has cut invasive conifer from 405,241 acres, of which 84% of removal is focused in four Great Basin populations[7]. Newly seeded acres[8] total 48,120 with 74% concentrated in five populations[9]. Additional benefits include 350 miles of high-risk fence marked or removed to reduce collisions, 15,509 acres of weed management and 179 acres of wet meadow restoration. Conservation actions planned but not funded through Farm Bill programs are not recorded by NRCS and are therefore not included in this report.

SGI further targeted its conservation effort to match areas of bird abundance range-wide. For example, 86 percent of SGI effort is invested in three of seven MZs (I, II, IV; Appendix C) that together contain 83 percent of birds (Doherty et al. 2010). Similarly, 61 percent of conserved acres are clustered inside three of 11 western states (Idaho, Montana, and Wyoming), that together comprise 69 percent of grouse range-wide (Appendix B).

[4] Wyoming Basin, Snake-Salmon-Beaverhead, Northwest Colorado.
[5] Northern Montana.
[6] Powder River Basin, Yellowstone Watershed, Dakotas, Wyoming Basin and Snake-Salmon-Beaverhead.
[7] Northern Great Basin, Box Elder, Central Oregon, Western Great Basin.
[8] Half of new acres are native seeding (23,253 acres); remaining acres were primarily former cropland restored back to tame pastures.
[9] Dakotas, Yellowstone Watershed, Northwest Colorado, Northern Great Basin, Box Elder.

Outcome #3: NRCS Accelerated Conservation Easements in Sage-Grouse Range

Threats reduced from COT Report – Ex-Urban Development, Agricultural Conversion

Conservation easements are an effective mechanism for keeping sage-grouse habitats intact by removing ex-urban development and agricultural conversion threats (FWS 2013). For nearly 25 years, NRCS and partners have used easements to conserve continentally-important wetland habitats and waterfowl populations. The concentration of easements in the Prairie Pothole Region and the Central Valley of California demonstrate the agency's ability to focus Farm Bill resources to landscapes prioritized for conservation (Figure 2; gold). SGI seized on this past success and has replicated the approach for sage grouse (Figure 2; pink and red). Most easements for sage grouse (79 percent) are located inside PACs (Appendices B and C), with 72 percent of those concentrated within four large and at-risk populations in southwest Wyoming, central Idaho, northwest Colorado and northern Montana[10] (Figure 2, Appendix C).

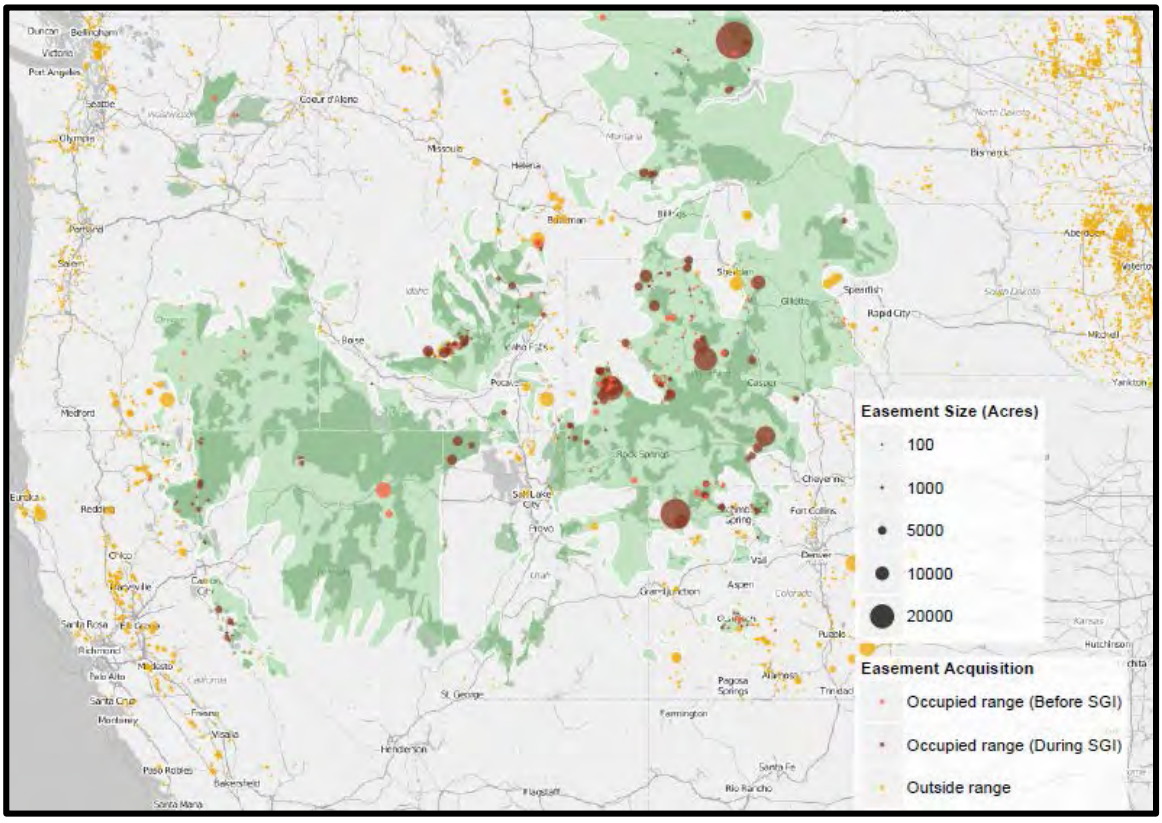

Figure 2. NRCS conservation easements (WRP, FRPP, GRP; 1992-2013) outside occupied sage-grouse range (gold), inside occupied range acquired 1992-2009 (pink), inside occupied range acquired from 2010-2013 (brown).

[10] Wyoming Basin, Snake-Salmon-Beaverhead, Northwest Colorado, Northern Montana.

The pace and extent of easement acquisition has accelerated in occupied sage-grouse habitat since SGI became a national priority for NRCS. Easement acquisition during SGI has increased 1,809 percent, totaling 361,984 in just 4 years[11] (Figure 3). SGI easements are bigger and more likely to be permanent inside than outside the occupied range, providing vast tracts of working lands that anchor sage-grouse conservation in perpetuity. On average, easements through SGI are more than four times larger inside than outside of the occupied range[12], with nearly all acquisitions (94 percent) providing permanent protection[13].

Easement acquisition increased 1,809% during SGI. Totaling 451,884 acres through fiscal year 2013, easements are more than four times larger inside occupied habitat; 94 percent provide permanent protection.

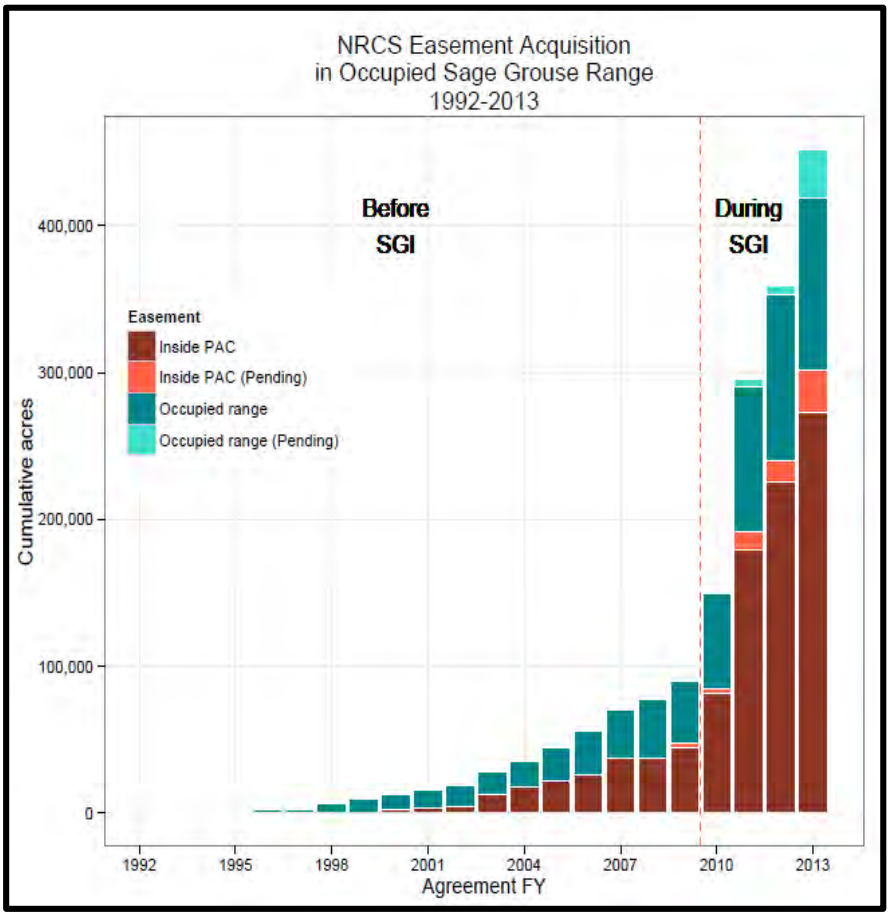

Figure 3. Acres of conservation easements acquired before (1992-2009) and during SGI (2010-2013). Colors denote acquisitions within occupied range or inside of PACs.

[11] Easement acres before SGI (89,990; 1992-2009) versus during SGI (361,984; 2010-2013).
[12] 934 acres inside versus 205 acres outside occupied sage-grouse range; estimates based on easements located within the 11 western sage-grouse states.
[13] Proportion of perpetual easements inside (94 percent) versus outside (73 percent) of occupied range in 11 western sage-grouse states.

SGI outcome-based science has quantified the effectiveness of easements for sage-grouse in Wyoming and Montana. SGI science also has created spatial tools to target future acquisitions in Oregon, Nevada and California.

Case Study: Wyoming

Wyoming's approach is a marriage between policy and voluntary conservation, with each partner doing its share to reduce the mix of threats facing populations. The Wyoming Governor's Executive Order (EO) is reducing energy threats inside PACs to 1 well/mi^2 and ≤5 percent surface disturbance to maintain populations (Wyoming EO 2011-5). Bureau of Land Management (BLM) policy manages drilling of the federal mineral estate in accordance with objectives set forth in the EO (BLM Instructional Memorandum Wyoming 2012-2019). With these policies in place to reduce habitat fragmentation from energy development, NRCS and partners have placed conservation easements to remove the residual fragmenting threat of urbanization.

Core area policy and easements in Wyoming reduce by two-thirds the bird losses that would have occurred in PACs, and these same protective measures also conserved 75 percent of habitats for migratory mule deer.

An outcome-based assessment by scientists from The Nature Conservancy has quantified the biological benefits of resulting policy and easement investments (Copeland et al. 2013). A conservation strategy with policy and $250 million in targeted easements is predicted to halt declines to 9-15 percent, cutting anticipated losses by roughly half statewide and nearly two-thirds within PACs (Appendix D: Panel A versus B). Easement acquisitions during SGI have prevented urbanization in some of the most bird abundant and at-risk landscapes in Wyoming (Figure 4). SGI's $250 million easement campaign in Wyoming is 59 percent complete[14], and NRCS and partners remain committed to continuing this partnership.

[14] Wyoming campaign is 59 percent complete based on $147 million currently invested and a $250 million target. Acquired acres (181,418 acres; Table 2) multiplied by $814/acre = $147,674,252. Current investment is estimated at $814/acre according to 2011-2013 Wyoming-specific Farm and Ranch Lands Protection Program (FRPP) easement data; estimate is doubled to reflect full value (FRPP pays half).

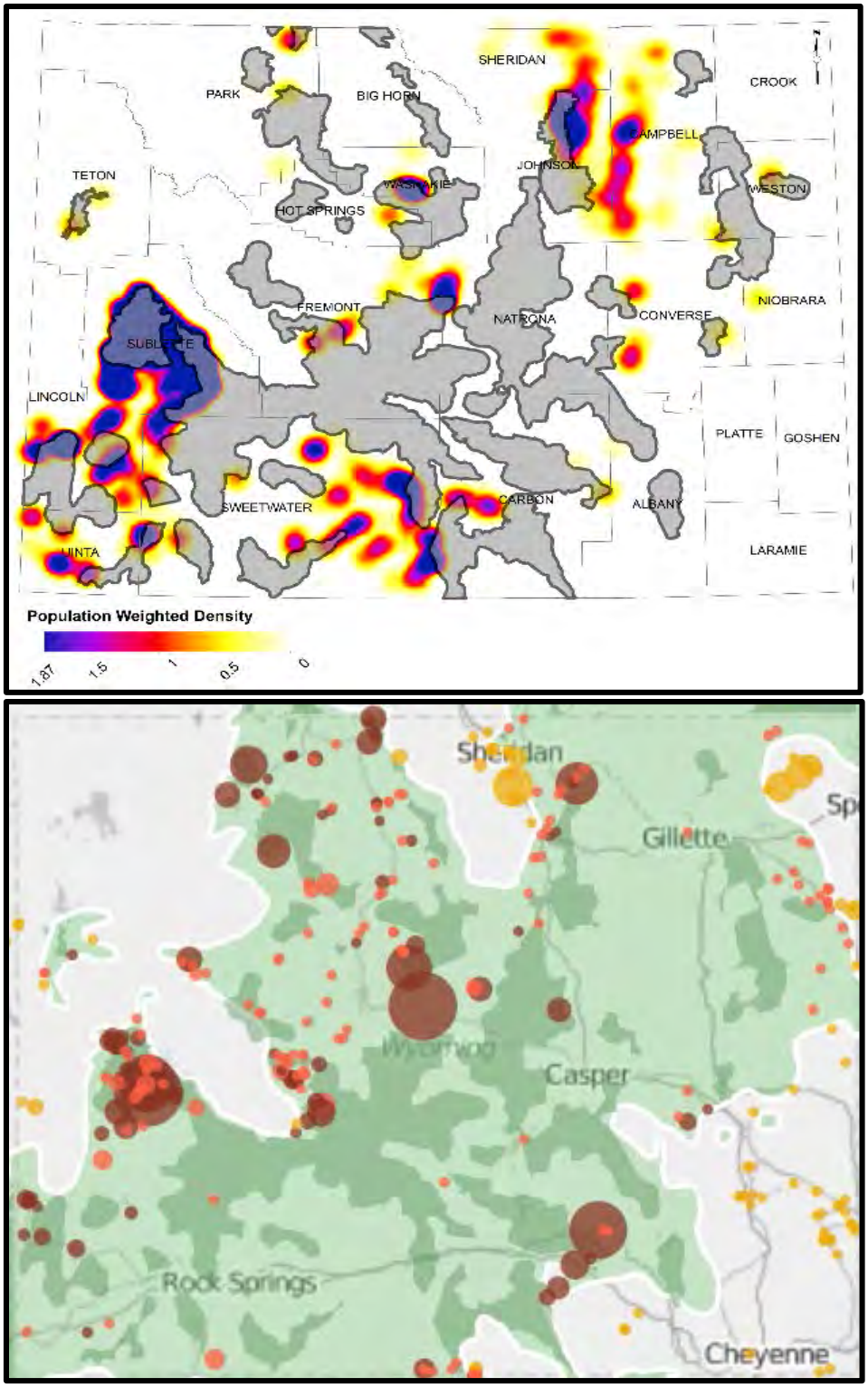

Figure 4. Top shows priority areas in need of conservation easements to reduce ex-urban development (blue is highest need; modified from Copeland et al. 2013).

Bottom shows NRCS-sponsored easement acquisitions in Wyoming during SGI (brown) and before SGI began (pink).

Targeting conservation to sage-grouse habitat also has benefited other sagebrush-dependent fauna. A second outcome-based evaluation by The Nature Conservancy found that measures taken for sage-grouse have also conserved 75 percent of priority habitats for two world-class populations of migratory mule deer (Copeland et al. 2014). Multiplicative benefits are the result of protective measures made possible through the Governor's sage-grouse EO, U.S. Forest Service purchases or withdrawals of oil and gas leases and conservation easements (Appendix E). Future SGI investments will further benefit deer because 77 percent of remaining high-priority, at-risk private lands important for mule deer migration are also PAC-based sage-grouse priorities (Appendix F).

Case Study: Montana

Located within the species' northernmost PAC, SGI's largest easement (32,249 acres; Figure 2) helps maintain in perpetuity the longest-known sage-grouse migration: a 150-mile journey between Saskatchewan (Canada) and the Missouri River in northeast Montana (Tack et al. 2012). This easement, together with others acquired by the Montana Chapter of The Nature Conservancy, has reduced the threat of agricultural conversion on private lands by 34 percent within this PAC. Sage-grouse nest and raise their young in silver sagebrush habitats north of the Milk River, before migrating up to 100 miles south to winter in big sagebrush habitats in Montana (Appendix G; Tack et al. 2012). A recent connectivity study reinforces the effectiveness of SGI easements, showing that Canada's Saskatchewan population remains genetically connected to northeast Montana (Bush et al. 2011). If funded in 2015, Governor Steve Bullock's budget request for $10 million from the Montana legislature would provide match for SGI and partners to acquire additional easements in this corridor and throughout the state.

Easements in northern Montana help maintain the longest-known sage-grouse migration by reducing the threat of agricultural conversion by 34 percent.

Case Study: Science-Based Tools for Targeting Easements in the Great Basin

Life follows water in the arid West, and easements are an effective tool for maintaining the scarce summer resources that moist (i.e., mesic) habitats provide in the Great Basin. The newest SGI acquisition in Nevada is Smoke Creek, located inside the Western Great Basin PAC. Each year, successful nesting females from surrounding public uplands make the short trek to Smoke Creek to raise their young on this private working ranch (Figure 5).

Easements in the Great Basin maintain requisite habitats on working ranches where new satellite mapping shows that more than 80 percent of brood rearing areas are privately owned.

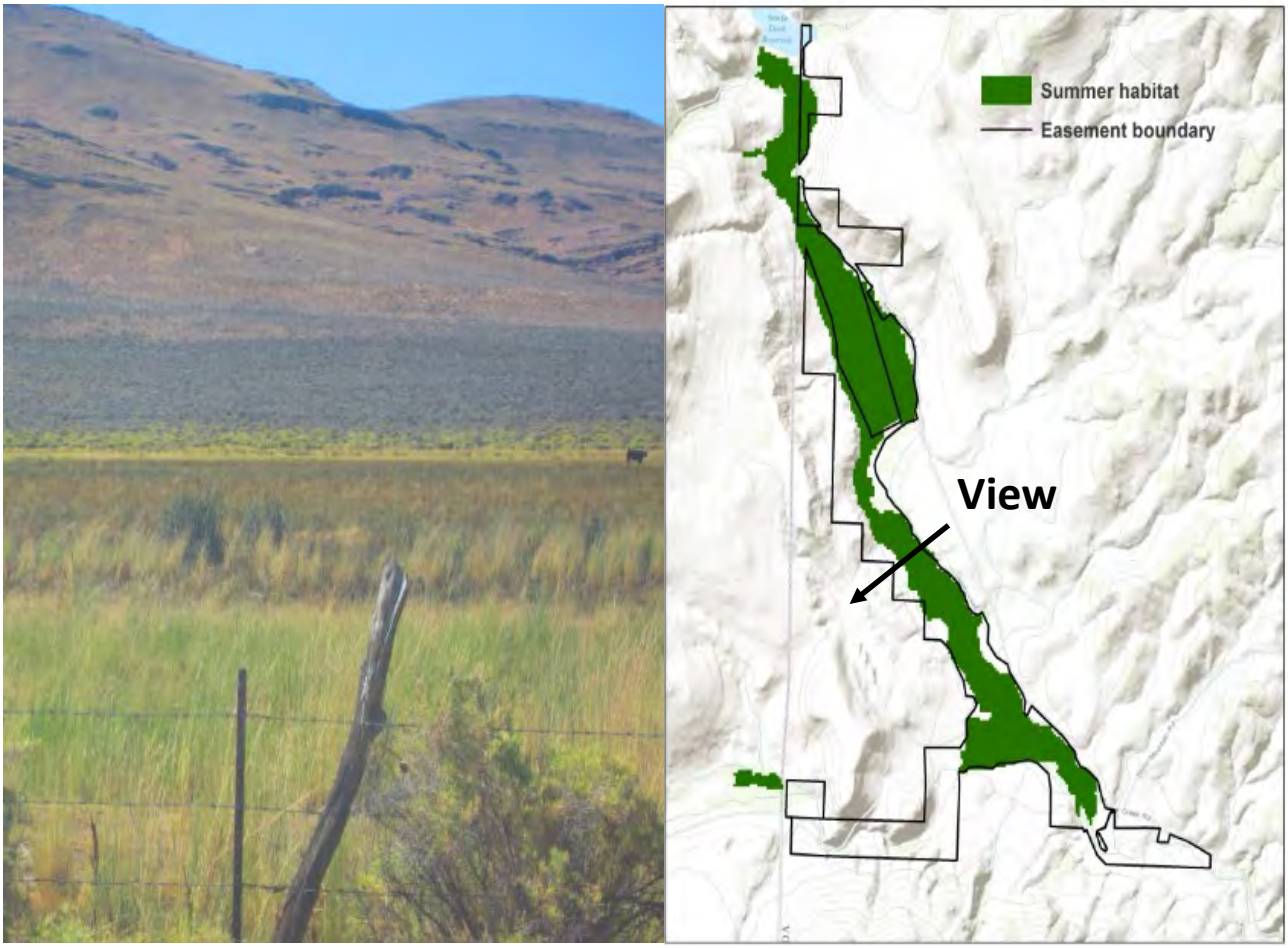

Figure 5. Smoke Creek easement (left) in Nevada's central Washoe County conserves in perpetuity the scarce summer habitats birds need to raise their young. The new SGI tool that maps mesic habitats (Appendices H and I) identified Smoke Creek as a high priority for conservation (green polygons; right).

This same story plays out each summer in much of the Great Basin, where new SGI science shows >80 percent of brood habitats are privately owned (Appendix H; SGI 2014). SGI has incorporated this information into a map-based decision support tool to assist in targeting of future actions that conserve, restore, and enhance mesic habitats (Appendix I).

Outcome #4: New "Sodsaver" Provision in 2014 Farm Bill

Threat reduced from COT Report – Agricultural Conversion

In Management Zone I (Appendix A), where most land is privately owned (70 percent) and wheat production is the top-ranked industry, protection of native sagebrush habitats is synonymous with sage-grouse-compatible uses of working lands. Historically, insurance premiums paid to landowners have increased, in effect subsidizing 2.5 million acres of cropland conversion from 1994 to 1997 in the contiguous 48 states (Lubowski et al. 2006). However, the Agricultural Act of 2014 (i.e., 2014 Farm Bill) includes a policy provision known as 'Sodsaver' that reduces the federal crop insurance subsidy on cropland recently converted from native sagebrush habitats. This reduction eliminates some benefits producers receive as part of their risk management strategy making conversion of marginal lands less economically viable (Smith and Goodwin 2013).

New 'Sodsaver' provision in 2014 Farm Bill has reduced by half the 13 percent of the population at risk of agricultural conversion.

The new Sodsaver policy directly addresses a need identified in the COT report to revise Farm Bill policy and commodity support programs in order to reduce conversion of native sagebrush habitats to marginal cropland (FWS 2013). Conservation benefits of this type of legislation have long been recognized by waterfowl enthusiasts in the Prairie Pothole Region, where a similar 'Swampbuster' provision in the 1985 Food Security Act rendered farmers who drained wetlands to grow crops ineligible for crop insurance subsidies (Gray and Teels 2006, Reynolds et al. 2006). Sodsaver was championed primarily by the same prairie-focused conservation groups that pushed for Swampbuster (i.e., Ducks Unlimited and Pheasants Forever), and its implications for sage-grouse conservation have only recently been recognized.

New SGI sponsored outcome based evaluation from the University of Montana has predicted that new Sodsaver provision in 2014 Farm Bill has reduced by half the 13 percent population at risk of agricultural conversion (unpublished data, Joseph Smith). In the evaluation, leks seldom remained active once cropland exceeded 7-14 percent of a 12.5-mi^2 landscape (Appendix J). Scientists then simulated alternative cropland scenarios by linking bird response (Appendix J) with SGI's new cropland suitability layer (Appendix K). Findings showed that most conversion risk was located outside PACs (Figure 6), and had Sodsaver not been enacted, the worst-case scenario would be a 13 percent population decline.

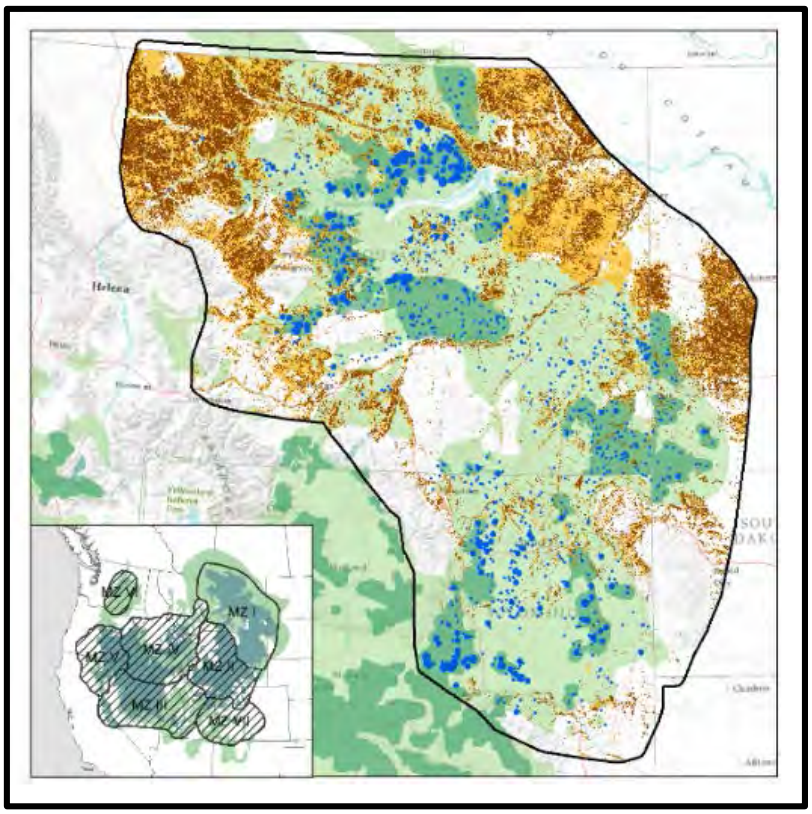

Figure 6. Current cropland (brown) and predicted potential agricultural conversion (tan) in sage-grouse MZI (unpublished data, Joseph Smith, University of Montana). Blue dots and their relative size denote the abundance of males on active sage-grouse leks (2008-2012).

Outcome #5: NRCS Reduced Threat of Conifer Invasion

Threat reduced from COT Report – Conifers

Conifer removal has emerged as a primary SGI conservation practice for maintaining extant sage-grouse populations through rapid restoration of degraded sage-steppe (Baruch-Mordo et al. 2013). Conifer encroachment today is largely an infill issue, as most sites vulnerable to invasion became occupied by trees in the late 1800s and early 1900s (Miller et al. 2005, 2008). Roughly 80 percent of sagebrush sites invaded by conifers are still in the early phases of woodland succession, where native shrubs and bunchgrasses are common (Miller et al. 2008), which means targeting Phase I and II conifer removal (Figure 7) in the near term can reclaim otherwise suitable habitat.

Phase I **Phase II** **Phase III**

Figure 7. Three phases of conifer encroachment in western U.S. rangelands (as modified from Miller et al. 2008).

SGI has greatly accelerated conifer removal, primarily through Phase I and II mechanical removal, reclaiming 405,241 acres of otherwise suitable habitat (Appendices B and C). Overall, 81 percent of cuts are located inside PACs and within populations where conifer encroachment was deemed a widespread threat by the COT report (Appendix L; FWS 2013). SGI's targeted approach helps ensure individual projects achieve cumulative, landscape-level effects with 84 percent of cuts located within four, at-risk populations in the Great Basin[15].

Researchers have long suspected that tree removal would benefit birds (Commons et al. 1999, Freese 2009) and SGI-sponsored science now confirms the reduced capacity of a landscape to support sage-grouse when conifer canopy exceeds 4 percent (Appendix M; Baruch-Mordo et al. 2013). By focusing treatments on early successional sites, SGI

New science shows that rapid restoration of early conifer-invaded sage-steppe maintains sage-grouse populations, and sagebrush songbirds reoccupied conifer cuts the spring following treatments.

[15] Northern Great Basin, Box Elder, Central Oregon, Western Great Basin.

helps prevent lek abandonment and conversion of sagebrush-steppe to conifer woodlands (Appendix N; Baruch-Mordo et al. 2013).

In order to produce more immediate bird benefits, most SGI cuts are completed using mechanical treatments that surgically remove trees while retaining the existing shrub community. New science by the U.S. Geological Survey reinforces mechanical treatments employed by SGI over burning. The study found sagebrush-obligate songbirds returned the following spring after mechanical removal reduced conifer canopy to <0.2 percent on sites with existing sagebrush that were adjacent to large sagebrush expanses; no such response was evident on burned sites where juniper skeletons remained (Knick et al. 2014).

Removing encroaching conifer reduces fuel load by half and can decrease the negative impacts resulting from catastrophic wildfire (Chambers et al. 2008). Private producers also embrace conifer removal because maintaining, rather than shading out, deep-rooted perennials conserves rangeland health, increasing available forage by up to 60 percent (McLain 2012).

Case Study: Oregon

Conifer removal in Oregon increased by 1,411 percent during SGI, and threat alleviation is now 68 percent complete on private lands inside PACs.

Oregon NRCS is a pioneer in conifer threat reduction, and its leadership in SGI has resulted in roughly half of SGI's applied acreage (199,203 acres; Appendix B). SGI in Oregon has targeted conifer removal to PACs most in need of threat reduction (Appendix O), concentrating beneficial cuts near active leks and other occupied seasonal habitats (Hagen et al. 2011). The pace and extent of removal has increased exponentially inside PACs and within occupied habitats since 2010, when sage-grouse was designated as a Candidate species for possible listing under the ESA. Conifer removal during SGI has increased 1,411 percent in 5 years[16] (Figure 8). Certainty of implementation is high because like in Oregon (black bars; Figure 8), 96 percent of previously contracted acres range-wide have been certified as complete.

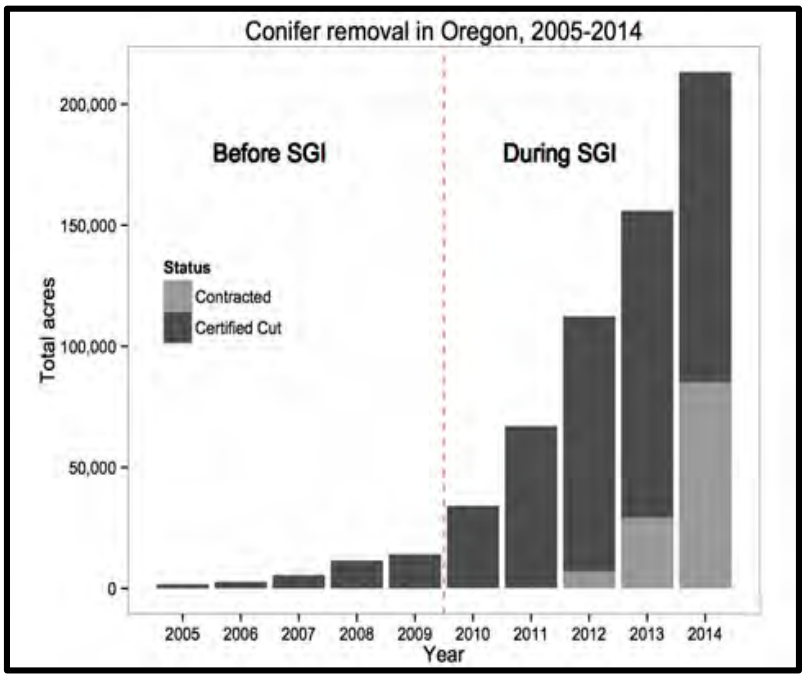

Figure 8. Increase in acres of conifer removal before and during SGI.

Substantial progress within affected PACs and across populations demonstrates SGI's track record for certainty of implementation and illustrates how solving this threat is well within reach of the collective partners in the near term. For the first time, new, high-resolution tree cover mapping capability provides an opportunity to estimate the extent of the conifer threat and quantify threat reduction inside Oregon PACs (Nielsen and Noone 2014). In all four Oregon populations (Appendix O), SGI has helped ranchers reduce the threat of early succession conifer on private lands. In total, SGI has reduced conifer invasion by two-thirds (i.e., 68 percent), and

[16] Acres of conifer removal before (14,114 acres) versus during (199,203 acres) SGI = 1,411 percent increase.

threat alleviation is nearly complete on priority private lands in the Central Oregon population (Table 2).

Table 2. Proportion of conifer threat reduced inside of PACs for four sage-grouse populations in southeast Oregon.

SGI Conifer Removal inside Oregon PACs				
Population	Ownership	Acres Early Successional Conifer[1]	Acres Cut Inside PACs[2,3]	% Threat Reduced in PACs
Central Oregon	Private	80,387	67,955	85%
Northern Great Basin	Private	97,367	65,052	67%
Western Great Basin	Private	39,085	20,412	52%
Baker, Oregon	Private	19,005	7,864	41%
TOTAL	**Private**	**235,844**	**161,283**	**68%**

[1] Acres of early-successional conifer is based on the SE Oregon Tree Canopy Cover map developed for The Nature Conservancy by Portland State University. Early-successional classes include 1-4% and 4-10% cover classes (Nielsen and Noone 2014).

[2] Acres cut includes certified cut and contracted acres. Certainty of contract fulfillment is high, as <5% of contracted acres have been cancelled in the five-year history of SGI conifer removal efforts rangewide.

[3] Contracts on ranches within 3.2 miles of a PAC border were counted as recorded contract locations—often ranch centroids or ranch headquarters—may fall outside borders of PACs even when conifer removal took place inside PAC borders.

Crafting a game plan for conservation that tracks threat reduction and anticipates future resource needs is the foundation upon which SGI 2.0 is being built. By the end of 2015, SGI will complete conifer mapping across 102.5 million acres of occupied habitat within MZ III-V and VII (Appendix P), covering seven affected western states. SGI will use new maps to refine targeting tools and develop a business investment plan through 2018 to facilitate and streamline continued success. Partnering with state and federal partners who are aggressively treating conifer and jointly tracking collective threat reduction is an SGI priority.

Outcome #6: NRCS Reduced Impacts from Range Management Infrastructure

Threats reduced from COT Report – Fences, Infrastructure, and Grazing

Private working lands are the glue that maintain sage-grouse habitats across the West, and conservationists desire sustainable ranching over the fragmenting effects of oil and gas, agricultural conversion, and subdivision (FWS 2013). Despite habitat benefits, poorly designed or improperly placed range management infrastructure (e.g., fencing, water tanks, seeps at spring developments, corrals) may threaten grouse with increased mortality risk. Such threats are comparatively simple to address, and in 5 years, SGI has transformed the type and placement of infrastructure installed to facilitate private-lands grazing management. SGI has been placing new infrastructure since 2010 in accordance with CR guidelines (FWS 2010), and NRCS now funds the retrofitting of existing structures (Figure 9).

Figure 9. Drowning risk is reduced by installing new livestock watering tanks equipped with built-in ramps (top left) and by retrofitting old tanks with escape inserts (bottom left). Collision risk is reduced by marking high-risk fence (right). (Photos by Jeremy Roberts)

SGI-sponsored science has catalyzed fence-marking by first quantifying its benefit and then targeting its application (Stevens et al. 2013); now, partners are scaling up execution to reduce sage-grouse collisions. The simple practice of fence-marking reduces grouse collisions by 83 percent (Stevens et al. 2013), without disrupting fences that facilitate sustainable grazing. Most collisions (93 percent) occur within one mile of breeding grounds in flat to rolling terrain. With this information in hand, SGI developed a mapping tool to help land managers prioritize sites across ten of 11 states where grouse are most at risk of colliding with fences (Figure 10). Mapping reveals that only 6-14 percent of the sage-grouse range poses a high risk for collisions that would need markers or other modification if fences are present (Stevens et al. 2013). Using this tool, SGI and partners are focusing limited resources on those fences that are most likely to reduce grouse collisions (Figure 10). Equally significant, the tool helps managers avoid building new fences in problematic high-risk areas, thus precluding many fence strikes from ever happening.

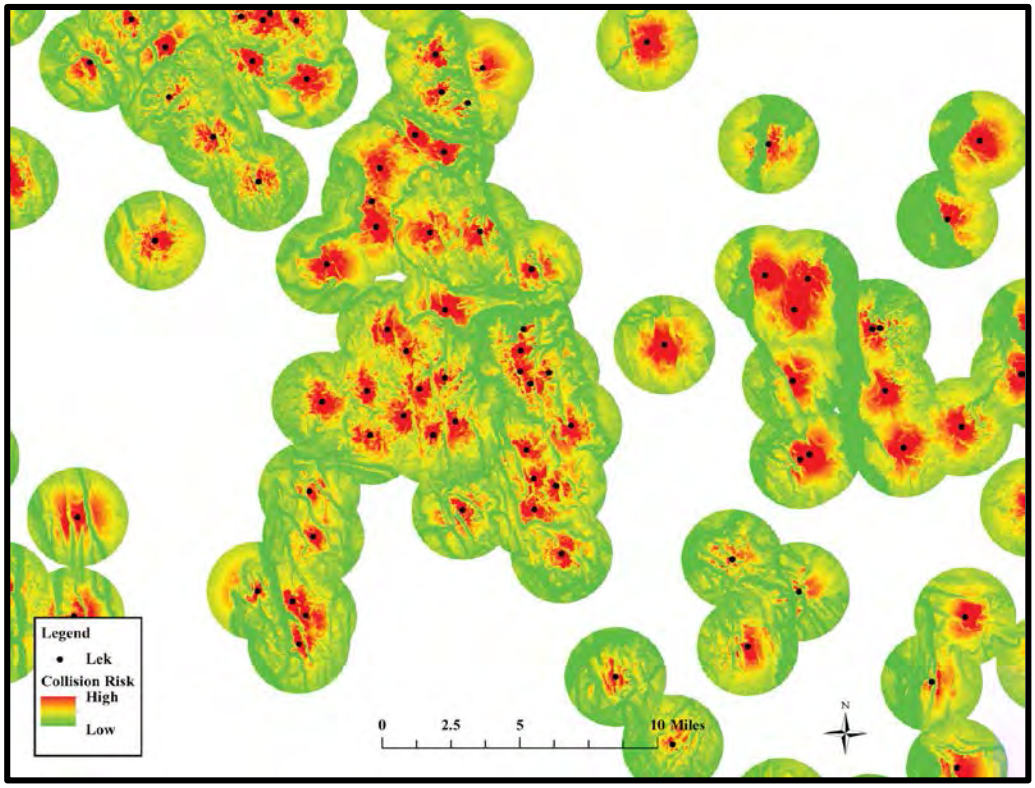

Figure 10. Excerpt from Fence Collision Risk tool resulting from Stevens et al. (2013) that is used to target fence-marking projects. Downloadable from the internet, the tool identifies areas with highest risk of fence collisions (red) within 1.8-mile radius of leks (black dots).

SGI fence-marking conservatively has prevented 2,600 fence collisions, which is more than twice the number of males counted annually on leks in Washington, North and South Dakota, and Canada combined.

Fence-marking is now a widespread practice applied by landowners and volunteers, which makes the tracking of resulting benefits difficult. For example, 41 Wyoming landowners voluntarily marked 82 miles of high-risk fence as a prerequisite to implementation of an SGI grazing contract on their ranch. Using a different approach, landowners in southeast Wyoming voluntarily reduced collision-risk along 57 miles of fence with markers provided by the Medicine Bow Conservation District. Similarly, the Fence Marking Partnership (FMP) in Montana has reduced collision threat by marking 101 miles of fence within six PACs (PACs 2-4, 8, 10, and 13), in addition to those under an SGI contract. The FMP's markers were paid for by American Colloid, manufactured by COR Enterprises in Billings, Montana, and distributed for free to volunteers marking fence inside high-risk areas identified by SGI (Figure 10) or within known grouse winter range. Equally important, but impossible to track range-wide, is the reduced threat of collision provided by NRCS and partner staff who no longer build fences within high-risk areas.

Through direct contracts with landowners, SGI has reduced the threat of collision by marking 350 miles of high-risk fence (Appendix Q). Collectively, 79 percent of these marked fences[17] are located inside of PACs to reduce risk to the greatest number of birds (FWS 2013). Published estimates report a six-fold decline in collisions along marked (0.93 collisions/mile) versus unmarked fences (5.36; Stevens et al. 2010, 2011a, b). Using these rates, the fence-marking efforts presented here (590 miles total) may be preventing 2,600 fence collisions annually[18], which is more than twice the number of males counted annually on leks in Washington, North and South Dakota, and Canada combined[19].

[17] 275 of 350 fence-miles inside of PACs.

[18] 5.36 collisions/mile before marking minus remaining impact of 0.93 collisions after marking = 4.43 reduction in collisions per linear fence mile. 590 miles of fence marked multiplied by 4.43 = 2,614 fewer collisions.

[19] Number of males on leks = 783 males counted in Washington, North and South Dakota, Alberta and Saskatchewan (Canada) (Table 1 in Doherty et al. [2010]). 783 males multiplied by two (1,566 birds) equates to SGI's estimated reduction in fence collisions (1,550).

Outcome #7: NRCS Improved Rangeland Health and Resilience

Threats reduced from COT Report - Grazing, Non-native plants, Invasive plants, Fire

Privately-owned grazing lands that underpin 40 percent of sage-grouse range also constitute some of the most productive habitats available (Appendix H). Despite their importance, poor rangeland management may reduce the value of private ranchlands if plant communities shift to undesirable ecological states, where invasive and other undesirable plants predominate. As outlined in the CR (FWS 2010), SGI enhances rangeland health by enacting a Prescribed Grazing approach, which balances forage availability with livestock demand and maintains ecosystem function by adjusting the timing, frequency, and duration of grazing.

The objective of Prescribed Grazing (NRCS Conservation Practice Standard 528) is to ensure that rangelands are managed sustainably to provide continued ecological function of sagebrush-steppe. The prevalence of deep-rooted perennial grasses is inversely related to that of invasive annual species, such as cheatgrass and medusahead (Appendix R). Therefore, a primary focus of Prescribed Grazing is maintenance of key plant species, such as deep-rooted perennial grasses that have been shown to be essential for ecological resistance to invasive annual grasses. Ecological Site Descriptions and comprehensive rangeland inventories, coupled with Prescribed Grazing, provide the biological basis for sustainable grazing plans.

Since 2010, SGI has enhanced rangeland health through rotational grazing systems, re-vegetating former rangeland with sagebrush and perennial grasses and control of invasive weeds (Figure 11). Collectively, 83 percent of weed management, 76 percent of seeding projects and 75 percent of grazing systems have been implemented inside of PACs[20] (FWS 2013).

[20] Acreage inside of PACs by practice is 1,837,338 of 2,437,645 (75 percent) grazing systems, 36,774 of 48,120 (76 percent) seeding and 12,820 of 15,509 (83 percent) of weed management.

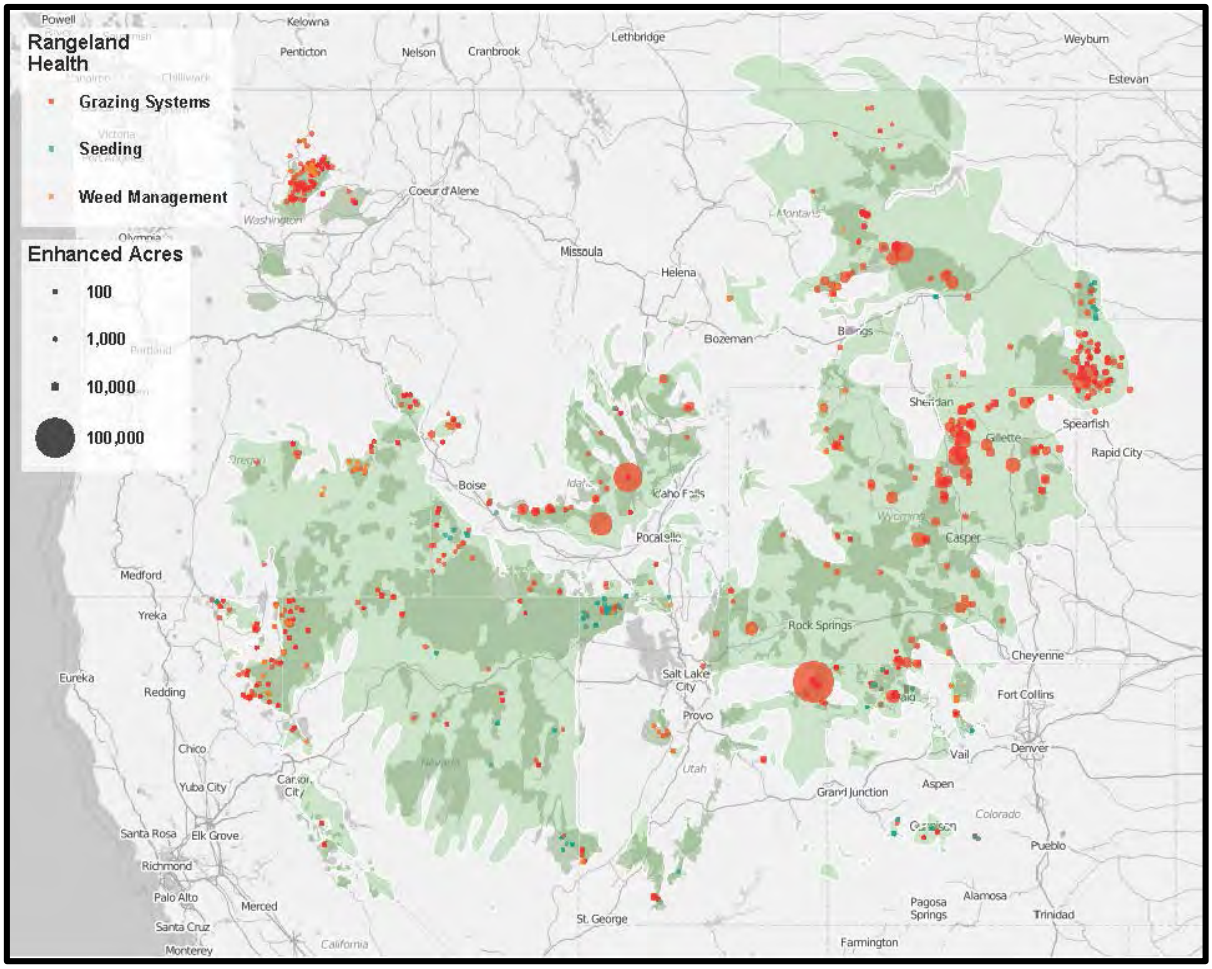

Figure 11. Location and size of SGI grazing systems (red), seeding projects (green), and weed management (orange).

SGI targeted rangeland health practices within PACs to address myriad threats facing sage-grouse (Figure 11). In central Idaho and eastern Montana, grazing systems help maintain existing habitats that support large and intact populations. In the western Dakotas, partners are restoring fringe habitats through native seeding, prescribed grazing and weed management. In Washington, the Columbia DPS reversed its decline following maturation of 1.5 million acres of Conservation Reserve Program (CRP) lands, planted through USDA's Farm Service Agency, to restore cropland to perennial grasses and sagebrush (Schroeder and Vander Haegan 2011). Today, SGI is helping maintain these habitats by turning expiring CRP lands into working lands where sustainable grazing is the predominant land use (Figure 11).

In addition to accelerating proven practices, SGI and partners are crafting solutions to threats posed by wildfire and invasive species (FWS 2013). In 2012, SGI (with BLM and the Western Association of Fish and Wildlife Agencies [WAFWA]) published a synthesis highlighting opportunities to reduce wildfire threats (*Trial by Fire*; Murphy et al. 2013). *Trial by Fire* raised awareness of steps taken to manage wildfire, the already high degree of suppression

effectiveness and the need to forge a strategic approach to reduce threats from remaining fires that damage habitat.

Trial by Fire resulted in WAFWA's launch of the interdisciplinary Wildfire and Invasive Initiative Working Group, in order to develop the desired strategic approach. The outcome is SGI's co-authorship of the groundbreaking *Resistance and Resilience* (*R&R*) publication (Chambers et al. 2014) that combines sage-grouse habitat needs with soils data, in particular temperature and moisture regimes, to spatially depict ecosystem *resilience* to disturbance and *resistance* to annual grass invasion. SGI assembled the soils data collected through the National Cooperative Soil Survey Program into a seamless range-wide data set (Maestas and Campbell 2014). This geospatial data product enables practitioners to incorporate *R&R* concepts into project planning and implementation.

Combining sage-grouse population status with the *R&R* framework provides a powerful decision tool for prioritizing scarce resources to combat wildfire and invasive species (Figure 12). Deep rooted perennial grasses maintained through SGI grazing and weed management practices are reducing fire and invasive threats where bird abundance and wildfire risk is high in northwest Nevada and northeast California (Figure 12).

R&R benefits to sagebrush ecosystems are just now being realized, and SGI is committed to working with partners to fully execute threat reduction measures.

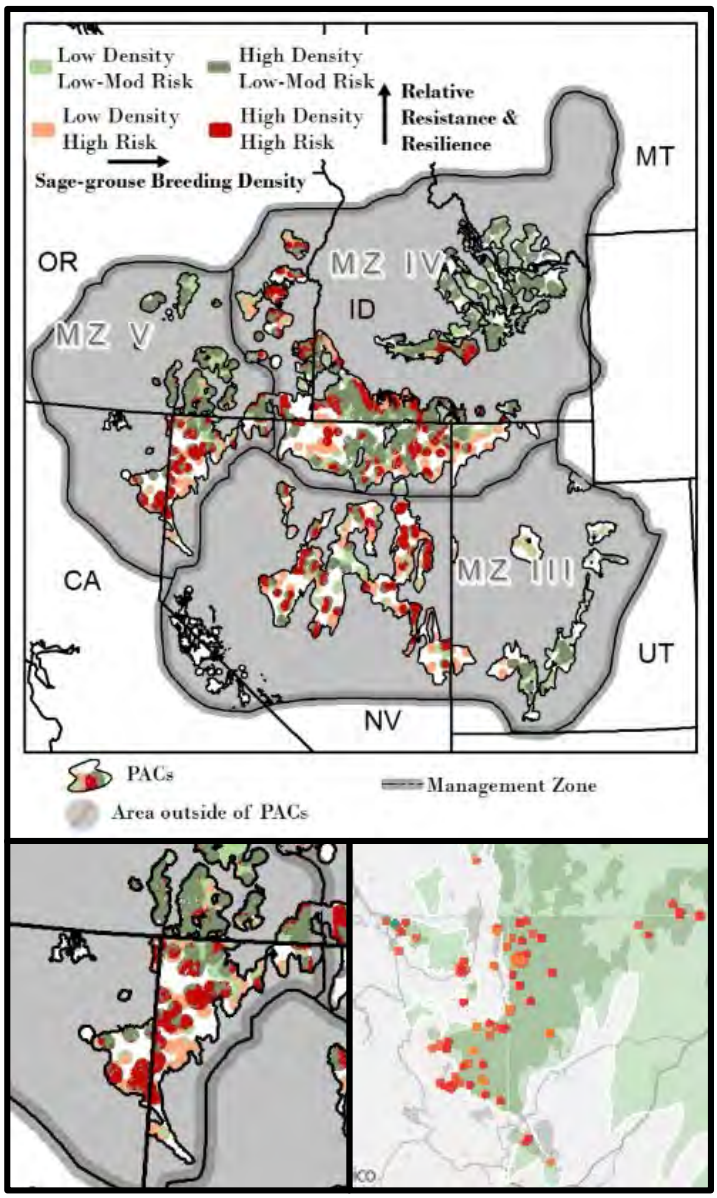

Figure 12. Sage-grouse densities (top) at high (pink and red) and low (light and dark green) risk of wildfire and invasive annual grasses (as modified from Chambers et al. 2014). SGI reduces this threat (bottom left) by targeting grazing systems (red) and weed management (orange) within priority landscapes (bottom right).

Outcome #8: SGI Capacity Has Bolstered Range-wide Certainty of Implementation

An additional 11,149 landowner visits by SGI SWAT employees doubled SGI conservation acreage.

Human capacity needed to initiate conservation and then sustain its implementation is a vital, yet often overlooked, component of successful partnerships (Beever et al. 2014). Anticipating this need, NRCS launched the Strategic Watershed Action Team (SWAT) in 2011, as its primary vehicle for increasing capacity for sage-grouse conservation in priority landscapes. In doing so, it provided the infrastructure requisite to SGI success. Instead of going it alone, NRCS asked that SWAT be managed by the Intermountain West Joint Venture (IWJV), an established and respected public-private partnership governed by a western-based management board.

The underlying strength in SWAT is its simplicity and breadth of partnerships. Diversity of partners investing in SWAT includes state and federal agencies, conservation districts, corporations, and non-governmental conservation organizations. NRCS has invested $9.3 million in SWAT through an Interagency Agreement (IA) with FWS. IWJV in turn leveraged the IA with an additional $5.4 million with more than 40 paying partners.

The primary SWAT outcome is 11,149 field visits[21] with landowners that ultimately resulted in a doubling[22] of SGI conservation. SWAT now manages 27 partner positions that continue to strategically apply SGI practices inside PACs (Figure 13). The three newest positions that further enhance delivery are located in Susanville, California; Gillette, Wyoming; and Dillon, Montana.

SWAT provides SGI with the flexibility to capitalize quickly on emerging opportunities by working locally with partners to solve issues that would otherwise stymie conservation. For example, in Alturas, California (Figure 13), SWAT speeds conifer removal by contracting with a private firm specializing in cultural resource clearances. In Elko County, Nevada (Figure 13), SGI rangeland specialists provide free technical assistance so that ranches that do not qualify for financial assistance can still enact beneficial practices on their own. The SWAT Field Capacity and Delivery Coordinator oversees field staff, catalyzes SGI partner investments, and coordinates training so that members function as a team. Annual trainings in Utah, Wyoming, Oregon, and Idaho enable the team to solve place-based threats within a range-wide

[21] SWAT staff had 11,149 field visits with 1,119 unique landowners from January 2012 to September 2014. In 2012, staff recorded number of field visits and new landowners. In 2013, SWAT started chronicling in SWAT Quarterly Reports the number of days that each staff person invested in direct landowner assistance. For 2013 and 2014, total contacts were calculated as the number of days invested times two, in order to account for the average number of landowners contacted per day afield.

[22] SGI SWAT field capacity helped implement 52 percent of SGI grazing systems (1,273,123 of 2,437,645 acres), 46 percent of conifer cuts (185,581 of 405,241 acres) and 37 percent of fence-marking projects (132 of 350 miles).

perspective. Delivery is further enhanced by monthly teleconferences, annual workshops, training webinars, and the sharing of decision support tools resulting from SGI science.

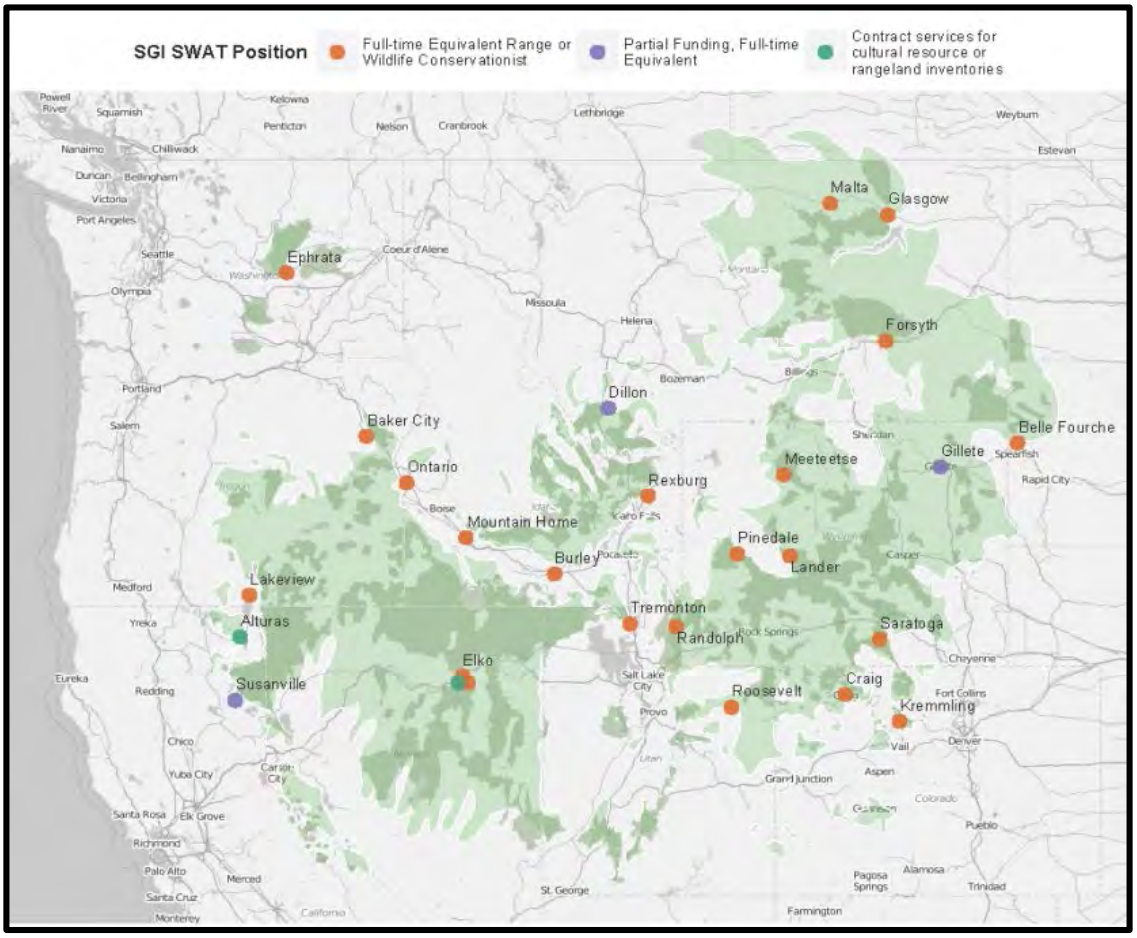

Figure 13. Locations of SGI partner positions in 11 western states.

SWAT sponsors SGI science used to target conservation, assess resulting outcomes, and continually improve program delivery. NRCS retains the services of a science advisor to help prioritize and guide SGI science. Resulting SGI priorities are then contracted by SWAT to independent scientists at state, federal, and private institutions. Science needs are funded primarily through a $3 million SWAT allocation with $1 million in match from the NRCS-based Conservation Effects Assessment Project.

SGI embraces strategic communications to show diverse audiences the benefits of sustainable ranching to wildlife conservation and to increase partner and landowner participation. Communication tools include a dedicated SGI website that is now the go-to source for sage-grouse conservation (Figure 14), SGI Facebook page reaching more than 100,000 since inception in 2012, SGI video library sharing key practices and benefits and a popular *Science to Solutions* series to show readers how SGI uses science to improve program delivery. A full-time

communication specialist integrates SGI communications with those of NRCS Public Affairs to maximize reach and benefits.

Figure 14. Home page for SGI website at www.sagegrouseinitiative.com.

SWAT bolsters IWJV capacity that in turn assists SGI in its daily operations. IWJV staff assists with event planning and logistics, manage grants and agreements, and help track and report accomplishments. A beneficial outgrowth of SWAT is an IWJV partnership with Pheasants Forever, which efficiently administers external contracting with third-party providers. Intangible benefits include an IWJV Coordinator and Management Board that help secure additional SGI support.

Section II: Certainty For Future Sage-Grouse Conservation

In another bold move to help sage-grouse, NRCS will make available $198 million to provide partners with unprecedented certainty that conservation will continue well into the future. Unlike past annual allocations, this new infusion will fuel SGI through 2018, the life of the current Farm Bill.

New NRCS funding provides unprecedented certainty that conservation will continue well into future.

Allocation levels through FY 2018 are comparable to those from previous years. The new commitment, combined with estimated partner match, will bring the total SGI investment to $751 million[23] (Table 3). These resources will allow SGI to nearly double the number of conserved acres from 4.4 million through 2014 to an estimated eight million by 2018 (Table 3).

Table 3. Past (FY 2010-FY 2014) and future (FY 2015-FY 2018) SGI funding, estimated partner match and projected acreage of additional conservation (in millions).

Past Accomplishments	NRCS	Partner Match	Total ($)	Total (Ac)
Restoration and enhancement	102.4	34.1	136.5	4.0
Conservation easements	164.7	85.7	250.4	0.4
Human capacity	29.4	8.2	37.6	
Subtotal	296.5	128.0	424.5	4.4
Outyear Commitments	NRCS	Estimated Partner Match	Estimated Total ($)	Estimated Total (Ac)
Restoration and enhancement	80.0	26.7	106.7	3.4
Conservation easements	100.0	100.0	200.0	0.2
Human capacity	17.6	2.5	20.1	
Subtotal	197.6	129.2	326.8	3.6
Total SGI Investment	**494.1**	**257.2**	**751.3**	**8.0**

[23] Restoration and enhancement represents NRCS cost-share programs (i.e., EQIP and WHIP) with partner match estimated at 25%. Partner match for conservation easements calculated at 50% for FRPP and ACEP easement programs. Additional NRCS easement funds exclude partner match (i.e., WRP, GRP). Human capacity to deliver conservation includes NRCS technical assistance, estimated at seven percent of financial assistance. Additional human capacity under NRCS includes contributions from CEAP and SWAT. Partner match for human capacity only includes estimated SWAT contributions. Extrapolated from past accomplishments, out-year forecasts project that the additional $80 million in NRCS investment will restore or enhance an additional 3,404,255 acres ($80 million divided by $25.50) and conserve in perpetuity another 243,986 acres ($100 million divided by $409.86 per acre).

The new $198 million investment includes up to $45 million annually in direct financial assistance to help landowners voluntarily accelerate conservation. Allocations are for conservation easements ($25 million/year) from ACEP as well as for restoration and enhancements of rangelands ($20 million/year) under EQIP. Extrapolated from past SGI accomplishments, out-year forecasts project that this additional investment through 2018 will restore or enhance an additional 3,404,255 acres and conserve in perpetuity another 243,986 acres.

New NRCS infusion will bring total investment to $751 million, enabling SGI to conserve an estimated 8 million acres by 2018.

Importantly, projections do not include additional funding through the new Regional Conservation Partnership Program (RCPP). Authorized by the 2014 Farm Bill, RCPP is a comprehensive and flexible program that uses partnerships to stretch and multiply conservation investments and reach conservation goals on a regional or watershed scale. As RCPP promotes a landscape-scale approach to conservation and leverages NRCS funding through partnerships to achieve greater outcomes, there are many opportunities to further sage-grouse conservation through this new program.

In the first round of selected projects announced in January 2014, NRCS awarded $9 million to a partnership in Oregon for landowners who voluntarily conserve sage-grouse habitat. The RCPP investment is equally matched from partners, providing $18 million total so that the Oregon Association of Conservation Districts can spearhead work in Baker, Crook, Deschutes, Grant, Harney, Lake, Malheur and Union counties. Efforts include removal of 130,000 acres of invasive conifer, which when completed by 2018, will alleviate this threat on priority private lands state-wide. New conservation easements on an additional 12,000 at-risk acres represent the first acquisitions in Oregon since SGI's inception.

NRCS will invest another $5 million into the SGI SWAT to maintain longevity of the human capacity necessary to deliver the newly committed financial resources. SWAT has matured over the years and is now regarded by partners as an effective mechanism for enhancing field capacity, funding outcome-based science, and sharing the SGI story. Originally envisioned as a 3-year effort in 2011, a second infusion by NRCS extended SWAT through 2016. New investments will continue to fuel SWAT through 2018. In January of 2015, a new $1 million contribution to IWJV from ConocoPhillips Company illustrates the commitments of partners to continue the SWAT model into the future, in order to truly achieve long-term conservation of the sagebrush ecosystem.

The last item included in projections are the technical resources that existing NRCS offices have redirected away from other priorities to implement SGI. This trained staff is critical to SGI implementation; without it the financial resources mean little. NRCS currently has more than 300 employees in more than 95 field offices across 11 western states working in tandem to

execute sage-grouse conservation on working landscapes. Their varied responsibilities include conservation planning, contracting, engineering, and training NRCS and partner staff.

In addition, not included in the above projections but offered for the first time as a new pilot under SGI in 2015 are conservation opportunities through the Conservation Stewardship Program (CSP). SGI-CSP is available to ranchers who volunteer to 'raise the bar' further by removing all identified threats facing sage-grouse on their entire operation. Participants earn CSP payments in five-year renewable contracts for conservation performance, the higher the performance the higher the payment. NRCS has specifically designed CSP enhancements to benefit sage-grouse and include conservation measures contained in the FWS-approved Conference Report (FWS 2010). For example, if an SGI participant has already removed invasive conifer, they can now through CSP also implement an SGI grazing system, and receive a financial incentive to maintain the system for 5 years with an opportunity to renew for an additional 5 years.

Finally, NRCS is developing a SGI 2.0 business plan as a spatially-explicit and state-based plan for guiding the investment of newly committed resources. NRCS staff in each of the eleven relevant States are refining sage grouse conservation priorities through 2018 and estimating anticipated level of threat reduction in those priority landscapes. Landscape priorities for NRCS in SGI 2.0 will link closely with State and Federal sage-grouse conservation plans and include quantitative goals. NRCS expects to provide this business plan to FWS in late spring 2015 as a further demonstration of commitment to future implementation. This business plan will be updated periodically, as state and federal plans are finalized and new science becomes available, in order to continue to drive sage-grouse conservation implementation to the areas of highest need and greatest impact across the landscape.

It is an exciting time for sage-grouse conservation and NRCS is proud to provide increased certainty for additional conservation through the life of the 2014 Farm Bill. Expectations are high that past accomplishments and out-year commitments will exceed criteria set forth in the Policy for Evaluation of Conservation Efforts policy for certainty of implementation and effectiveness (i.e., Policy for Evaluation of Conservation Efforts When Making Listing Decisions; Federal Register 2003). NRCS has provided with this Report to FWS a spatially-explicit dataset depicting conservation actions (Appendix S) for incorporation in the Conservation Efforts Database (CED) and to help inform the upcoming ESA listing decision.

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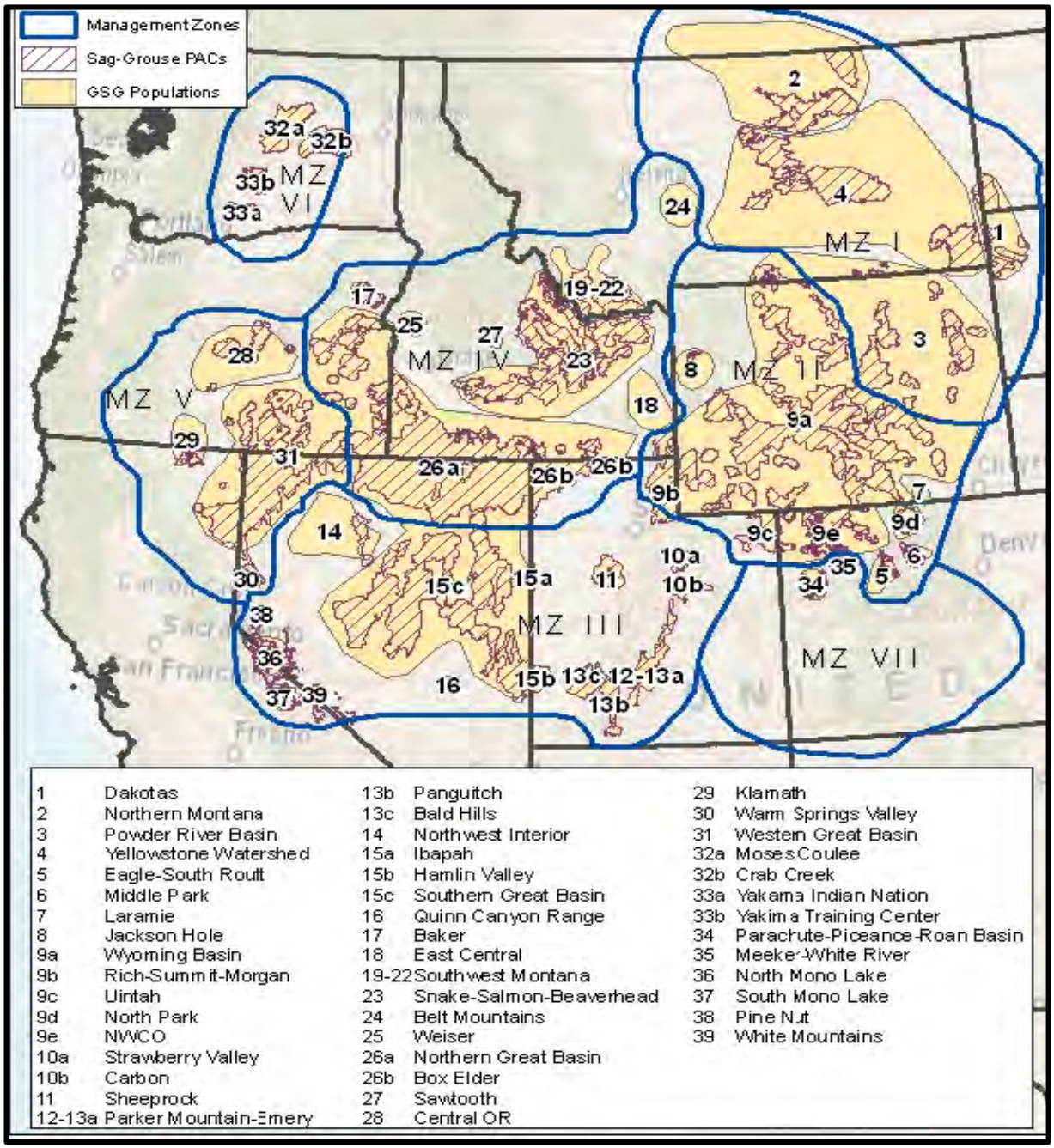
Appendices

Appendix A. Boundaries for sage-grouse management zones, populations, and priority areas for conservation (PACs; as adapted from FWS 2013).



Appendix B. SGI acres certified complete or contracted by state and activity, FY 2010-FY 2014.

Acres certified complete or contracted by state, 2010-2014

State	Grazing Systems		Easements*		Conifer Removal		Seeding		Fences Marked or Removed	
	acres	(% in PACs)	acres	(% in PACs)	acres	(% in PACs)	acres	(% in PACs)	miles	(% in PACs)
California	64,204	(56)	15,187	(71)	63,299	(65)	987	(96)	65	(72)
Colorado	79,077	(56)	68,988	(86)	1,185	(19)	3,483	(72)	11	(85)
Idaho	249,653	(87)	69,609	(94)	47,830	(77)	5,235	(43)	79	(94)
Montana	409,594	(85)	70,111	(75)	168	(0)	5,442	(14)	104	(96)
Nevada	26,173	(90)	18,272	(100)	22,266	(75)	1,855	(62)	21	(66)
North Dakota	20,173	(100)					2,475	(88)	< 1	(100)
Oregon	26,571	(100)	6,701	(1)	199,203	(81)	296	(93)	11	(82)
South Dakota	312,295	(85)							5	(83)
Utah	173,733	(95)	17,229	(100)	70,011	(99)	27,666	(96)	11	(100)
Washington	83,073	(86)	4,369	(100)			677	(41)	29	(10)
Wyoming	993,100	(63)	181,418	(71)	1,280	(80)	4	(100)	14	(36)
Total	2,437,645	(75)	451,884	(79)	405,241	(81)	48,120	(76)	350	(79)

Rangewide totals of 15,509 acres of weed management and 179 acres of wet meadow restoration are not shown.
*Easement numbers include all NRCS easements in occupied range or PACs acquired between FY92 and FY13

Appendix C. SGI acres certified complete or contracted by population, FY 2010-FY 2014.

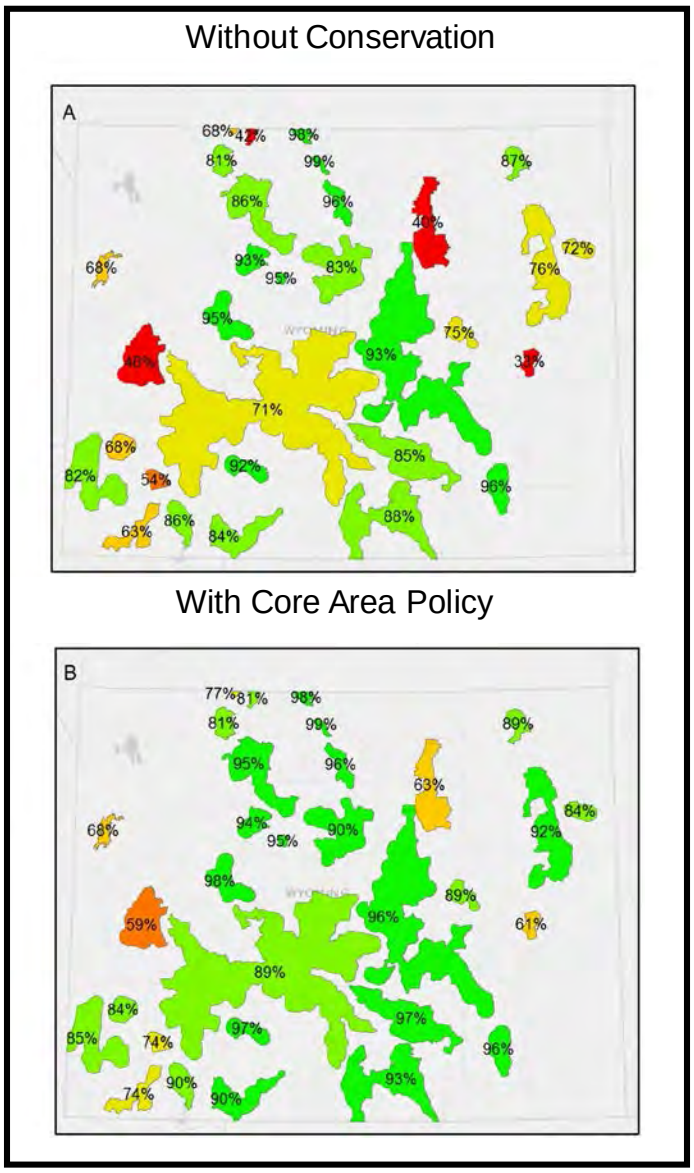
Acres certified complete or contracted by population, 2010-2014

MZ	Population	Grazing Systems		Easements*		Conifer Removal		Seeding		Fence Marked or Removed	
		acres	(% in PAC)	acres	(% in PAC)	acres	(% in PAC)	acres	(% in PAC)	miles	(% in PAC)
I	Dakotas	329,055	(89)					2,475	(89)	11	(93)
	Northern Montana	4,411	(73)	40,807	(79)						
	Powder River Basin	671,954	(54)	8,720	(60)	181	(0)			10	(98)
	Yellowstone Watershed	338,849	(83)	16,354	(97)			5,122	(15)	91	(95)
	Other	26,000	(49)							< 1	(100)
II	Middle Park	16	(100)	1,288	(100)			11	(100)		
	Jackson Hole			70	(100)						
	Wyoming Basin	327,652	(83)	166,831	(72)	1,099	(94)	4	(100)	5	(100)
	Rich-Morgan-Summit	8,596	(100)	465	(100)	455	(100)				
	Uintah	126,327	(100)			1,748	(100)			8	(100)
	North Park	12,182	(100)	6,067	(100)					< 1	(100)
	Northwest Colorado	48,677	(47)	52,039	(97)	223	(100)	2,512	(100)	10	(87)
	Other	11,000	(84)	8,450	(88)	26	(0)			< 1	(100)
III	Strawberry					7	(100)				
	Sheeprock Mountains	3,959	(100)			1,204	(100)	720	(100)	1	(100)
	Parker Mountain-Emery			93	(100)	509	(100)	226	(100)	< 1	(100)
	Panguitch	1,297	(100)	18	(100)	358	(100)	66	(100)	< 1	(100)
	Ibapah			422	(100)						
	Hamlin Valley	7,248	(100)			3,181	(100)	1,917	(100)	1	(100)
	Southern Great Basin	1,188	(33)			5,858	(83)	1,072	(100)	7	(100)
	North Mono Lake	13	(100)	6,085	(100)	2,185	(100)			1	(100)
	Pine Nut			0		963	(100)				
	Other	23,852	(63)	4,573	(100)	4,590	(77)	1,533	(19)	< 1	(100)
IV	Baker	10,295	(100)			5,795	(100)				
	East-Central ID			419	(0)						
	SW Montana	31,179	(100)	4,125	(99)					5	(100)
	Snake, Salmon, Beaverhead	198,284	(100)	64,314	(99)	290	(100)	1,730	(100)	62	(100)
	Belt Mountains	4,204				142	(0)	320	(0)	< 1	(0)
	Weiser	11,593						257	(0)		
	Northern Great Basin	38,053	(87)	2,477	(0)	137,501	(74)	2,445	(40)	27	(83)
	Box Elder	2,992	(100)	16,230	(100)	59,990	(100)	22,861	(100)	1	(100)
	Other	18,330	(33)	10,602	(4)	2,381	(100)	2,127	(73)	< 1	(0)
V	Central OR	4,522	(100)	1,690	(0)	69,291	(85)	20		6	(63)
	Klamath	12	(83)	679	(0)	11,229	(77)	535	(96)	18	(100)
	Warm Springs Valley	3	(100)	902	(100)	15					
	Western Great Basin	64,359	(78)	20,253	(81)	75,685	(76)	496	(97)	54	(56)
	Other	19,410	(27)	5,347	(23)	19,375	(72)	34	(100)	2	(78)
VI	Moses Coulee	60,037	(100)	2,127	(100)			280	(100)	3	(100)
	Crab Creek	9,515	(100)	2,242	(100)						
	Other	13,521	(15)					397	(0)	26	(37)
VII	Other	9,061		8,193		962	(0)	960	(0)	< 1	(0)
Total		2,437,645	(75)	451,884	(79)	405,241	(81)	48,120	(76)	350	(79)

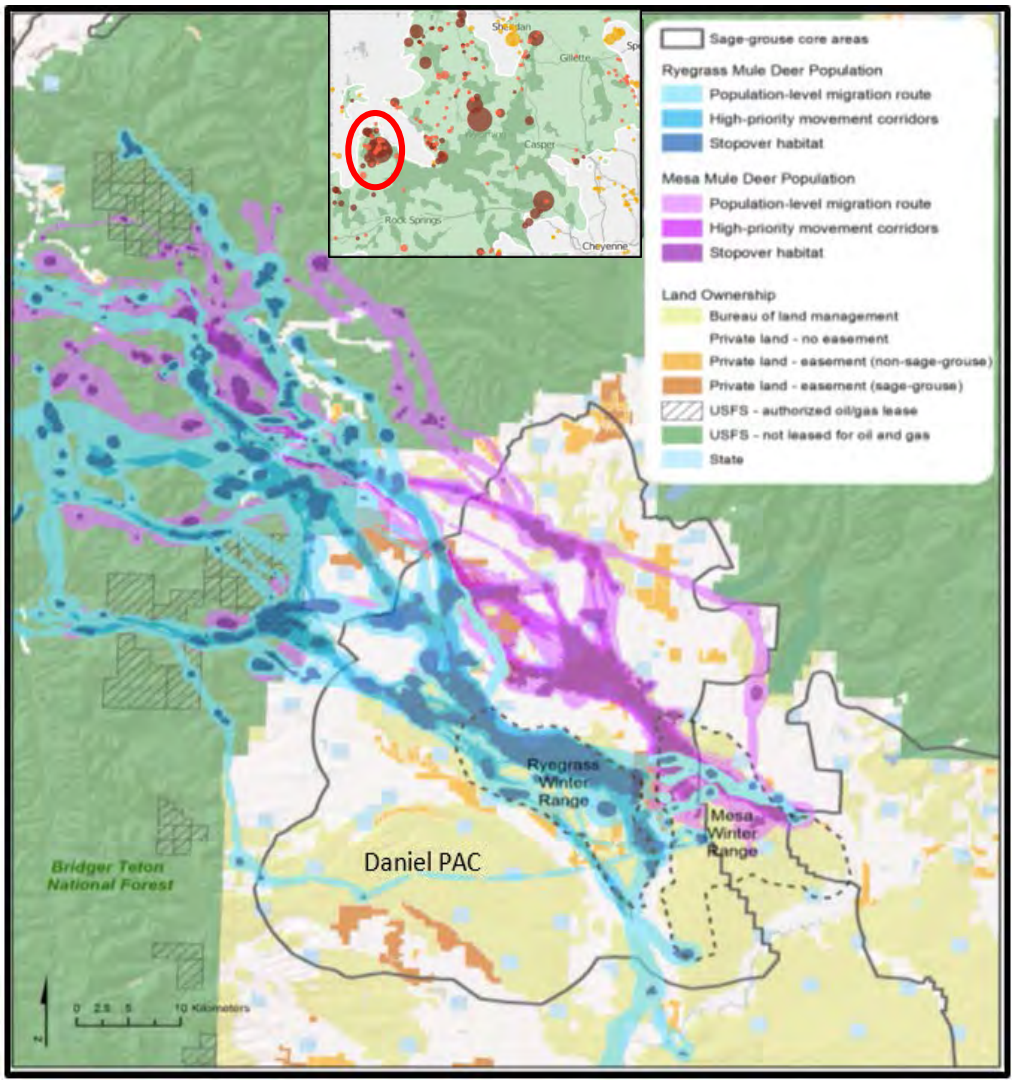
Rangewide totals of 15,509 acres of weed management and 179 acres of wet meadow restoration are not shown.

*Easement numbers include all NRCS easements in occupied range or PACs acquired between FY92 and FY13

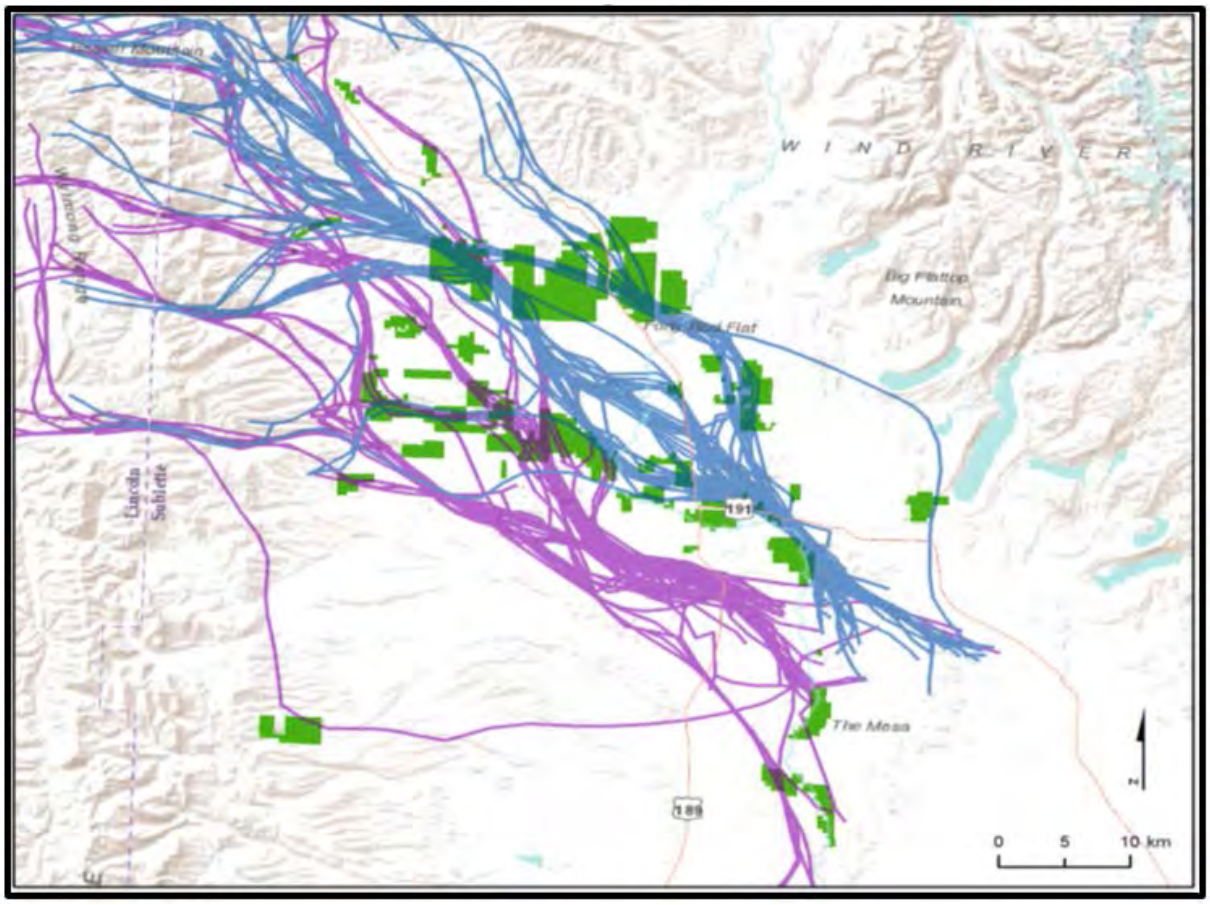
Appendix D. Percent of Wyoming sage-grouse populations remaining with and without conservation. Panel A is population remaining within PACs without policy and easements. Panel B shows percent remaining from current population with policy in place (as modified from Copeland et al. [2013]).



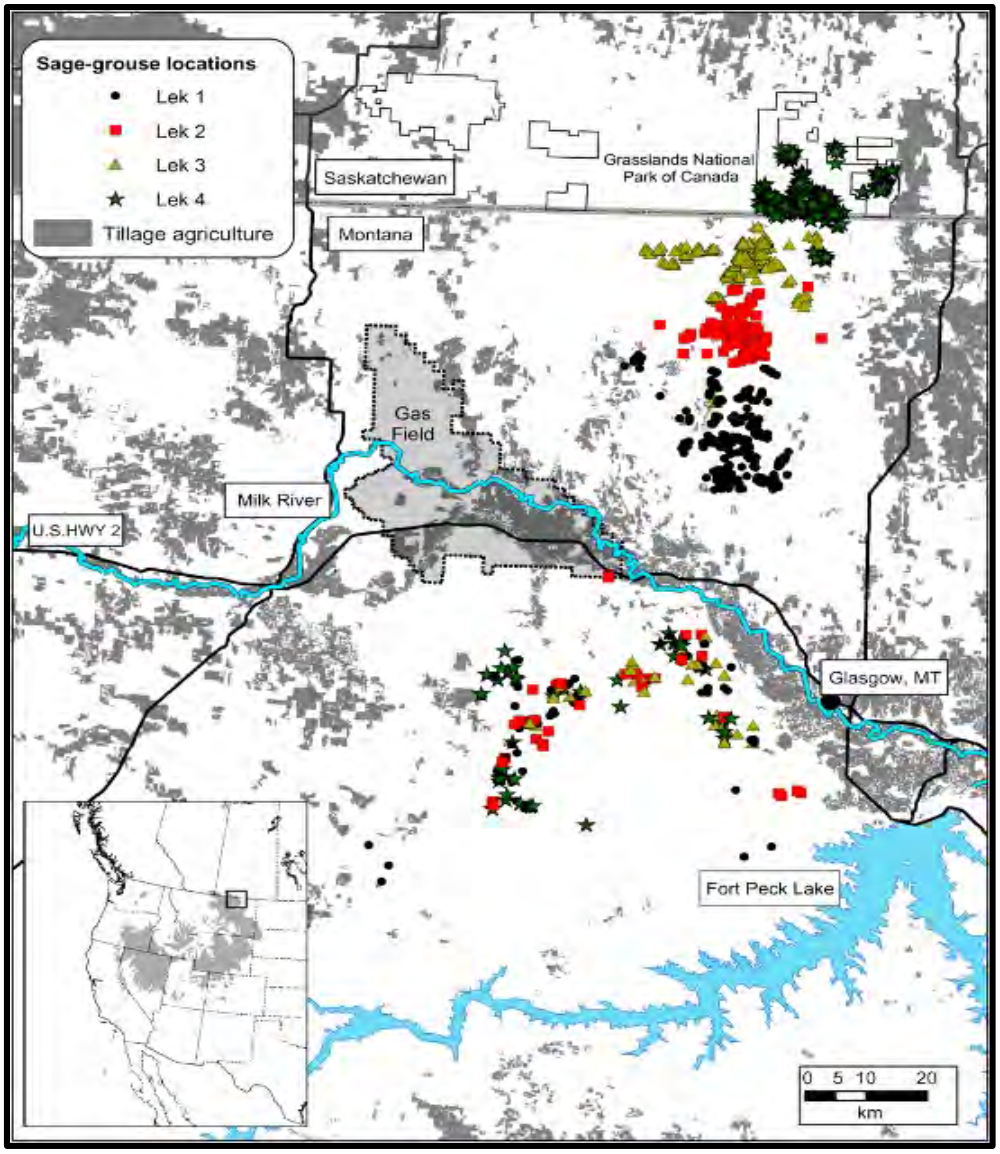
Appendix E. Winter ranges, stopovers, and migration routes for two mule deer herds (Mesa and Ryegrass subpopulations), Upper Green River Basin, Wyoming, relative to land ownership and conservation measures enacted (as modified from Copeland et al. 2014).



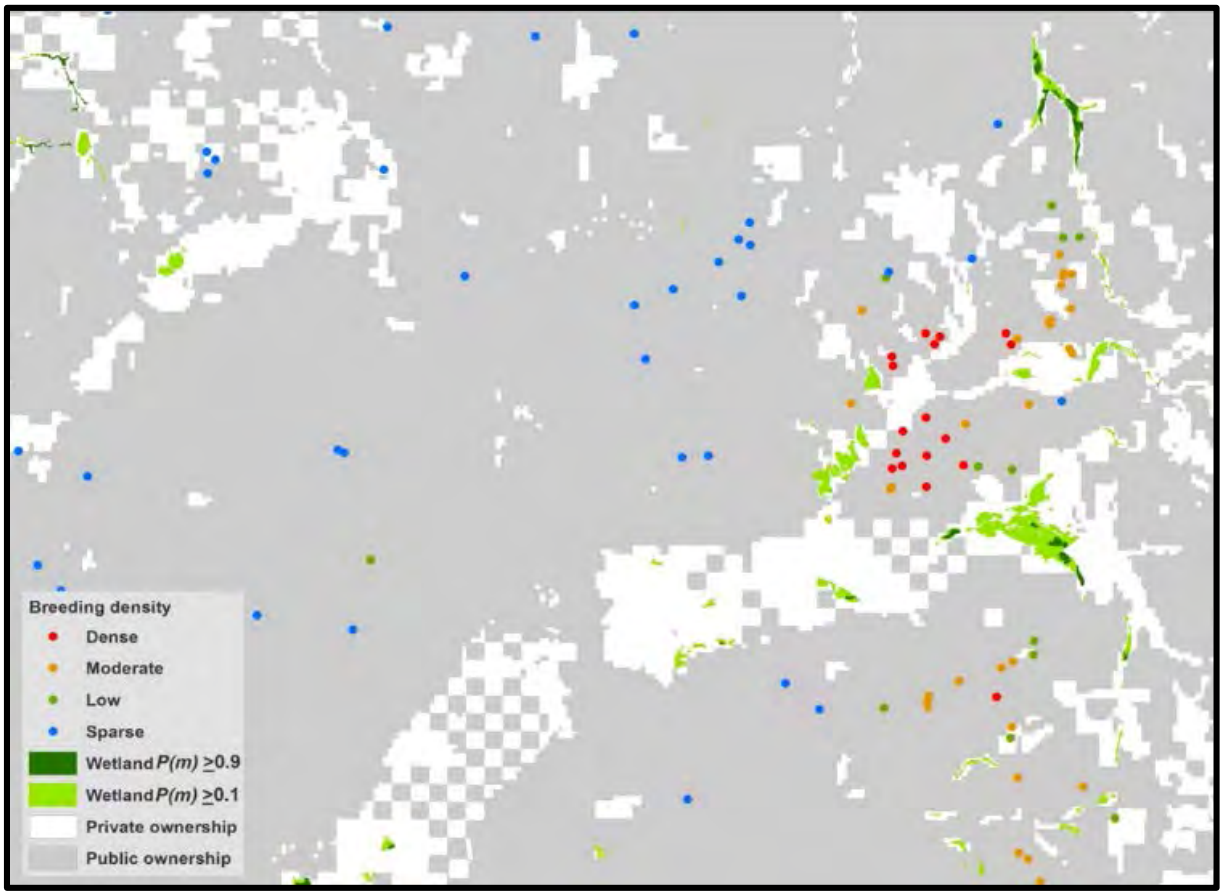
Appendix F. Conservation opportunities on private land (green) with individual migration routes for Mesa (blue) and Ryegrass (purple) mule deer populations (as modified from Copeland et al. 2014).



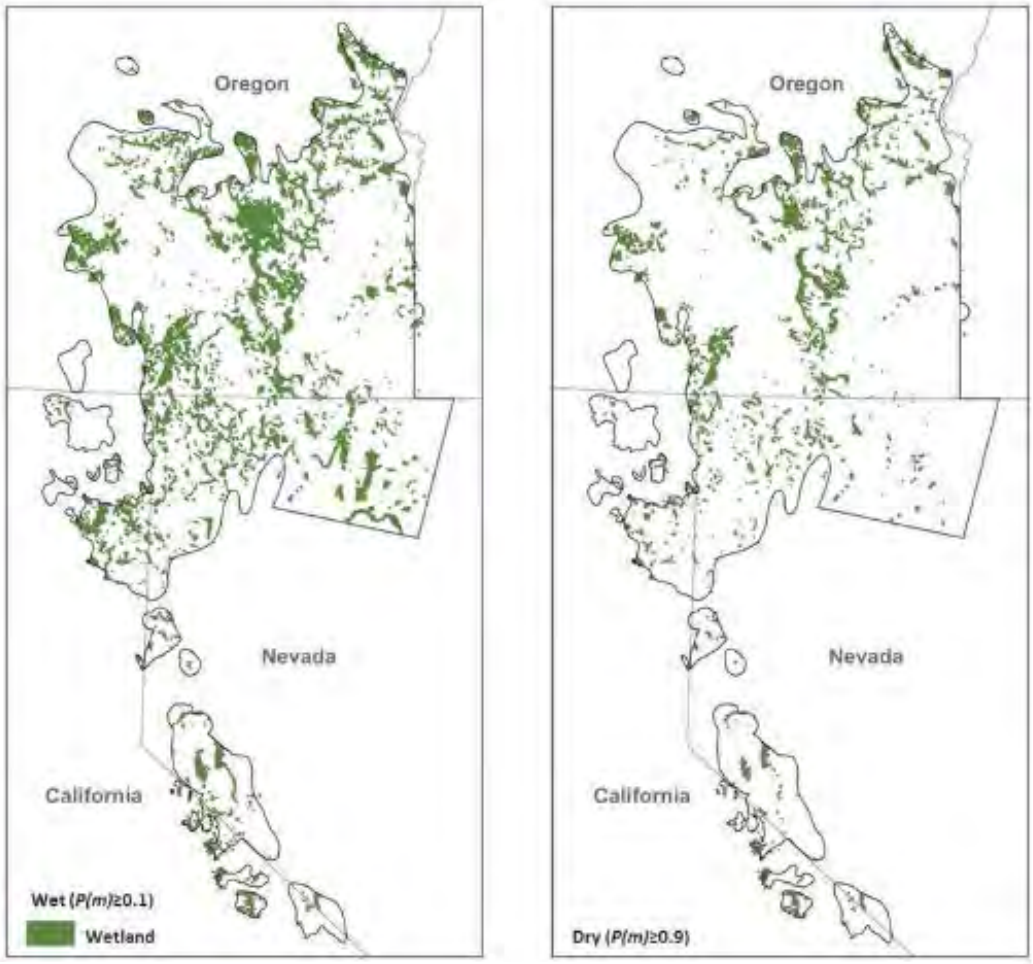
Appendix G. Telemetered sage-grouse locations in spring/summer (north of Milk River) and winter (south of Milk River) in northeast Montana and East Block of Grasslands National Park, Saskatchewan, Canada (modified from Tack et al. 2012).



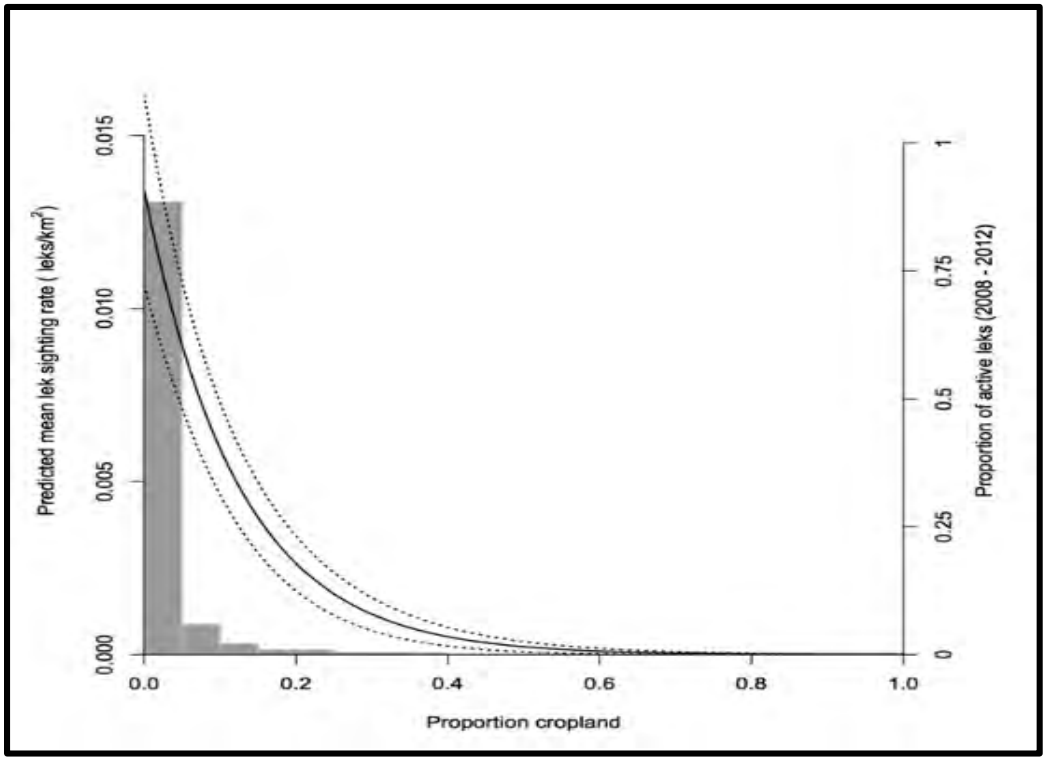
Appendix H. Colored dots represent sage-grouse leks with breeding densities that vary from dense (red) to sparse (blue). Leks are clustered near summer habitats (green). Although more than 80 percent of upland breeding habitat is on public lands (gray), 81 percent of summer habitats are privately owned (white; as modified from SGI 2014).



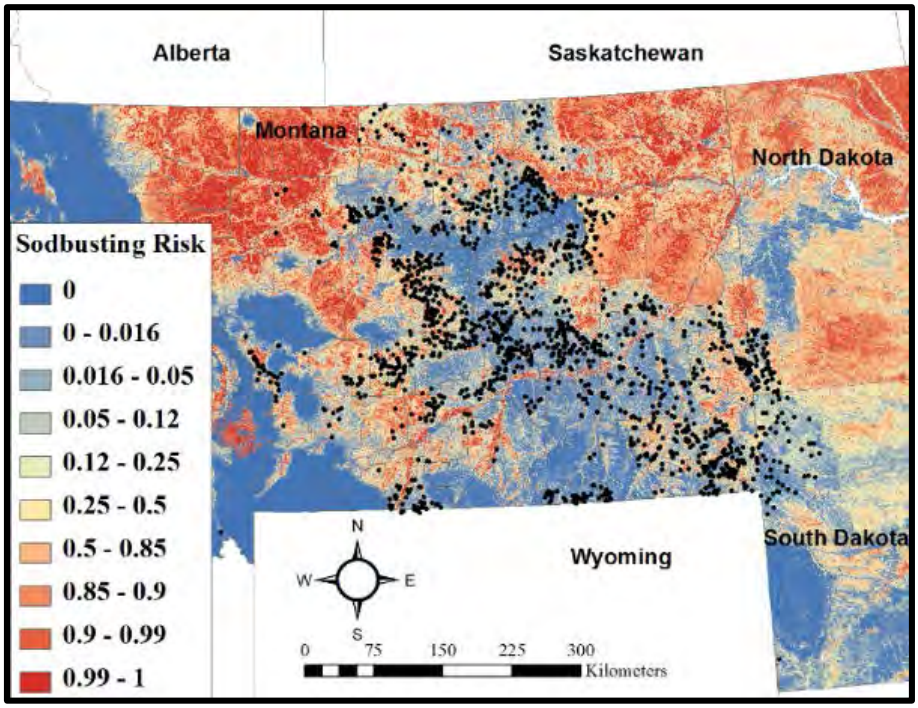
Appendix I. Mesic habitats, as mapped for sage-grouse broods in Oregon, Nevada, and California. Extent of brood habitat nearly doubles in wet (left) compared to dry (right) years.



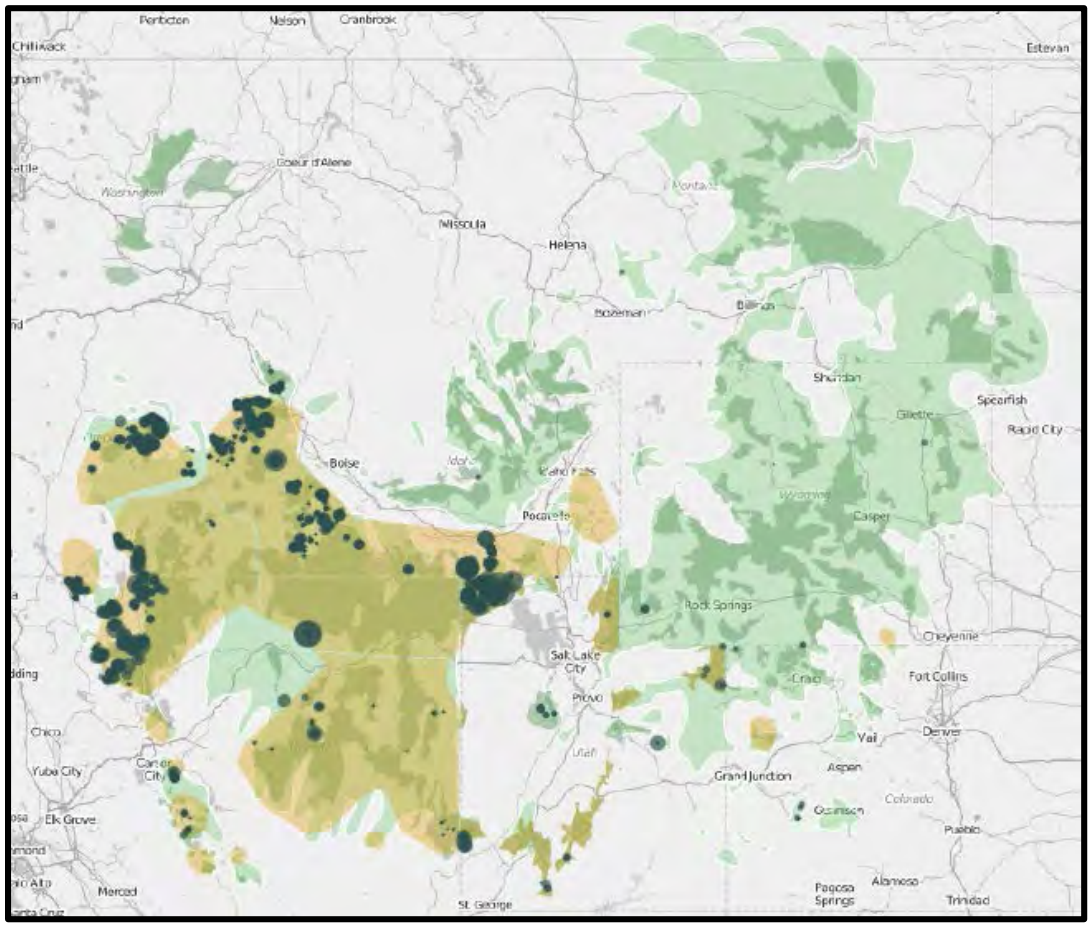
Appendix J. Effect of proportion cropland within 2 miles on lek sighting rate. Lek sighting rate was calculated as a function of increasing cropland simultaneously within 0-0.5 mile and 0.5-2 mile buffers. Histogram indicates proportion cropland within 0-2 miles of active leks (unpublished data, Joseph Smith, University of Montana).



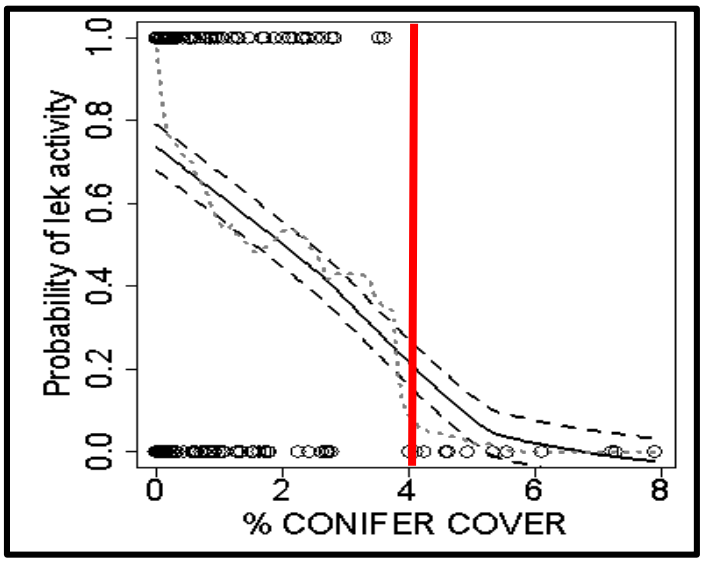
Appendix K. Crop suitability map depicting relative risk of agricultural conversion with blue representing low likelihood of tillage (unpublished data, Jeff Evans, The Nature Conservancy). Black dots denote active sage-grouse leks.



Appendix L. Location and size of SGI-sponsored conifer removal projects. Yellow shading denotes project clustering inside PACs where conifer is a threat (FWS 2013).

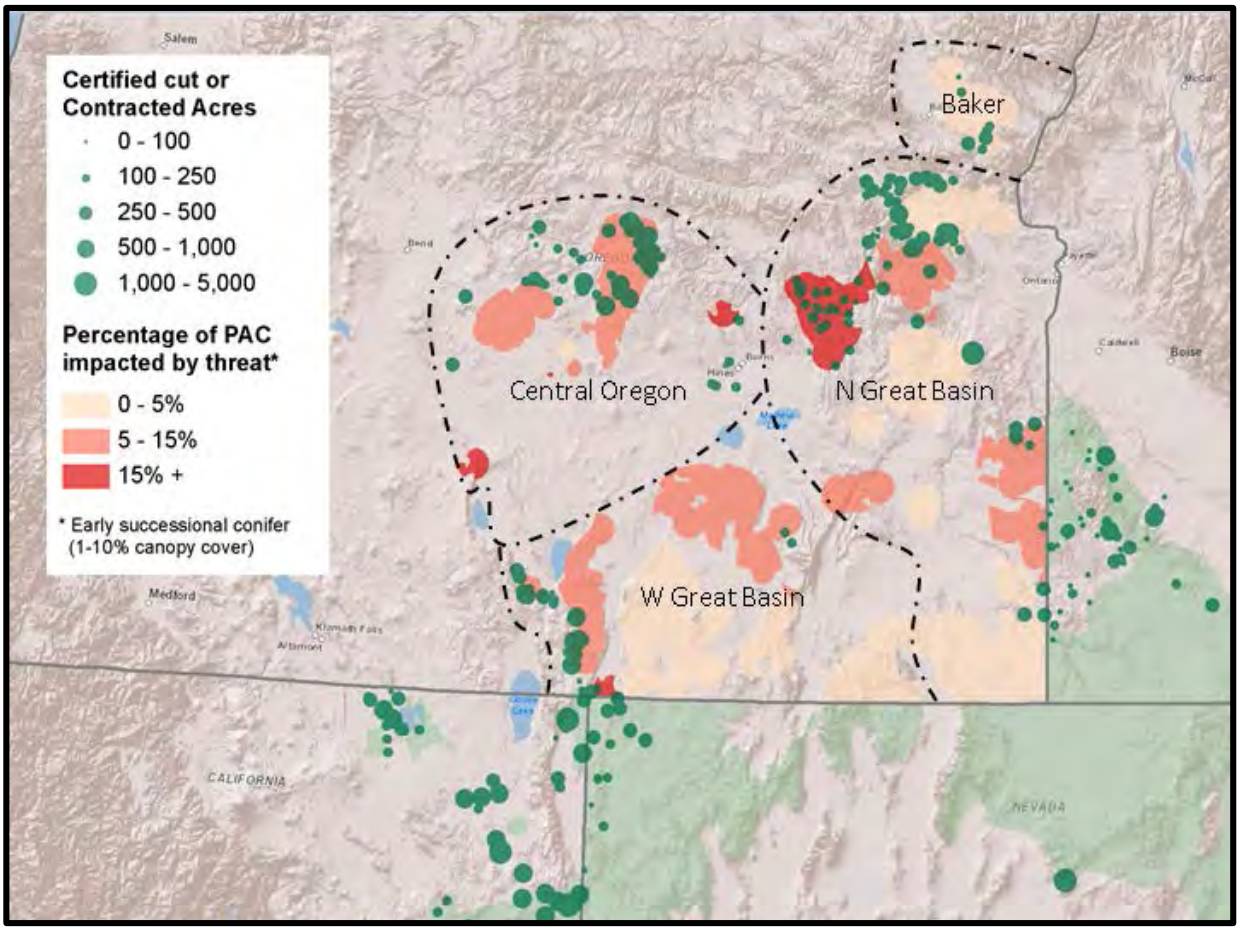


Appendix M. Decreasing sage-grouse lek activity as a function of increasing conifer cover (as modified from Baruch-Mordo et al. 2013). Black circles depict active (1.0) and inactive (0.0) leks. No leks remained active after invasive conifer exceeded 4 percent canopy cover.

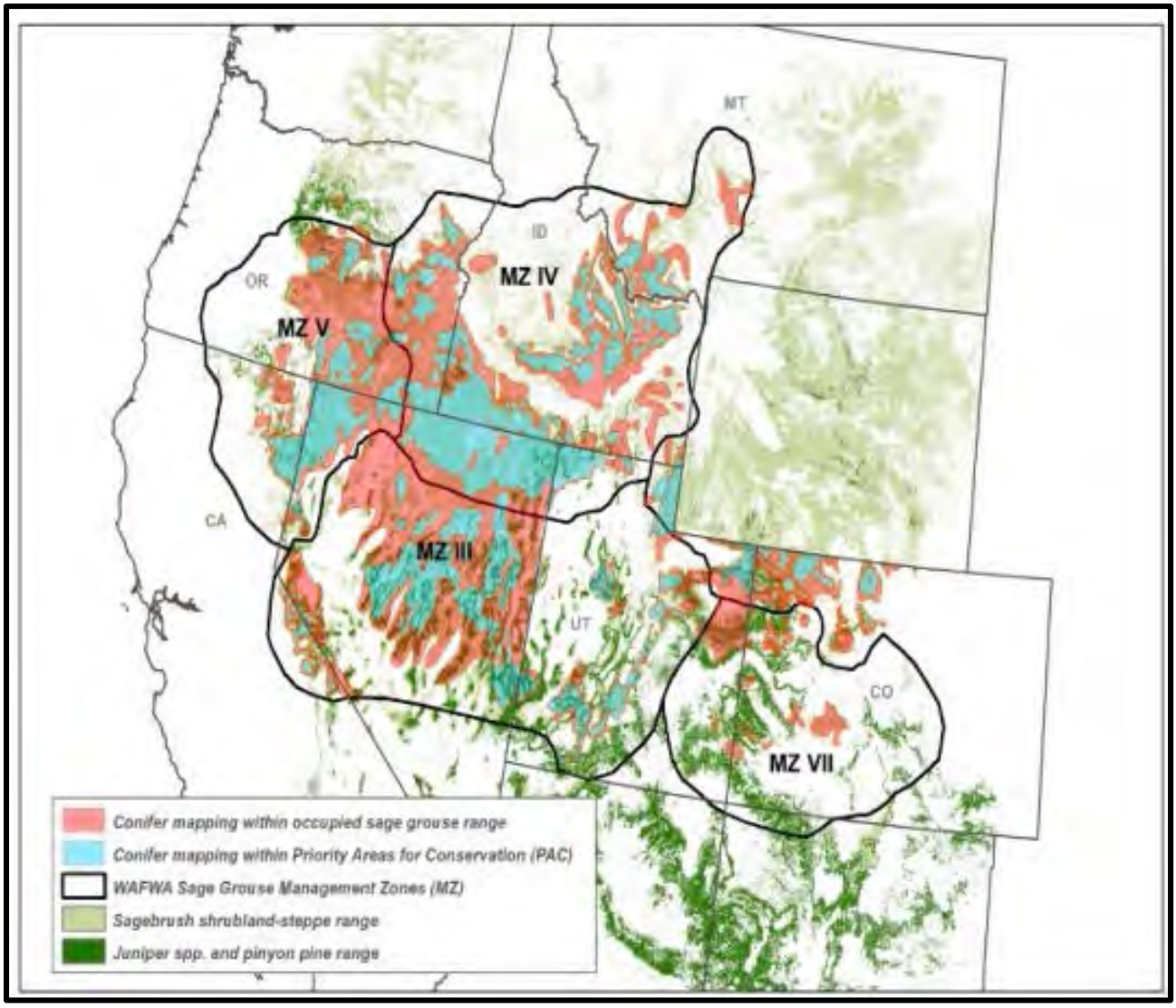


Appendix N. Jim Sage project site near Burley, Idaho, before (top; September 2013) and after (bottom; April 2014) removal of invasive conifer (photos courtesy of Pheasants Forever and Idaho BLM).

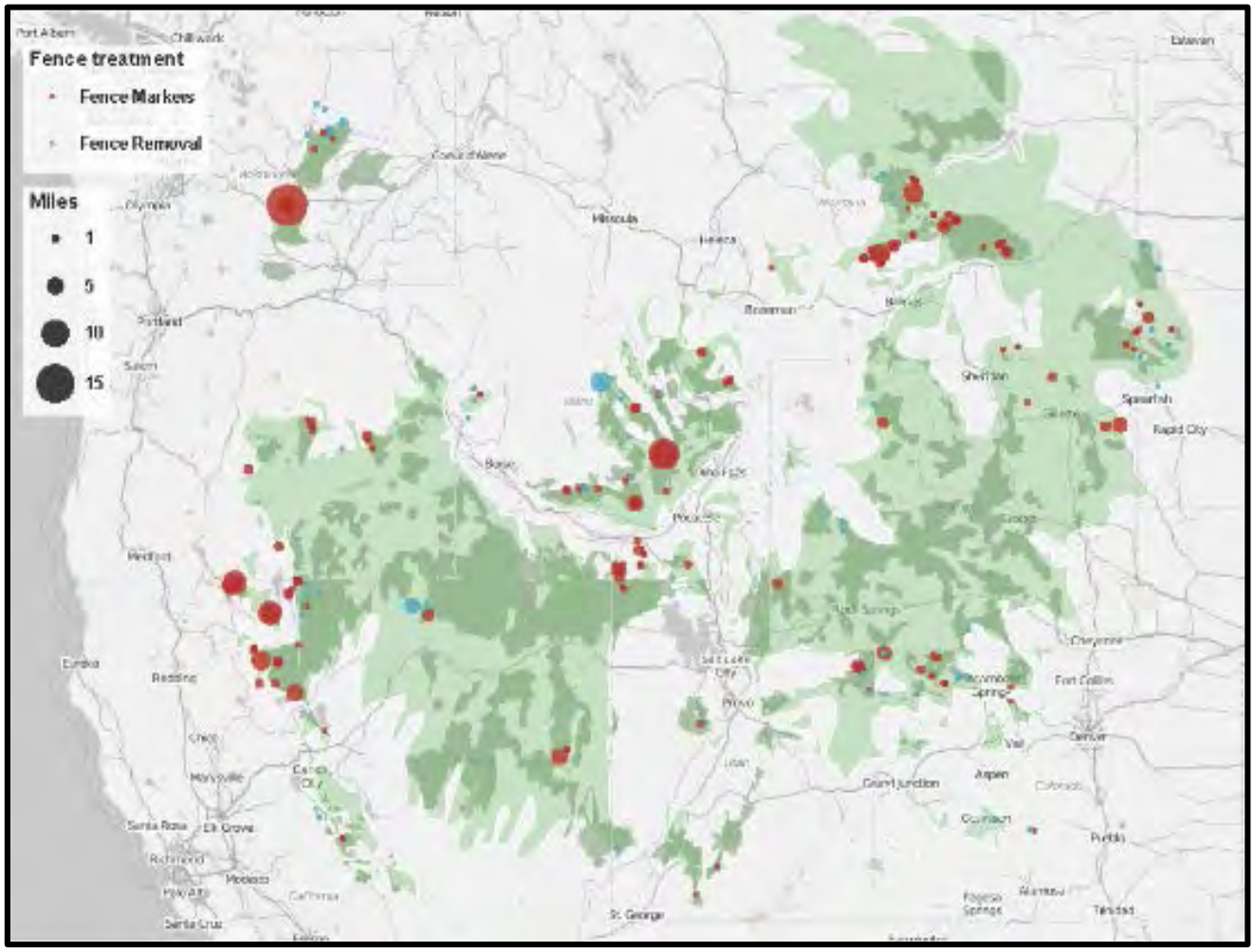
Appendix O. Location and size of conifer cuts in southeast Oregon. Red shading depicts extent of early-successional conifer in each PAC.



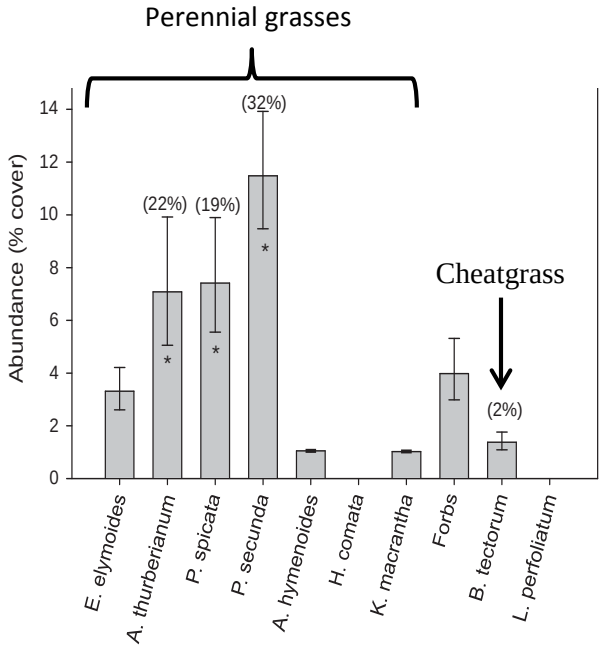
Appendix P. Areas where invasive conifer is being mapped in seven western states, PACs shown in blue and occupied habitat in pink (102.5 million acres total).

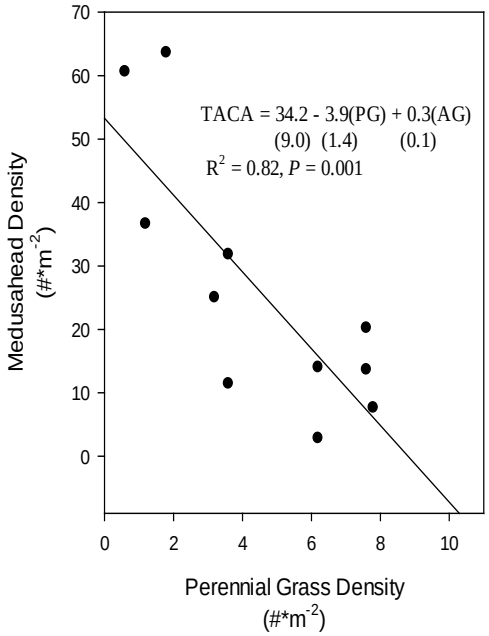


Appendix Q. Location and miles of fences that have been marked (red) or removed (blue) under SGI contract to reduce sage-grouse collisions.



Appendix R. Deep-rooted perennial grasses reduce the prevalence of invasive species, including cheatgrass (left; as modified from Reisner et al. [2013]) and medusahead (right; Davies [2008]).





Appendix S. SGI Digital Data for the FWS (Metadata)

NRCS has assembled a spatially explicit dataset depicting conservation actions described in this report. Data is provided to the FWS for incorporation in the Conservation Efforts Database (CED) and to help inform the upcoming ESA listing decision. Data is aggregated to prevent disclosure of personally identifiable information, as required by Section 1619 of the Food, Conservation, and Energy Act of 2008, and categorized by Type (e.g., easement, conifer removal, grazing system), Status (i.e., contracted but not implemented or certified complete), Priority Location (inside or outside of PACs) and Population to maximize compatibility and utility with the COT Report, CED and FWS. Although 1619 prohibitions prevent NRCS from disclosing easement boundaries for enrolled but unclosed easements, all completed easement boundary shape files are publicly available through the National Conservation Easement Database.

SGI contract locations were determined using point data and often marked at the ranch centroid or headquarters. As a result, conservation actions may fall outside a PAC boundary, even when the area affected lay inside the PAC. Contracts with recorded locations within 3.2 miles (five kilometers) of a PAC boundary were tallied within PAC totals. Similarly, all contracts within 3.2 miles of population boundaries but more than 3.2 miles from a PAC were assigned to the population of interest.

Description: Summary of USDA Natural Resources Conservation Service's Sage Grouse Initiative (SGI) projects at the scale of populations and Priority Areas for Conservation (PACs).

Prepared: January 2015

Data format: ESRI Shapefile

Data Source (conservation easements): 1992-2014 REAP Quarterly Report Query from NEST conducted January 23, 2015.

Data Source (all non-easement): Protracts database query conducted 10/10/2014 for all SGI fund coded EQIP and WHIP contracts FY 2010- FY2014. Also included are six contracts from Nevada and 8 in Oregon that adhere to Conference Report standards, but were simply incorrectly coded under EQIP in 2010.

Field definitions:
population: Population *sensu* Garton et al. (2011).
priority: Inside PAC (<= 3.2 miles) or Outside PAC (> 3.2 miles)
conif_crt: Acres of conifer removal, certified completed.
conif_pln: Acres of conifer removal planned, but not yet certified completed.
graze_crt: Acres of grazing systems, certified completed.
graze_pln: Acres of grazing systems planned, but not yet certified completed.
fence_crt: Feet of fence marking or removal, certified completed.
fence_pln: Feet of fence marking or removal, but not yet certified completed.
seed_crt: Acres of native or tame seeding, certified completed.
seed_pln: Acres of native or tame seeding, but not yet certified completed.
weed_cert: Acres of weed management, certified completed.
weed_pln: Acres of weed management planned, but not yet certified completed.
wetmdw_cert: Acres of wet meadow restoration, certified completed.
wetmdw_pln: Acres of wet meadow restoration planned, but not yet certified completed.
easmt_cmpl: Acres of conservation easements completed/acquired.
easmt_pend: Acres of conservation easements active or pending.

Coordinate system:
Projection: Albers
Geographic coordinate system: GCS North American 1983
Datum: NAD 83

Prepared in cooperation with the U.S. Fish and Wildlife Service

Range-Wide Network of Priority Areas for Greater Sage-Grouse—A Design for Conserving Connected Distributions or Isolating Individual Zoos?

Open-File Report 2015–1158

U.S. Department of the Interior
U.S. Geological Survey

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By Michele R. Crist, Steven T. Knick, and Steven E. Hanser

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Conversion Factors

International System of Units to Inch/Pound

Multiply	By	To obtain
	Length	
kilometer (km)	0.6214	mile (mi)
	Area	
hectare (ha)	2.471	acre
square hectometer (hm^2)	2.471	acre
square kilometer (km^2)	247.1	acre
square kilometer (km^2)	0.3861	square mile (mi^2)

Vertical coordinate information is referenced to the North American Vertical Datum of 1988 (NAVD 88).

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Elevation, as used in this report, refers to distance above the vertical datum.

Range-Wide Network of Priority Areas for Greater Sage-Grouse—A Design for Conserving Connected Distributions or Isolating Individual Zoos?

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Abstract

The network of areas delineated in 11 Western States for prioritizing management of greater sage-grouse (*Centrocercus urophasianus*) represents a grand experiment in conservation biology and reserve design. We used centrality metrics from social network theory to gain insights into how this priority area network might function. The network was highly centralized. Twenty of 188 priority areas accounted for 80 percent of the total centrality scores. These priority areas, characterized by large size and a central location in the range-wide distribution, are strongholds for greater sage-grouse populations and also might function as sources. Mid-ranking priority areas may serve as stepping stones because of their location between large central and smaller peripheral priority areas. The current network design and conservation strategy has risks. The contribution of almost one-half (n = 93) of the priority areas combined for less than 1 percent of the cumulative centrality scores for the network. These priority areas individually are likely too small to support viable sage-grouse populations within their boundary. Without habitat corridors to connect small priority areas either to larger priority areas or as a clustered group within the network, their isolation could lead to loss of sage-grouse within these regions of the network.

Introduction

Greater sage-grouse (*Centrocercus urophasianus*; hereinafter, sage-grouse) is an endemic Galliform to arid and semiarid sagebrush (*Artemisia* spp.) landscapes of Western North America (Schroeder and others, 1999). Sage-grouse currently occupy approximately one-half of their presettlement habitat distribution and have recently received much attention for their long-term population declines (Schroeder and others, 2004; Garton and others, 2011). The U.S. Fish and Wildlife Service listed sage-grouse as a candidate species under the Endangered Species Act in 2010 concluding that protection was warranted although immediate conservation actions were precluded due to other higher priority species (U.S. Fish and Wildlife Service, 2010). Broad-scale habitat loss and fragmentation from synergistic cycles of wildfire and conversion to invasive plant communities as well as from human land use is the primary cause of population declines (Knick and Connelly, 2011). The most pressing challenge to long-term sage-grouse persistence is conservation of remaining large and intact sagebrush landscapes (Stiver and others, 2006).

The U.S. Fish and Wildlife Service, faced with legal challenges for delaying full protection under the Endangered Species Act, is currently reviewing the bird's status and is scheduled to issue an updated listing decision in September 2015. In an effort to avoid listing, the 11 Western States and Federal management agencies within the sage-grouse range have developed conservation plans embracing the concept of core or priority areas (Priority Areas for Conservation, PACs [U.S. Fish and Wildlife Service, 2013], or equivalent terms designated in individual State agency plans)—allowable spatial area of disturbance due to human land use, such as energy development, is tightly regulated and conservation actions are focused in areas with the highest number of sage-grouse and potentially the greatest benefit to the species. Land use is allowed to continue outside of priority areas under normal regulations.

The delineation of an entire species range spanning more than 2 million km^2 (excluding the Canadian portion) into a binary division of priority and nonpriority areas may represent one of the largest experiments in conservation reserve design for a single species. Individual priority areas range in size from less than 1 to more than 83,000 km^2 and encompass the broad spectrum of reserve design paradigms from single large to several small reserves. Although we do not know the minimum area required, the largest priority areas likely can support viable sage-grouse populations completely within their boundaries. However, the smallest priority areas clearly enclose much less than the annual range of a sage-grouse (4–615 km^2; Connelly and others, 2011). Much scientific literature addressing conservation reserve design has stressed the importance of the inclusion and protection of habitat connectivity between conservation reserves to ensure individual movements, opportunity to shift habitats when needed, and facilitate genetic exchange (Crooks and Sanjayan, 2006). Therefore, numerous connected priority areas also may be necessary to provide seasonal habitats that can be separated by up to 160 km (Connelly and others, 2011; Smith, 2013). The two primary factors that influence populations, area and isolation (MacArthur and Wilson, 1967; Hanski and Gilpin, 1991; Hanski, 1999), are important metrics in understanding the efficacy of this conservation approach.

We used social network theory and centrality metrics (Moreno, 1932, 1934; Freeman, 1979, 2004) to quantify and understand the potential for the delineated priority areas to function as a connected network to conserve sage-grouse populations. Our objectives were to:

1. Identify high-ranking priority areas within the network based on their location and number of connections to other priority areas,
2. Estimate the ability of other lower ranking priority areas within the network to function as stepping stones for maintaining connectivity among clusters of priority areas, and
3. Model relative isolation among priority areas based on movement potential in their surrounding environment.

Description of Study Area

We included 2,030,230 km^2 of the Western United States in our analysis of designated priority areas across the current sage-grouse range (Schroeder and others, 2004). The sage-grouse range is divided into seven management zones based on similar floristic and environmental characteristics (Stiver and others, 2006). The area contains a diversity of shrubland types of which landscapes dominated by sagebrush are the most important to sage-grouse. Mountain ranges, forest communities, and agricultural regions, particularly in broad plains of large river systems, are not used by sage-grouse and can act as barriers to their movements (Fedy and others, 2014). Lands used by sage-grouse are of mixed ownership (Knick, 2011). Public lands are dominant in the Western States and are managed primarily by the Bureau of Land Management and U.S. Forest Service for multiple uses. Private lands, characteristically those fertile lands with deep soils and access to water, constitute the greatest proportion of ownership in the northern and eastern parts of the sage-grouse range and can comprise more than two-thirds of the landscape used by sage-grouse (Doherty and others, 2010; Knick, 2011).

Each State used different criteria for delineating boundaries of priority areas but each generally incorporated metrics for sage-grouse populations (lek locations and breeding bird densities [Doherty and others, 2010]) and habitat areas (identified from known sage-grouse distributions or seasonal habitats for breeding, nesting, brood-rearing, or wintering areas derived from observations or telemetry data). In some cases, States also adjusted boundaries to exclude private lands, Federal lands approved for or in the process of being developed for energy and other management activities, and pre-existing development. The current range-wide management strategy, if not the ecological reality, is that each priority area bounds a homogeneous patch and that all priority areas are of equal importance.

We created a range-wide map of priority areas by combining the spatial boundaries of priority areas as delineated by the 11 States in Western North America (fig. 1, appendix A). Boundaries of polygons were merged between States when shared but followed State lines when adjoining priority areas did not match across borders. We also merged or removed priority areas less than 1 km^2 that typically were slivers left after the State's original delineations and subsequent edits. The final map contained 188 priority areas ranging in size from approximately 1.1 to 83,000 km^2 (appendix B). Mean size was approximately 16,600 km^2. The frequency distribution consisted predominantly of smaller priority areas; 50 percent of the priority areas were less than 125 km^2 and 90 percent were less than 3,300 km^2. Total area included within priority areas was approximately 310,000 km^2 and included 15 percent of our study area.

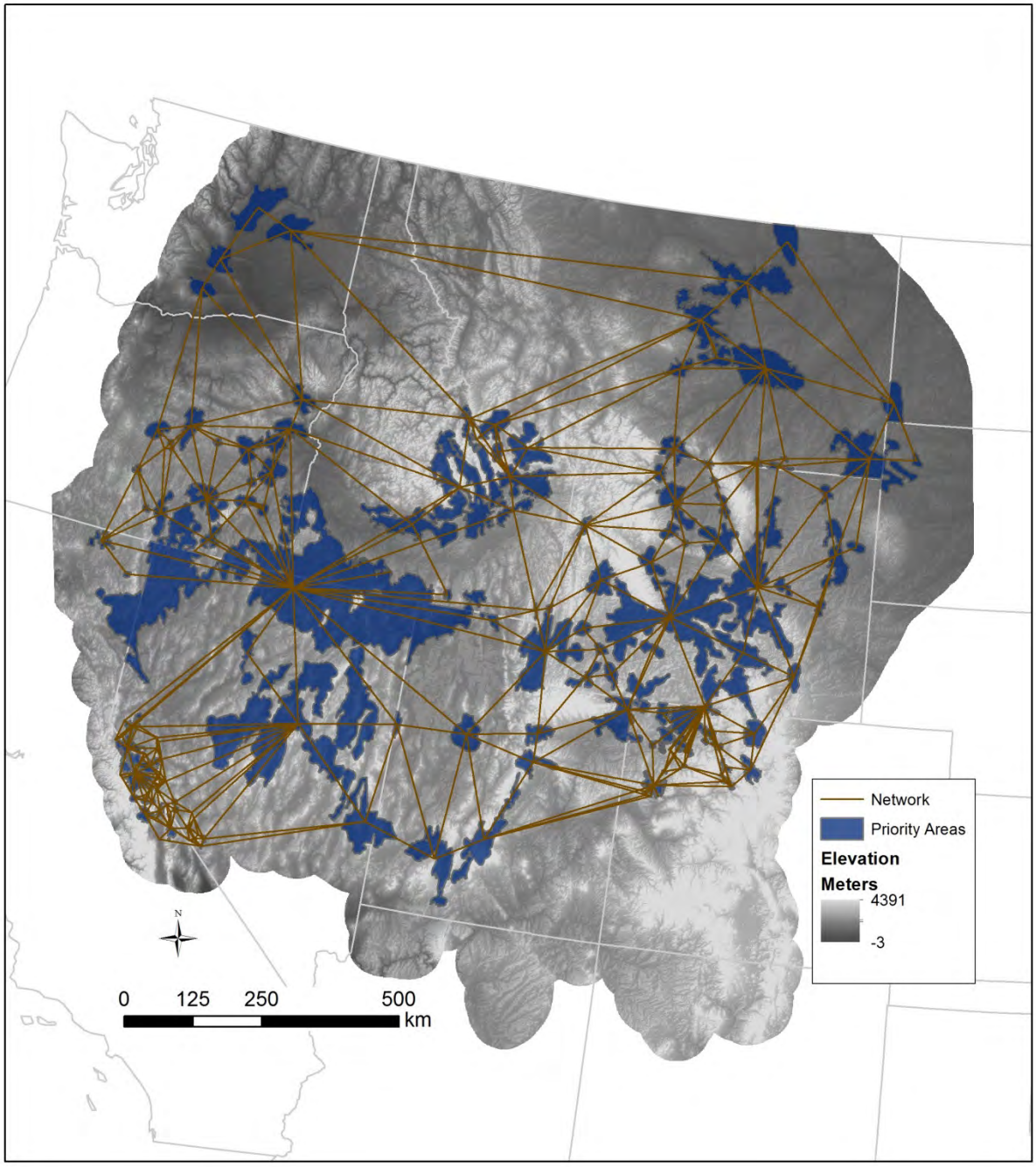

Figure 1. Study area and designated priority areas across the sage-grouse range in Western North America represented as a network of nodes and links. Background map is from U.S. Geological Survey National Elevation Data (NED; 2011; http://seamless.usgs.gov).

Methods

Priority Areas as a Spatial Network

We described the spatial network of priority areas as a graph structured by nodes and connecting links (Diestel, 2005). To identify adjacencies, we delineated individual polygons around each priority area by creating Thiessen polygons where boundaries encompassed grid cells closest to each priority area relative to all other priority areas. Shared boundaries between Thiessen polygons identified neighboring priority areas. We then added links between each priority area and its neighbor's centroid. Thus, the network of conservation reserves currently designed for the sage-grouse range was represented by nodes and links across all priority areas (fig. 1).

We used analyses derived from social network theory (Wasserman and Faust, 2004) to identify priority areas that were highly important for connectivity within the range-wide network. Social network theory combines graph theory and centrality indices to characterize network structures by mapping and measuring relationships and flows (links) between people, groups, organizations, computers, and other entities (nodes) (Freeman, 2004; Wasserman and Faust, 2004; Diestel, 2005; Newman, 2010). Quantifying network centrality provides insight into the overall structure, connection, and function of a network, and is considered to be the fundamental characteristic describing a node's position in a network. Relative importance in social networks is measured by centrality metrics that emphasize number of connections to indicate relative position within the network. Networks can range from highly centralized, dominated by a few highly connected nodes, to more widely dispersed configurations in which connections are equally shared among all nodes.

We used two centrality metrics, degree and betweenness, to assess the relative importance of individual priority areas based on their position and number of connections within the overall range-wide network (Freeman, 1977, 2004; Wasserman and Faust, 2004; Newman, 2010). Relative importance estimated by degree centrality is based simply on number of connections to other nodes in the network; more connections indicate greater influence and a more central position in the network (Erdos and Gallai, 1960; Diestel, 2005). However, a priority area also might be important because its relative position connects clusters or groups of priority areas located in close proximity. Betweenness centrality quantifies the number of times a node acts as a bridge along the shortest path between two other nodes, thus indicating its importance in maintaining the network (Freeman, 1977; Freeman and others, 1991; Estrada, 2007; Brandes, 2008; González-Pereira and others, 2010). Nodes with high scores of betweenness centrality represent the primary foundation of the network's structure because a disproportionately high number of the shortest pathways go through them. These nodes funnel movement not only from adjacent nodes but also from nodes that could be located far away in the landscape (Bodin and Norberg, 2007).

Movement Potential among Priority Areas

Connections in ecological networks are not without dimensions (as in social networks) but rather have a distance and environmental cost to move between nodes (Bunn and others, 2000; McRae and others, 2008; Carroll and others, 2012; LaPointe and others, 2013). To assess the relative importance of priority areas, we needed to combine number of connections with the ability to traverse the interstitial landscape matrix.

We calibrated movement potential by sage-grouse through the landscape by mapping a model of ecological minimum requirements (Knick and others, 2013). Sage-grouse may perceive a landscape quite differently when moving within a range, moving between seasonal ranges, or when dispersing. Similarly, connectivity for individual movements obtained from telemetry data might be different than connectivity derived from genetic information. For our study, we made the basic assumption that movement would be more likely in suitable environments that could be modeled across the entire range.

An ecological minimum, in concept, represents a multivariate construct of the basic requirements for a species. The model was developed from 23 variables describing land cover, fire history (area burned from 1980 to 2013), terrain (topographic accessibility [Sappington and others, 2007]), climate, edaphic, and anthropogenic features measured at our minimum mapping unit of 1-km^2 resolution across the sage-grouse range. Land-cover variables consisted of combined Landfire Existing Vegetation Type (http://www.landfire.gov/; Rollins, 2009) for big sagebrush, low sagebrush, salt desert shrub, exotic grassland, native grassland, pinyon-juniper woodland, conifer forest, and riparian associations. Climate variables were obtained from the PRISM Climate Group (Daly and others, 2004; Oregon State University, 2011) measured from 1998 to 2010 and included mean annual maximum and minimum temperatures, and mean annual precipitation. We described soils using available water capacity, salinity, and depth to rock (U.S. Department of Agriculture, 2011). Anthropogenic features included agriculture and development land cover (http://www.landfire.gov/), transmission lines, tall structures (communication towers, wind towers), roads, pipelines, and oil and gas wells. We produced a smoothed, continuous surface for most variables by averaging individual cell values within a 5-km radius moving window. We used mapped values for soils, which were in vector format, measured at the center of each 1-km grid cell in the map.

We derived estimates of the ecological minimums using a partitioned Mahalanobis D^2 model of presence only data (Dunn and Duncan, 2000; Rotenberry and others, 2002). Lek (breeding area) locations were used to indicate presence for a previous model of sage-grouse ecological minimums across their western range (Knick and others, 2013). However, we did not have permission to use lek data from all States across the sage-grouse range. Therefore, we assumed that the priority areas delineated by States captured higher quality habitat than occurred outside, despite having some areas excluded because of ownership or forecasted disturbance, and a large proportion of the sage-grouse population. We randomly selected 1,669 points within individual priority areas as presence data and extracted values for corresponding variables to calibrate models. Total number of presence points was obtained by proportional area expansion to the eastern part of the sage-grouse range after an initial 1,000 point random sample in a preliminary comparison of results from priority areas compared to the lek-based map in our previous study of the western range (Knick and others, 2013). We then performed a principal components analysis on 1,000 iterative samples created by bootstrapping the calibration data. The final model was created by subsequently averaging the PCA output after correcting for sign ambiguity (Bro and others, 2008) across all iterations.

We evaluated model performance from the area under the curve (AUC) for a receiver operating characteristic (ROC) to assess sensitivity (fraction of habitat points correctly classified) and specificity (fraction of non-habitat points predicted as habitat) (Fielding and Bell, 1997). To generate presence data, we overlaid the 100 percent sage-grouse breeding densities (Doherty and others, 2010) representing spatial locations of all known sage-grouse breeding sites with our map of ecological minimums and selected all values that fell within the density boundaries. For absence data, we selected all values that fell outside of the breeding density boundaries. To calculate the AUC, we randomly sampled 5,000 presence points and 20,000 absence points. We also created a null presence/absence dataset by randomly sampling 20,000 points 1,000 times from the ecological minimums map. For each iteration, we divided the resulting sample into two datasets (null presence and null absence) based on a relatively equal proportion of the total rows and columns. We then sampled 10,000 points from each of the two datasets and computed a mean AUC score and distribution from all null samples. Means and distributions for model and null AUC scores then were used in a t-test for significance.

Principal component partition 14 met our criteria of having an eigenvalue ≤ 1, a relative difference in eigenvalues among adjacent partitions (table 1), performance against evaluation data (AUC = 0.80; null AUC = 0.50; 95% CI = 0.49 and 0.50; t-test between the null AUC and true AUC = -3,775.0; $p << 0.001$), and our subjective assessment of mapped results from different model partitions. We rescaled the mapped output to range continuously from 0 to 1 based on a χ^2 distribution of the D^2 distance; a value of 1 indicated environmental conditions identical to the mean vector of ecological minimum requirements, whereas a value near 0 indicated very dissimilar conditions (fig. 2).

We used circuit theory (McRae and others, 2008) to model movement pathways between all priority areas across our network. We assumed that sage-grouse moved more readily through areas meeting their ecological minimum requirements and used a scaled inverse of our mapped scores as a resistance surface (McRae and others, 2008; Spear and others, 2010; Beier and others, 2011; Zeller and others, 2012). Our resistance surface was calculated by multiplying habitat values by 100 and using the following function: ((habitat value – maximum habitat value) * -1) + minimum habitat value). Resistance values ranged from 1, representing the lowest resistance/highest habitat value, to 100 (high resistance/lowest habitat value). We ran Circuitscape (Circuitscape version 4.0, http://www.circuitscape.org; McRae and Shah, 2008) using the pairwise mode to calculate connectivity between all pairs of priority areas. We treated priority areas as focal patches instead of individual nodes in the modeling process: evaluating habitat pathways from priority area polygon boundaries rather than nodes captured the influence of priority area structure and size in influencing current flow. Effective resistance distances, the relative distance that incorporates the resistance to a species movements across a heterogeneous landscape and used as an estimate of connectivity, were calculated iteratively between all priority area pairs and maps of current densities. We calculated electric current flowing through the resistance landscape between each pair to produce cumulative and maximum current densities across all pair-wise combinations. Our approach thus incorporated multiple dispersal pathways and landscape heterogeneity.

Table 1. Partitions (*k*) in a Mahalanobis D^2 model describing ecological minimums for the range-wide distribution of greater sage-grouse.

Partition (*k*)	Eigenvalue
1	3.18
2	2.89
3	1.87
4	1.76
5	1.68
6	1.42
7	1.31
8	0.99
9	0.96
10	0.93
11	0.85
12	0.80
13	0.76
14	0.63
15	0.59
16	0.49
17	0.44
18	0.40
19	0.34
20	0.32
21	0.24
22	0.14
23	0.04

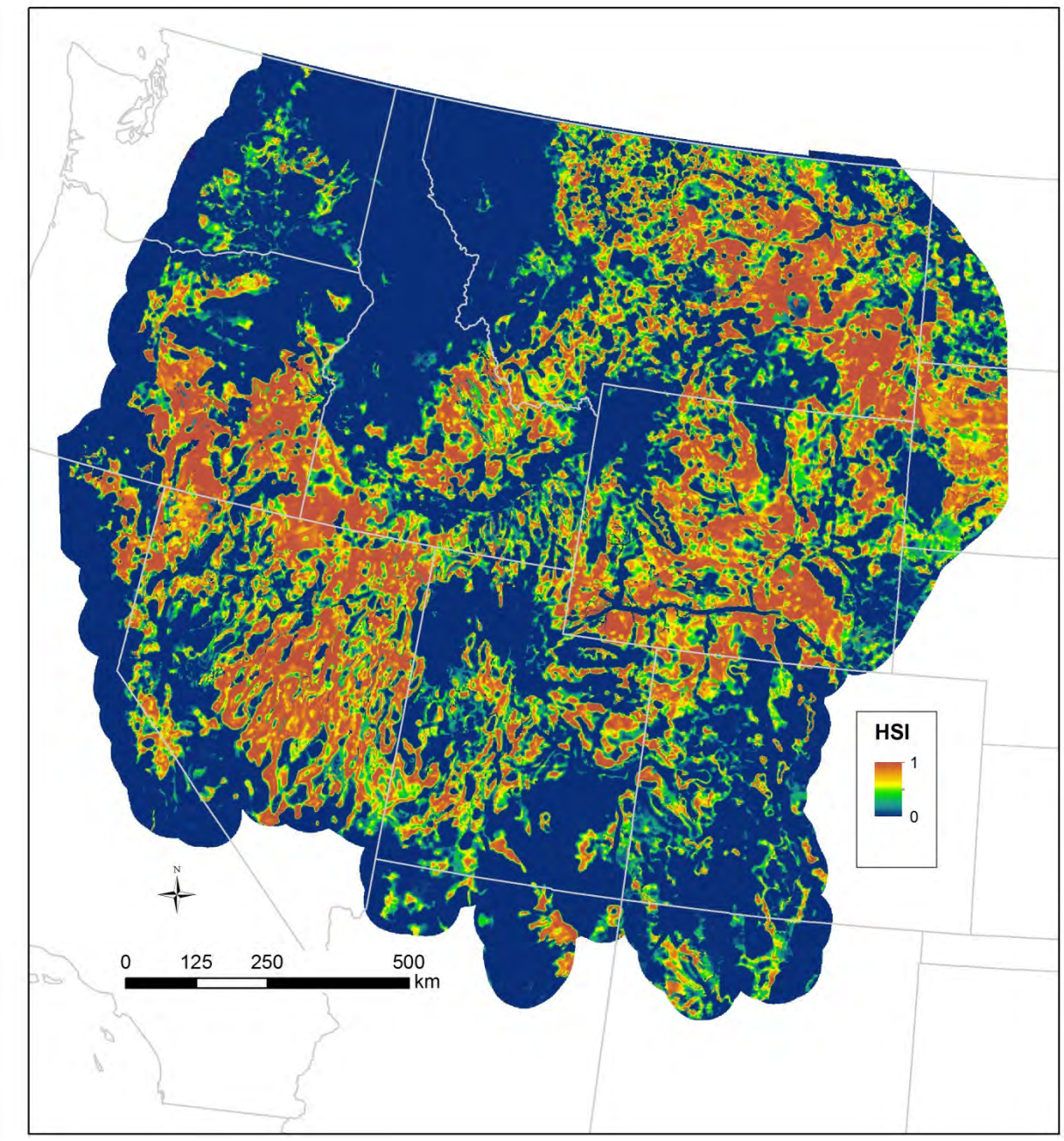

Figure 2. Habitat similarity index (HSI) values for greater sage-grouse across their historical range. HSI values represent the relationship of environmental values at map locations to the multivariate mean vector of minimum requirements for sage-grouse defined by land cover, anthropogenic variables, soil, topography, and climate.

Network Analysis

We applied the effective resistance distances calculated between priority areas to our priority area network. We exported the attribute table of our line network shapefile and built a matrix based on priority area IDs, where "0" was assigned to indicate non-adjacency for a priority area pair (where the two priority areas are not linked in the network), and a "1" indicates adjacency (priority area pairs are linked). We assigned the resulting pair-wise effective resistance distances as a cost between adjacent priority areas in the matrix to all priority pair adjacencies labeled with a "1". For example, a low effective resistance distance represents a relative capability for sage-grouse movements between the priority area pair based on similarity to habitats within priority areas. We rebuilt our node and link network from our matrices using the igraph package in R (Csardi and Nepusz, 2006; R Core Team, 2013) to calculate centrality. Links connecting adjacent priority areas represent a relation between the priority areas based on the effective resistance distance. The final graph represented the priority area network's spatial structure of connectivity.

We calculated our centrality metrics, degree and betweenness, using the igraph package and computed summary statistics of our centrality results using R (Csardi and Nepusz, 2006; R Core Team, 2013). We also computed a cumulative distribution curve for resulting betweenness centrality values and used the incremental contribution by each priority areas to assess its contribution to overall network centrality. We used the distribution to rank and identify central priority areas that contribute the most in maintaining a connected network and to identify priority areas that function as stepping stones in promoting connectivity to the central priority areas.

Relative Isolation

Our final objective was to model the relative isolation of priority areas across the historical range of sage-grouse. Results from Circuitscape were used to map habitat linkages among all priority areas and identify clusters of connected priority areas within our network. Circuit theory is advantageous for quantifying connectivity in this manner because of its ability to simultaneously evaluate the combined contributions of multiple pathways to dispersal in heterogeneous landscapes, and identify areas important for connectivity conservation (McRae, 2006; McRae and others, 2008). We used visual observations of the maximum current densities and computed effective resistance distances resulting from Circuitscape to identify areas where habitat connectivity is high or low between priority areas. We chose to evaluate the maximum current density map because maximum values help to remove the confounding effects of network configuration (halo effect) in the Circuitscape results. Again, greater connectivity among priority areas was reflected by a larger number of connected pathways and lower effective resistance distance values (McRae and Shah, 2008; McRae and others, 2008). We also visually identified locations of high current densities that may function as bottlenecks (pinch points) to sage-grouse movements where alternative pathways are not available (McRae and others, 2008). These locations may represent conservation priorities for sage-grouse because their loss may disrupt connectivity among the priority area network.

Results

Priority Areas as a Spatial Network

Average number of connections from each priority area to adjacent neighbors averaged 11 and ranged from 2 to 50 (fig. 3). Betweenness centrality scores ranged from 0 to 11,414 (table 2; appendix B); the average betweenness centrality was 475 (table 2), indicating that most priority areas were contributing little to the range-wide centrality. The largest priority area (Priority Area ID 48), which combined individual State polygons in northeastern Oregon, western California, northern Nevada, southern Idaho, and western Utah, exhibited the highest number of adjacent neighbors (n = 50) and highest betweenness centrality value, signifying its importance in connecting the network.

Twenty priority areas explained 80 percent of the total betweenness centrality value and were likely the central priority areas for maintaining a connected reserve network (fig. 4). Two priority areas that exhibited the highest betweenness centrality scores and explained 20 percent of total centrality were the largest single polygon (Priority Area ID 48) and a priority area centrally located in Wyoming (Priority Area ID 110). Priority areas that were within the 80–99 percent cumulative distribution scored lower in centrality compared to the central priority areas but may still contribute largely by functioning as stepping stones maintaining connections across the most central 20 priority areas. These priority areas typically were located between the highest- and lowest-scoring priority areas, mid-sized in area, and were distributed across the entire range rather than having a more central location.

Ninety-three priority areas that scored a 0 for betweenness centrality were characterized by small size (averaging approximately 350 km^2), and were either isolated between large priority areas where the shape of the surrounding large priority areas limited the number of connections, or were located on the periphery of the range. Although these small priority areas were not central in maintaining the overall network, most scored low in the effective resistance distance results (figs. 4 and 5; appendix B) indicating high connectivity to their neighboring priority areas.

Table 2. Summary statistics calculated for degree and betweenness centrality, and effective resistance and maximum current densities from Circuitscape (McRae and others, 2008).

Priority Areas	Mean	Minimum	Maximum
Distance between Priority Areas (km)	99.3	2.7	843.3
Degree Centrality Metric	10.6	2.0	50.0
Betweenness Centrality Metric	475	0	11,414
Priority Area Effective Resistance	4.4	<0.1	35.8
Maximum Current Densities	0.1	0.0	1.0

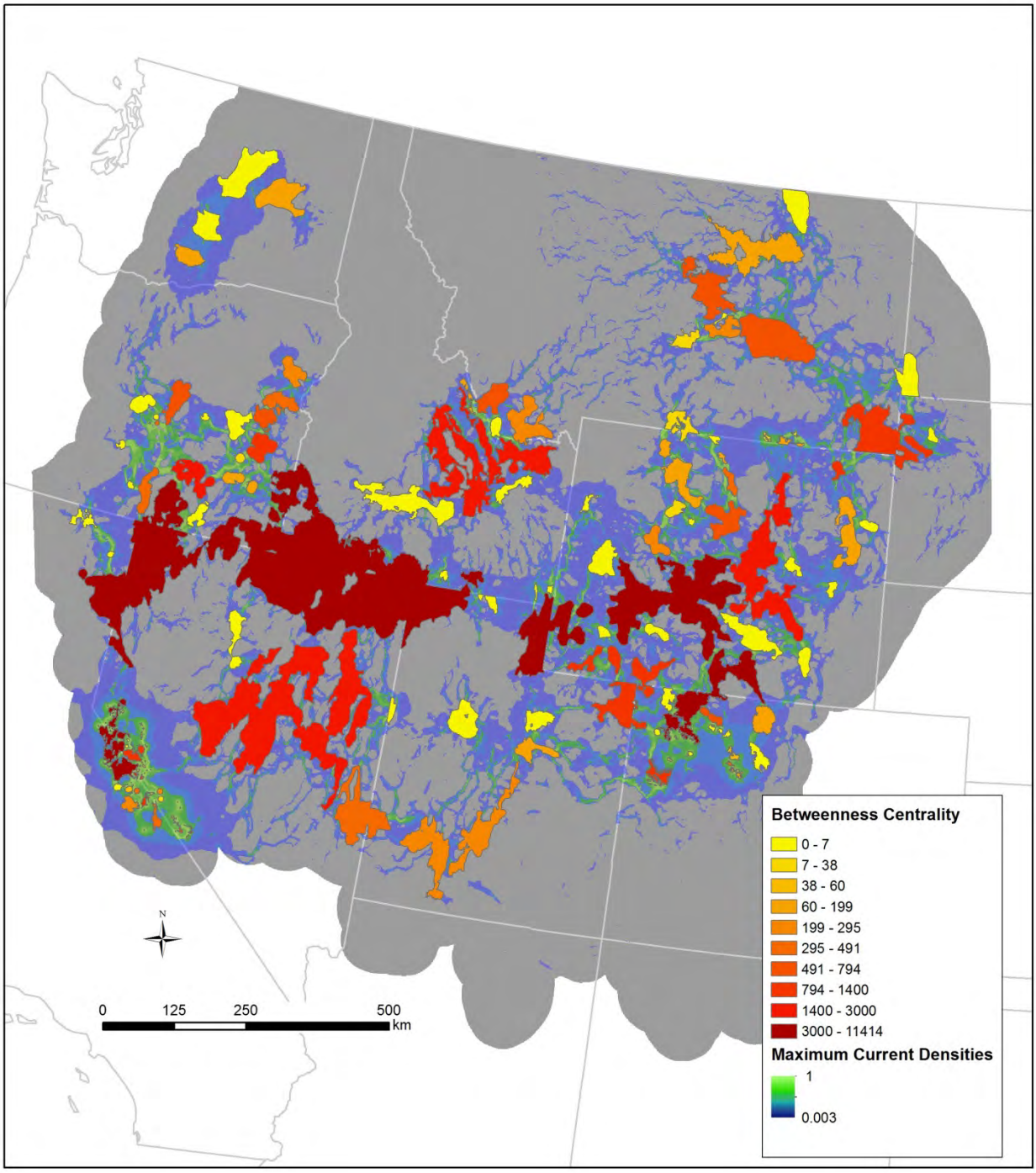

Figure 3. Priority area importance and connectivity for betweenness centrality and ranked across the network. Potential for sage-grouse movements was estimated between priority areas and used to determine each priority area's centrality based on the number of movement pathways available between priority areas. Current densities were displayed using a histogram equalize stretch.

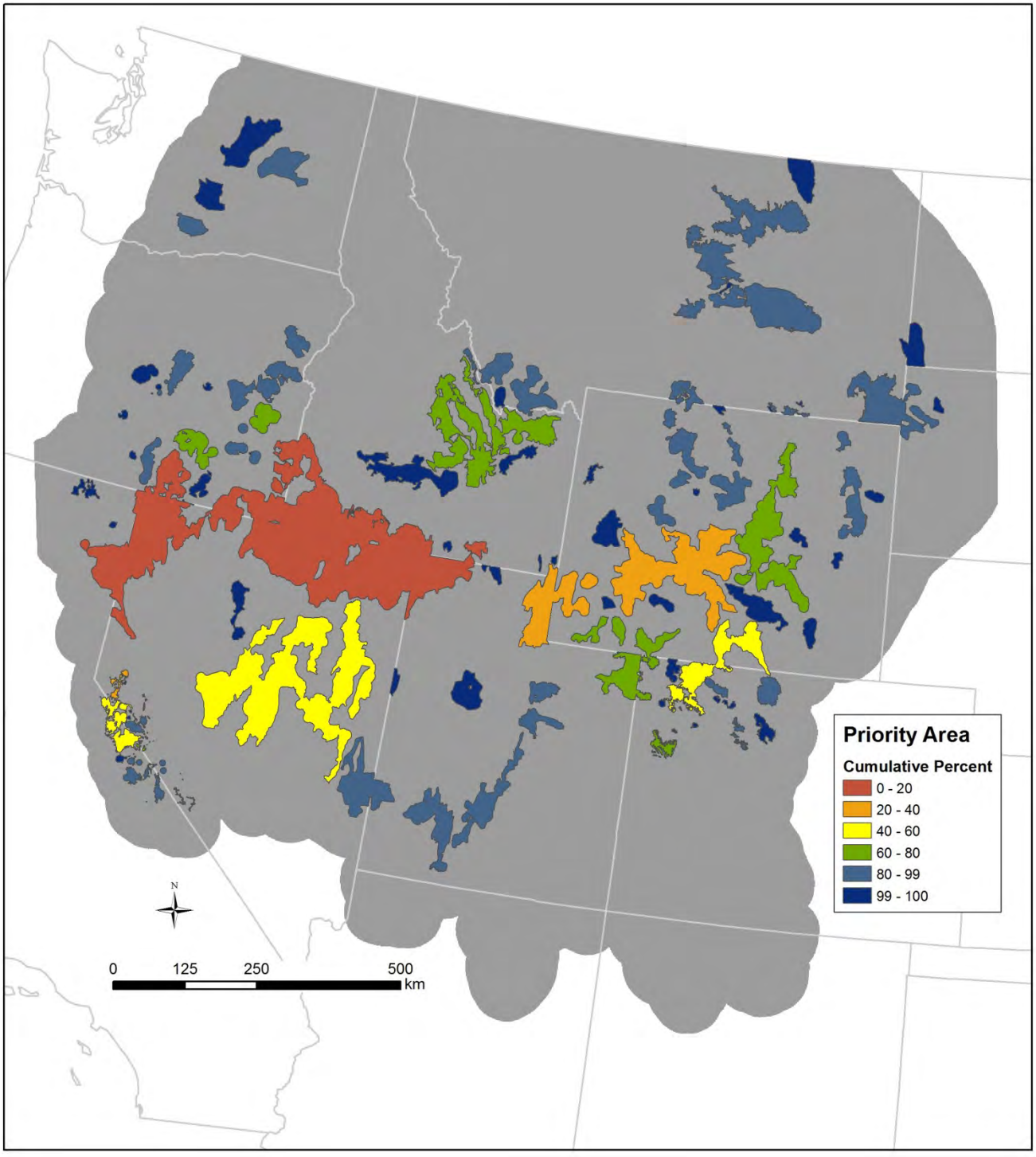

Figure 4. Relative contribution of each priority area to range-wide cumulative percent betweenness centrality. Priority area colors in map correspond with figure 5.

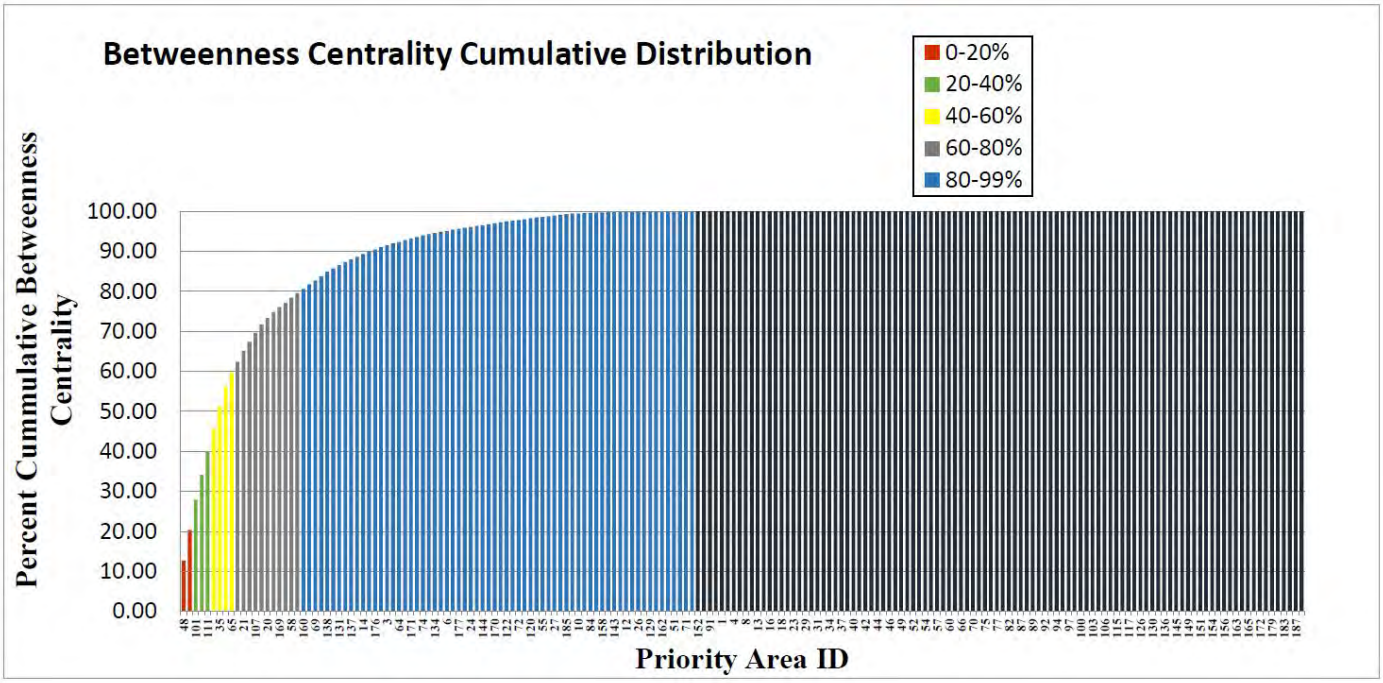

Figure 5. Cumulative distribution of each priority area's contribution to total betweenness centrality. Graph colors correspond to mapped priority areas in figure 4.

Connectivity among Priority Areas

Movement potential, estimated by Circuitscape current densities (fig. 6), coupled with the relatively low mean for priority area effective resistance distance (mean = 4.4; table 2) indicated a high degree of connectivity across the network characterized by numerous and multiple pathways between most of the priority areas. The map reflecting maximum current densities highlighted areas of high current flow between priority areas that may be important habitat linkages (pinch points). Their loss may result in disconnections across the entire network or result in the use of less efficient (more costly) habitat pathways connecting priority areas (fig. 6). A number of linkages have portions of high current densities that depict pinch points where connectivity is high but constrained due to either natural or anthropogenic barriers to sage-grouse movements surrounding the pinch points. Our map of maximum current densities also highlighted priority area clusters where current flow was high between priority areas and low surrounding a group of priority areas.

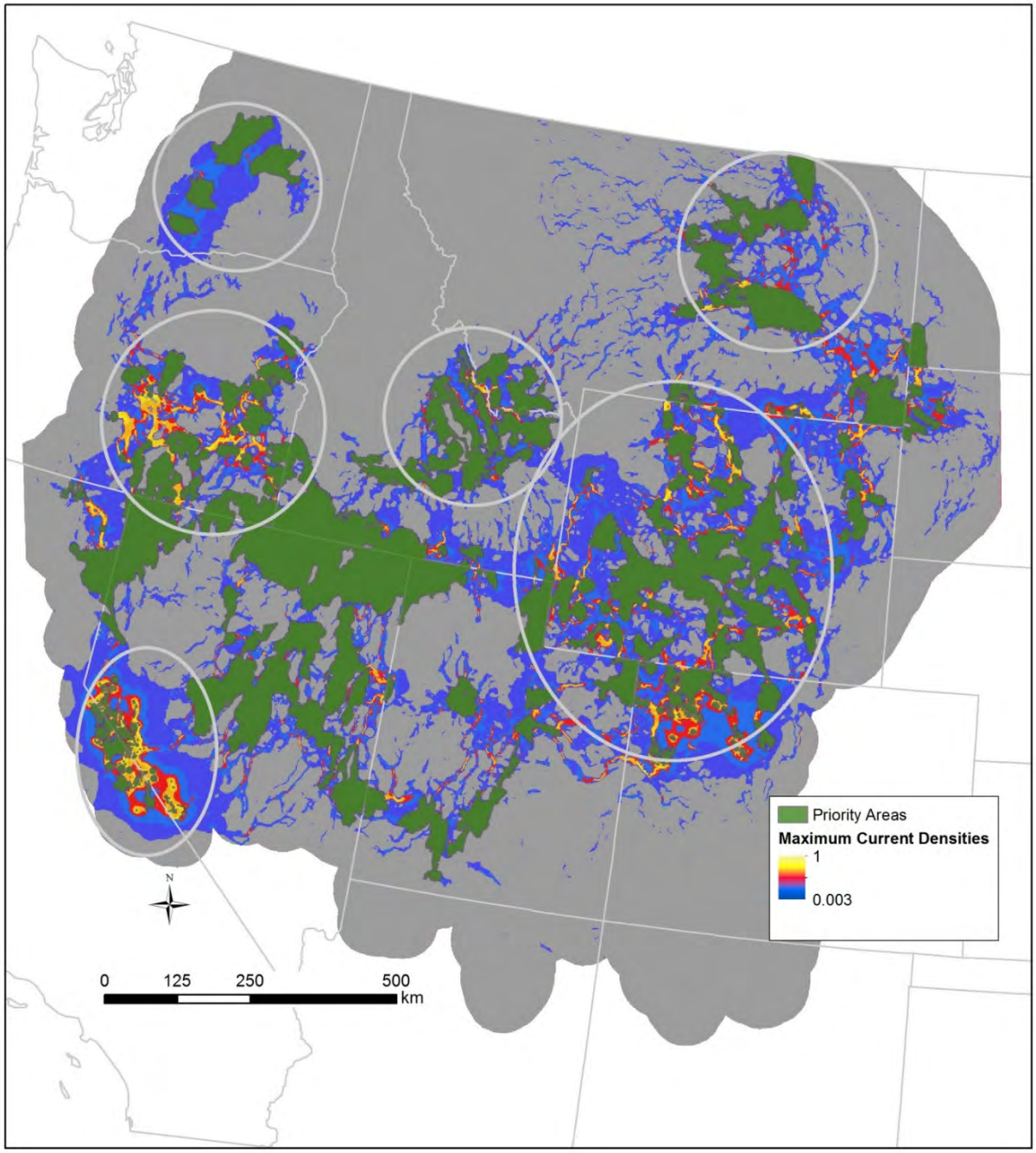

Figure 6. Relative isolation of priority areas based on estimated potential for sage-grouse movement (Circuitscape; McRae and Shah, 2008). Inverted HSI values were used as a measure of landscape resistance. Six clusters of priority areas are circled where connectivity between priority areas was high in comparison to surrounding environment. High to medium current densities represent pinch points.

Relative Isolation

Low current densities highlighted areas where habitat quality was more fragmented or where barriers for sage-grouse movements may exist. Mean maximum current density across the study area was low (mean = 0.1; table 2) because the study area included large expanses for high elevation mountain ranges, forested communities, highly populated areas, agriculture development, and other areas of low habitat value for sage-grouse that composed a large portion of our study area. For example, the Snake River Plain in southern Idaho, which contains Interstate 84 and large areas of developed private lands, may function as a barrier for sage-grouse movements between two adjoining priority areas. The Snake River Plain also has experienced significant areas of cheatgrass (*Bromus tectorum*) invasions and recent fire activity resulting in higher habitat loss and fragmentation in comparison to other regions across the historical range.

Discussion

The strategy currently implemented for conserving greater sage-grouse is based on designated priority areas in each of the 11 States across its range (U.S. Fish and Wildlife Service, 2013). Focusing conservation actions on a relatively small (<15 percent) total area containing a large proportion of the range-wide population can have the greatest benefit with limited resources. However, continued management under normal regulations in regions surrounding priority areas can potentially lead to a spatially disjunct set of areas that retain the characteristics necessary to sustain sage-grouse populations. We assumed that the priority areas serve as a system of reserves and function within the context of island biogeography theory (MacArthur and Wilson, 1967; Wiens, 1997).

We used two primary factors, size and connectivity of priority areas, to understand how this network functions. We ranked priority areas for their relative importance within the network and identified important habitat linkages that may help maintain connected sage-grouse populations across their range. However, our approach was a simple metric based on a social theory relating importance to number of connections. The critical component to assessing viability is not just size of priority area and number of connections but how individuals are linked together to function as a viable population.

Priority Areas as a Spatial Network

Centrality measures derived from social network theory provided an interpretable analysis for characterizing the importance of priority areas within a network. Centrality measures also produced a ranking metric for identifying key areas to conserve to minimize network connectivity loss (Freeman, 2004; Blazquez-Cabrera and others, 2014). A highly centralized network is dominated by one or a few very central nodes. If these nodes are removed, the network may quickly fragment into unconnected sub-networks by isolating individual or clusters of nodes. In contrast, a less centralized network might be more resilient because many links or nodes can fail while allowing the remaining nodes to remain connected through other network paths.

High centrality scores for 20 of 188 priority areas indicated that the network was highly centralized. Highly ranked priority areas were characterized by large size, a more central spatial location within the network, and were surrounded by many other priority areas of various sizes. The highest ranked priority area (Priority Area ID 48) was the largest and most centrally located in the network. Large size also correlates with longer boundaries that allow for more dispersal opportunity with adjacent priority areas. Similarly, a central position in the network facilitates movement to reach numerous other priority areas, thus increasing overall connectivity across the network. Loss or fragmentation of these large priority areas, or their associated connections, would have a disproportionally large influence across the entire network. Delineating priority areas with these characteristics may be important in further conservation strategies because they play a strong role in the range-wide network connectivity.

Approximately 80 percent of the priority areas scored betweenness centrality values of (near) zero despite being well-connected to surrounding priority areas. These priority areas generally were smaller and were distributed across the network surrounding the central larger priority areas. Although these individual priority areas were small, their total area contained a large amount of the habitat across the entire sage-grouse range. Their size and location likely allows them to function as stepping stones and may be critical for individuals moving from larger neighboring priority areas needed to maintain smaller sage-grouse populations (Bodin and others, 2006; Saura and others, 2014).

Connectivity among Priority Areas

Maintaining connectivity by conserving habitat between separated populations or reserves is an important strategy to mitigate against impacts of land-use change. Landscape connectivity is often assessed in the form of least-cost paths, corridors, and graph networks to identify critical habitat connections where, if severed, could potentially isolate populations (Bunn and others, 2000; Urban and Keitt, 2001; LaPoint and others, 2013). Our primary objective was to evaluate the capability of the network of priority areas to serve as a connected reserve network for sage-grouse. To do that, we also needed to produce the first range-wide landscape-scale analysis to quantify habitat quality and connectivity across their range. This approach, incorporating an effective resistance surface, enhanced our assessment of the priority area network by permitting multiple dispersal pathways and recognizing landscape heterogeneity in estimating movement cost. Our maps highlighted important habitat corridors and pinch points between priority areas that land managers can target for conservation to help ensure sage-grouse seasonal and dispersal movements. These locations also might be considered for future priority areas to ensure connectivity.

We emphasize that the parameters defining connectivity in our study were based on a habitat suitability metric measured at a 1-km^2 resolution. The interpretation of connectivity requires an understanding of genetic, individual, and population levels as well as recognizing behavioral differences between seasonal and dispersal movements. Connectivity to maintain genetic diversity might have different requirements than the connectivity necessary to recolonize areas or augment declining populations. Characteristics of sage-grouse dispersal are relatively unknown (Connelly and others, 2011); patterns from telemetry, satellite, and genetic studies would provide valuable information in assessing landscape-scale connectivity for conservation planning.

Relative Isolation

The cost of movement across a landscape is a combined function of distance and resistance to movement (McRae, 2006). Connectivity, measured by the effective resistance distance, varied widely across the sage-grouse range. Some geographically distant priority areas were highly connected to the network through corridors of low resistance to movement. In contrast, other priority areas in close proximity were disconnected because of resistance created by unsuitable environments.

The formal conservation strategy focused on priority areas did not designate connecting corridors among priority areas, which could effectively isolate priority areas or regions. Therefore, we identified linkages and pinch-points that may be important for sustaining sage-grouse movements among priority areas (Bengtsson and others, 2003; Beier and others, 2011; Dickson and others, 2013; LaPoint and others, 2013). Most techniques for analyzing landscape connectivity identify one primary route based on a least cost pathway that becomes the focus for conservation efforts. Our approach for characterizing connectivity based on a resistance surface and circuit theory allowed for the quantitative and simultaneous evaluation of multiple alternative habitat linkages important for maintaining connected sage-grouse populations (McRae and others, 2008; Knick and others, 2013).

Synthesis and Application

The current network of priority areas has many important characteristics for maintaining sage-grouse populations. This network contained a range of large and small sizes of priority areas that might provide different functions. The structure of the network of priority areas for conserving greater sage-grouse was highly centralized. A relatively few large and more central priority areas accounted for a large proportion of cumulative centrality ranking. These large priority areas likely can self-sustain viable sage-grouse populations because of the large sagebrush regions within their boundaries. Large priority areas also might function as sources to augment adjacent populations, either those in priority areas too small to support persistent sage-grouse populations or in nonpriority areas.

The network also contained connected clusters of priority areas that otherwise might be too small individually to sustain viable populations. For example, a cluster of priority areas in Wyoming were highly connected and centered on one large priority area. A priority area cluster in Montana appears geographically isolated but is highly connected to the Wyoming cluster through habitat linkages in North and South Dakota. High current densities between priority areas in Oregon connect with priority areas across Idaho, Nevada, and California. The Bi-State cluster on the border of Nevada and California was isolated from all other clusters but exhibited a high degree of connectivity among the priority areas within it. Although our analysis focused on the range-wide network, there is likely a hierarchical system of networks for both priority areas and metapopulations of sage-grouse. These smaller clusters might function independently and an analysis of these smaller clusters as networks might provide important insights into regional centrality and linkages.

Designating clustered areas in close proximity is one of the central tenets of reserve design (Diamond, 1975; Williams and others, 2004). Clustering helps to promote frequent dispersal movements for genetic exchange. Clustering also might enhance migration that might rescue declining or isolated populations, allow for seasonal movements, or egress away from areas that have become degraded or lost (Cabeza and Moilanen, 2001). Maintaining connectivity within and among the clusters potentially allows for dispersal to augment declining populations and maintain genetic exchange across the entire network reducing the chance for the creation of isolated or genetically distinct populations in the long-term (Crooks and Sanjayan, 2006).

Priority areas that scored lower in the centrality metrics were mid-sized and widely distributed across the entire range. Their function as stepping stones to reduce overall distance for sage-grouse movements among the central priority areas is an important consideration for sustaining a connected network.

Adopting a range-wide conservation plan for sage-grouse based on a network of priority areas has risks. Different conservation and management priorities among administrative units could disrupt the metapopulation structure leading to greater isolation and potentially initiate or accelerate population declines. Many priority areas share a boundary on State jurisdictional lines and many important habitat linkages presented here occur across State and Federal jurisdictional boundaries. Yet, priorities and land use plans often differ among State and Federal management agencies both within and outside of the proposed priority area structure (Copeland and others, 2014). Understanding the functions of the priority area network and recognizing the importance of connecting corridors can help sustain sage-grouse populations.

Designing reserve networks is challenging because of combined needs to protect the largest habitat or population areas in a landscape, ensure that those areas are close enough to sustain effective dispersal rates, and also ensure that a sufficient number of areas exist so that individual losses can be absorbed within the entire network (Diamond, 1975; Cabeza and Moilanen, 2001; Williams and others, 2004). Our centrality results may help predict impacts to connectivity when priority areas are lost, degraded, or fragmented. Numerous factors, both natural and anthropogenic, make it unlikely that the current network of priority areas can be sustained (Knick and Connelly, 2011). Focusing conservation actions on important and highly connected priority areas and corresponding habitat linkages may help to mitigate future landscape change and enhance the long-term viability of sage-grouse populations.

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Appendix A. Crosswalk Table Depicting Priority Area Identifiers, U.S. Fish and Wildlife Service Unique Identifiers, Sage-Grouse Population Name, and Management Zone

[Data for crosswalk table was obtained from the U.S. Fish and Wildlife Service (FWS). ID, identifier]

Priority Area ID	FWS Unique ID	Sage-grouse Population	Management Zone	FWS Name
1	401	Bi-State	MZ3	401-Bi-State-MZ3
2	395	Bi-State	MZ3	395-Bi-State-MZ3
3	358	Bi-State	MZ3	358-Bi-State-MZ3
4	396	Bi-State	MZ3	396-Bi-State-MZ3
5	334	Parachute Piceance Roan	MZ7	334-Parachute Piceance Roan-MZ7
6	353	Bi-State	MZ3	353-Bi-State-MZ3
7	354	Bi-State	MZ3	354-Bi-State-MZ3
8	332	Parachute Piceance Roan	MZ7	332-Parachute Piceance Roan-MZ7
9	352	Bi-State	MZ3	352-Bi-State-MZ3
10	351	Bi-State	MZ3	351-Bi-State-MZ3
11	385	Bi-State	MZ3	385-Bi-State-MZ3
12	362	Bi-State	MZ3	362-Bi-State-MZ3
13	399	Bi-State	MZ3	399-Bi-State-MZ3
14	360	Bi-State	MZ3	360-Bi-State-MZ3
15	350	Bi-State	MZ3	350-Bi-State-MZ3
16	388	Bi-State	MZ3	388-Bi-State-MZ3
17	391	Bi-State	MZ3	391-Bi-State-MZ3
18	390	Bi-State	MZ3	390-Bi-State-MZ3
19	345	Bi-State	MZ3	345-Bi-State-MZ3
20	386	Bi-State	MZ3	386-Bi-State-MZ3
21	349	Bi-State	MZ3	349-Bi-State-MZ3
22	383	Bi-State	MZ3	383-Bi-State-MZ3
23	387	Bi-State	MZ3	387-Bi-State-MZ3
24	356	Bi-State	MZ3	356-Bi-State-MZ3
25	355	Bi-State	MZ3	355-Bi-State-MZ3
26	357	Bi-State	MZ3	357-Bi-State-MZ3
27	359	Bi-State	MZ3	359-Bi-State-MZ3
28	394	Bi-State	MZ3	394-Bi-State-MZ3
29	393	Bi-State	MZ3	393-Bi-State-MZ3
30	382	Bi-State	MZ3	382-Bi-State-MZ3
31	389	Bi-State	MZ3	389-Bi-State-MZ3
32	384	Bi-State	MZ3	384-Bi-State-MZ3
33	381	Bi-State	MZ3	381-Bi-State-MZ3
34	374	Bi-State	MZ3	374-Bi-State-MZ3
35	344	Bi-State	MZ3	344-Bi-State-MZ3
36	369	Bi-State	MZ3	369-Bi-State-MZ3

Priority Area ID	FWS Unique ID	Sage-grouse Population	Management Zone	FWS Name
37	372	Bi-State	MZ3	372-Bi-State-MZ3
38	370	Bi-State	MZ3	370-Bi-State-MZ3
39	341	Bi-State	MZ3	341-Bi-State-MZ3
40	347	Bi-State	MZ3	347-Bi-State-MZ3
41	346	Bi-State	MZ3	346-Bi-State-MZ3
42	375	Bi-State	MZ3	375-Bi-State-MZ3
43	314	Western Great Basin	MZ5	314-Western Great Basin-MZ5
44	343	Bi-State	MZ3	343-Bi-State-MZ3
45	317	Klamath OR/CA	MZ5	317-Klamath OR/CA-MZ5
46	368	Bi-State	MZ3	368-Bi-State-MZ3
47	367	Bi-State	MZ3	367-Bi-State-MZ3
48	316	Western Great Basin	MZ5	316-Western Great Basin-MZ5
49	309	Western Great Basin	MZ5	309-Western Great Basin-MZ5
50	312	Western Great Basin	MZ5	312-Western Great Basin-MZ5
51	223	Eagle/S Routt CO	MZ2	223-Eagle/S Routt CO-MZ2
52	156	Wyoming Basin	MZ2	156-Wyoming Basin-MZ2
53	363	Bi-State	MZ3	363-Bi-State-MZ3
54	306	Central	MZ5	306-Central-MZ5
55	322	Yakama Indian Nation	MZ6	322-Yakama Indian Nation-MZ6
56	253	Snake, Salmon, and Beaverhead	MZ4	253-Snake, Salmon, and Beaverhead-MZ4
57	279	Northern Great Basin	MZ4	279-Northern Great Basin-MZ4
58	329	Parachute Piceance Roan	MZ7	329-Parachute Piceance Roan-MZ7
59	340	Parachute Piceance Roan	MZ7	340-Parachute Piceance Roan-MZ7
60	331	Parachute Piceance Roan	MZ7	331-Parachute Piceance Roan-MZ7
61	224	Eagle/S Routt CO	MZ2	224-Eagle/S Routt CO-MZ2
62	239	Panguitch	MZ3	239-Panguitch-MZ3
63	398	Bi-State	MZ3	398-Bi-State-MZ3
64	242	Southern Great Basin	MZ3	242-Southern Great Basin-MZ3
65	243	Southern Great Basin	MZ3	243-Southern Great Basin-MZ3
66	241	Southern Great Basin	MZ3	241-Southern Great Basin-MZ3
67	232	Sheeprock Mountains	MZ3	232-Sheeprock Mountains-MZ3
68	237	Carbon	MZ3	237-Carbon-MZ3
69	361	Bi-State	MZ3	361-Bi-State-MZ3
70	400	Bi-State	MZ3	400-Bi-State-MZ3
71	214	Middle Park CO	MZ2	214-Middle Park CO-MZ2
72	221	Eagle/S Routt CO	MZ2	221-Eagle/S Routt CO-MZ2
73	222	Eagle/S Routt CO	MZ2	222-Eagle/S Routt CO-MZ2
74	220	Eagle/S Routt CO	MZ2	220-Eagle/S Routt CO-MZ2
75	326	Meeker - White River	MZ7	326-Meeker - White River-MZ7
76	327	Parachute Piceance Roan	MZ7	327-Parachute Piceance Roan-MZ7
77	323	Meeker - White River	MZ7	323-Meeker - White River-MZ7

Priority Area ID	FWS Unique ID	Sage-grouse Population	Management Zone	FWS Name
78	238	Parker Mountain-Emery	MZ3	238-Parker Mountain-Emery-MZ3
79	153	Wyoming Basin	MZ2	153-Wyoming Basin-MZ2
80	152	Wyoming Basin	MZ2	152-Wyoming Basin-MZ2
81	235	Strawberry	MZ3	235-Strawberry-MZ3
82	154	Wyoming Basin	MZ2	154-Wyoming Basin-MZ2
83	183	Wyoming Basin	MZ2	183-Wyoming Basin-MZ2
84	219	Eagle/S Routt CO	MZ2	219-Eagle/S Routt CO-MZ2
85	204	Wyoming Basin	MZ2	204-Wyoming Basin-MZ2
86	198	Wyoming Basin	MZ2	198-Wyoming Basin-MZ2
87	160	Wyoming Basin	MZ2	160-Wyoming Basin-MZ2
88	193	Wyoming Basin	MZ2	193-Wyoming Basin-MZ2
89	199	Wyoming Basin	MZ2	199-Wyoming Basin-MZ2
90	195	Wyoming Basin	MZ2	195-Wyoming Basin-MZ2
91	158	Wyoming Basin	MZ2	158-Wyoming Basin-MZ2
92	191	Wyoming Basin	MZ2	191-Wyoming Basin-MZ2
93	182	Wyoming Basin	MZ2	182-Wyoming Basin-MZ2
94	266	Snake, Salmon, and Beaverhead	MZ4	266-Snake, Salmon, and Beaverhead-MZ4
95	213	North Park	MZ2	213-North Park-MZ2
96	142	Wyoming Basin	MZ2	142-Wyoming Basin-MZ2
97	159	Wyoming Basin	MZ2	159-Wyoming Basin-MZ2
98	157	Wyoming Basin	MZ2	157-Wyoming Basin-MZ2
99	178	Wyoming Basin	MZ2	178-Wyoming Basin-MZ2
100	169	Wyoming Basin	MZ2	169-Wyoming Basin-MZ2
101	139	Wyoming Basin	MZ2	139-Wyoming Basin-MZ2
102	143	Wyoming Basin	MZ2	143-Wyoming Basin-MZ2
103	114	Powder River Basin	MZ1	114-Powder River Basin-MZ1
104	141	Wyoming Basin	MZ2	141-Wyoming Basin-MZ2
105	148	Wyoming Basin	MZ2	148-Wyoming Basin-MZ2
106	150	Wyoming Basin	MZ2	150-Wyoming Basin-MZ2
107	264	Snake, Salmon, and Beaverhead	MZ4	264-Snake, Salmon, and Beaverhead-MZ4
108	144	Wyoming Basin	MZ2	144-Wyoming Basin-MZ2
109	149	Wyoming Basin	MZ2	149-Wyoming Basin-MZ2
110	145	Wyoming Basin	MZ2	145-Wyoming Basin-MZ2
111	146	Wyoming Basin	MZ2	146-Wyoming Basin-MZ2
112	366	Bi-State	MZ3	366-Bi-State-MZ3
113	244	NW-Interior NV	MZ3	244-NW-Interior NV-MZ3
114	267	Snake, Salmon, and Beaverhead	MZ4	267-Snake, Salmon, and Beaverhead-MZ4
115	263	Snake, Salmon, and Beaverhead	MZ4	263-Snake, Salmon, and Beaverhead-MZ4
116	138	Wyoming Basin	MZ2	138-Wyoming Basin-MZ2

Priority Area ID	FWS Unique ID	Sage-grouse Population	Management Zone	FWS Name
117	126	Jackson Hole WY	MZ2	126-Jackson Hole WY-MZ2
118	246	Southwest Montana	MZ4	246-Southwest Montana-MZ4
119	245	Southwest Montana	MZ4	245-Southwest Montana-MZ4
120	275	Northern Great Basin	MZ4	275-Northern Great Basin-MZ4
121	273	Northern Great Basin	MZ4	273-Northern Great Basin-MZ4
122	248	Snake, Salmon, and Beaverhead	MZ4	248-Snake, Salmon, and Beaverhead-MZ4
123	269	Northern Great Basin	MZ4	269-Northern Great Basin-MZ4
124	277	Northern Great Basin	MZ4	277-Northern Great Basin-MZ4
125	310	Western Great Basin	MZ5	310-Western Great Basin-MZ5
126	247	Southwest Montana	MZ4	247-Southwest Montana-MZ4
127	115	Powder River Basin	MZ1	115-Powder River Basin-MZ1
128	121	Powder River Basin	MZ1	121-Powder River Basin-MZ1
129	108	Yellowstone Watershed	MZ1	108-Yellowstone Watershed-MZ1
130	147	Wyoming Basin	MZ2	147-Wyoming Basin-MZ2
131	104	Yellowstone Watershed	MZ1	104-Yellowstone Watershed-MZ1
132	117	Powder River Basin	MZ1	117-Powder River Basin-MZ1
133	137	Wyoming Basin	MZ2	137-Wyoming Basin-MZ2
134	106	Yellowstone Watershed	MZ1	106-Yellowstone Watershed-MZ1
135	116	Powder River Basin	MZ1	116-Powder River Basin-MZ1
136	120	Powder River Basin	MZ1	120-Powder River Basin-MZ1
137	107	Yellowstone Watershed	MZ1	107-Yellowstone Watershed-MZ1
138	110	Yellowstone Watershed	MZ1	110-Yellowstone Watershed-MZ1
139	119	Powder River Basin	MZ1	119-Powder River Basin-MZ1
140	123	Powder River Basin	MZ1	123-Powder River Basin-MZ1
141	135	Wyoming Basin	MZ2	135-Wyoming Basin-MZ2
142	134	Wyoming Basin	MZ2	134-Wyoming Basin-MZ2
143	128	Wyoming Basin	MZ2	128-Wyoming Basin-MZ2
144	130	Wyoming Basin	MZ2	130-Wyoming Basin-MZ2
145	105	Yellowstone Watershed	MZ1	105-Yellowstone Watershed-MZ1
146	102	Northern Montana	MZ1	102-Northern Montana-MZ1
147	113	Dakotas	MZ1	113-Dakotas-MZ1
148	118	Powder River Basin	MZ1	118-Powder River Basin-MZ1
149	305	Central	MZ5	305-Central-MZ5
150	101	Northern Montana	MZ1	101-Northern Montana-MZ1
151	111	Dakotas	MZ1	111-Dakotas-MZ1
152	321	Yakama Training Center	MZ6	321-Yakama Training Center-MZ6
153	397	Bi-State	MZ3	397-Bi-State-MZ3
154	392	Bi-State	MZ3	392-Bi-State-MZ3
155	365	Bi-State	MZ3	365-Bi-State-MZ3
156	380	Bi-State	MZ3	380-Bi-State-MZ3
157	379	Bi-State	MZ3	379-Bi-State-MZ3

Priority Area ID	FWS Unique ID	Sage-grouse Population	Management Zone	FWS Name
158	377	Bi-State	MZ3	377-Bi-State-MZ3
159	378	Bi-State	MZ3	378-Bi-State-MZ3
160	348	Bi-State	MZ3	348-Bi-State-MZ3
161	376	Bi-State	MZ3	376-Bi-State-MZ3
162	373	Bi-State	MZ3	373-Bi-State-MZ3
163	371	Bi-State	MZ3	371-Bi-State-MZ3
164	364	Bi-State	MZ3	364-Bi-State-MZ3
165	342	Bi-State	MZ3	342-Bi-State-MZ3
166	308	Western Great Basin	MZ5	308-Western Great Basin-MZ5
167	270	Northern Great Basin	MZ4	270-Northern Great Basin-MZ4
168	276	Northern Great Basin	MZ4	276-Northern Great Basin-MZ4
169	272	Northern Great Basin	MZ4	272-Northern Great Basin-MZ4
170	274	Northern Great Basin	MZ4	274-Northern Great Basin-MZ4
171	304	Central	MZ5	304-Central-MZ5
172	300	Central	MZ5	300-Central-MZ5
173	302	Central	MZ5	302-Central-MZ5
174	271	Northern Great Basin	MZ4	271-Northern Great Basin-MZ4
175	303	Central	MZ5	303-Central-MZ5
176	301	Central	MZ5	301-Central-MZ5
177	268	Baker	MZ4	268-Baker-MZ4
178	320	Crab Creek	MZ6	320-Crab Creek-MZ6
179	319	Moses Coulee	MZ6	319-Moses Coulee-MZ6
180	298	Northern Great Basin	MZ4	298-Northern Great Basin-MZ4
181	140	Wyoming Basin	MZ2	140-Wyoming Basin-MZ2
182	136	Wyoming Basin	MZ2	136-Wyoming Basin-MZ2
183	132	Wyoming Basin	MZ2	132-Wyoming Basin-MZ2
184	131	Wyoming Basin	MZ2	131-Wyoming Basin-MZ2
185	129	Wyoming Basin	MZ2	129-Wyoming Basin-MZ2
186	133	Wyoming Basin	MZ2	133-Wyoming Basin-MZ2
187	315	Western Great Basin	MZ5	315-Western Great Basin-MZ5
188	288	Northern Great Basin	MZ4	288-Northern Great Basin-MZ4

Appendix B. Centrality Results for Degree and Betweenness Metrics for Each Priority Area

[Priority areas are ranked from highest to lowest betweenness centrality value. Cumulative percent of betweenness centrality was calculated to provide each priority area's contribution to total betweenness centrality. ID, identifier]

Priority Area ID	Area (km^2)	Degree Centrality	Betweenness Centrality	Betweenness Centrality Rank	Cumulative Percent
48	78,218	50	11,414	1	12.8
110	7,673	20	6,820	2	20.4
101	18,607	24	6,740	3	27.9
39	440	22	5,537	4	34.1
111	608	8	5,178	5	39.9
19	1,847	32	5,072	6	45.6
35	717	24	5,048	7	51.3
83	7,316	48	4,455	8	56.2
65	33,892	26	3,000	9	59.6
181	11,999	24	2,554	10	62.5
21	40	16	2,415	11	65.2
114	9,548	14	2,024	12	67.4
107	6,133	18	2,009	13	69.7
166	2,570	18	1,907	14	71.8
20	24	16	1,400	15	73.4
80	5,593	22	1,291	16	74.8
169	1,760	14	1,093	17	76.0
105	950	10	1,068	18	77.2
58	839	28	1,048	19	78.4
109	753	8	1,029	20	79.6
160	560	18	992	21	80.7
7	132	14	961	22	81.7
69	33	12	948	23	82.8
148	493	8	945	24	83.9
138	7,677	16	926	25	84.9
182	2,601	10	794	26	85.8
131	4,448	16	711	27	86.6
119	1,894	14	670	28	87.3
137	7,376	20	626	29	88.0
167	1,132	6	577	30	88.7
14	48	14	574	31	89.3
98	554	10	542	32	89.9
176	1,788	18	524	33	90.5
9	82	12	491	34	91.1
3	400	22	458	35	91.6
123	1,492	16	400	36	92.0

Priority Area ID	Area (km^2)	Degree Centrality	Betweenness Centrality	Betweenness Centrality Rank	Cumulative Percent
64	5,783	10	366	37	92.4
125	1,336	14	366	38	92.8
171	56	10	364	39	93.3
141	585	10	338	40	93.6
74	50	10	325	41	94.0
157	2	16	295	42	94.3
134	1,422	8	268	43	94.6
62	4,606	8	257	44	94.9
6	541	14	233	45	95.2
133	1,260	10	225	46	95.4
177	1,362	14	222	47	95.7
118	3,264	12	218	48	95.9
24	82	12	210	49	96.2
78	4,563	12	210	50	96.4
144	2,464	18	199	51	96.6
139	3,122	14	198	52	96.8
170	669	16	193	53	97.0
178	3,273	12	193	54	97.3
122	316	14	192	55	97.5
146	6,796	10	185	56	97.7
72	37	12	180	57	97.9
95	1,529	10	178	58	98.1
120	336	10	174	59	98.3
135	284	10	172	60	98.5
55	1,285	8	164	61	98.7
142	147	8	155	62	98.8
27	26	14	149	63	99.0
68	1,442	14	148	64	99.2
185	523	10	142	65	99.3
61	81	10	128	66	99.5
10	120	12	60	67	99.5
33	23	12	60	68	99.6
84	214	12	60	69	99.7
112	24	12	51	70	99.7
158	17	14	38	71	99.8
25	24	12	30	72	99.8
143	1,487	12	29	73	99.8
121	227	8	24	74	99.9
12	14	12	23	75	99.9
127	79	12	18	76	99.9
26	82	12	16	77	99.9

Priority Area ID	Area (km^2)	Degree Centrality	Betweenness Centrality	Betweenness Centrality Rank	Cumulative Percent
161	4	10	14	78	99.9
129	965	12	13	79	100.0
184	661	8	12	80	100.0
162	2	10	7	81	100.0
174	1,492	14	7	82	100.0
51	27	10	6	83	100.0
81	1,309	10	4	84	100.0
71	888	10	3	85	100.0
108	117	8	3	86	100.0
152	1,933	8	2	87	100.0
86	8	8	1	88	100.0
91	78	8	1	89	100.0
175	81	8	1	90	100.0
1	2	6	0	91	100.0
2	1	4	0	92	100.0
4	1	6	0	93	100.0
5	5	6	0	94	100.0
8	8	10	0	95	100.0
11	4	8	0	96	100.0
13	4	4	0	97	100.0
15	153	12	0	98	100.0
16	1	12	0	99	100.0
17	2	8	0	100	100.0
18	4	8	0	101	100.0
22	2	12	0	102	100.0
23	7	6	0	103	100.0
28	2	12	0	104	100.0
29	2	6	0	105	100.0
30	2	8	0	106	100.0
31	3	6	0	107	100.0
32	2	2	0	108	100.0
34	1	4	0	109	100.0
36	2	10	0	110	100.0
37	5	12	0	111	100.0
38	5	6	0	112	100.0
40	27	8	0	113	100.0
41	15	8	0	114	100.0
42	3	10	0	115	100.0
43	103	4	0	116	100.0
44	5	2	0	117	100.0
45	658	10	0	118	100.0

Priority Area ID	Area (km^2)	Degree Centrality	Betweenness Centrality	Betweenness Centrality Rank	Cumulative Percent
46	2	6	0	119	100.0
47	2	6	0	120	100.0
49	128	6	0	121	100.0
50	845	8	0	122	100.0
52	108	6	0	123	100.0
53	2	6	0	124	100.0
54	172	10	0	125	100.0
56	4,967	8	0	126	100.0
57	200	4	0	127	100.0
59	1	2	0	128	100.0
60	15	6	0	129	100.0
63	2	8	0	130	100.0
66	399	10	0	131	100.0
67	2,474	14	0	132	100.0
70	2	10	0	133	100.0
73	1	4	0	134	100.0
75	1	8	0	135	100.0
76	31	8	0	136	100.0
77	58	14	0	137	100.0
79	6	2	0	138	100.0
82	648	6	0	139	100.0
85	1	4	0	140	100.0
87	145	12	0	141	100.0
88	12	12	0	142	100.0
89	2	4	0	143	100.0
90	3	4	0	144	100.0
92	1	2	0	145	100.0
93	6	4	0	146	100.0
94	1,046	10	0	147	100.0
96	891	14	0	148	100.0
97	7	4	0	149	100.0
99	1	2	0	150	100.0
100	2	4	0	151	100.0
102	109	12	0	152	100.0
103	37	10	0	153	100.0
104	2,960	8	0	154	100.0
106	697	4	0	155	100.0
113	1,504	4	0	156	100.0
115	7	6	0	157	100.0
116	2,071	12	0	158	100.0
117	342	18	0	159	100.0

Priority Area ID	Area (km^2)	Degree Centrality	Betweenness Centrality	Betweenness Centrality Rank	Cumulative Percent
124	2	6	0	160	100.0
126	555	6	0	161	100.0
128	357	8	0	162	100.0
130	352	10	0	163	100.0
132	48	8	0	164	100.0
136	481	4	0	165	100.0
140	556	6	0	166	100.0
145	125	4	0	167	100.0
147	316	4	0	168	100.0
149	7	10	0	169	100.0
150	2,456	4	0	170	100.0
151	2,121	10	0	171	100.0
153	2	8	0	172	100.0
154	2	10	0	173	100.0
155	7	10	0	174	100.0
156	2	6	0	175	100.0
159	5	8	0	176	100.0
163	1	8	0	177	100.0
164	8	12	0	178	100.0
165	21	6	0	179	100.0
168	11	6	0	180	100.0
172	145	6	0	181	100.0
173	1,044	10	0	182	100.0
179	4,437	4	0	183	100.0
180	490	6	0	184	100.0
183	105	10	0	185	100.0
186	199	12	0	186	100.0
187	6	4	0	187	100.0
188	17	2	0	188	100.0

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Conversion Factors

Inch/Pound to SI

Multiply	By	To obtain
	Length	
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
yard (yd)	0.9144	meter (m)
	Area	
acre	4,047	square meter (m^2)
acre	0.4047	hectare (ha)
acre	0.004047	square kilometer (km^2)
section (640 acres or 1 square mile)	259.0	square hectometer (hm^2)
square mile (mi^2)	259.0	hectare (ha)
square mile (mi^2)	2.590	square kilometer (km^2)

SI to Inch/Pound

Multiply	By	To obtain
	Length	
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
meter (m)	1.094	yard (yd)
	Area	
square meter (m^2)	0.0002471	acre
hectare (ha)	2.471	acre
square kilometer (km^2)	247.1	acre
square hectometer (hm^2)	0.003861	section (640 acres or 1 square mile)
hectare (ha)	0.003861	square mile (mi^2)
square kilometer (km^2)	0.3861	square mile (mi^2)

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Introduction

This report was prepared at the request of the U.S. Department of the Interior and is a compilation and summary of published scientific studies that evaluate the influence of anthropogenic activities and infrastructure on Greater Sage-Grouse (*Centrocercus urophasianus*; hereafter, sage-grouse) populations. The purpose of this report is to provide a convenient reference for land managers and others who are working to develop biologically relevant and socioeconomically practical buffer distances around sage-grouse habitats. The framework for this summary includes (1) addressing the potential effects of anthropogenic land use and disturbances on sage-grouse populations, (2) providing ecologically based interpretations of evidence from the scientific literature, and (3) informing implementation of conservation buffers around sage-grouse communal breeding locations—known as leks.

We do not make specific management recommendations but instead provide summarized information, citations, and interpretation of findings available in scientific literature. We also recognize that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range. Thus, we report values for distances upon which protective, conservation buffers might be based, in conjunction with other considerations (table 1). We present this information for six categories of land use or disturbance typically found in land-use plans which are representative of the level of definition available in the scientific literature: surface disturbance (multiple causes; immediate and cumulative influences); linear features (roads); energy development (oil, gas, wind, and solar); tall structures (electrical, communication, and meteorological); low structures (fences and buildings); and activities (noise and related disruptions). Minimum and maximum distances for observed effects found in the scientific literature, as well as a distance range for possible conservation buffers based on interpretation of multiple sources, expert knowledge of the authors regarding affected areas, and the distribution of birds around leks are provided for each of the six categories (table 1). These interpreted values for buffer distances are an attempt to balance the extent of protected areas with multiple land-use requirements using estimates of the distribution of sage-grouse habitat. Conservation efforts may then focus on the overlap between potential effect zone and important habitats. We provide a brief discussion of some of the most relevant literature for each category. References associated with the minimum and maximum values in table 1 are identified in the References Cited section with corresponding symbols.

Distances in this report reflect radii around lek locations because these locations are typically (although not universally) known, and

management plans often refer to these locations. Lek sites are most representative of breeding habitats, but their locations are focal points within populations, and as such, protective buffers around lek sites can offer a useful solution for identifying and conserving seasonal habitats required by sage-grouse *throughout* their life cycle. However, knowledge of local and regional patterns of seasonal habitat use may improve conservation of those important areas, especially regarding the distribution and utilization of nonbreeding season habitats (which may be underrepresented in lek-based designations).

Analytical Realities and Additional Background

Understanding the effects of multiple human land uses on sage-grouse and their habitats is complicated by the combination of environmental, ecological, and socioeconomic conditions across the species range, which includes parts of 11 U.S. States and 2 Canadian Provinces in western North America. Responses of individual birds and populations, coupled with variability in land-use patterns and habitat conditions, add variation in research results. This variability presents a challenge for land managers and planners seeking to use research results to guide management and plan for sage-grouse conservation measures.

Variability between sage-grouse populations and their responses to different types of infrastructure can be substantial across the species' range. Our interpretations attempt to encompass variability in populations (for example, migratory versus nonmigratory) and rangewide response patterns of sage-grouse to various human activities. Logical and scientifically justifiable departures from the "typical response," based on local data and other factors, may be warranted when implementing buffer protections or density limits in parts of the species' range.

Natural movement behaviors of sage-grouse have been documented by multiple studies that provide direct evidence of inter- and intraseasonal movements from a few kilometers (km) (nonmigratory populations; Berry and Eng, 1985; Connelly and others, 2004) to 20–30 km or more (Connelly and others, 2004; Fedy and others, 2012; Tack and others, 2012). An influential, telemetry-based, tracking project in central Montana indicated more than 90 percent of *breeding season* movements by male grouse were within 1.3 km (0.8 mi) of a lek and 76 percent were within 1 km of a lek (0.6 mi; Wallestad and Schladweiler, 1974). The 1-km (0.6-mi) buffer used in many management efforts was based upon this research. More recent analyses have indicated that 90–95 percent of habitat use at the population level was focused within approximately 8 km (5 miles [mi]) of several California and Nevada lek sites (Coates and others, 2013), and 95 percent of all nests were located within approximately 5 km (3.1 mi) of leks. Holloran and Anderson (2005) found that 64 percent of nests in Wyoming occurred within 5 km (3.1 mi) of leks, suggesting considerable protection of sage-grouse within these proximate habitats. In contrast, home ranges as large as 2,975 km^2 (1,149 mi^2) have been documented (Connelly and others, 2000, 2004) in some portions of the species' range. These larger distances suggest that for some populations, the minimum distance inferred here (5 km [3.1 mi]) from leks may be insufficient to protect nesting and other seasonal habitats. Based on the collective information reviewed for this study, conservation practices that address habitats falling within the interpreted distances may be expected to protect as much as 75 percent (Doherty and others, 2010) to 95 percent (Coates and others, 2013) of local population's habitat utilization.

Habitat condition, composition, structure, and distribution are important potential modifiers of the effect of human infrastructure and activities on sage-grouse

populations (Dinkins and others, 2014; Walters and others, 2014). The distribution of sagebrush (*Artemisia* spp.) is a well-known biological and statistical predictor of sage-grouse response to their environment (for example, Connelly and others, 2004; Aldridge and Boyce, 2007; Hagen and others, 2007; National Technical Team, Sage Grouse, 2011; Wisdom and others, 2011; Kirol and others, 2012; Beck and others, 2014; Smith and others, 2014). Differences among sagebrush communities within a population range may also affect the impact of infrastructure. For example, primary productivity of sites is typically greater in mountain big sagebrush (*A. tridendata* ssp. *vaseyana*) communities than Wyoming big sagebrush (*A. t.* ssp. *wyomingensis*) communities (Davies and Bates, 2010).

Sage-grouse depend on sagebrush, so buffer protections may be most effective when focused on avoidance of disturbance to sagebrush that provides the keystone to sage-grouse habitat. Important sage-grouse habitats include those with >40 percent sagebrush landcover (within 5 km [3.1 mi] radial assessment area; Knick and others, 2013), sagebrush patch sizes greater than 1 km^2 (0.4 mi^2) (Aldridge and Boyce, 2007), and plot-level composition of approximately 10–30 percent sagebrush cover and >15 percent grasses and forbs (Connelly and others, 2004; Stiver and others, 2006). Avoidance of activities that increase distance between sagebrush patches or that impose barriers to dispersal could also help maintain populations (Wisdom and others, 2011; Knick and Hanser, 2011).

Various protection measures have been developed and implemented, including complete closure of important habitats, distance buffers that restrict disturbing activities within designated distances, and development-disturbance density limits within habitats (for examples see, "Policy and Rules for Development" at *http://utahcbcp.org/htm/tall-structure-info*). Timing restrictions have also commonly been employed at lek sites, primarily to reduce disturbance to breeding sage-grouse. Although specific details and implementation of these different approaches have varied, each approach has the ability (alone or in concert with others) to protect important habitats, sustain populations, and support multiple-use demands for public lands. As such, local and regional differences in design and implementation of conservation plans should be assessed with explicit attention to the details and cumulative impact of a suite of actions, including but not limited to the buffer distances, which are the focus of this report.

Surface Disturbance

Surface disturbance represents a combination of human activities that alter or remove the natural vegetation community on a site. Isolating the potential effects of human land-use patterns on sage-grouse is challenging because causal factors are frequently interrelated and interactive (for example roads and distribution lines or roads and well pads) making a general discussion of "development effects" necessary. In cases where better discrimination is available, those specific types of surface disturbances are addressed in the following sections. The values in this section reflect a nondiscriminatory understanding of the independent and interactive and cumulative effects of activities that remove sagebrush cover and other natural vegetation, and often include continual and (or) intermittent activities, such as running motors and pumps, vehicle visits, and equipment servicing. The collective influence of human activity on the landscape, often referred to as the human footprint (Leu and others, 2008), has been associated with negative trends in sage-grouse lek counts (Johnson and others, 2011) and population persistence (Aldridge and others, 2008; Wisdom and others, 2011). A multiscale assessment of factors associated with lek abandonment between 1965 and 2007 found that the level of the human footprint within 5 km (3.1 mi) of the lek was negatively associated

with lek persistence (Knick and Hanser, 2011). Agricultural activities, including tilling, seeding, and other highly managed activities, are a component of the human footprint and clearly fall into the category of surface disturbance (removal of native vegetation); however, agriculture is a special case because, although agriculture occupies large areas with transformed conditions, these lands are typically privately owned and the habitat value of agricultural areas is not zero because these lands can provide cover and forage for some populations in some seasons (Fischer and others, 1996). For example, sage-grouse have been known to use agricultural lands in late summer and early spring (Fischer and others, 1996). Though we found no direct evidence for spacing recommendations between agricultural lands and leks or other sage-grouse habitat, the conversion of sagebrush to agriculture within a landscape has been shown to lead to decreased abundance of sage-grouse in many portions of their range (Swenson and others, 1987; Smith and others, 2005; Aldridge and Boyce, 2007; Aldridge and others, 2008). A potential mechanism for this decrease in abundances, besides the direct loss of habitat, is the association of generalist predators (Common Raven [*Corvus corax*] and Black-billed Magpie [*Pica hudsonia*]) with agricultural infrastructure (Vander Haegen and others, 2002) and subsequent predation on sage-grouse (Connelly and others, 2004; Coates and Delehanty, 2010).

Estimated distance effects were translated to a 5- to 8-km (3.1- to 5-mi) radius around each lek to describe a possible conservation buffer area (interpreted range) based on interpretation of two principal factors: the potential effect area and the potential distribution of habitat use within affected areas. The need for protection of populations that are not well understood requires some generalization, and this distance range is proposed because research suggests that a majority of sage-grouse distributions and movements (within and between seasons) occur within this range (for example, Berry and Eng, 1985; Lyon and Anderson, 2003; Holloran and Anderson, 2005; Walker and others, 2007; Aldridge and others, 2008; Knick and others, 2011; Naugle and others, 2011; Coates and others, 2013). Importantly, due to variability among individuals and populations, some individuals in most populations (migratory and nonmigratory) may move greater distances than those included in the buffer, but specific protections cannot, practically, be determined for all individuals and all behavioral patterns. Although leks are generally recognized as the center of breeding and nesting habitats, recent utilization distribution analyses have helped to refine understanding of sage-grouse habitat-use patterns throughout the year. Based on this approach, Coates and others (2013) suggested that an 8-km (5-mi) protection area centered on an active lek location should encompass the seasonal movements and habitat use of 90–95 percent of sage-grouse associated with the lek. Longer distance movements are not always explicitly protected in this context, and habitats associated with previously unidentified leks may not be protected. However, final settling locations for more mobile individuals may be associated with quality habitats protected by buffers around adjacent lek sites. Furthermore, buffer distances beyond 8 km (5 mi) result in a decreasing benefit (cost-benefit trade-off) of increasing protection in areas that are less commonly used by sage-grouse. Without population-specific information regarding the location of habitats and movement of birds, which may be utilized when available (for an example see, Colorado Greater Sage-grouse Steering Committee, 2008), this generalized protection area (circular buffer around active leks with radius of 8 km [5mi]) offers a practical tool for determining important habitat areas. (Note: the Colorado Plan [Colorado Greater Sage-grouse Steering Committee, 2008] recommended a 6.4-km [4-mi] circular buffer, which may be well suited for those populations and falls within the range identified here.)

Importantly, similar results and interpretations to those derived from California and Nevada populations (Coates and others, 2013) were attained from the eastern portion of sage-grouse range; namely, Holloran and Anderson (2005) reported 64 percent of monitored nests fell within 5 km (3.1 mi) of a lek, and response to industrial development (decreased nesting rates and success rates) was observable to distances between 5 and 10 km (3.1–6.2 mi) from a lek suggesting that similar buffer distances are as relevant in Wyoming as in the Great Basin. In Utah, approximately 90 percent of nests (not all movements) were located within 5 km (3 mi) of a lek and threshold distance increased with greater contiguity of habitats. The smallest effect distance (3.2 km [2 mi] from a lek) described by Naugle and others (2011) was previously described and tested in field research by Holloran and Anderson (2005) and Walker and others (2007); these studies were designed to evaluate the effectiveness of existing stipulations. However, recent evaluation of different effect areas (Gregory and Beck, 2014) suggested significant immediate effects on lek attendance with one well pad within 2 km (1.2 mi) of a lek and time-lagged effects due to industrial development within 10 km (6.2 mi) of a lek indicating a habitat within the 8 km (5 mi) identified here may still experience an influence of development on some landscapes. Although considerable protections would be afforded by using a greater buffer distance from leks, research has indicated population effects are variable, and the cumulative effect of development may extend across the landscape many kilometers (>10 km [6 mi]) beyond the immediately affected areas. Diminishing gain analysis (Coates and others, 2013) suggested that sustained gains from habitat protection (based on percent of *highly used areas* protected versus *total* area protected) diminished after 8 km (5 mi)(radius) from leks, which helped to establish a ceiling on interpretations for habitat buffers seeking to maximize conservation benefits and minimize impacts on land uses.

Linear Features

Roads, especially active roads such as collectors, major haul, and service roads, as well as county, State, and Federal highways, create many of the same “aversion” factors described previously that are related to traffic noise on roadways and interactions with infrastructure associated with corridors (such as fences, poles, and towers). One potential mechanism behind road-aversion behavior by sage-grouse could be the intermittent noise produced by passing traffic. Blickley and others (2012) discovered that noise-disturbance simulations that mimicked intermittent sources (road noise), or separately, drilling noises (continuous), generated a significant reduction in lek attendance of sage-grouse (73-percent reduction with road noise, 29 percent with drilling noise).

Most planning related to linear features applies to new construction, that is, avoidance of placing new roads or transmission lines in important habitats, but existing roads might also be addressed by considering seasonal closures, or removal, of roads within protective buffer areas. Fragmentation of habitats related to the network of roads and other linear features (potential for cumulative effects) may have negative effects on sage-grouse populations by reducing and fragmenting sagebrush habitat. When compared to extirpated leks, occupied leks have twice the cover of sagebrush (46 percent versus 24 percent) and ten times larger average sagebrush patches (4,173 hectares [ha] [10,310 acres] versus 481 ha [1,190 acres]) (Wisdom and others, 2011). However, it is important to recognize that previous assessments of relations between sage-grouse distributions and roads include a combination of positive and negative relations (Johnson and others, 2011), and local effects may be restricted to visible (or audible) range. Correlations between the distribution of roads with the distribution of quality sagebrush habitats (due to moderate topographic relief), interactions between influence of roads and

infrastructure with topography and habitat conditions (visibility and audibility), and differences in traffic volumes may all contribute to population effects on sage-grouse; not all roads have the same effect (Carpenter and others, 2010; Dinkins and others, 2014). Because roads and other linear features can have different effects on sage-grouse behavior, regional models of distributions and population dynamics have attempted to capture some differences; for example, roads closer to lek locations and other seasonal habitats may have greater effects than those occurring farther from important habitats (Hanser and others, 2011). Effects of pipelines and powerline corridors were tested but were not found to have clear, rangewide effects on lek trends (Johnson and others, 2011). However, it has become evident that interactions and co-location of linear features (for example, power distribution lines along roads and railroads) can make separation of effects difficult (Walters and others, 2014); power lines are addressed in a following section (Tall Structures).

Because of general concerns about habitat fragmentation and loss due to transportation networks, rangewide assessment of the effects of distributed human features, including road proximity (distance) and density, on trends in sage-grouse populations (based on lek counts), were conducted (Johnson and others, 2011). Incremental effects of accumulating length of roads in proximity to leks were apparent rangewide, although limited to major roads (State and Federal highways and interstates). This effect was demonstrated by decreasing lek counts when there were more than 5 km (3.1 mi) of Federal or State highway within 5 km (3.1 mi) of leks and when more than 20 km (12.4 mi) of highway occurs within an 18-km (11.2-mi) window (Johnson and others, 2011). Regional assessments (sage-grouse management zones, MZs; see Stiver and others, 2006) indicated downward trends in northern Great Basin (MZ4 and a portion of MZ5) populations when road density within 5-km (3.1-mi) radius of lek exceeded 30 km (18.6 mi). In Great Plains populations (MZ1), lek trends declined within a 10 km (6.2 mi) radius of a major road. It is important to note that many of the regional assessments did not indicate decreasing lek trends associated with the various size-classes of roads that were assessed (Johnson and others, 2011). In separate analyses in Wyoming, probability of sage-grouse habitat use (based on pellet-count surveys) declined around major roads (State and Federal highways and interstates) when assessed using a 1-km (0.6-mi) exponential decay function ($\exp^{(\text{distance}/-1\text{km})}$; Hanser and others, 2011). Assessment of lek trends in proximity to a large, interstate highway (I-80) indicated that all formerly recorded lek sites within 2 km (1.25 mi) of the highway were unoccupied, and leks within 7.5 km (4.7 mi) of the highway had declining attendance (Connelly and others, 2004).

Radio-telemetry (Very High Frequency, VHF) studies are often used to help track and document animal movements and habitat use, and some have reflected affinity of sage-grouse to roads (for example, Carpenter and others, 2010; Dinkens and others, 2014). However, this pattern may be due to search patterns employed by road-bound investigators (Fedy and others, 2014) or the distribution of roads across quality habitats in flat and lower elevation terrain (Carpenter and others, 2010; Dinkins and others, 2014) as opposed to selection of roads as preferred habitats. Seasonal, Statewide habitat models in Wyoming indicated a difference in seasonal sensitivity to density of paved roads, suggesting a decaying effects function approaching zero as distance approaches 3.2 km (2 mi) of leks (negative exponential) during the nesting and summer seasons, and a decay function approaching zero as distance approaches 1.5 km (0.9 mi) of leks during winter (Fedy and others, 2014). However, Dinkins and others (2014) found decreased risk of death for hens with *increasing* road density, but they also noted that the co-location of road

distribution and quality habitat may have influenced this result. Although noise has been clearly demonstrated to influence sage-grouse (Blickley and others, 2012), the influence of individual roads or networks of roads on sage-grouse habitat use and demographic parameters remains a research need. This is a good example of the challenge associated with making clear interpretations of the effect area (and therefore, a definitive buffer distance) for these types of infrastructure.

Energy Development

Research and applications addressing surface disturbances in sagebrush ecosystems have been commonly conducted in relation to energy development activities. Lands affected by these activities have been the focus of many studies investigating the effects of anthropogenic activities on sage-grouse behavior and population dynamics, so the previous section (Surface Disturbance) contains much of the information relevant here.

Direct impacts of energy development on sage-grouse habitats and populations, such as loss of sagebrush canopy or nest failure, have been estimated to occur within a 1.2-ha (3-acre) area of leks (radius: 62 m [68 yards]); indirect influences, such as habitat degradation or utilization displacement, have been estimated to extend out to 19 km (11.8 mi) from leks (Naugle and others, 2011). Regional analyses of well-density and distance effects (Johnson and others, 2011) suggested negative trends in populations (lek counts) when distance was less than 4 km (2.5 mi) to the nearest producing well; whereas density effects were evident rangewide based on decreasing population trends when greater than eight active wells occurred within 5 km (3.1 mi) of leks, or when more than 200 active wells occurred within 18 km (11 mi)of leks. In Wyoming, significant negative relations between use of seasonal habitats and well densities have been demonstrated. Fedy and others (2014) found a significant negative relation between well density and probability of sage-grouse habitat selection during nesting (3.2-km [2-mi] radius) and winter (6.44-km [4-mi] radius) seasons. In the Powder River Basin, wintering sage-grouse were negatively associated with increasing coalbed natural gas well densities within a 2-km × 2-km (1.24-mi × 1.24-mi) window (Doherty and others 2008). Also, Gregory and Beck (2014) documented lek attendance decline when energy development averaged 0.7 well pads/km^2 (1.81 well pads/mi^2; using a 10-km × 10-km [6.2-mi × 6.2-mi] assessment window) across multiple populations and different development patterns.

A key consideration, besides the impacts of the development footprint on habitat condition and predation potential, is the effect of intermittent noise on behavior (avoidance) as evident from work by Blickley and others (2012) who found decreased lek activity due to mimicked drilling and road noise produced at close range (volume level equivalent to a road or well 400 m [1300 ft] away). A precise distance for noise effects has not been determined, but this value likely varies depending on the source (equipment, vehicles) and the terrain.

Less information is available about the effects of renewable energy development, such as wind-turbine arrays, on sage-grouse. LeBeau and others (2014) monitored effects during breeding season (95 nests and 31 broods) and found a linear decline of 7.1 percent in nest failure and 38 percent in brood failure with each 1-km (0.6-mi) increase in distance from wind energy infrastructure (less effect with greater distance). Changes in mortality were not attributed to direct collisions but to increased predation. It is notable that one study on prairie chickens (a related galliform, *Tympanuchus cupido*) found *increased* nest success rates adjacent to recent wind-energy facilities (Winder and others, 2014).

Suggestions that sage-grouse instinctively avoid wind turbines (tall

structures) to avoid predators are debated because of the difficulty in directly connecting predation risk to infrastructure, which often includes a combination of features (Walters and others, 2014). A further discussion of this topic is contained in the Tall Structures section below. It is notable that use of wind turbines as perches has not been documented.

Tall Structures

It is important to recognize that the effect of tall structures remains debated, and this category contains a wide array of infrastructure including poles that support lights, telephone and electrical distribution, communication towers, meteorological towers, and high-tension transmission towers. Determining effects of these structures has remained difficult due to limited research and confounding effects (for example, towers and transmission lines are typically associated with other development infrastructure; Messmer and others, 2013; Walters and others, 2014). Lacking precise information regarding the influence of tall structures on the foraging behavior of corvids and raptors, management plans have adopted similar buffer distances to other infrastructure, for example a 1-km (0.6-mi) buffer of avoidance around lek sites. The general assumption is that these structures offer opportunities for increased predator use and thereby generate aversion behaviors among prey species (that is, sage-grouse); however, other effects, such as electro-magnetic radiation, have not been eliminated, and effects on predation rates have not been confirmed (Messmer and others, 2013). Habitat alteration, akin to other linear features (see previous section), may also be considered an important component of interactions between powerline corridors and sage-grouse populations. The 1-km (0.6-mi) buffer indicated here (table 1) was based upon Wallestad and Schladweiler (1974) who observed that more than 90 percent of breeding season movements by male grouse were within 1.3 km (0.8 mi) of a lek (76 percent of movements occurred within 1 km [0.6 mi]). Subsequently, Connelly and others (2000, p. 977) suggested, "avoid building powerlines and other tall structures that provide perch sites for raptors within 3 km of seasonal habitats... lines should be buried or posts modified to prevent use as perches..." Recent research has added important information to previous speculations and estimations, specifying concentrated foraging behaviors by common ravens (a common predator of sage-grouse nests) at 2.2 km (1.4 mi) from electrical transmission towers with the observed foraging area extending out to 11 km (6.8 mi; Coates, and others, 2014a). According to estimates, the greatest potential impact on sage-grouse nests occurs within 570 m (0.35 mi) of structures (Howe and others, 2014). Negative trends in lek counts were associated with increasing number of communication towers within 18km of leks range wide (Johnson and others 2011). Johnson and others (2011) also documented negative trends in lek counts for Great Plains populations within 20 km (12.4 mi) of a power transmission line or when the linear density of powerlines within 5 km (3.1 mi) of leks was greater than 10 km (6.2 mi)—notably, affected areas may be greater in these habitats (compared to other intermountain communities) because visibility is often greater in gentle terrain.

Although considerable attention has been paid to the influence of tall structures (both anthropogenic and trees) on the quality of sage-grouse habitat (for example, Connelly and others, 2000; Connelly and others, 2004; Stiver and others, 2006; National Technical Team, Sage-Grouse, 2011; Manier and others, 2013), solid evidence that sage-grouse instinctively avoid tall structures to avoid predators remains debated because of the difficulty in connecting predation risk to various combinations of infrastructure (Walters and others, 2014). However some evidence exists; in Wyoming the risk of death for sage-grouse hens was greater near potential raptor perches (Dinkins and

others, 2014), and in Idaho common raven abundance was greater near energy infrastructure (2.2 km [1.4 mi]; Coates and others 2014a,b). Coates and others (2014b) found different effects of infrastructure on three species of raptor (*Buteo* spp.) and common ravens, with clear increases in raven abundance with infrastructure but less consistent results with raptors. Also, in Wyoming, common raven habitat use was greatest within 3 km (1.8 mi) of human activity centers, and raven occupancy was correlated with nest failure (Bui and others, 2010). These studies suggest a potential increase in predators of sage-grouse, in particular ravens, which may influence predation pressure more than raptors.

Low Structures

Collisions of flying sage-grouse with fences have been associated with mortality (Beck and others, 2006; Stevens and others, 2012a,b). Incidents were focused within 1.6–3.2 km (1–2 mi) of leks on flat to rolling terrain and fences with wide spacing of poles and (or) less visible 't-posts' (as opposed to wooden posts) (Stevens and others 2012a,b). Importantly, the effect of fences was apparently less in rougher terrain, presumably due to differences in flight behaviors in the birds. Marking fences helps flying grouse avoid these collisions; therefore, marking or removal of fences within 2 km (1.2 mi) of leks on flat or rolling terrain can reduce sage-grouse mortality associated with collisions. In a review of previous research, including theses and reports, Connelly and others (2004, p. 4–2) described findings of Rogers (1964) who stated that only 5 percent of leks were found within 200 m (656 ft) of a building, which suggests structures, even without regular activity and (or) noise, may have produced aversion behavior in historic sage-grouse populations. Recent research provides evidence that ravens forage at distances as far as 5.1 km (3.2 mi) from buildings in sagebrush environments (Coates and others, 2014a) suggesting that a wide distribution of infrastructure that can supply nesting or resting sites for ravens could have negative effects on sage-grouse populations.

Activities (Without Habitat Loss)

Tests using recorded noises and wild sage-grouse populations (Blickley and others, 2012) suggest that loud noises transmitted at decibels (70 dB at 0 m; 40 dB at 100 m [328 ft]) to approximate a noise source 400 m (1300 ft) from leks caused decreased activity on leks. Though they did not test the range of potential noise volumes or activities (different noises) associated with recreation or other (nonindustrial) activities, this research is our best evidence of the effect of noise (independent from infrastructure) on sage-grouse behavior. The upper limit (4.8 km [3 mi]) is the value being used by the State of Nevada for reducing noise effects on sage-grouse due to locations of geothermal energy facilities (Nevada Governor's Sage-Grouse Conservation Team, 2010). Better understanding of the type, frequency, and volume of noise effects on sage-grouse behavior will enhance our ability to define effect areas.

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Symbols in this section refer to citations in Table 1.

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Table 1. Lek buffer-distance estimates for six categories of anthropogenic land use and activity. Literature minimum and maximum values are distances for observed effects found in the scientific literature. Interpreted ranges indicate potential conservation buffer distances based on multiple sources. [Citations for literature minimum and maximum values are denoted using corresponding symbols in the References Cited section.]

Category	Literature minimum	Interpreted range (lower)	Interpreted range (upper)	Literature maximum
Surface disturbance	3.2km (2mi) *	5km (3.1mi)	8km (5mi)	20km (12.4mi) ◊
Linear features	400m (0.25mi) ‡	5km (3.1mi)	8km (5mi)	18km (11.2mi) ◊
Energy development	3.2km (2mi) ǂ	5km (3.1mi)	8km (5mi)	20km (12.4mi) ◊
Tall structures	1km (0.6mi) °	3.3km (2mi)	8km (5mi)	18km (11.2mi) ◊
Low structures	200 m (0.12 mi) §	2 km (1.2mi)	5.1 km (3.2mi)	5.1 km (3.2mi) “
Activities	400 m (0.25 mi) ‡	400 m (0.25 mi)	4.8 km (3mi)	4.8 km (3mi) ψ

From: Mermejo, Lauren [lmermejo@blm.gov]
Sent: Tuesday, September 29, 2015 6:04 PM
To: nvca sagegrouse
Subject: Fwd: Follow-up on Avoidance Criteria and Lands and Realty Management Action

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Fri, Dec 5, 2014 at 11:57 AM
Subject: Follow-up on Avoidance Criteria and Lands and Realty Management Action
To: Joan Suther <jsuther@blm.gov>, Jessica Rubado <jarubado@blm.gov>, Brent Ralston <bralston@blm.gov>, jmbeck@blm.gov, Quincy Bahr <qfbahr@blm.gov>, "Melvin (Joe) Tague" <jtague@blm.gov>, Randall Sharp <sharphay@att.net>
Cc: Glen Stein <gstein@fs.fed.us>, "Dillon, Madelyn -FS" <mdillon@fs.fed.us>, David Batts <david.batts@empsi.com>, Matthew Magaletti <mmagalet@blm.gov>

If you all recall, when we reworked the Avoidance Criteria for Anthropogenic Disturbance for the Great Basin last week, we changed # 7 to take out the specific information that dealt with powerlines. We did this because we already had it in the Lands and Realty section as a management action. I wanted to provide you with the language that covers the lined-out portion of the action below for the Lands and Realty section. The Management Action was developed from the Great Basin Lands and Realty Team that convened last Spring.

Avoidance Criteria for Anthropogenic Disturbance:

7. The development/activity cannot be reasonably accomplished outside of PHMA; or can be either: 1) developed pursuant to a valid existing authorization; ~~2) is an incremental upgrade/capacity increase of existing development (i.e. powerline capacity upgrade);~~ or 2) is co-located within the footprint of existing infrastructure ~~(i.e. powerlines).~~

Lands and Realty Management Action:

In PPMA, if a higher voltage transmission line is required adjacent to an existing line:

- the existing transmission line must be removed within a reasonable amount of time after the new line is installed and energized; and

- the new line must be constructed in the same alignment as the existing line unless an alternate route would benefit GRSG or GRSG habitat.

Sending you this because I said that I would, and I didn't want to forget by waiting another week!

Happy Weekend

Lauren

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Rights-of-Way

Where avoidance is not possible, placement of new ROWs would be allowed under the following conditions:

- development does not exceed the 3 percent disturbance limit (see ____) in Priority Habitat;
- only issue RoWs after documenting that the RoWs will not adversely affect GRSG populations due to habitat loss or disruptive activities (independent of disturbance cap) except where such limitation would make accessing valid existing rights impracticable in Priority and General Habitat;
- new disturbance does not occur within ___-mile of an occupied lek in Priority Habitat, and ___-mile of an occupied lek in General Habitat except in designated corridors;
- development meets noise restrictions (see _____) in Priority and General Habitat;
- development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter) (see _____) in Priority and General Habitat. During the period specified, manage discretionary surface disturbing activities and uses to prevent disturbance to GRSG during life cycle periods. Seasonal protection is identified for the following: Seasonal Protection within four (4) miles of active GRSG leks from March 1 through June 15, Seasonal protection of GRSG wintering areas from November 1 through March 31, Seasonal protection of GRSG wintering areas from November 1 through March 31, and Seasonal protection of GRSG brood-rearing habitat from May 15 to August 15.
- mitigation is implemented to offset impacts to GRSG and their habitats (see Appendix ____) in Priority and General Habitat;
- all disturbance is subject to no net unmitigated loss (see _____) in Priority and General Habitat;
- all new construction or re-authorizations will follow Required Design Features in Priority and General Habitat;
- avoid authorizing rights-of-way that would result in net habitat loss, net habitat fragmentation, or net population disturbance; and
- to the extent feasible, development should only occur in non-habitat areas. If this is not possible, then development must occur in the least suitable habitat for GRSG.

PRIORITY HABITAT	**GENERAL HABITAT**
1. Wind and Solar Utility/Commercial Scale Exclusion Area	1. Wind and Solar Utility/Commercial Scale ID/MT – avoidance for wind and solar UT – exclusion for solar, wind TBD NV/CA – exclusion for wind and solar OR – avoidance for wind and solar If Avoidance: If possible, meteorological towers should be constructed without guy wires. If guy wires are necessary, they should be marked with anti-strike devices. All NEPA documents for ROW applications within General Habitat would require analysis of potential alternative site locations outside of GRSG habitat.
2. High Voltage Transmission and Major Pipelines outside of Designated Corridors ID, UT, OR - Avoidance Area NV/CA – Exclusion Area	2. High Voltage Transmission and Major Pipelines outside of Designated Corridors Avoidance Area
3. Designated Corridors Open	3. Designated Corridors Open
4. Other ROWs/Land Use Authorization/Permits Avoidance Area	4. Other ROWs/Land Use Authorization/Permits UT and OR – Open

	NV/CA – Avoidance ID - Avoidance
<u>Road Rights-of-Ways:</u> New road ROWs would be authorized only when necessary for public safety, administrative access, or subject to valid existing rights. If the new ROW is necessary for public safety, administrative access, or subject to valid existing rights and creates new surface disturbance, then minimize and mitigate the impacts. New road ROWs would also be allowed if the ROW applicant is pursuing a Title V FLPMA ROW grant and would create no new surface disturbance. Only allow use of existing roads, or realignment of existing roads, when renewing or amending existing authorizations in priority habitat. Co-locate new ROWs as close as technically possible to existing ROWs or where it best minimizes GRSG impacts. Use existing roads, or realignments, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary. Existing Federal Highway Act (FHWA) Appropriation ROWs will be managed as valid existing rights, and new FHWA ROWs would continue to be considered and subject to all GRSG ROW plan restrictions.	Nevada/NE California Only: Only allow use of existing roads, or realignment of existing roads, when renewing or amending existing authorizations in general habitat. Same as Priority Habitat

<u>Other Rights-of-Way:</u> High voltage transmission lines (100kV or greater) would be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure. Outside of designated corridors, new transmission lines must be buried where feasible. Where burying transmission lines in not feasible: • new transmission lines must be adjacent to existing transmission lines; and • would be subject to GRSG ROW avoidance criteria. If a higher voltage transmission line is required: • the existing transmission line must be removed within a reasonable amount of time after the new line is energized, and replaced by the new line; and; • the new line must be constructed in the same alignment unless an alternate route would benefit GRSG. Where determined to have a negative impact on GRSG, existing guy wires should be removed or appropriately marked with bird flight diverters to make them more visible to sage-grouse in flight. Outside of designated corridors, do not authorize any new pipelines greater than 24 inches in width. New proposals for power lines, access roads, pump storage, and other hydroelectric facilities licensed by FERC would be subject to all GRSG ROW avoidance criteria.	New high-voltage transmission lines in general habitat will be constructed as close as technically feasible to existing infrastructure (e.g. transmission lines and pipelines) to limit disturbance to the smallest footprint Same as Priority Habitat Same as Priority Habitat New pipelines in general habitat will be constructed as close as technically feasible to existing infrastructure (e.g. transmission lines and pipelines) to limit disturbance to the smallest footprint Same as Priority Habitat
<u>Communication Sites:</u> New communication towers must be located where technically feasible within an existing communication site, New sites would be considered where necessary for public safety.	
<u>ROW Grants:</u> When a ROW grant expires, is relinquished, or terminated, required rehabilitation is a term and condition of the FLPMA ROW grant, in compliance with 43 CFR 2805.12(i). • the lease holder will be required to reclaim the site by removing overhead lines and other infrastructure, and;	Same as Priority Habitat

• eliminate existing raven nesting opportunities created by anthropogenic development on public lands (e.g., remove powerline and communication facilities no longer in service). During renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing power lines. Where technically feasible, require ROW holders to bury or relocate existing lines to minimize impacts on GRSG habitat. Where the potential impacts of the mitigation (e.g. relocation or burying) would be greater than the existing impacts of the line, do not pursue the mitigation. If mitigation is not feasible or would result in greater impacts on GRSG habitat, incorporate additional terms and conditions in the ROW authorization for protection of GRSG habitat. Work with ROW holders to retrofit existing towers with perch deterrents or other anti-perching devices, where appropriate, to limit sage-grouse predation.	Same as Priority Habitat
<u>Corridors:</u> Existing designated ROW corridors are identified on Map 2.X, Designated ROW Corridors–Proposed Plan, and would continue to be designated corridors. Placement of new ROWs in priority habitat should be avoided if at all possible. Where avoidance is not possible, allow new above and underground linear ROWs in designated corridors. New ROWs constructed in designated corridors will be constructed as close as technically feasible to existing linear ROW infrastructure to limit disturbance to the smallest footprint.	Same as Priority Habitat

REQUIRED DESIGN FEATURES:

- Limit noise to less than 10 decibels above ambient measures (20-24 dBA) at sunrise at the perimeter of a lek during active lek season.
- Where technically and financially feasible, bury distribution powerlines and communication lines within existing disturbance.
- Utilize existing roads, or realignments of existing roads to the extent possible.
- Design roads to an appropriate standard no higher than necessary to accommodate their intended purpose.
- Place infrastructure in already disturbed locations where the habitat has not been fully restored.
- Cluster disturbances, operations, and facilities.
- Micro-site linear facilities to reduce impacts to sage-grouse habitats.
- Locate staging areas outside GRSG habitat to the extent possible.

- Coordinate road construction and use among ROW holders.
- Construct road crossings at right angles to ephemeral drainages and stream crossings.
- Consider placing pipelines under or immediately adjacent to a road or adjacent to other pipelines first, before considering co-locating with other ROW.
- Control the spread and effects of non-native plant species.
- Eliminate or minimize external food sources for corvids.
- development meets tall structure restrictions (see _____) in Priority and General Habitat;
- new ROW structures will be constructed with perch deterrents or other anti-perching devices, where needed.

GBR_PUB_0221 7.10

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, August 12, 2015 6:14 PM
To: nvca sagegrouse
Subject: Fwd: FW: BLM Definition of High Voltage

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Tue, Mar 3, 2015 at 9:25 AM
Subject: FW: BLM Definition of High Voltage
To: Joan Suther <jsuther@blm.gov>, jmbeck@blm.gov, Quincy Bahr <qfbahr@blm.gov>, "Lauren L. Mermejo" <lmermejo@blm.gov>
Cc: David Batts <david.batts@empsi.com>, Matthew Magaletti <mmagalet@blm.gov>, Michael Hildner <mhildner@blm.gov>, Stephanie Carman <scarman@blm.gov>

For discussion and resolution on this morning's call….. (follow e-mail trail)….

Lauren

From: Stephanie Carman [mailto:scarman@blm.gov]
Sent: Tuesday, March 03, 2015 9:05 AM
To: Lauren Mermejo
Cc: Matthew Magaletti; Michael Hildner
Subject: Re: BLM Definition of High Voltage

I think we should do whatever the direction from 300 is and it sounds like 100 kW. Can you reach back out to OR and UT? Besides making us wishywashy, are there other issue with this?

Stephanie Carman

Mobile 202 380 7421

Sent from my iPhone

On Mar 3, 2015, at 11:30 AM, Lauren Mermejo <lmermejo@blm.gov> wrote:

> OK Guys and Gals –
>
> Lucas is saying 100 kV is the cutoff for high voltage…..see e-mail below. So now we are in a pickle since I talked to Joan and Quincy and had them change it to 230 kV.
>
> We need clear guidance on this……
>
> Lauren
>
> **From:** Seley, Wendy [mailto:wseley@blm.gov]
> **Sent:** Tuesday, March 03, 2015 8:23 AM
> **To:** Lauren Mermejo; Peter Gower; Daniel Ryan; Holly Prohaska
> **Subject:** Fwd: BLM Definition of High Voltage
>
> Hi All -
>
> As I mentioned yesterday, the LR2000 lands data standards were updated to reflect the 100kV lines. Also, I had attached NREL's description to one of the emails.
>
> Wendy
>
> ---------- Forwarded message ----------
> From: **Marcell, Frederick** <fmarcell@blm.gov>
> Date: Tue, Mar 3, 2015 at 8:14 AM
> Subject: Fwd: BLM Definition of High Voltage
> To: Kimberly Dow <kddow@blm.gov>, Wendy Seley <wseley@blm.gov>
>
> FYI
>
> **Frederick (not Fred) Marcell**
>
> Realty Specialist

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Reno, Nevada 89502

(775) 861-6474

---------- Forwarded message ----------
From: **Lucero, Lucas** <llucero@blm.gov>
Date: Tue, Mar 3, 2015 at 6:17 AM
Subject: Re: BLM Definition of High Voltage
To: "Marcell, Frederick" <fmarcell@blm.gov>
Cc: Stephen Fusilier <sfusilie@blm.gov>

Hello Frederick,

WO-350 has been using 100kV or higher to be consistent with the NERC definition of "bulk power transmission". I believe WO referred to 100kV when we revised the LR2000 lands data standards a few years ago. We will refer to it again in the 2 upcoming transmission policies on pre-app meetings and application processing/NEPA reviews. Hope that helps.

Lucas Lucero, PMP

Acting Division Chief, Lands, Realty & Cadastral Survey

Bureau of Land Management

Washington Office

202-912-7342 office

202-731-2794 mobile

Do what you can, with what you have, where you are

- Teddy Roosevelt

--

Wendy Seley, Realty Specialist
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"Enthusiasm is the motivating power to success. Success is enthusiasm in action.

--

Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
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775 861-6580

Sarah Crump

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Tuesday, September 08, 2015 1:35 PM
To: nvca sagegrouse
Subject: Fwd: FW: Mapping Mineral Material Actions

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Thu, Jul 30, 2015 at 8:30 AM
Subject: FW: Mapping Mineral Material Actions
To: Joan Suther <jsuther@blm.gov>, jmbeck@blm.gov

Joan and Jon –

Looks like our salable mineral map should NOT show Forest Service administered sub-surface acres. If you currently are showing FS sub-surface on your Salable Mineral map, please remove it.

Thanks,

Lauren

From: Magaletti, Matthew [mailto:mmagalet@blm.gov]
Sent: Thursday, July 30, 2015 7:33 AM
To: Quincy Bahr; Lauren Mermejo; Stephanie Carman; Munson, Johanna
Subject: Fwd: Mapping Mineral Material Actions

FYI -

Quincy you and your folks are correct. The Forest Service administers their own salable minerals, therefore your salable/mineral materials map does not need to depict FS administered sub-surface acres.

Lauren and Johanna - can you pass along this message to your project leads.

Thanks,

Matt

---------- Forwarded message ----------
From: **Vogt, Vincent** <vvogt@blm.gov>
Date: Thu, Jul 30, 2015 at 10:22 AM
Subject: Re: Mapping Mineral Material Actions
To: "Magaletti, Matthew" <mmagalet@blm.gov>
Cc: Alfred Elser <aelser@blm.gov>

Hi Matthew,

The Forest Service administers all salable / mineral materials on their lands. They have their own regulations, etc., and the BLM has no jurisdiction.

Mineral materials / salable minerals are considered to be "subsurface minerals" and are part of the federal mineral estate. This is true for sand-and-gravel deposits and even for flagstone or other "pretty rocks" that are laying on the surface and are just picked up and then used for construction purposes.

I hope this helps. Vince.

On Thu, Jul 30, 2015 at 8:46 AM, Magaletti, Matthew <mmagalet@blm.gov> wrote:

Good morning Vince and Al,

I hope you are both doing well. I have a mineral materials question for you both that I hope you can help me with. We are trying to determine whether BLM has jurisdiction over Forest Service mineral materials (salables)? Are salable minerals even consider "sub-surface" minerals?

I apologize for the elementary question, but your assistance is greatly appreciated.

Thanks,

Matt

---------- Forwarded message ----------
From: **Bahr, Quincy** <qfbahr@blm.gov>
Date: Wed, Jul 29, 2015 at 5:37 PM
Subject: Mapping Mineral Material Actions
To: Matthew Magaletti <mmagalet@blm.gov>, Stephanie Carman <scarman@blm.gov>, Lauren Mermejo <lmermejo@blm.gov>, Johanna Munson <jmunson@blm.gov>

We just finished our Approved Plan maps, but I have one nagging question I'd like resolved. BLM is including the Forest Service and non-federal split estate lands on the Approved Plan maps when mapping actions where the BLM retains decision-making authority. That fits well for fluids, non-energy leasables, coal, locatable, etc. However, saleable minerals have a different legal and regulatory framework. Earlier in this process, the FS NEST Team Minerals Lead, Dale Harbor, mentioned that saleables are a discretionary action the Forest Supervisor evaluates on a case-by-case basis. Further, in talking with two former FS planners here at the UTSO, they both do not think the BLM has decision-making or administrative authority over FS mineral material actions.

So my question...

Should the Saleable/Salable/Mineral Material maps and acres include the FS lands, or not?

--

Quincy Bahr
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Matthew Magaletti

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Lauren L. Mermejo
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GBR_PUB_0318
7.10

Alex Finch

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Monday, August 10, 2015 11:56 AM
To: nvca sagegrouse
Subject: Fwd: Urgent: subsurface in SFAs

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Fri, Jan 30, 2015 at 6:07 AM
Subject: Re: Urgent: subsurface in SFAs
To: "Beck, Jonathan" <jmbeck@blm.gov>
Cc: "Carman, Stephanie" <scarman@blm.gov>

Nevada does not have a mapped layer for sub- surface estate, but has almost the exact same language as Idaho. The Great Basin worked out consistent language for split estate across the 4 sub-regions. So, although you haven't heard back from Oregon yet, they too have this same language.

Sent from my iPhone
Lauren

On Jan 30, 2015, at 5:53 AM, "Beck, Jonathan" <jmbeck@blm.gov> wrote:

> Here is the Idaho language.
> **BLM Owns Mineral Estate – non-federal surface owner**: Where the federal government owns the mineral estate in PHMAs, IHMAs, and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures, and RDFs applied if the mineral estate is developed on BLM-administered lands in the management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.
>
> **BLM owns surface – non-federal mineral estate owner**: In coordination with the state regulatory entity and mineral estate owner apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities in PHMA, IHMA, and GHMA.
>
> On Fri, Jan 30, 2015 at 5:53 AM, Carman, Stephanie <scarman@blm.gov> wrote:
>> Good morning! We have an urgent request this morning concerning split estate lands: did your plans consider management changes for subsurface under lands managed by other agencies, such as FWS refuges? what about FS?
>>
>> For context, and an update, we have nearly completed the SFA guidance and shapefiles (we are cleaning up the slivers! yeah Frank!), including looking at what was non-habitat, but we are now looking at the subsurface which was included in the FWS maps. About 99% of it is under other agencies (and we need to discuss with the FS in particular).
>>
>> Thank you for your quick responses!

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--
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--
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775 861-6580

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, August 12, 2015 4:51 PM
To: nvca sagegrouse
Subject: Fwd: FW: Mining Law reference in drop-in language

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Fri, Feb 20, 2015 at 11:43 AM
Subject: FW: Mining Law reference in drop-in language
To: Quincy Bahr <qfbahr@blm.gov>, jmbeck@blm.gov, Randall Sharp <sharphay@att.net>, "Lauren L. Mermejo" <lmermejo@blm.gov>
Cc: David Batts <david.batts@empsi.com>, Holly Prohaska <holly.prohaska@empsi.com>, Peter Gower <peter.gower@empsi.com>, Chad Ricklefs <chad.ricklefs@empsi.com>, "Zaccherio, Meredith" <meredith.zaccherio@empsi.com>, Derek Holmgren <derek.holmgren@empsi.com>, mdillon@fs.fed.us, Joan Suther <jsuther@blm.gov>

Not a fatal flaw, but suggest following the suggested change below. Prefer "General Mining Law of 1872, as amended".

Thanks to Joan for pointing this out.

Lauren

From: Carman, Stephanie [mailto:scarman@blm.gov]
Sent: Friday, February 20, 2015 9:59 AM
To: Suther, Joan
Cc: Lauren Mermejo; Michael Hildner; Vicki Herren; Jessica Rubado; Tim Barnes
Subject: Re: Mining Law reference in drop-in language

Thank you Joan, that change should be just fine.

Stephanie Carman

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On Fri, Feb 20, 2015 at 12:58 PM, Suther, Joan <jsuther@blm.gov> wrote:

Hi all - I realize this "drop-in" language has been reviewed by everyone, but our geologist notes that different terminology is used in different sections of the doc.

He recommends the following minor change:

Consistently use either “General Mining Law” or “General Mining Law of 1872, as amended”.

He cites this source.

http://www.blm.gov/wo/st/en/info/regulations/mining_claims.html

Oregon plans to make this change, unless we hear otherwise. Thanks.

Joan Suther

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--
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Oil and Gas Development in Western North America: Effects on Sagebrush Steppe Avifauna with Particular Emphasis on Sage-grouse

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Fort Collins

Olin O. Oedekoven
Wyoming Game and Fish Department
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Cameron L. Aldridge
University of Alberta
Edmonton

Sagebrush (*Artemisia* spp.) steppe was once a dominant feature of the landscape in western North America covering at least 243 million acres (60 million ha) (Beetle 1960, Vale 1975) in 16 states and 3 provinces. Most of this vast expanse has been altered by human activity. Estimates of complete loss of sagebrush-dominated areas exceed 50 % (Schneegas 1967, Braun et al. 1976, Braun 1998). The remaining sagebrush steppe has been markedly altered through treatments to benefit livestock grazing including livestock grazing as a treatment, fragmentation (roads, power lines and other structures, pipelines. reservoirs, fences, etc.), and degradation (Braun 1998). More recently, urban expansion as well as development of housing scattered through large tracts has impacted wildlife use of sagebrush habitats (Braun 1998).

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While the sagebrush steppe is seasonally host to a large number of avian species (Braun et al 1976, Paige and Ritter 1999), only 5 species (Gunnison and Northern sage-grouse [*Centrocercus minimus, C. urophasianus*], sage thrasher [*Oreoscoptes montanus*], sage sparrow [*Amphispiza belli*], Brewer's sparrow [*Spizella breweri*]) are truly sagebrush obligates (Braun et al. 1976). However, at the grassland or shrub steppe interfaces with sagebrush-dominated areas, other species such as Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*), mountain plover (*Charadrius montanus*), and burrowing owl (*Athene cunicularia*) were locally abundant. All of these species are now known or thought to be declining in distribution and abundance.

Oil and gas developments and their attendant structures including power lines, roads, and collection stations are not recent additions to western North America with some activity dating to the late 1800's. Exploration and development activity has tended to be cyclical depending on apparent needs, extraction costs, and price (per barrel or cubic foot). In the 1970's and early 1980's, the interest was in development of oil shale. In the early and mid 1980's, the emphasis was in the Rocky Mountain Overthrust Belt. Today, interest in oil and gas development is everywhere in the West where reserves are thought to be present. Nowhere is this more apparent than in development of coal-bed methane, especially in the area near Gillette, Wyoming. Because of the interest in rapid expansion and development of oil and gas reserves, this paper examines what is known about the effects of energy exploitation on sagebrush steppe dependent avian species and what might be logically expected during and after exploration, facilities development, and extraction. Case history examples are provided from Alberta, Colorado, and

Wyoming.

What Is Known

A relatively large body of literature exists for game species such as sage-grouse (summarized by Connelly et al. 2000) and Columbian sharp-tailed grouse (reviewed by Giesen and Connelly 1993). Reasonable information is available for passerine species breeding in sagebrush steppe and it is known that presence of sagebrush (Feist 1968; Best 1972; Schroeder and Sturges 1975; Reynolds and Rich 1978; Rich 1978, 1980; Reynolds 1981; Peterson and Best 1985a, b, 1987) and patch size (Rotenberry and Wiens 1980; Wiens and Rotenberry 1981, 1985; Wiens et al. 1987; Knick and Rotenberry 1995, Aldridge and Brigham 2002) are important for all sagebrush obligates. Relatively little is known about the effects of habitat alteration on other species such as burrowing owls and mountain plover, which seasonally occupy the interface of sagebrush steppe and grasslands. It is known that burrowing owls are negatively impacted by plowing, reseeding, and other disturbances in breeding areas (Rich 1986, Haug et al. 1993). Plowing of native habitats and reseeding with taller grasses is also negative for mountain plovers and restrictions have been placed on oil and gas exploration in key breeding areas in Colorado, Montana, and Wyoming (Knopf 1996).

Review of the available information suggests that habitat alteration that removes live sagebrush and reduces patch size is negative for all sagebrush obligates, specifically sage-grouse, sage sparrow, sage thrasher, and Brewer's sparrow. Plowing of native habitats is also negative for burrowing owls and mountain plovers. Columbian (and other subspecies) sharp-tailed grouse are less impacted as they can positively respond to some altered habitats, provided that native shrub habitats useful in winter remain available.

Thus, sharp-tailed grouse have the best potential to maintain their distribution and abundance with changes in habitat use and disturbance.

Oil and Gas Developments and Sage-grouse

Alberta

Sage-grouse were historically abundant across southeastern Alberta, occupying as much as 18,920 mi² (49,000 km^2) in the early 1900's (Aldridge 2000). However, the current distribution of sage-grouse has been reduced to ~ 1,544 mi² (4,000 km^2), less than 10% of their historic range. Sage-grouse population data exist for the currently occupied area; however, lek counts only began in 1968 and were conducted sporadically prior to the 1990's. Thus, direct comparisons and cause and effect studies are not possible, but the available data are compelling.

Records of oil and gas developments are incomplete and difficult to obtain, but the earliest records suggest that exploration for gas began as early as 1940. The oil boom of the mid 1980's resulted in intensive oil extraction activities in southern Alberta. Over this time, the number of male sage-grouse displaying at lek sites decreased from as many as 524 males prior to the oil boom, to between 200 and 300 during and afterwards (Aldridge 2000). Similar correlations were seen in the early 1990's, with a resurgence of development activity in the heart of sage-grouse habitat (Manyberries Oil Field). Number of male sage-grouse counted in Alberta fell to the lowest known level with only 70 males counted in 1994 (Aldridge 2000). Direct disturbances (development of road or well sites) within ~ 220 yds (200 m) of three different lek complexes were noted between 1983 and 1985. None of these leks has been active since the disturbance. At that same time, drilling activities occurred within view of a fourth lek complex and the two lek satellites

were reduced to one smaller lek. This site has since been reclaimed, but numbers have never recovered. Two additional known lek sites were directly disturbed at some unknown time in the past; one is now a reclaimed well site and the second was seeded to tame grass (it most likely is also a reclaimed well site). Neither of these leks has been active for at least 10 years.

To date, approximately 1,500 wells have been drilled within the current range of sage-grouse in Alberta. It is estimated that 575 wells are still producing. Thus, there are approximately 8 well sites/mi² (one active and two inactive well sites/km²) of sage-grouse habitat. Connecting each of these well sites is a series of roads and trails, as well as power lines and pipelines that are interlaced with compressor stations and gas camps. These structures and linear features result in direct habitat loss, and fragment remaining suitable habitat. The effect of daily vehicular traffic along these road networks can also impact breeding activities or directly reduce survival.

There are relatively few limitations placed on spacing and density of well sites in Alberta. Each company is 'restricted' to drilling 16 well sites per section of land, but is allowed 16 wells per zone in which they are drilling. Thus the total number of wells could potentially far exceed 16 per section. Recommendations and guidelines are made by Alberta Fish and Wildlife to reduce the impact of such intensive drilling, particularly in important sage-grouse habitats. However, there is no current legislation that commits Alberta Public Lands or the Alberta Energy Utility Board to follow these recommendations. Under the Alberta Provincial Wildlife Act, an individual cannot willfully destroy the nest or den site of an endangered species (sage-grouse are listed as endangered in Alberta and Canada). This provincial legislation offers little or no

protection for sage-grouse breeding and nesting habitat and, currently, there is no federal legislation in place.

Over the last three decades, the Alberta sage-grouse population has declined by 66-92% (based on the currently occupied range only, Aldridge 2000). Currently, only seven of 31 historic lek complexes remain active. The future plans for oil and gas developments within the range of sage-grouse are unknown, but expansion is expected. The cumulative impacts of further activities could result in reduction of the Alberta sage-grouse population to non-viable levels.

Colorado

Sage-grouse historically occurred (Braun 1995) in at least eight counties in Colorado in which oil and gas development is common. No replicated, designed cause and effect studies have explored the impacts of oil and gas production on sage grouse populations although Braun (1987, 1998) generally discussed the apparent short-term impacts. Presently, active oil and gas production occurs in only four counties (Jackson, Moffat, Rio Blanco, and Routt) while sage-grouse populations within areas impacted by coal-bed methane production (LaPlata and Montezuma) or that could be potentially impacted by development of oil shale (Garfield) are no longer present due to a complexity of factors.

Oil and gas developments preceded formalized counts of sage-grouse in Colorado and date to at least the early 1920's. Counts of sage-grouse were initiated on a sporadic basis in Colorado in the late 1940's. These counts were incomplete and primarily focused on larger, more accessible leks. Thus, data collected from the 1940's to the early 1970's are not directly comparable to those collected in the last 25-30 years.

Therefore, it is not possible to be definitive about actual impacts of oil and gas development on sage-grouse.

The most complete data set for sage-grouse and oil and gas production is from North Park in Jackson County. Development of the McCallum Field was initiated in 1926 and it continues to be active with 47 producing wells, 39 water injection wells, 25 abandoned (plugged) wells, and 6 approved but not drilled wells in an area of approximately 8,600 acres (2,125 ha). This area has a well-developed unimproved road network with one paved road to a processing plant, numerous pipelines, but only a few power lines. Sage-grouse were reported to occur in the McCallum Field in the 1940's but no data are available. During the 1973-2001 interval, at least 11 leks were active within or immediately adjacent to the McCallum Field. Seven of these leks were active in 2001 with a combined total of 181 males, 12.8 % of the total males counted and 20.6 % of the active leks in North Park. Examination of each active lek site indicated that only two were within sight of an active well or power line. Most were out of sight because of topography that also made noises associated with pumping and oil field activities inaudible to the human ear when an observer was on the lek site. Only three active leks were within the main oil field and most (8 of 11 known lek sites) were on the periphery. During the 1973-2001 interval, number of male sage-grouse counted and active leks in this area fluctuated in synchrony with the entire sage-grouse population in North Park. Sage-grouse are also known to over winter within the McCallum Field (Beck 1975) because a series of ridges are wind swept of most snow.

Locations of the known active sage-grouse leks in the McCallum Field suggest selection for sites that are removed from disturbance such as active wells, the processing

plant, the paved road, and power lines. The McCallum Field is a relatively small, older, moderately developed oil production area and demonstrates that sage-grouse continue to use areas in and near oil production facilities provided that suitable sagebrush-dominated habitats are available and that they have opportunity to select sites that are not disturbed by or apparent from physical structures and paved roads. Despite the fragmented (by trails, pipelines, power lines, and several roads) nature of the habitat in this area, only small areas are no longer useable by sage-grouse.

Wyoming

Oil and gas development in Wyoming dates to at least to 1883 (Salt Creek Field). Since that time, many additional oil and gas fields have been discovered and developed throughout areas occupied by sage-grouse. Presently, the focus is on development of coal-bed methane in northeastern Wyoming (and adjacent southeastern Montana).

Coal-bed methane (CBM) gas development in northeast Wyoming first began in 1987 with a test well. Over the next 10 years, more wells were drilled and markets were developed for the gas. From 1997 through 2001, nearly 12,000 CBM wells were brought into production. Another 40,000 wells are expected to be developed within the Powder River Basin over the next 10 years (BLM Draft EIS for the Powder River Basin Oil and Gas Project, January 2002). Nearly 80 % of the production to date occurs on private surface lands with the remainder on State, BLM, and USFS owned lands. Over half of the mineral ownership within the Basin is private. CBM production involves drilling relatively shallow water wells into the coal seams to pump off the water and release the gas. The gas is then sent through a series of compressor stations and finally released into large transportation pipelines for sale. Discharge water is either impounded locally or

released into area drainages. Each well has at least one unimproved road, an electrical line, a gas pipeline, and a water discharge pipeline. For every 6-10 wells, there is a small single-stage compressor. Larger, two-stage compressor stations are built for every 3-5 smaller compressor stations and there is a larger facility for third stage gas compression. All facilities have improved road access, utility lines, overhead power lines, and underground pipelines. The expected production life of a CBM well is about 7-15 years depending upon the depth of the coal seam and the amount of gas present. With an estimated 25 trillion cubic feet of CBM within the Powder River Basin, the life of the development is expected to be 30-50 years.

Prior to 2001, wells were drilled on a 40-acre (16 ha) spacing. Currently, wells are drilled on an 80-acre (32 ha) spacing; however, exceptions to this rule are often granted to facilitate production. The amount of disturbance from pipelines, power lines, and roads is fairly similar with either well spacing criteria. Although the actual disturbed area from wells, compressors, pipelines, and roads is relatively small (typically 15-20 acres [6-8 ha]) per section, the overall project area is very large and mostly contiguous. Currently, the 12,000 active wells occur over an area of ~ 4,500 mi^2 (11,655 km^2). The total field development area is ~ 11,000 mi^2 (28,490 km^2), which will result in a total of over 300,000 acres (121,410 ha) in direct habitat loss. Predominate habitats within the CBM development area include sagebrush/grassland types, agricultural lands (hay and grain fields), and some mixed shrub communities. Most of the area is considered yearlong sage-grouse habitat with over 200 known active leks. Not all of the area has been extensively searched for sage-grouse so the actual number of leks is considered to be much higher.

Impacts to sage-grouse from CBM development include direct loss of habitats from all production activities along with indirect affects from new power lines and significantly higher amounts human activity, both during initial development and during production. Direct habitat loss to sage-grouse to date with nearly 12,000 wells in production includes an estimated 5,000 acres (2,024 ha). CBM activity has affected an estimated 28 % of the known sage-grouse habitats within the project area. Development will continue to affect more sage-grouse habitats over the next 30-50 years as new wells are drilled within areas that contain known sage-grouse populations and their habitats. Should all of the project area be placed into production, over 50 % of the known sage-grouse range will be either directly or indirectly affected.

Sage-grouse population responses to CBM development are just beginning to be observed as most of the current production has only occurred over the past 4 years and nearly 70 % of the current production in just the past 2 years. Although CBM production is fairly recent; there are a few early indications of detrimental affects on sage-grouse as a result of this development.

There are 200 CBM wells within 0.25 miles (0.4 km) of 30 known sage-grouse leks. For these leks, there has been significantly fewer males/lek and the rate of growth is much lower when compared to other less disturbed leks (Fig 1). Direct disturbance and loss of habitats are the suspected causes for these differences. Some 6,000 miles (9,656 km) of new overhead power lines have been constructed since CBM development began. Another 5,000 miles (8,046 km) of overhead power lines are expected as CBM development continues over the next 10 years. Currently, there are 40 known sage-grouse leks that have an overhead power line within 0.25 miles (0.40 km) of

the lek. Sage-grouse numbers for these leks have a significantly lower growth rate than observed on leks that do not have an overhead power line so close to the breeding ground. Higher raptor predation rates because of perches are the expected cause. The proximity of CBM compressor stations to sage-grouse leks is also having a measurable negative impact on sage-grouse. Currently, there are nearly 200 CBM facilities within 1 mile (1.6 km) of a sage-grouse lek. Sage grouse numbers are consistently lower for these leks than they are for leks that do not have this disturbance. Direct habitat losses from the site itself, roads and traffic, and the associated noise are mostly likely the reasons behind this finding.

The cumulative impact to sage-grouse from all CBM activities is just starting to be observed (Fig. 2). Currently, nearly 90 sage-grouse leks lie within the CBM development area, or about 40 % of the known leks within northeast Wyoming. As development continues, another 50-70 leks areas will be impacted by CBM. Population monitoring will most likely reveal severe consequences to sage-grouse from this activity; however, this knowledge will most likely come too late to result in any major initiatives to protect the birds or their habitats.

Mitigation of CBM impacts on sage-grouse has been mostly minimal and usually voluntary by the operators involved because nearly 80 % of the surface ownership is private. On federal lands, companies are required to avoid lek disturbance during the spring breeding season, reduce compressor noise near leks, and to place overhead power lines at least 0.5 miles (0.8 km) from any sage-grouse breeding or nesting grounds. Companies are also required avoid sagebrush habitats when locating impoundments.

All of these requirements can be waived by the federal land management agencies. There are no mitigation requirements or stipulations for sage-grouse on private land/private mineral CBM production.

Concluding Comments

The effects of oil and gas developments on sage-grouse and other sagebrush-grassland avifauna are poorly understood because of the lack of replicated, well designed studies. However, it is clear that all sagebrush-grassland dependent birds have specific habitat requirements including shrub structure and patch size. We believe the immediate effects of development are clearly negative because of loss of habitat and disturbances associated with structures, roads, and noise, especially during the breeding season. We hypothesize that numbers of individual birds of each species decrease with initial development, and then increase to some unknown level below that prior to development. A return to pre-disturbance levels of abundance is not expected because of loss of habitat. The length of time of the expected decrease is unknown and may be species dependent, as well as dependent upon the level of activity and density of physical disturbances. Increased roads and power lines have the most potential to be negative, as does the decrease in available habitat. Increased long-term and well-funded research is needed on all bird species in areas to be developed and presently developed for oil and gas production so that a sound scientific basis becomes available. Cause and effect studies using an active adaptive management approach (Walters 1986) are necessary to fully understand the implications of energy developments on wildlife species. We believe it is the responsibility of the oil and gas industry to demonstrate their activities have no negative impacts initially, short-term, or over the long-term. We especially believe the

impacts of oil and gas development have been and are negative for sage-grouse and this species, because of its' requirement for large areas of sagebrush-dominated habitats, will be placed at risk of local extirpation in intensively developed areas. Thus, we strongly recommend the published "Guidelines to manage sage grouse populations and their habitats" (Connelly et al. 2000) be followed in all areas with populations of sage-grouse. This is not presently done, as some agencies pick and choose which guidelines to follow and vary their application among states, districts, and resource areas or virtually ignore them, as is the case in both Alberta and Saskatchewan. Further, it would be desirable to have uniformity in application of habitat guidelines for all bird species among all agencies across the entire shrub-steppe region. Finally, the oil and gas industry should be expected to fully mitigate for documented decreases in useable habitat as well as in populations of specific bird species. Mitigation should also consider those impacts that can be reasonably expected including cumulative effects. Consideration should be given to removing other uses of sagebrush habitats that also have cumulative effects on specific avian species as well as other wildlife.

Acknowledgments

We thank M. D. Strickland and F. G. Lindzey for encouraging preparation of this paper. C. C. Cesar of the Bureau of Land Management and J. L. Hicks of the Colorado Division of Wildlife provided current data for North Park, Colorado.

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Figure Captions

Figure 1. Sage-grouse response to CBM wells and drilling in Wyoming. Average males/lek for both leks within ¼ mile of a CBM Well (n = 30) and leks outside ¼ mile of a CBM well (n = 200). Note, since 1996 when CBM production started to significantly increase, sage grouse response in areas of gas production has been increasing at significantly lower rate that for those leks outside of this area.

Figure 2. Sage-grouse response to the cumulative affects of CBM development in Wyoming. There are 90 sage grouse leks that have CBM development within 2 miles of the lek. Within this area, there are 3,688 wells, 168 facilities, and 872 miles of overhead power lines. The amount of direct habitat loss and displacement can only be estimated at this time. As development continues, adverse affects on sage grouse will continue.

Fig. 1

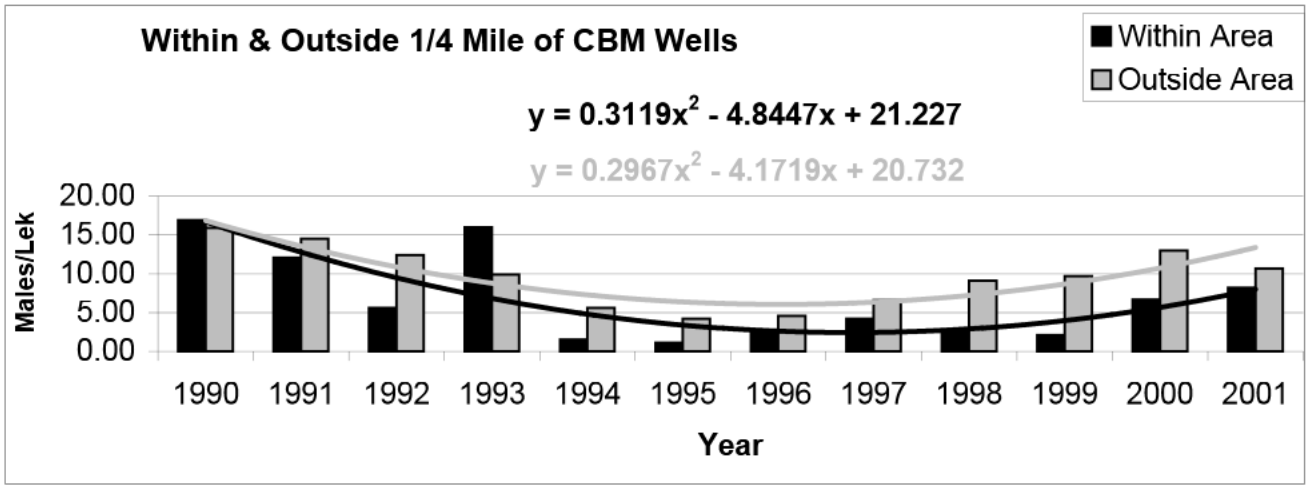
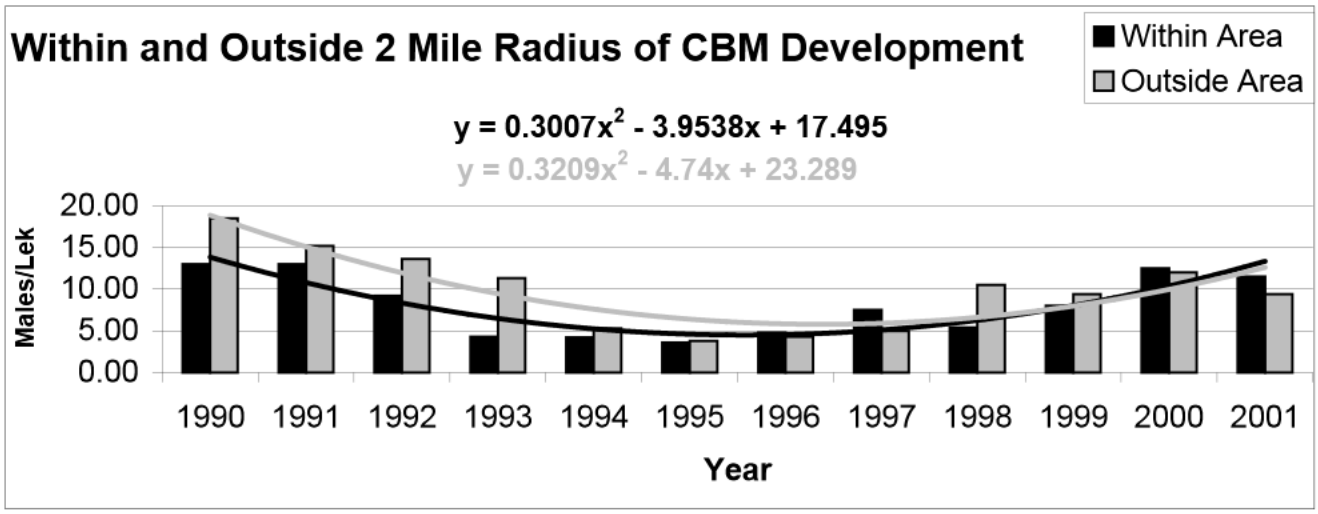


Fig. 2



GBR_PUB_0639
7.10
06/02/2015

Laura Long

From: David Batts <david.batts@empsi.com>
Sent: Tuesday, October 28, 2014 3:33 PM
To: Meredith Zaccherio; Chad Ricklefs; Holly Prohaska; Peter Gower; Derek Holmgren; Angie Adams; Drew Vankat
Subject: FW: Final Split Estate Language for GB Plans
Attachments: Split Estate Management Actions New Table.Final.10.28.14.docx

David Batts
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Bringing clarity to the complex ™

Asheville Denver Portland Reno San Francisco Santa Fe Washington, DC

From: Lauren Mermejo [mailto:lmermejo@blm.gov]
Sent: Tuesday, October 28, 2014 3:07 PM
To: jmbeck@blm.gov; Quincy F; Melvin (Joe) Tague; Randall Sharp; Joan Suther
Cc: Johanna Munson; David Batts
Subject: FW: Final Split Estate Language for GB Plans

Not sure if the attachment went through…so here it is again just in case it didn't.
Lauren

From: Lauren Mermejo [mailto:lmermejo@blm.gov]
Sent: Tuesday, October 28, 2014 1:59 PM
To: Brent Ralston; jmbeck@blm.gov; Bahr, Quincy F (qfbahr@blm.gov); Melvin (Joe) Tague; Randall Sharp (sharphay@att.net); Joan Suther; Jessica Rubado
Cc: Matthew Magaletti; Johanna Munson (jmunson@blm.gov); David Batts (david.batts@empsi.com)
Subject: Final Split Estate Language for GB Plans

Hello All –
Attached are the minor changes to the Split Estate language that we discussed this morning - this should be the final language for you all to use. Since each of them has some slight variations, please excerpt your specific language out of the Table and insert into your Fluid Minerals section of the Proposed Plan.
Thanks for everyone's patience….one step at a time!!!
Lauren

Split Estate Management Actions			
IDAHO/SW MT	**UTAH**	**OREGON**	**NEVADA/NE CA**
1.1.1. Mineral Split Estate (MSE)-1: **BLM Owns Mineral Estate – non-federal surface owner**: Where the federal government owns the mineral estate in PHMAs, IHMAs, and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	SE-1: Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	Action MSE - 1: Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs as applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	Action G-MSE 1: Where the federal government owns the mineral estate in GRSG habitat and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs as applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner, SETT, NDOW and CDFW.
1.1.2. MSE-2: **BLM owns surface – non-federal mineral estate owner**: In coordination with the state regulatory entity and mineral estate owner, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities in PHMA, IHMA, and GHMA.	SE - 2: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	Action MSE - 2: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	Action G-MSE 2: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, and in coordination with the mineral estate owner/lessee, SETT, NDOW and CDFW.

GBR_PUB_0648
7.10
06/02/2015

Laura Long

From: Beck, Jonathan <jmbeck@blm.gov>
Sent: Wednesday, April 01, 2015 12:51 PM
To: Meredith Zaccherio
Subject: Fwd: FW: Disturbance Appendix
Attachments: Disturbance Appendix Mar 31 2015.docx

Follow Up Flag: Follow up
Flag Status: Completed

drop in language
---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Wed, Apr 1, 2015 at 10:13 AM
Subject: FW: Disturbance Appendix
To: Quincy Bahr <qfbahr@blm.gov>, jmbeck@blm.gov, Joan Suther <jsuther@blm.gov>, "Lauren L. Mermejo" <lmermejo@blm.gov>
Cc: mdillon@fs.fed.us, Randall Sharp <sharphay@att.net>, Holly Prohaska <holly.prohaska@empsi.com>, Marguerite Adams <maadams@blm.gov>, Glen Stein <gstein@fs.fed.us>

Here is the drop in language for the Disturbance Appendix. It was sent to me yesterday, and I apologize for not getting it to you earlier.

Lauren

From: Herren, Vicki [mailto:vherren@blm.gov]
Sent: Tuesday, March 31, 2015 10:58 AM
To: Matthew Magaletti; Lauren Mermejo
Cc: Stephanie Carman; Michael Hildner; Stephen Small; Gordon Toevs
Subject: Disturbance Appendix

Matt and Lauren

Attached is the Disturbance Appendix that applies to the states that are consistent with the 3% disturbance cap (OR, UT, CO and CA). Stephanie asked that it be distributed to your project leads before tomorrow's call. My understanding is that this does not apply in full to WY, MT/DK, ID and NV although some parts of it may be useful to them.

--

Vicki Herren

BLM National Sage-Grouse Coordinator

BLM Washington Office, Division of Fish and Wildlife Conservation

202.912.7235 Desk

202.374.4597 Cell

--
Jonathan Beck
Bureau of Land Management
Idaho State Office
208-373-4070

Appendix XXX
Greater Sage-Grouse (GRSG) Disturbance Caps

In the USFWS's 2010 listing decision for sage-grouse, the USFWS identified 18 threats contributing to the destruction, modification, or curtailment of the sage-grouse's habitat or range (75 FR 13910 2010. The 18 threats have been aggregated into three measures:

Sagebrush Availability (percent of sagebrush per unit area)
Habitat Degradation (percent of human activity per unit area)
Density of Energy and Mining (facilities and locations per unit area)

Habitat Degradation and Density of Energy and Mining will be evaluated under the Disturbance Cap and Density Cap respectively and are further described in this appendix. The three measures, in conjunction with other information, will be considered during the NEPA process for projects authorized or undertaken by the BLM.

Disturbance Cap:

This land use plan has incorporated a 3% disturbance cap within Greater Sage-Grouse (GRSG) Priority Habitat Management Areas (PHMAs) and the subsequent land use planning actions if the cap is met:

If the 3% anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within GRSG Priority Habitat Management Areas (PHMA)in any given Biologically Significant Unit (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the 1872 hard rock mining law, valid existing rights, etc.) will be permitted by BLM within GRSG PHMAs in any given BSU until the disturbance has been reduced to less than the cap.

If the 3% disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 hard rock mining law, valid existing rights, etc.).

The disturbance cap applies to the PHMA within both the Biologically Significant Units (BSU) and at the project authorization scale. For the BSUs, west-wide habitat degradation (disturbance) data layers (Table 1) will be used at a minimum to calculate the amount of disturbance and to determine if the disturbance cap has been exceeded as the land use plans (LUP) are being implemented. Locally collected disturbance data will be used to determine if the disturbance cap has been exceeded for project authorizations, and may also be used to calculate the amount of disturbance in the BSUs.

Although locatable mine sites are included in the degradation calculation, mining activities under the 1872 mining law may not be subject to the 3% disturbance cap. Details about locatable mining activities will be fully disclosed and analyzed in the NEPA process to assess impacts to sage-grouse and their habitat as well as to BLM goals and objectives, and other BLM programs and activities.

Formulas for calculations of the amount of disturbance in the PHMA in a BSU and or in a proposed project area are as follows:

- For the BSUs:

  % Degradation Disturbance = (combined acres of the 12 degradation threats[1]) ÷ (acres of all lands within the PHMAs in a BSU) x 100.

- For the Project Analysis Area:

  % Degradation Disturbance = (combined acres of the 12 degradation threats[1] plus the 7 site scale threats[2]) ÷ (acres of all lands within the PHMA in the project analysis area) x 100.

[1] see Table 1. [2] see Table 2

The denominator in the disturbance calculation formula consists of all acres of lands classified as PHMA within the analysis area (BSU or project area). Areas that are not sage-grouse seasonal habitats, or are not currently supporting sagebrush cover (e.g., due to wildfire), are not excluded from the acres of PHMA in the denominator of the formula. Information regarding sage-grouse seasonal habitats, sagebrush availability, and areas with the potential to support sage-grouse populations will be considered along with other local conditions that may affect sage-grouse during the analysis of the proposed project area.

Density Cap:

This land use plan has also incorporated a cap on the density of energy and mining facilities at an average of one facility per 640 acres in the PHMA in a project authorization area. If the disturbance density in the PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located it into existing disturbed area (subject to applicable laws and regulations, such as the 1872 Mining Law, valid existing rights, etc.). Facilities included in the density calculation (Table 3) are:

- Energy (oil and gas wells and development facilities)

- Energy (coal mines)
- Energy (wind towers)
- Energy (solar fields)
- Energy (geothermal)
- Mining (active locatable, leasable, and saleable developments)

Project Analysis Area Method for Permitting Surface Disturbance Activities:

- Determine potentially affected occupied leks by placing a four mile boundary around the proposed area of physical disturbance related to the project. All occupied leks located within the four mile project boundary and within PHMA will be considered affected by the project.
- Next, place a four mile boundary around each of the affected occupied leks.
- The PHMA within the four mile lek boundary and the four mile project boundary creates the project analysis area for each individual project. If there are no occupied leks within the four-mile project boundary, the project analysis area will be that portion of the four-mile project boundary within the PHMA.
- Digitize all existing anthropogenic disturbances identified in Table 1 and the 7 additional features that are considered threats to sage-grouse (Table 2). Using 1 meter resolution NAIP imagery is recommended. Use existing local data if available.
- Calculate percent existing disturbance using the formula above. If existing disturbance is less than 3%, proceed to next step. If existing disturbance is greater than 3%, defer the project.
- Add proposed project disturbance footprint area and recalculate the percent disturbance. If disturbance is less than 3%, proceed to next step. If disturbance is greater than 3%, defer project.
- Calculate the disturbance density of energy and mining facilities (listed above). If the disturbance density is less than 1 facility per 640 acres, averaged across project analysis area, proceed to the NEPA analysis incorporating mitigation measures into an alternative. If the disturbance density is greater than 1 facility per 640 acres, averaged across the project analysis area, either defer the proposed project or co-locate it into existing disturbed area.
- If a project that would exceed the degradation cap or density cap cannot be deferred due to valid existing rights or other existing laws and regulations, fully disclose the local and regional impacts of the proposed action in the associated NEPA.

Table 1. Anthropogenic disturbance types for disturbance calculations. Data sources are described for the west-wide habitat degradation estimates (Table copied from the GRSG Monitoring Framework)

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (oil & gas)	Wells	IHS; BLM (AFMSS)	5.0ac (2.0ha)	BLM WO-300
	Power Plants	Platts (power plants)	5.0ac (2.0ha)	BLM WO-300
Energy (coal)	Mines	BLM; USFS; Office of Surface Mining Reclamation and Enforcement; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/ Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Energy (wind)	Wind Turbines	Federal Aviation Administration	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	3.0ac (1.2ha)	BLM WO-300
Energy (solar)	Fields/Power Plants	Platts (power plants)	7.3ac (3.0ha)/MW	NREL
Energy (geothermal)	Wells	IHS	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Mining	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
Infrastructure (roads)	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7ft (12.4m)	USGS
	Major Roads	Esri StreetMap Premium	84.0ft (25.6m)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2ft (73.2m)	USGS
Infrastructure (railroads)	Active Lines	Federal Railroad Administration	30.8ft (9.4m)	USGS
Infrastructure (power lines)	1-199kV Lines	Platts (transmission lines)	100ft (30.5m)	BLM WO-300
	200-399 kV Lines	Platts (transmission lines)	150ft (45.7m)	BLM WO-300
	400-699kV Lines	Platts (transmission lines)	200ft (61.0m)	BLM WO-300
	700+kV Lines	Platts (transmission lines)	250ft (76.2m)	BLM WO-300
Infrastructure (communication)	Towers	Federal Communications Commission	2.5ac (1.0ha)	BLM WO-300

Table 2. The seven site scale features considered threats to sage-grouse included in the disturbance calculation for project authorizations.

1. Coalbed Methane Ponds
2. Meteorological Towers
3. Nuclear Energy Facilities
4. Airport Facilities and Infrastructure
5. Military Range Facilities & Infrastructure
6. Hydroelectric Plants
7. Recreation Areas Facilities and Infrastructure

Definitions:

1. Coalbed Methane and other Energy-related Retention Ponds – The footprint boundary will follow the fenceline and includes the area within the fenceline surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (roads, well pads, etc.) will be captured in other disturbance categories.

2. Meteorological Towers – This feature includes long-term weather monitoring and temporary meteorological towers associated with short-term wind testing. The footprint boundary includes the area underneath the guy wires.

3. Nuclear Energy Facilities – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

4. Airport Facilities and Infrastructure (public and private) –The footprint boundary of will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangers, taxiways, driveways, terminals, maintenance facilities, beacons and related features. Indicators of the boundary, such as distinct land cover changes, fences and perimeter roads, will be used to encompass the entire airport or heliport.

5. Military Range Facilities & Infrastructure – The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility's perimeter.

6. Hydroelectric Plants – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.

7. Recreation Areas & Facilities – This feature includes all sites/facilities larger than 0.25 acres in size. The footprint boundary will include any undisturbed areas within the site/facility.

Table 3. Relationship between the 18 threats and the three habitat disturbance measures for monitoring and disturbance calculations**.**

USFWS Listing Decision Threat	Sagebrush Availability	Habitat Degradation	Energy and Mining Density
Agriculture	X		
Urbanization	X		
Wildfire	X		
Conifer encroachment	X		
Treatments	X		
Invasive Species	X		
Energy (oil and gas wells and development facilities)		X	X

Energy (coal mines)	X	X
Energy (wind towers)	X	X
Energy (solar fields)	X	X
Energy (geothermal)	X	X
Mining (active locatable, leasable, and saleable developments)	X	X
Infrastructure (roads)	X	
Infrastructure (railroads)	X	
Infrastructure (power lines)	X	
Infrastructure (communication towers)	X	
Infrastructure (other vertical structures)	X	
Other developed rights-of-way	X	

Brent Ralston

From: Melvin (Joe) Tague
Sent: Wednesday, September 24, 2014 7:04 PM
To: Brent Ralston; David Batts; Dennis Mackey; Frank Quamen; Glen Stein; Jesse DElia; Joan Suther; Lauren Mermejo; Leisa Wesch; Matt Magaletti; Quincy Bahr; Randy Sharp; Ronald Baxter; Stephen Small; Ted Koch
Subject: Great Basin Projected Development
Attachments: 2014-09-26 Great Basin Development Projection Call Agenda.docx; Copy of TEDS TABLE 2 SUMMARY NUMBERS FWS v 2.xlsx; GREAT BASIN ALLOCATIONS ROLL-UP TABLE 1 - FINAL-FWS.docx; Table 2_Existing Rights and Future Projections -NV OR ID UT 2014-09-05.docx

Here are the agenda and the last version of Table 1 and 2 I have. I am also attaching the table that Ron Baxter put in a spreadsheet.

Joe

Table 2. Great Basin Existing Conditions / Projections of Future Development - Direct Impacts

(Initial estimates only based on available information - refinment of these values is expected)

Programs Generally Incompatible with Sage-Grouse Conservation

		NV/CA - Acres	%	OR - Acres	%	ID - Acres	%	SW MT - Acres	%	UT - Acres	%	TOTALS:
SOLAR	Currently Authorized	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	**0**
	RFD	0	0.000	0	0.000	0	0.000	0	0.000			**0**
WIND	Currently Authorized	61,638	0.347	0	0.000	0	0.000	0	0.000	0	0.000	**61,638**
	RFD	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	**0**
ROWs	Currently Authorized	1,493	0.008			82,945	0.700	18,900	1.000	1,027	0.019	**104,367**
	RFD											**0**
FLUID MINERALS	Currently Authorized	1,900	0.011	42,342 *	0.410	4,135	0.040			796,261	20*	**802,296**
	RFD	1,246	0.007			20	0.000			4,242	0.104	**5,508**
NON-ENERGY LEASABLES	Currently Authorized	61,425	0.346	0	0.000	66	0.000			5,362	0.097	**66,853**
	RFD	0	0.000	0	0.000	66	0.000					**66**
SALABLE MINERALS	Currently Authorized	23,081	0.013	10,990 *	0.065	12,000	0.100			24,173	0.013	**59,254**
	RFD	0	0.000			1,500	0.010					**1,500**
ROWs & CORRIDORS	Currently Authorized	216,834	1.222	1,168,629	11.400	66,588	0.500	23,110	1.160	5,854	0.106	**1,481,029**
	RFD			1,900								**1,900**
GEOTHERMAL	Currently Authorized	465	0.003	45,501 *	0.450	25,571	0.200	0	0.000	500	0.009	**26,537**
	RFD	0	0.000			410	0.003	0	0.000	4		**414**
LOCATABLES	Currently Authorized	36,475	0.206	89,120 *	0.870	13,260	0.120			193	0.003	**49,929**
	RFD	22,800	0.130			240	0.002					**23,040**
	TOTALS:	**427,357**	**2.293**	**1,170,529**	**13.195**	**206,801**	**1.675**	**42,010**	**2.160**	**837,616**		**2,684,332**

*** Value approximate - based on average of PPMA &PGMA percentages**

Progams Not Necessarily Incompatible with Sage-Grouse Conservation

LIVESTOCK GRAZING	Currently Authorized	16,009,700	90.200	9,983,278 **	98.700	11,180,900	97.500			3,254,000	97.100	**30,444,886**
	RFD	0	0.000			0	0.000					**0**
RECREATION	Currently Authorized			5,000		600	0.005					**5,600**
	RFD					25	0.000					**25**
	TOTALS:	**16,009,700**	**90.200**	**5,000**	**98.700**	**11,181,525**	**97.505**			**3,254,000**	**97.100**	**30,450,511**

Data not currently available =

*** Orgon indicates these values have not changed significantly in apx. 8 years, and are not expected to change, but there exists a slight possible exists that it could increase 10%-20%.**

**** Oregon indicates that there will be a decrease of apx. 22,000 acres due to the closing of 13 sagebrush natural areas to grazing.**

TABLE 1: GREAT BASIN SUMMARY OF ALLOCATIONS						
ALLOCATION	HABITAT	NV-CA[NV-3]	OR	ID	SW MT	UT(BLM)
SOLAR	PPMA (Core)	Exclusion[NV-1]	Exclusion	Exclusion	Exclusion	Exclusion
	Important			Avoidance		
	PGMA	Exclusion[NV-1]	Avoidance	Open	Open	Exclusion
WIND	PPMA (Core)	Exclusion[NV-1]	Exclusion	Exclusion	Exclusion	Exclusion
	Important			Avoidance		
	PGMA	Exclusion[NV-1]	Avoidance	Open	Open	Varies[UT-1]
ROW						
UTILITY COORIDO	PPMA (Core)	Open (existing)[NV-2]	Open	Open	Open	Open[UT-2]
	Important			Open	Open	
	PGMA	Open (existing)[NV-2]	Open	Open	Open	Open[UT-2]
HIGH-VOLTAGE MAJOR PIPELINES	PPMA (Core)	Avoidance	Avoidance	Avoidance	Avoidance	Avoidance
	Important			Avoidance		
	PGMA	Avoidance	Avoidance	Open	Open	Varies[UT-1]
OTHER (MINOR) ROWs & PER	PPMA (Core)	Avoidance	Avoidance	Avoidance	Avoidance	Avoidance
	Important			Avoidance		
	PGMA	Avoidance	Open	Open	Open	Varies[UT-1]

FLUID MINERALS (includes GEOTHERMAL)	PPMA (Core)	NSO (with single NPT Exception)	NSO (with single NPT Exception)	NSO (with single NPT Exception)	NSO (with single NPT Exception)	NSO (BLM with 3 specific exceptions)
	Important			NSO (with single NPT Exception)		
	PGMA	NSO (with waivers, modifications, stipulations)	Open w/ 1 mi NSO around leks + CSU, TL	Open with CSU and TL	Open with CSU and TL	Varies UT-1
NON-ENERGY LEASABLES	PPMA (Core)	Closed	Closed	Closed	Closed	Closed UT-3
	Important			Open		
	PGMA	Closed	Open	Open	Open	Varies UT-1
SALABALE MINERALS	PPMA (Core)	Closed (expansion OK with mitigation, RDFs, and within Cap. Free use OK)	Closed (limited expansion for Federal Highway ROWs with mitigation and other stipulations)	Closed to new sites (existing sites open)	Closed to new sites (existing sites open)	Closed (expansion and new free-use sites OK, though not within 1 mile of a lek, and they require mitigation, RDFs, be within the cap, and other stipulations)
	Important			Closed to new sites (existing sites open)		
	PGMA	Closed	Open	Open	Open	Varies UT-1
RECREATION (TRAVEL MANAGEMENT)	PPMA (Core)	Limited To Existing Routes	Limited To Existing Routes	Limited To Existing Routes	Limited to Designated Routes ID-SWMT-1	Limited to existing routes (where not already closed or limited to designated routes)
	Important			Limited To Existing Routes		
	PGMA	Limited To Existing Routes	Limited To Existing Routes	Limited To Existing Routes	Limited to Designated Routes ID-SWMT-1	Limited to existing routes (where not already closed or limited to designated routes)

LOCATABLE MINERALS	PPMA (Core)	Open[NV-3]	Open[OR-1] direction to work with claimant to implement various measures to avoid, minimize, or mitigate impacts	Open	Open	Open (direction to work with claimant to implement various measures to avoid, minimize, or mitigate impacts)
	Important			Open		
	PGMA	Open[NV-3]	Open[OR-1]	Open	Open	Varies[UT-1]

Footnotes:

NV-1: Use of solar and wind to power existing facilities OK if no impacts to GRSG or habitat is documented.

NV-2: No new utility corridors allowed; some wide corridors reduced to a maximum width of 3500 feet.

NV-3: All disturbances to GRSG habitat must follow State of Nevada avoid-minimize-mitigate procedures to attain no net or mitigated loss of habitat.

UT-1: PGMA is for BLM-UT is managed according to the existing LUP allocations (O&G-open, CSU, NSO, closed; ROWs: open, avoidance, exclusion, mineral materials and non-energy leasables: open, closed; other allocations: etc.) in addition to whatever the existing LUP includes, there is an added requirement for no net unmitigated loss of GRSG habitat that would be applied to the PPMA and PGMA.

UT-2: Several new ROW corridors were identified in the DAPP as a mean to focus future development from collocating with the existing line on the landscape to allocated areas where they would do less damage to GRSG. Additionally, the decision in the DAPP for ROW corridors is to avoid GRSG habitat entirely, if possible, but if this not feasible, to locate in the corridors and apply a variety of other stipulations to minimize impacts, including mitigation.

UT-3: Per NPT, closed unless adjacent to existing operations, where it could be allowed with mitigation and within the disturbance cap. Utah went further and wouldn't allow expansion within 1 mile of lek, and would require mitigation to be completed before the project is initiated, as well as other stipulations such as to eliminate impacts from noise and infrastructure.

OR-1: Open except where closed in existing plans

ID-SWMT-1: Southwest Montana BLM areas have already completed travel management planning and identified designated roads and trails.

NFWD

Table 2: Great Basin Existing Conditions/Projections of Future Development Direct Impacts (These are initial estimates based on available information and projections. Refinement is expected.)											
Resource Allocation		NV/CA		OR		ID		SW MT		UT	
		Acres	% Habitat	Acres	% Habitat	Acres	% Habitat	Acres	% Habitat	Acres	% Habitat
Solar	Acres of Habitat currently authorized	0	0	0	0	0	0	0	0	0	0
	Projection of future development (RFDs)	0	0	0	0	0	0	0	0	N/A	N/A
Wind	Acres of Habitat currently authorized	61,638	.347%	0	0	0	0	0	0	0	0
	Projection of future development (RFDs)	0	0	0	0	0	0	0	0	Excluded in PPMA = 0	0
ROWs	Acres of Habitat currently authorized	Assuming non-linear (Comm Towers and Railroads = 1,493	.008%	This is a duplicate line. Do not report here.	This is a duplicate line. Do not report here.	82,945	0.7%	18,900	1.0%	Assuming non-linear (Comm Towers and Railroads = 1027 (all ownership	0.019%

Version: 9/5/2014

										s)	
	Projection of future development (RFDs)	Unknown	Unknown	This is a duplicate line. Do not report here.	This is a duplicate line. Do not report here.					Unknown	unknown
Fluid Minerals	Acres of Habitat currently authorized	1,900	0.011%	42,342	.41%	4135 (leased) 0 (developed)	0.04% (leased) 0 (developed)	?	?	PPMA (federal) 513,410 leased; 43,408 HBP PGMA (federal) 282,851 leased; 164,272 HBP Total Estimated currently disturbed (all ownership) = 32,793 (9,358 in PPMA)	PPMA (federal) 15.17% leased; 1.28% HBP PGMA (federal) 41.71% leased; 24.22% HBP Estimated disturbed = 0.807% (0.277% PPMA)
	Projection of future development (RFDs)	1,246	0.007%	42,342	.41%	20 (developed)	0.0002% (developed)	?	?	4,242 (all Federal)	0.104%

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Non-energy Leasable Minerals	Acres of Habitat currently authorized	61,425[(1)]	.346%	0	0	66 (leased)	0.0006%			5,362 (all ownership)	0.097%
	Projection of future development (RFDs)	0	0	0	0	66 (developed)	0.0006%			Unknown	unknown
Salable Minerals (Mineral Materials)	Acres of Habitat currently authorized	23,081	0.013%	FHWA ROW: 6,494 Mineral Material Pits: 4,496 Total Pit: 10,990 acres	FHWA ROW: 0.065% Mineral Material Pits: 0.045% Total Pit: 0.11%	12,000	0.1%	?	?	24,173 acres permitted 705 acres disturbed (federal)	0.013% disturbed
	Projection of future development (RFDs)	0	0	FHWA ROW: 6,494 Mineral Material Pits: 4,496 Total Pit: 10,990 acres	FHWA ROW: 0.065% Mineral Material Pits: 0.045% Total Pit: 0.11%	1500	0.01%	?	?	Unknown	unknown
Livestock Grazing	Acres of Habitat currently authorized	16,009,700	90.2%	9,983,278	98.7%	11,180,900	97.5%			3,254,000 (Federal)	97.1%
	Projection of future development (RFDs)	0	0	9,961,278	97.5%	0	0			Unknown Metric	Unknown Metric
Recreation	Acres of	Unknown		5,000	0	600	0.005%			Unknown	

	Habitat currently authorized	Metric		Does not include roads and trails						Metric	
	Projection of future development (RFDs)	n/a	n/a	0	0	25	0.0002%			n/a	n/a
Land Tenure	Acres of Habitat currently authorized	0	0	0	0	0	0	0	0	Unknown Metric	Unknown Metric
	Projection of future development (RFDs)	0	0	0	0	0	0	0	0	Unknown Metric	Unknown Metric
ROWs and Corridors	Acres of Habitat currently authorized	216,834	1.222%	In 2012: 1,168,629 Includes wind leases OR-2, comm sites, corridors, transmission ≥115 kV	11.4% This is an over estimate.	66,588	0.5%	23,110	1.16%	5854 (Powerline all ownerships)	0.106%
	Projection of future development (RFDs)	Unknown	Unknown	1900 ac	Unknown future locations	0	0	0	0	Unknown	Unknown
Geothermal	Acres of Habitat currently authorized	465	.003%	45,501	.45%	25,571 (leased) 0 (developed)	0.2% (leased) 0 (developed)	0	0	500 (Federal)	0.009%
	Projection of future development	0	0	45,501	.45%	410	0.003%	0	0	35	

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	(RFDs)										
Locatables	Acres of Habitat currently authorized	36,475	0.206%	89,120[OR-3]	.87%	13,260	0.12%	?	?	193 (Federal)	0.003%
	Projection of future development (RFDs)	22,800	0.13%	89,120	.87%	240	0.002%	?	?		

Acres of Habitat currently authorized – This is the acres that could be disturbed by development (the Footprint) of a current authorization.

Projected Future development – This is the acres that are in application in process, those deferred due to interim guidance, and those that could be projected based on historical development levels.

(1) data from previous WO300 data call
T:\OC\Wildlife\Transfers\Incoming\WO300_DataCall_StateSubmittals_Round2\NV\NV_WO300_data_call20120430.gdb\Notices_ProspectingApps

[OR-1]Suther recommends this reads "Acres authorized in proposed plan"

[OR-2] Acreage of Wind leases has dropped substantially. Will be re-calculated in next month.

[OR-3]Acres claimed.

PL_PUB_5693
7.10

From: Lauren Mermejo
Sent: Tuesday, October 28, 2014 2:16 PM
To: Brent Ralston; Jessica Rubado; Matthew Magaletti
Subject: FW: Final Split Estate Language for GB Plans
Attachments: Split Estate Management Actions New Table.Final.10.28.14.docx

<<…>>

As you can see – the message below said that you did not receive the final language???!!!! Something is all messed up….please let me know that you got this one.

Lauren

From: System Administrator
Sent: Tuesday, October 28, 2014 2:07 PM
To: Lauren Mermejo
Cc: Matthew Magaletti (mmagalet@blm.gov)
Subject: Undeliverable: Final Split Estate Language for GB Plans

Your message did not reach some or all of the intended recipients.

Subject: FW: Final Split Estate Language for GB Plans

Sent: 10/28/2014 2:07 PM

The following recipient(s) cannot be reached:

Ralston, Brent E (bralston@blm.gov) on 10/28/2014 2:07 PM

None of your e-mail accounts could send to this recipient.

Rubado, Jessica A (jarubado@blm.gov) on 10/28/2014 2:07 PM

None of your e-mail accounts could send to this recipient.

Matthew Magaletti (mmagalet@blm.gov) on 10/28/2014 2:07 PM

None of your e-mail accounts could send to this recipient.

Split Estate Management Actions			
IDAHO/SW MT	**UTAH**	**OREGON**	**NEVADA/NE CA**
1.1.1. Mineral Split Estate (MSE)-1: **BLM Owns Mineral Estate – non-federal surface owner**: Where the federal government owns the mineral estate in PHMAs, IHMAs, and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	SE-1: Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	Action MSE - 1: Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs as applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.	Action G-MSE 1: Where the federal government owns the mineral estate in GRSG habitat and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs as applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner, SETT, NDOW and CDFW.
1.1.2. MSE-2: **BLM owns surface – non-federal mineral estate owner**: In coordination with the state regulatory entity and mineral estate owner, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities in PHMA, IHMA, and GHMA.	SE - 2: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	Action MSE - 2: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	Action G-MSE 2: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, and in coordination with the mineral estate owner/lessee, SETT, NDOW and CDFW.

PL_PUB_5688
7.12

From: Lauren Mermejo
Sent: Friday, October 03, 2014 10:06 AM
To: Melvin (Joe) Tague; Brent Ralston; Joan Suther; Robert Hopper; Quincy Bahr; Dominika Lepak; Victor (Gus) Warr; Christopher Robbins; Matthew Magaletti; Amy Dumas; Alan Shepherd
Cc: Johanna Munson; mdillon@fs.fed.us; Glen Stein; Jerome Fox; David Batts
Subject: Wild Horse and Burro Planning Actions for Greater Sage-Grouse Amendments in Great Basin
Attachments: Wild Horse and Burro Management Actions for the Great Basin.Utah.Nevada.California.Oregon 2014-10-02.docx; Wild Horse and Burro Management Actions for the Great Basin - Idaho Specific 2014-10-02.docx

Good Happy Friday Morning Everyone!

Attached is the cleaned-up version(s) of the language that we all agreed to use in our GRSG Amendments for Wild Horse and Burros. There is a separate one for Idaho because we agreed that three of the actions would include IHMAs – I have included that in Idaho's version attached above. I have left the Nevada specific action (highlighted in green) in case anyone of you have an opportunity to adapt it to your state.

I appreciate all of your time and effort in joining in on the two conference calls to get these actions worked thru….it really was a productive exercise, and I feel that we have a much stronger and consistent story to provide to the FWS while they ponder their listing decision. Also, having this consistent language provides the BLM the ability to easily tell our story in the landscape report in the end run, as well as in our Conservation Summaries for the Proposed Plans.

Again – thank you so much for your involvement – this was such a success!

Lauren L. Mermejo
Great Basin GRSG Project Manager
BLM Nevada State Office
775 861-6580 (Office)
775 223-2770 (Cell)

Consistent Wild Horse and Burro Management Actions for the Great Basin

10.2.2014

Management Action 1: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (Table 2-X).

Management Action 2: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are:

1. HMAs containing PHMA;
2. HMAs containing only GHMA;
3. HMAs containing sagebrush habitat outside of PHMA, IHMA. and GHMA mapped habitat;
4. HMAs without GRSG habitat.

Management Action 3: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas occupied by wild horses and burros in PHMAs, as these areas are to be managed for zero wild horses and burros.

Management Action 4: In PHMAs, assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded .

Management Action 5: In PHMAs, monitor the effects of WHB use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.

Management Action 6: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with emphasis placed on PHMAs.

Management Action 7: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.

Management Action 8: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

> *Nevada Specific Action due to impacts from horses on private land water sources – but can be used by others:* Provide new water locations to ensure dispersal or avoidance of sites heavily impacted by wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992) in compliance with State Water Laws and subject to valid existing rights.

Management Action 9: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

Consistent Wild Horse and Burro Management Actions for the Great Basin (Idaho Specific)

10.2.2014

Management Action 1: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (Table 2-X).

Management Action 2: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are:

1. HMAs containing PHMA;
2. HMAs containing IHMA;
3. HMAs containing only GHMA;
4. HMAs containing sagebrush habitat outside of PHMA, IHMA. and GHMA mapped habitat;
5. HMAs without GRSG habitat.

Management Action 3: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas occupied by wild horses and burros in PHMAs, as these areas are to be managed for zero wild horses and burros.

Management Action 4: In PHMAs and IHMAs, assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded .

Management Action 5: In PHMAs and IHMAs, monitor the effects of WHB use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.

Management Action 6: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with emphasis placed on PHMAs.

Management Action 7: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.

Management Action 8: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

> *Nevada Specific Action due to impacts from horses on private land water sources – but can be used by others:* Provide new water locations to ensure dispersal or avoidance of sites heavily impacted by wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992) in compliance with State Water Laws and subject to valid existing rights.

Management Action 9: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

PL_PUB_5662
7.12

From: Lauren Mermejo
Sent: Wednesday, September 24, 2014 11:30 AM
To: Joan Suther; Melvin (Joe) Tague; Quincy Bahr; Brent Ralston
Cc: Johanna Munson; Bridget Clayton; Matthew Magaletti; Alan Shepherd
Subject: Discussion on Wild Horse and Burro Management Actions
Attachments: Wild Horse and Burro Management Actions (one set) for the Great Basin.docx

Hi Ya'all:

Attached is a more refined list of wild horse and burro management actions that I worked thru with Alan Shepherd (Nevada's Wild Horse and Burro Specialist), using a table that I put together outlining everyone's wild horse and burro management actions. We modified and selected what we felt was that "best of the best" from all of the language in our Great Basin draft ADPPs. There are no longer goals or objectives…these are just 'draft' management actions that I hope we can all come to agreement to use as we move forward.

The stronger we can be on these actions, the more focus we can bring to the WHB program and soliciting funding to do gathers for managing population levels, completing inventories and assessments, applying growth suppression hormones, etc. Clearly, the FWS is really concerned about the impacts from WHBs to the sagebrush ecosystem and waters.

That said, I am proposing that we have a conference call next Wednesday with all of you and your wild horse and burro leads to discuss these management actions, and make changes, where appropriate. There are only 11 of them, so hopefully it will go smoothly.

My wish if for all of us to come to consensus on one path forward for the Great Basin on this issue.

I have also invited Bridget, the PL from Colorado, because this came up as a point of concern in the Rocky Mountain FFM, and she agreed to use some of the same language that we are using for her one PAC where wild horses was an issue in the COT Report.

I will send out a calendar invite for next Wednesday at 9:00 am Pacific Time (10:00 MT and 12:00 ET). Please forward this and the calendar invite onto your WHB specialist so we can all have one robust conversation.

The call in # is 1-866-715-9418
PC: 5690296#

Thanks everyone…..I hope you can adjust your calendar to join us next week.

Lauren L. Mermejo
Great Basin GRSG Project Manager
BLM Nevada State Office
775 861-6580 (Office)
775 223-2770 (Cell)

Consistent Wild Horse and Burro Management Actions for the Great Basin

(to be shared with Colorado)

Management Action 1: Manage active herd management areas (HMAs) in PHMAs (and GHMAs,IHMAs in Idaho) habitat to achieve GRSG habitat objectives (Table 2-X).

Management Action 2: Complete rangeland health assessments for HMAs containing PHMAs (and GHMAs, IHMAs in Idaho). Make appropriate adjustments to AML to achieve and maintain GRSG habitat objectives (see Table 2-X). The priorities for conducting evaluations are:

1. HMAs containing PHMA;
2. HMAs containing only GHMA;
3. Sagebrush habitat outside of PHMA and GHMA mapped habitat;
4. HMAs without GRSG habitat.

In PHMA (and GHMAs, IHMAs in Idaho), prioritize the evaluation of AMLs based on indicators that address structure/condition/ composition of vegetation and measurements specific to achieving GRSG habitat objectives.

Management Action 3: Manage wild horse and burro population levels in PHMAs (and GHMAs, IHMAs in Idaho) at the lower limit of the established AML ranges to maintain or enhance GRSG habitat.

Management Action 4: Prioritize gathers and population growth suppression techniques in HMAs in PHMAs (and GHMAs, IHMAs in Idaho), unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas occupied by wild horses and burros in PHMAs (and GHMAs, IHMAs in Idaho), as these areas are to be managed for zero wild horses and burros.

Management Action 5: In PHMAs (GHMAs and IHMAs in Idaho), assess and adjust AMLs through the NEPA process within HMAs that are at least partially degraded due to wild horses or burros (as identified in land health assessments), even if current AML is not being exceeded .

Management Action 6: In PHMAs (and GHMAs, IHMAs in Idaho), monitor HMAs annually to assess attainment of habitat objectives and to help determine future management decisions.

Management Action 7: Within PHMAs (GHMAs, IHMAs in Idaho), develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs.

Management Action 8: Continue to use interdisciplinary team specialists (e.g., range, wildlife, and riparian) to cooperatively conduct land health, proper functioning condition, and habitat assessments.

Management Action 9: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) where HMAs overlap with PHMAs and GHMAs until GRSG habitat objectives have been met.

Management Action 10: In PHMAs (and GHMAs, IHMAs in Idaho), when conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

Nevada Specific Action due to impacts from horses on private land water sources – but can be used by others: Provide new water locations to ensure dispersal or avoidance of sites heavily impacted by wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992) in compliance with State Water Laws and subject to valid existing rights.

Management Action 11: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

GBR_PUB_15967.12

From: Lauren Mermejo
Sent: Wednesday, December 17, 2014 11:17 AM
To: Matthew Magaletti; Michael Hildner
Cc: Stephanie Carman
Subject: Wild Horse and Burro Management Actions for the Great Basin.Utah.Nevada.California.Oregon 2014-10-02
Attachments: Wild Horse and Burro Management Actions for the Great Basin.Utah.Nevada.California.Oregon 2014-10-02.docx

Consistent Wild Horse and Burro Management Actions for the Great Basin

10.2.2014

Management Action 1: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (Table 2-X).

Management Action 2: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are:

1. HMAs containing PHMA;
2. HMAs containing only GHMA;
3. HMAs containing sagebrush habitat outside of PHMA, IHMA. and GHMA mapped habitat;
4. HMAs without GRSG habitat.

Management Action 3: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas occupied by wild horses and burros in PHMAs, as these areas are to be managed for zero wild horses and burros.

Management Action 4: In PHMAs, assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded .

Management Action 5: In PHMAs, monitor the effects of WHB use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.

Management Action 6: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with emphasis placed on PHMAs.

Management Action 7: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.

Management Action 8: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

> *Nevada Specific Action due to impacts from horses on private land water sources – but can be used by others:* Provide new water locations to ensure dispersal or avoidance of sites heavily impacted by wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992) in compliance with State Water Laws and subject to valid existing rights.

Management Action 9: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

Alex Finch

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, August 12, 2015 1:12 PM
To: nvca sagegrouse
Subject: Fwd: Changes to WH&B Actions Due to SFAs
Attachments: Document1.docx

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Tue, Feb 3, 2015 at 7:31 AM
Subject: Changes to WH&B Actions Due to SFAs
To: David Batts <david.batts@empsi.com>

David –

Could you please send this out to all of the GB PLs and othesr that join our call (like the WO folks and Matt), so we can quickly discuss this morning. I have highlighted in yellow where we are proposing changes to this global language due to SFAs and prioritization of assessments in those areas.

Thanks!

Lauren

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Wild Horse and Burros

Action WHB 1: For WHB management activities (e.g., gathers), apply applicable conditions outlined in Actions SSS 2, 4 and 5 when revewing and analyzing projects/activities proposed within GRSG habitat.

Action WHB 2: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (Table 2-2).

Action WHB 3: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g. range, wildlife, and riparian). The priorities for conducting assessments are:

1. HMAs containing SFA
2. HMAs containing PHMA, which include riparian areas
3. HMAs containing only GHMA
4. HMAs containing sagebrush habitat outside of PHMA and GHMA mapped habitat
5. HMAs without GRSG habitat

Action WHB 4: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas occupied by wild horses and burros in SFAs, as these areas are to be managed for zero wild horses and burros.

Action WHB 5: In SFAs and PHMA outside of SFAs~~,~~ assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting land health standards, even if current AML is not being exceeded.

Action WHB 6: In SFAs and PHMAs outside of SFAs, monitor the effects of WHB use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.

Action WHB 7: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with emphasis placed on SFAs and other PHMAs.

Action WHB 8: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.

Action WHB 9: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

Action WHB 10: Due to impacts from horses on private land water sources – but can be used by others: Provide new water locations to ensure dispersal or avoidance of sites heavily impacted by wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992) in compliance with State Water Laws and subject to valid existing rights.

Action WHB 11: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

Jonathan Hayden

From: Mermejo, Lauren <lmermejo@blm.gov>
Sent: Wednesday, August 12, 2015 4:46 PM
To: nvca sagegrouse
Subject: Fwd: Wild Horse and Burro Action 4 Change
Attachments: Wild Horse and Burro Action 4 Change.docx

---------- Forwarded message ----------
From: **Lauren Mermejo** <lmermejo@blm.gov>
Date: Fri, Feb 20, 2015 at 8:47 AM
Subject: Wild Horse and Burro Action 4 Change
To: Stephanie Carman <scarman@blm.gov>

Stephanie –

Could you please send me this back with the following language so that I can share with my PLs. Thanks!

Lauren

We have made a slight change to WHB Management Action 4 and ask that the Great Basin Project Leads make this change in their ADPPs. The reason that the end of the last sentence is deleted is because it is confusing to publics who don't know the difference between an HMA and a HA, and the term "zero" is a target for horse enthusiasts. The information and direction still remains the same in WHB 4, but the rational "as these areas are to be managed for zero wild horses and burros" does not need to be included, and should be removed.

--
Lauren L. Mermejo
Great Basin Greater Sage-Grouse Project Mgr.
BLM, Nevada State Office
775 861-6580

Action WHB 4: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas not allocated as Herd Management Areas and occupied by wild horses and burros in SFAs followed by PHMA. ~~as these areas are to be managed for zero wild horses and burros~~.

GBR_PUB_0640
7.12
06/02/2015

Laura Long

From: Lauren Mermejo <lmermejo@blm.gov>
Sent: Friday, February 20, 2015 9:09 AM
To: Joan Suther; jmbeck@blm.gov; Jessica Rubado; Randall Sharp; Quincy Bahr
Cc: Lauren L. Mermejo; David Batts; Holly Prohaska; Derek Holmgren; Chad Ricklefs; Meredith Zaccherio; Matthew Magaletti
Subject: CHANGE: Wild Horse and Burro Action 4 Change

Hi Everyone -
I am asking that you all make a slight change to the Wild Horse and Burro Action 4 – and it is corroborated by the WO. The reason that the end of the last sentence is deleted is because it is confusing to publics who don't know the difference between an HMA and a HA, and the term "zero" is a target for horse enthusiasts. The information and direction still remains the same in WHB 4, but the rational "as these areas are to be managed for zero wild horses and burros" does not need to be included, and should be removed.
Thanks,
Lauren

From: Carman, Stephanie [mailto:scarman@blm.gov]
Sent: Friday, February 20, 2015 8:55 AM
To: Lauren Mermejo
Cc: Matthew Magaletti; Michael Hildner
Subject: Wild Horse and Burro Action 4 Change

Lauren -
I think the change proposed below, is consistent with direction. Thanks.
Stephanie

> Action WHB 4: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas not allocated as Herd Management Areas and occupied by wild horses and burros in SFAs followed by PHMA. ~~as these areas are to be managed for zero wild horses and burros~~.

Stephanie Carman
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GBR_PUB_1456
7.12

Brent Ralston

From: Lauren Mermejo
Sent: Wednesday, September 24, 2014 12:30 PM
To: Joan Suther; Melvin (Joe) Tague; Quincy Bahr; Brent Ralston
Cc: Johanna Munson; Bridget Clayton; Matthew Magaletti; Alan Shepherd
Subject: Discussion on Wild Horse and Burro Management Actions
Attachments: Wild Horse and Burro Management Actions (one set) for the Great Basin.docx

Hi Ya'all:

Attached is a more refined list of wild horse and burro management actions that I worked thru with Alan Shepherd (Nevada's Wild Horse and Burro Specialist), using a table that I put together outlining everyone's wild horse and burro management actions. We modified and selected what we felt was that "best of the best" from all of the language in our Great Basin draft ADPPs. There are no longer goals or objectives…these are just 'draft' management actions that I hope we can all come to agreement to use as we move forward.

The stronger we can be on these actions, the more focus we can bring to the WHB program and soliciting funding to do gathers for managing population levels, completing inventories and assessments, applying growth suppression hormones, etc. Clearly, the FWS is really concerned about the impacts from WHBs to the sagebrush ecosystem and waters.

That said, I am proposing that we have a conference call next Wednesday with all of you and your wild horse and burro leads to discuss these management actions, and make changes, where appropriate. There are only 11 of them, so hopefully it will go smoothly.

My wish if for all of us to come to consensus on one path forward for the Great Basin on this issue.

I have also invited Bridget, the PL from Colorado, because this came up as a point of concern in the Rocky Mountain FFM, and she agreed to use some of the same language that we are using for her one PAC where wild horses was an issue in the COT Report.

I will send out a calendar invite for next Wednesday at 9:00 am Pacific Time (10:00 MT and 12:00 ET). Please forward this and the calendar invite onto your WHB specialist so we can all have one robust conversation.

The call in # is [redacted]
PC: [redacted]

Thanks everyone…..I hope you can adjust your calendar to join us next week.

Lauren L. Mermejo
Great Basin GRSG Project Manager
BLM Nevada State Office
775 861-6580 (Office)
775 223-2770 (Cell)

Consistent Wild Horse and Burro Management Actions for the Great Basin

(to be shared with Colorado)

Management Action 1: Manage active herd management areas (HMAs) in PHMAs (and GHMAs,IHMAs in Idaho) habitat to achieve GRSG habitat objectives (Table 2-X).

Management Action 2: Complete rangeland health assessments for HMAs containing PHMAs (and GHMAs, IHMAs in Idaho). Make appropriate adjustments to AML to achieve and maintain GRSG habitat objectives (see Table 2-X). The priorities for conducting evaluations are:

1. HMAs containing PHMA;
2. HMAs containing only GHMA;
3. Sagebrush habitat outside of PHMA and GHMA mapped habitat;
4. HMAs without GRSG habitat.

In PHMA (and GHMAs, IHMAs in Idaho), prioritize the evaluation of AMLs based on indicators that address structure/condition/ composition of vegetation and measurements specific to achieving GRSG habitat objectives.

Management Action 3: Manage wild horse and burro population levels in PHMAs (and GHMAs, IHMAs in Idaho) at the lower limit of the established AML ranges to maintain or enhance GRSG habitat.

Management Action 4: Prioritize gathers and population growth suppression techniques in HMAs in PHMAs (and GHMAs, IHMAs in Idaho), unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on Herd Areas occupied by wild horses and burros in PHMAs (and GHMAs, IHMAs in Idaho), as these areas are to be managed for zero wild horses and burros.

Management Action 5: In PHMAs (GHMAs and IHMAs in Idaho), assess and adjust AMLs through the NEPA process within HMAs that are at least partially degraded due to wild horses or burros (as identified in land health assessments), even if current AML is not being exceeded .

Management Action 6: In PHMAs (and GHMAs, IHMAs in Idaho), monitor HMAs annually to assess attainment of habitat objectives and to help determine future management decisions.

Management Action 7: Within PHMAs (GHMAs, IHMAs in Idaho), develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives and management considerations for all HMAs.

Management Action 8: Continue to use interdisciplinary team specialists (e.g., range, wildlife, and riparian) to cooperatively conduct land health, proper functioning condition, and habitat assessments.

Management Action 9: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) where HMAs overlap with PHMAs and GHMAs until GRSG habitat objectives have been met.

Management Action 10: In PHMAs (and GHMAs, IHMAs in Idaho), when conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

Nevada Specific Action due to impacts from horses on private land water sources – but can be used by others: Provide new water locations to ensure dispersal or avoidance of sites heavily impacted by wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992) in compliance with State Water Laws and subject to valid existing rights.

Management Action 11: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

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Ranch-Level Economic Impact Analysis for Public Lands: A Guide to Methods, Issues, and Applications

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Keywords: benefit/cost analysis, economic impacts, ecosystem services, ranch budgets

Abstract

Legal mandates require public land managers to consider social and economic impacts in planning efforts, and analysts seek models and tools for use in resource planning and impact assessment. In this paper we review state-of-the-art methods and models that can be used to evaluate ranch-level decisions and land-use policy impacts. Most ranch models use profit-maximization as the decision criterion, but it must be recognized that ranchers make decisions with personal objectives that are broader than just profit. Investments in rangeland improvement practices or management changes can be assessed using standard investment analysis (e.g., net present value, benefit/cost, or internal rate of return). Ranching is a year-round endeavor and changes in a specific season of grazing use or management activity may have greater impact on the whole ranch operation than can be accounted for by analyzing seasons or levels of grazing use in isolation. Impacts will vary with available forage alternatives, ranch resources, and management options. Current models use recursive linear programming or simulations to assess impacts over multiple years. Ranching and grazing on rangelands can affect the production of a variety of ecosystem services, though these are often not quantified or included in either investment analysis or economic models that describe ranch businesses. Because no formal markets exist for many ecosystem services, establishing a value has proven difficult. The few studies that have attempted to quantify ecosystem service values report said values without strong justification for the defined level of goods and services expected under alternative actions and policies.

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Key Points

- *Land managers, conservation groups and others should be apprised of potential economic impacts before instituting management plans on rangelands.*
- *Three basic methods can be used to determine if proposed management changes or improvement practices will pay off: Benefit/Cost ratio, Internal Rate of Return, and Net Present Value.*
- *Challenges to effective economic analysis of rangeland and livestock management options include the general lack of available livestock cost and return information to predict adjustments that a typical livestock producer will make in response to a policy change; and, knowing the biophysical and ecological responses from such changes.*
- *The impacts of reducing or eliminating grazing during selected seasons will depend on ranch resources and the substitute forage alternatives that are economically and physically available.*
- *The most fundamental challenge for valuing ecosystem services is an adequate description and assessment of the linkages between the structure and function of natural systems and the goods and services derived under alternative actions.*

Introduction

Economic impacts of management plans are important considerations for managers of natural resources. Whether the resource manager is caring for public, private or mixed ownership parcels, the impacts on financial conditions of rural America should be estimated and used in the decision-making process. In fact, economic impact assessments are as important to decision-making as factors like forage production, threatened or endangered species, erosion and other resource concerns. Federal and state land managers, private landowners, conservation groups and others should be apprised of anticipated economic and social impacts before

implementing critical management plans on the nation's rangelands.

Legal mandates for public land managers to consider social and economic impacts in planning efforts, coupled with their own limited social science staff, have motivated land management agencies to seek models and tools for use in resource planning and assessment. Agencies including the Bureau of Land Management (BLM) and the US Forest Service (USFS) seek tools for estimating economic impacts of grazing plans and other resource management decisions. The level of analysis ranges from calculating the economic impacts of proposed changes at the Resource Management Plan level to evaluation of grazing plans in the permit renewal process. The National Environmental Policy Act (NEPA) of 1969 (PL 91-190, as amended) directs public land managers to specify and consider economic and social impacts concurrently with the environmental impacts of their decisions. The Act also established the President's Council on Environmental Quality (CEQ), which in turn, created policy guidelines related to the process and analysis included in Environmental Impact Statements (Protecting the Environment, 2007).

This document summarizes a process for developing economic impact assessments for western public and private rangelands. We summarize relevant applied research and list sources of information related to ranch-level economic assessments. Taylor et al. (2014) provide a similar summary and discussion for social impact assessments and for community and regional economic assessments. Both papers provide recommendations on approaches for gathering and analyzing the critical economic and social impacts required by NEPA.

Ranch Investment and Impact Analysis

Ranchers and agency land managers often want to know if a change in management or an investment in a rangeland practice is going to pay for itself. There are three common methods used to make this determination and all require the same basic information: the Benefit/Cost ratio, Internal Rate of Return, and Net Present Value. For each method, one must know the initial investment cost, the annual operation and maintenance costs, the expected annual benefits, expected project life, and a discount rate to account for differences in timing between benefits and costs.

Providing an estimate of the expected benefits is perhaps the most challenging part of a rangeland investment analysis. Traditionally, economic evaluations of range improvements focused on the value of additional livestock grazing capacity and livestock production that could be achieved by implementing the improvement (Workman 1986). However, other reasons for implementing range improvements, such as those aimed simply at good range management, have tacitly justified at least part of the cost of range improvement practices and government subsidies for those practices. Improving range condition, rangeland health, and promoting watershed and wildlife benefits are now the motivating reasons why government agencies spend money on range improvements (Briske 2011). As discussed in greater detail below, placing an economic value on these ecosystem services creates new challenges for benefit estimation because adequate definition of key linkages about the structure and function of rangeland systems is limiting, and non-market economic valuation procedures must be used (Torell et al. 2013).

If you make an investment in range improvements like water developments, fencing, seeding, brush control, or even a management change, there will usually be an initial expenditure for materials and labor. In an economic analysis, these are considered to occur in time 0 (today). Many of these types of investments will also incur annual operating and maintenance costs – things like power to run a pump, fence repair, and other periodic expenses.

When making long-term investments, one expects to realize economic benefits in the future. These could be more animal unit months (AUMs) of grazing, improved animal performance, and/or reduced costs. Benefits may not be the same every year of the project. For example, if you do a brush control project, you expect more grass to eventually grow, for it to reach a peak in some future year, and then for it to slowly decline as brush re-establishes in the project area.

The discount rate is the factor used to recognize the time value of money. It basically states that a dollar received or spent in the future is not the same as a dollar received or spent today. It is only through the process of discounting that one can make valid comparisons of the costs and benefits of a proposed action. The discount rate used in most economic analyses of these types would be a risk- and inflation-free long-term rate such as what one would expect on a long-term treasury bond. An economic analysis can consider a range of discount rates to see if the decision is sensitive to the discount factor.

As Workman and Tanaka (1991) argued, the **Net Present Value** (NPV) method provides the best answer for decision-making.

$$NPV = \text{Initial Investment} + \sum((\text{Annual Benefits}_n - \text{Annual Costs}_n) * (1\text{-discount rate})^{-n})$$

The NPV equation describes the initial investment (a negative value) at time zero (today) and adds the sum of annual net benefits that have been discounted back to today's dollars. The result is the estimate of NPV. Note that this estimate does not necessarily identify the profit-maximizing alternative, just those alternatives that are financially feasible. If the calculated NPV is positive it is considered a feasible investment alternative. When funds are limited, a combination of feasible alternatives can be selected that would maximize the overall NPV of the selected investment alternatives and this is the major benefit of the NPV method of investment analysis.

The **Benefit/Cost** (B/C) ratio is used by most federal agencies. Ideally, it captures all the social benefits and costs of each alternative. In actual use, it uses the same data as used in the NPV since we are not able to value all of the ecosystem services that could potentially be part of the calculations. In this case, we calculate the sum of the present value of future benefits and divide by the initial investment plus the sum of the present value of future costs. The result is expressed as a ratio. The decision rule is that if the B/C ratio is greater than 1.0, the project will be economically feasible.

The **Internal Rate of Return** (IRR) is a little different in that a discount rate is not specified. In this case, a discount rate that will make the present value of benefits equal to the present value of costs is sought. Or, the IRR is the interest rate that will bring a series of cash flows (positive and negative) to a NPV of zero (Workman 1986). The calculated rate can then be compared to whatever a rate of return needs to be for an individual to consider this a sound investment. If the calculated IRR is more than the desired rate of return, then it would be a feasible alternative. If it is necessary to borrow funds for the project, the IRR can be compared to the interest rate on borrowed capital. Once the cost of capital hurdle has been cleared, the project with the highest IRR would be the wiser investment, all other things being equal (including risk). One of the disadvantages of using IRR is that all cash flows are assumed to be reinvested at the same discount rate and this may or may not be true. This makes comparison of projects of different lengths problematic.

None of these investment analysis methods will ensure that profit is maximized. These investment tools only provide an indication that the investment or management change will be financially feasible. The methods described in the next section describe how to find profit-maximizing solutions. The final thing to keep in mind is that past research has indicated that very few rangeland improvement practice investments or management changes are financially feasible for the average or typical ranch operation (Tanaka et al., 2011).

Numerous resources are available for assistance and guidance in conducting an investment analysis and in using standard investment analysis tools. These tools are discussed in all basic and advanced financial management textbooks. For federal program assessments, the Office of Management and Budget circular A-94 provides guidance for conducting benefit-cost and cost-effectiveness analyses (OMB 1992). It also provides specific guidance on the discount rates to be used in evaluating federal programs whose benefits and costs are distributed over time.

Ranch-Level Policy Impact Analysis and Models

Analyzing the potential impacts of land-use policy changes to livestock producers requires definition of the current production situation and an estimate of how impacted individuals will likely adjust to a

proposed policy change. The basic tools of analysis have included enterprise budgets, simulation, and optimization (profit-maximizing) models. In all cases, the analysis starts with producer-provided information to describe economic, production and resource characteristics for representative ranches in the study area. These representative ranches are typically categorized by size and type of livestock, season of grazing use, and other criteria like level of federal land dependency. Many "representative" ranch models could be defined for an area but in most cases a limited number of models and budgets are used. If further analysis of regional impacts is to be considered, the estimated ranch-level impacts are aggregated to total impacts based on the number of ranches or livestock supposedly described by each representative ranch model.

Ranch Enterprise Budgets

Basic ranch budget information describing the characteristics, resources and seasonality of resource use for a typical ranch is crucial to the analysis. Availability of this basic cost and return data is perhaps the most limiting information required for impact assessment studies. A limited number of university cost and return studies provide the basis for many impact assessment studies (see for example, Teegerstrom & Tronstad, 2000; Gray et al., 2012). Another source of livestock cost and return information is the USDA Economic Resource Service (USDA-ERS, 2011). Cost and return data are generally gathered from livestock producers using procedures similar to those described by Richardson and Nixon (2012) as they reference defining and updating the Farm Level Income and Policy Simulation Model (FLIPSIM) that has been widely used in federal policy and farm program impact analysis. As described, producers that are representative of operations in the area are identified by a local facilitator, often a county Extension agent. Producers are asked to build a typical farm or ranch drawing from their personal operations and experiences. Key factors like herd size, production rates (e.g., sale weights, calf crop, hay yields, rangeland productivity), available forage and crop resources, expenses by enterprise and by expense category (e.g., fuel, labor, raised and purchased feed), and investment levels are identified.

In addition to a general lack of available livestock cost and return information that is appropriate for resource area specific or even state specific analysis, a second challenge in the impact assessment is predicting the adjustments that the typical livestock producer will make because of a proposed policy change. Consider as an example a policy to increase public land grazing fees, a controversial proposal that has been debated numerous times. If it is assumed that public land ranchers will merely pay the higher fee the impact analysis is simple: multiply the quantity of federal AUMs used by the change in the fee rate. If, however, demand for federal grazing is price sensitive at the proposed fee rate, the analysis is much more complicated as producers will at some point reduce federal grazing use, reduce herd size and/or substitute alternative forages. Profit maximization has been widely used as the criteria upon which production adjustments are assumed to be made and evaluated. Ranchers are assumed to adjust production strategies with the profit objective in mind. Linear programming (LP) models that maximize profit subject to resource constraints for a representative ranch have been widely used for impact assessment. A base run provides a benchmark against which alternative policy scenarios are compared.

Ranch-level Economic Models

Many of the initial profit-maximizing LP models used for ranch impact analysis were single-year models where profit was maximized over one year (Olson & Jackson, 1975; Torell et al., 1981; Wilson et al., 1985). More recent applications have been multi-period recursive models where information about debt, herd inventories by animal class, family living expenses and off-ranch income in the previous year (t-1) is used as input to calculate values for the current year (t). One model developed by the authors as a part of regional research efforts has been widely used for policy impact analysis (Torell et al., 2002; Rimbey et al., 2003; Taylor et al., 2004; Taylor et al., 2005). The general structure of the multi-period LP model is shown in Figure 1.

This model is ultimately constrained by available land (i.e., forage) and cash with numerous equations to transfer animals, forage and cash among years and seasons. In this application, variable seasonal and annual forage supply and demand may be explicitly considered. The NPV of discounted net returns is maximized over a T-year planning horizon subject to constraints that define resource limitations, resource transfers between years, and production characteristics. Seasonal forage supply and demand within a particular year is explicitly considered to recognize that certain forage sources may be restricted in use to only selected seasons, because of regulation, physical availability or production limitations. The importance of the model structure for impact assessment is recognition that in addition to access to forage, a policy change may also alter the length and timing of allowed grazing use. Policy impact assessments can be handled in the model by changing the allowed seasonal use, resource availability, and cost definitions.

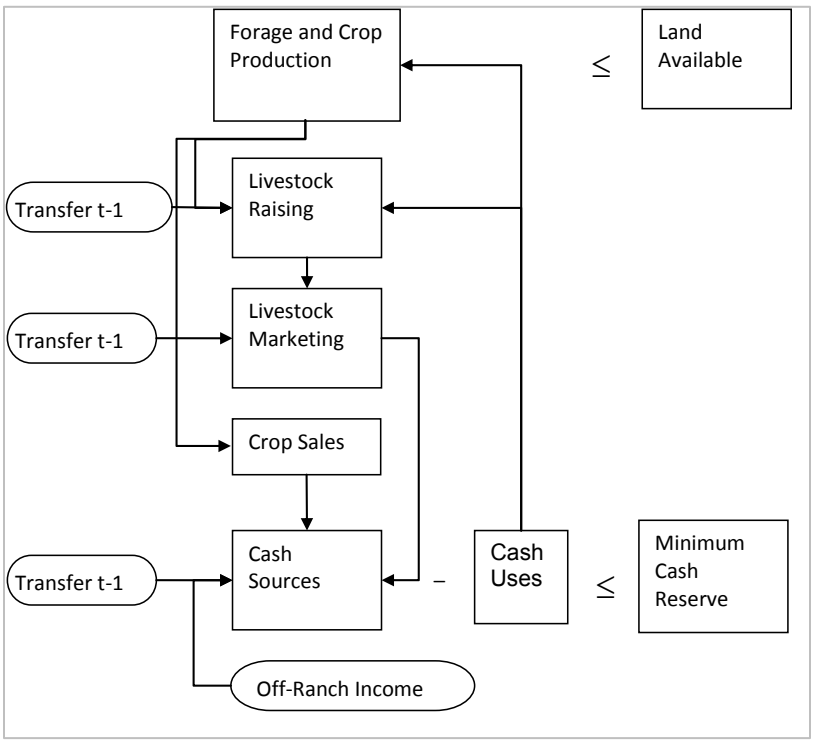

Figure 1 -Policy analysis LP model structure (from Torell et al., 2002).
Maximize Net Present Value NPV of discounted profit =
Livestock Sales + Crop Sales – Expenses.

Profit Maximization: A Critical Assumption

It is widely recognized that western ranchers do not have profit maximization as the primary goal of their ranching enterprises. Instead, desired recreational opportunities, the rural lifestyle and agrarian values are the primary motives for ranch ownership (Torell et al., 2001; Gentner & Tanaka, 2002; Gosnell et al., 2006). Pasture and rangeland values have been significantly inflated by many factors not related to livestock production (Rimbey et al., 2007; Doye & Brorsen, 2011; Torell et al., 2012). As noted by Van Tassell and Richardson (1998), western public land ranchers will, for the most part, continue to ranch until forced to do something else. How then, is the profit maximization objective justified in impact assessments? The utility-maximization model that ranchers subscribe to is impossible to measure and quantify. Individual ranchers and ranch families have differing levels of commitment to the ranching lifestyle and decreasing annual ranch income through altered land-use policies can be expected to dampen enthusiasm for ranching to widely varying degrees. It will not be possible to accurately predict how many ranchers a particular land-use policy will force out of business, yet it is a question often asked.

The profit-maximizing objective provides a measurable criterion against which to judge policy changes[6]. It is tempered by considering only investment alternatives related to ranching and livestock production, and by including cash flow restrictions. The LP model determines the optimal production strategy with the current policy prescription and how optimal production changes with a new policy. The implicit assumption is that ranch families will continue to consider only the limited investment opportunities associated with the ranch property; they prefer more money to less and will continue to ranch until cash flow restrictions can no longer be met and they are forced, or decide, to leave the

[6]An alternative, as used with simulation models such as FLIPSIM, is to use feedback from livestock producers and professional judgment of the analyst as to how livestock producers would adjust to altered land use policies.

business.

Livestock Price Scenarios

One of the decisions to be made is the appropriate livestock prices to consider in an analysis. A common strategy is to use inflation-adjusted, average, or projected prices with potential alternative levels also considered. An alternative a stochastic process where price trends, cycles, price distributions, and price correlations between animal classes are considered and the impact models are run numerous times at different price levels. Average impacts are tabulated across the numerous price scenarios (Torell et al., 2002). Other factors like crop yield and livestock production rates that are influenced by precipitation and other variables can also be stochastic inputs to the impact assessment (Richardson & Nixon, 2012).

FLIPSIM and the LP model detailed in Figure 1 represent current state-of-the-art analysis tools for ranch-level impact assessment. In many cases, this modeling effort will be beyond the capabilities, budgets, and time allotted for the analysis. Simpler budgeting procedures can be, and have been, used but the analysis still starts with data describing economic, production and resource characteristics for representative ranches in the study area (Tanaka et al., 1987). The general lack of detailed cost and return data is a limitation regardless of the assessment tool used. Using budgeting tools, revenues, expenses, and net returns under current policies are compared to similar budgets defined under a policy of interest. Without the profit-maximizing criteria to determine optimal adjustment strategies, the analyst must use judgment to determine which production and marketing strategies will likely be followed with the altered policy.

Forage Input Costs

Many times a policy assessment requires an estimate of forage value, as when public land forage is proposed for re-allocation to alternative uses or to protect other resource values. Bartlett et al. (2002) provided a detailed description of how forage can be valued and the interested reader is referred to this paper for a more complete description and discussion. As described, valuing forage for livestock production has strong ties to profit-maximization, suggesting use of the profit-maximizing models described above. If the forage market is efficient, it also suggests a comparison to the private forage market, and in fact, comparison to the private market has been the primary way of valuing public land forage. The comparison is based on the opportunity-cost concept, whereby a profit-maximizing lessee of forage will not pay in excess of the amount that must be paid for the next-best alternative. If private and public forage are perfect substitutes, economically motivated ranchers should be willing to pay equal amounts for the two sources of forage. Because of policies governing the issuance and regulation of public grazing permits, there is no market competition to determine public forage value. Consequently, it has generally been accepted that the fair market value of public land forage would have to be estimated indirectly by comparison to the private forage market after appropriately adjusting for landowner-provided services and lease characteristics on private leases that are not provided by the public land agencies (Bartlett et al., 2002). Non-fee grazing costs on public lands are substantially higher as compared to private land leases. Based on indexing values from a 1993 grazing cost comparison conducted in Idaho, Wyoming and New Mexico, Rimbey and Torell (2011) estimated that in 2010, public land ranchers paid a total cost including both fee and non-fee expenses of $35/AUM as compared $32/AUM for private land leases.

Attempts have been made to statistically determine how private land lease rates vary when selected landlord-provided services are included with the lease (e.g., periodic checking of water and livestock, supplemental feeding, maintenance of improvements and facilities). These studies (Rimbey et al., 1992; LaFrance & Watts, 1995; Bartlett et al., 2002; Bioeconomics Inc., 2011) have consistently found the service value component of private land grazing leases to comprise about 30% of the average lease price reported by USDA-National Agricultural Statistics Service (USDA-NASS, 2012). This 30% rule-of-thumb has been widely used to adjust NASS-reported lease rates to a payment for grass-only leases in range improvement economic studies (Bastian et al., 1995; Torell et al., 2005), ranchland valuation studies (Rimbey et al., 2007; Torell et al., 2012), and as an adjustment in estimating the market value of public and state trust land grazing fees (Torell et al., 1990;

Rimbey et al., 1992; LaFrance & Watts, 1995; Bioeconomics Inc., 2011).

Forage values implied by comparison to the private grazing market can be estimated down to the state level, as USDA-NASS (2012) reports private grazing lease rates annually on both a $/head and $/AUM basis for each of the western states. The NASS lease rate data is the only consistently reported information available for the western states. Limitations of the data include concern about potential range quality differences between private and public land leases, a small sample size for each state, and the hearsay factor, as survey respondents are asked to recall or speculate on lease rates in the area (Brokken & McCarl, 1987; Torell et al., 2003).

The average forage value estimated from NASS data will also not recognize or consider seasonal differences in value. As noted by Torell et al. (2002), if a ranch is seasonally dependent on federal forage, as is typically the case for many western ranches in northern climates, a reduction in federal AUMs can create forage imbalances and produce a greater reduction in grazing capacity than just the loss of federal AUMs. Seasons with limited forage availability (typically winter and spring) have the highest forage value and using hay price (the next best alternative) may be a better alternative when seasonality of forage use is important. However, the impact(s) of eliminating or reducing grazing during selected seasons will depend on ranch resources and the substitute forage alternatives that are economically and physically available. Simulation and linear programming models, as described above, that recognize seasonal forage uses and alternatives are the best evaluation tool when seasonality is important.

Valuing Ecosystem Services

Recently there has been an increasing emphasis placed on valuing ecosystem services. Textbooks describe how this might be done with many examples from aquatic systems (Champ et al., 2003; NRC, 2005; Barbier, 2007). For rangeland systems, failure to include a measure of the benefits of range improvements and resource decisions beyond livestock production implicitly assigns a value of zero to those outputs in the traditional economic assessment. Recognizing this, there has been an increased awareness for the need to value alternative outputs in land management planning efforts. Many of the issues addressed by land management agencies are now related to enhancing and protecting threatened and endangered species, providing wildlife habitat, improving degraded rangelands and watersheds, reducing the threat of fires, and enhancing numerous other ecosystem services that society values (Torell et al., 2013). For example, in the Owyhee area of Idaho, factors such as Wild and Scenic Rivers, wilderness designation, water quality, and restoration of western juniper (*Juniperus occidentalis*) invaded sagebrush rangelands are all examples of ecosystem services that should be considered in an assessment of the ecological, economic, and social assessment.

As noted by Taylor and Rollins (2012), despite a growing recognition of the need for placing an economic value on the ecosystem services provided from rangelands, there is a perception among scientists and public land decision makers that economic theory and methods are not capable of providing accurate, timely and policy-relevant estimates of the values associated with ecosystem change for informed decisions. Taylor and Rollins (2012) dismissed this pessimistic view and suggested there are steps that can be taken to counter criticisms about attempting to place an economic value on the ecosystem services provided on both public and private lands. Loomis (2012) similarly dismissed the notion that economists are not up to the task and details ways to integrate non-market values into land management decision making. While we agree that resource economists can provide site-specific valuations of rangeland ecosystem services, we believe there are major obstacles that will result in questionable reliability of those estimates at various levels. Most notably, suggested valuation procedures require a reliance on the Contingent Valuation Method (CVM) with its many noted shortcomings (Hausman 2012). The weaknesses of CVM include an extrapolation of study results using benefits transfer and reliance on rangeland state-and-transition models to measure ecosystem differences between management alternatives. The linkages required to value rangeland ecosystem services are poorly defined and care must be taken to

not extrapolate value estimates beyond an appropriate area of applicability.

The most fundamental challenge for valuing ecosystem services is an adequate description and assessment of the linkages between the structure and function of natural systems and the goods and services derived under alternative actions (NRC, 2005). Several scientists from different disciplines suggest the ecological site and state-and-transition modeling (STM) framework has promise for providing the necessary linkage detail needed to measure rangeland ecosystem provisioning under alternative management actions (Bestelmeyer & Brown, 2010; Herrick et al., 2010; Bestelmeyer et al., 2011; Taylor & Rollins, 2012). As Brown and MacLeod (2011) noted, the STM framework is a soil/vegetation-based system in which similar climate, geomorphology, and soil properties are grouped into ecological sites based on their response to disturbance. Within each ecological site, a unique state-and-transition model describes the dynamics of vegetation and soil properties, and provides indicators of the vegetation structure and soil properties. Alternative management actions potentially prompt changes among states. Because the ecological model is soil/vegetation-based, provisioning of different types of ecosystem services can be predicted if there is a defined and predictable linkage to soil and vegetation characteristics.

While soil and vegetative conditions link directly to livestock grazing output potential and the benefits from vegetation management practices, estimating the complex linkage from the altered soil and vegetation conditions to provisioning of wildlife habitat, watershed health, wilderness, and other rangeland outputs is complex and largely undefined. An assessment of Natural Resource Conservation Service (NRCS) rangeland conservation efforts indicated that it was not possible to determine the magnitude or trend of conservation benefits originating from NRCS conservation investments because of the paucity of information documenting benefits (Briske, 2011). Furthermore, the benefits of conservation practices are seldom quantified and lack consistent measurement (Briske, 2011).

A proposed ecosystem valuation procedure suggested in the works of Loomis (2012) and Taylor and Rollins (2012) would use benefit transfer (which uses economic values and other information) from a ”study site” where data is collected to a ”policy site” with little or no data. A site-to-site transfer function would be defined that considers the spatial, temporal, and ecological details specific to the target ecosystem (Taylor & Rollins, 2012). Meta-analysis equations have also been used to tailor the benefit transfer to a specific study site (Loomis et al., 2012). The biggest problem we see for benefit transfer application for ecosystem valuation on rangelands is the limited number of studies from which to extrapolate and project response differences. As noted by Briske (2011), conservation practices have seldom been monitored across spatial areas (even within the same ecological site) and through time as needed to adequately assess conservation practice outcomes.

The Sustainable Rangeland Roundtable developed a framework to assess rangeland sustainability that compares the expected direction of change resulting from alternative rangeland uses (Fox et al., 2009; Kreuter et al., 2012). In this framework, ecosystem services are the nexus between the biophysical world and the social and economic systems that utilize it. Indicators of social, economic, and ecological sustainability are monitored over time and impacts are assessed by the decision- and/or policy-maker. Assessment is more related to direction of change, tradeoffs, and expected strength of change rather than applying values and conducting economic efficiency analyses. Relationships among indicators remain a missing link even in this framework. It is left to the decision- and/or policy-maker to determine whether the direction of change is “good or bad.” We argue that in most cases this is the best that can reliably be done given the current state of knowledge about the critical linkages required for rangeland ecosystem valuation. We are far from being able to estimate the levels of goods and services provided under alternative rangeland management actions, to extrapolate those value estimates across the western public lands, or to use those values to evaluate trade-offs in management and policy decisions at this stage of development.

Opportunities for Management and Research

Assessments of the economic benefits, costs and social impacts of management decisions and policy changes are critical to rangeland managers and users. A major challenge in applying ranch-level economic evaluations is a general lack of available livestock cost, return, and production information that is appropriate for a specific ranching area and policy analysis. Understanding trade-offs, likely production changes, changes in ecosystem services, and predicting the adjustments a typical livestock producer will make in light of a proposed land-use change are additional requirements. Economic evaluations use profit maximization as a goal even though it is widely recognized that western ranchers do not have profit as their primary objective. Finally, ranching is a yearlong activity and changes in one season or one management activity may have greater impact on the whole ranch operation than if only analyzed in isolation. This cumulative effect should be included in an effective economic analysis and will vary with forage substitutes, available ranch resources, and management options. Managers need to evaluate the economic impacts of proposed policy and management changes in order to understand how ranching operations are going to be affected. In addition, understanding the public and private land implications and interactions from those changes will be important for understanding societal impacts.

Rangelands are valued for many ecological services beyond providing forage for livestock and wildlife. It is often perceived that economic theory and analytic approaches are not able to provide accurate, timely and policy-relevant estimates of the values associated with ecosystem change in response to proposed land-use decisions. There are, however, methods and approaches that can be used to integrate non-market values into land management decisions and provide site-specific valuations of rangeland ecosystem services. The most fundamental challenge for valuing ecosystem services is an adequate description and assessment of the linkages between the structure and function of natural systems and the goods and services derived under alternative actions. Development and understanding of ecological sites and state-and-transition models may provide a framework that can be used to evaluate ecological services in dynamic settings.

Research is critically needed to quantify production impacts from management changes and the relationships between the structure and function of rangeland systems and the goods and services derived under alternative actions. Research is also needed to define explicit ranch models that can address local conditions and specific policy and management changes.

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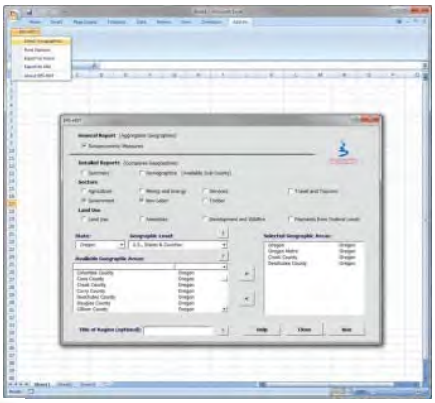
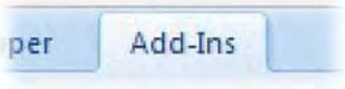
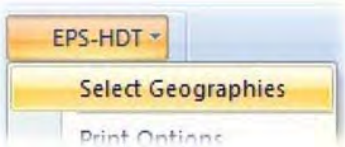
Step 1: Open Excel and click the top-menu "Add-Ins" tab.





Step 2: Click open the "EPS-HDT" pull-down menu that will appear on the left.



Step 3: Scroll to and choose the "Select Geographies" menu option.

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Option to print with the interpretive text or without.

How-To Videos

Install EPS-HDT (2:16)

Description of Reports (13:45)

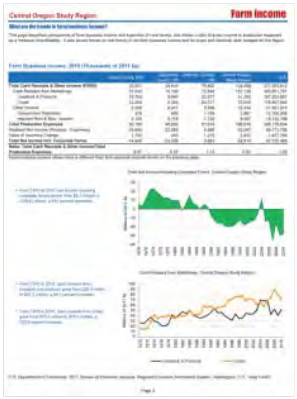
Create, Print, & Export (7:02)

GBR_0015762

- **Economic trends–** jobs and personal income by industry, wages, unemployment, etc.
- **Specific economic sectors–** services, agriculture, government, timber, mining, oil and gas, travel and tourism-related
- **Demographics–** e.g., race, age, poverty, housing, education
- **Non-labor income–** transfer payments, retirement, and investment income
- **Land use–** e.g., land cover, ownership, residential development
- **The role of public lands in providing amenities–** e.g., special land designations
- **The wildland-urban interface–** for the West only
- **Payments from federal land management agencies to counties–** PILT, SRS, etc.

SAMPLE REPORTS

SUMMARY– shows side-by-side comparisons between geographies.



AGRICULTURE– shows net farm income over time.

TIMBER– shows employment by type.

LAND USE– shows land ownership by county.

DOCUMENTATION

Documentation PDFs

- **Description and Operation of EPS-HDT** (0.6MB)
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