

# Development of Tribal Ecosystem Workforce Initiatives for the Implementation of Landscape Scale Restoration in southern Oregon and northeastern California

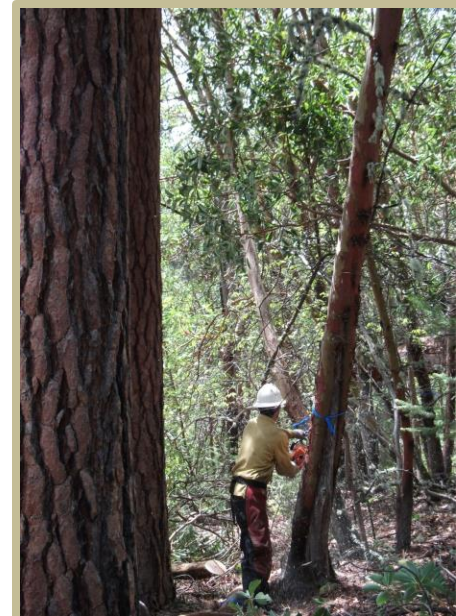


DOI National Workshop, NRDAR Program  
Phoenix, Arizona, April 30, 2014  
Marissa Fierro, Pit River Tribe  
Marko Bey, Lomakatsi Restoration Project

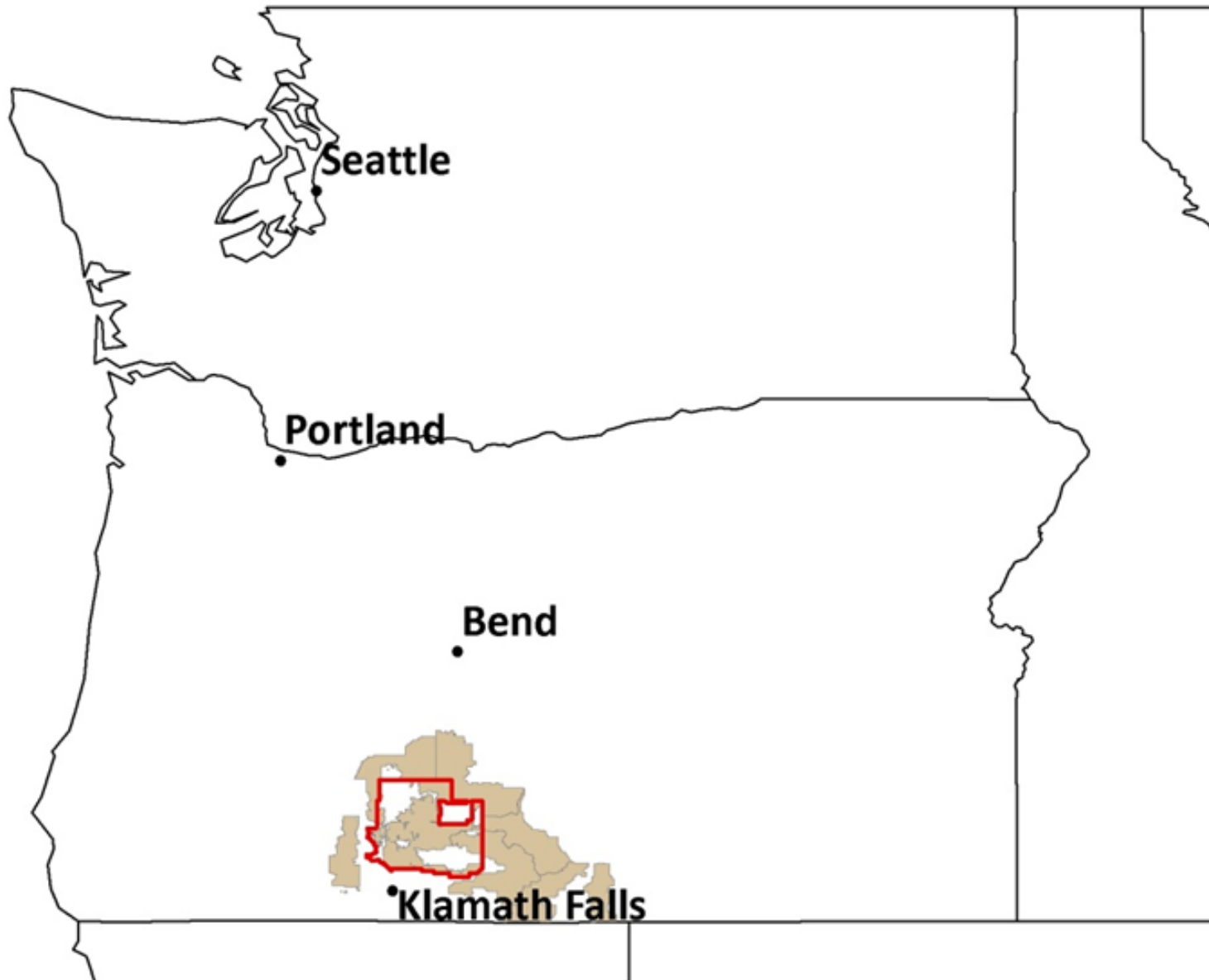


# Lomakatsi Restoration Project

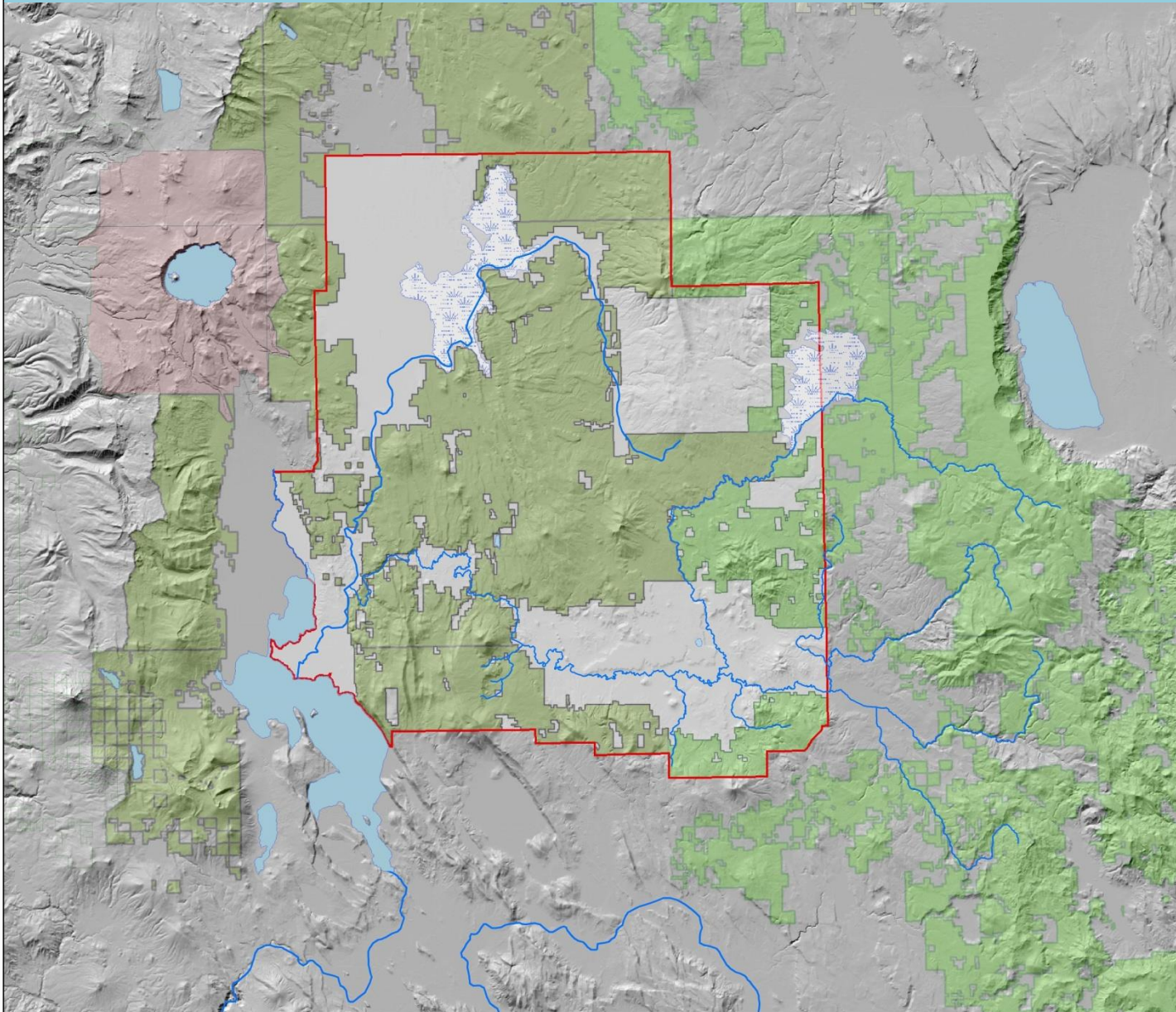
Restoring Ecosystems, Sustaining Communities



# Klamath Reservation Forest Fremont-Winema National Forest

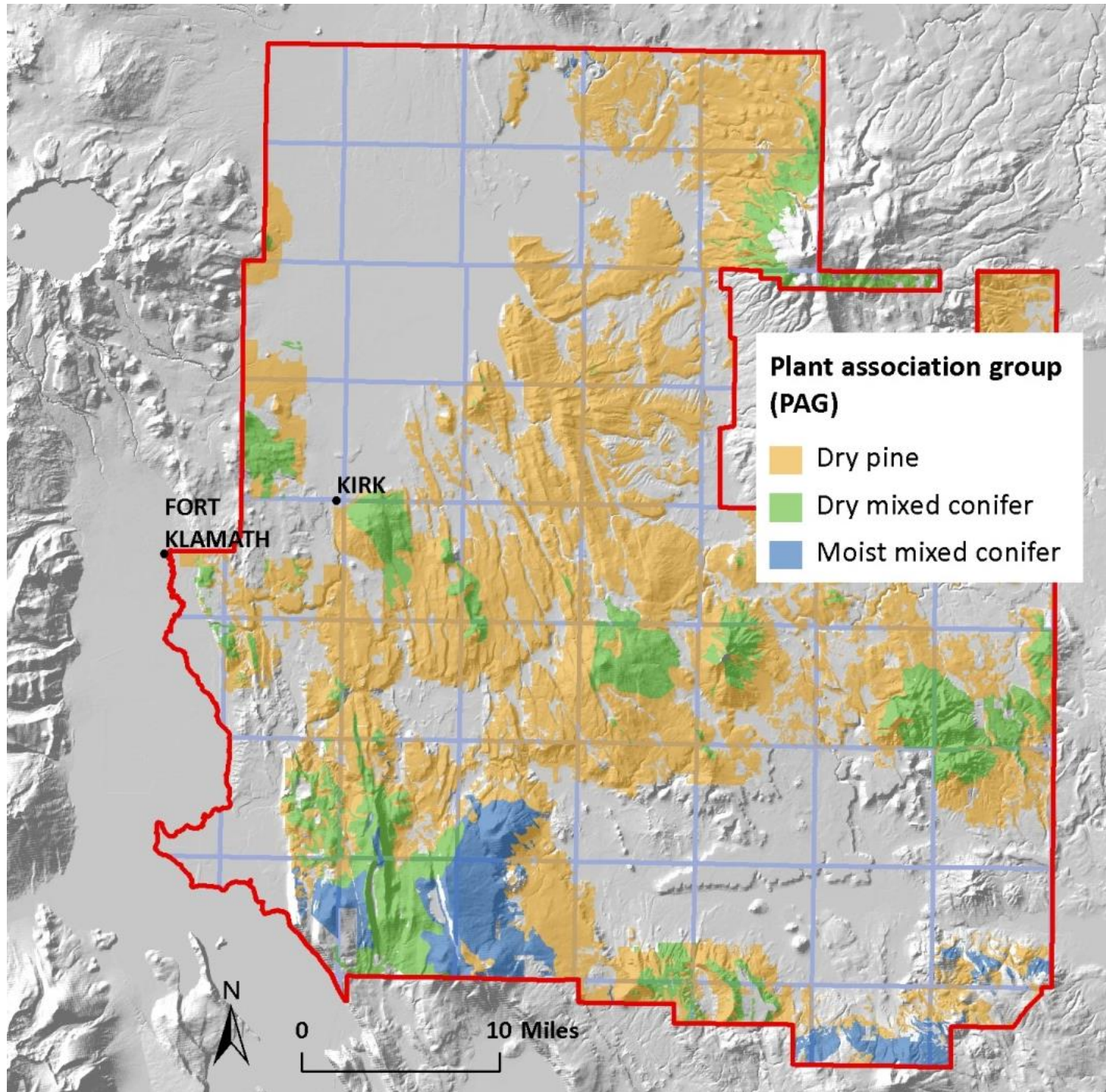


# Klamath Reservation Forest Fremont-Winema National Forest

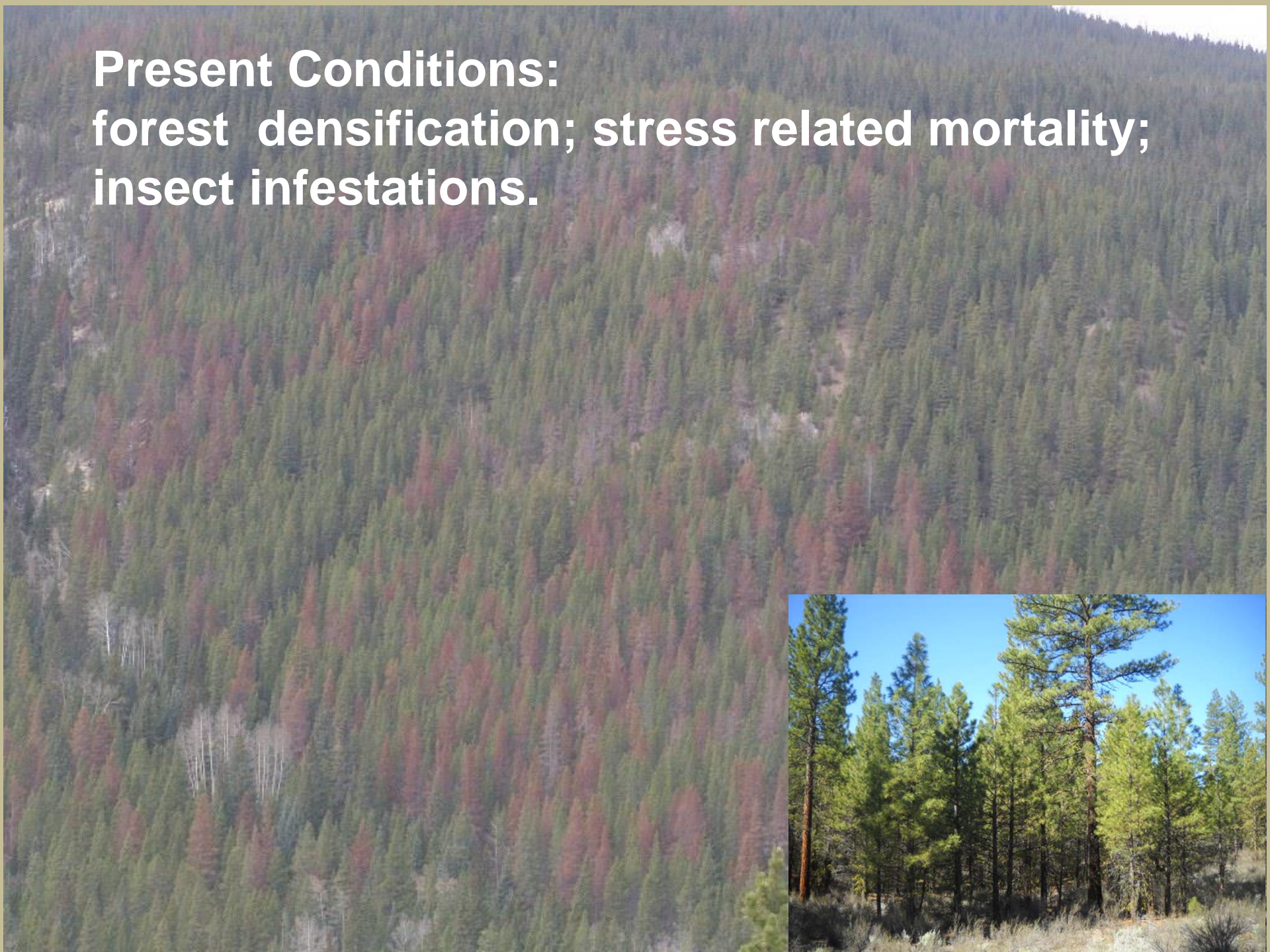


1932





**Present Conditions:  
forest densification; stress related mortality;  
insect infestations.**



# Impacts to tribal subsistence species: Lack of fire, decadent bitterbrush

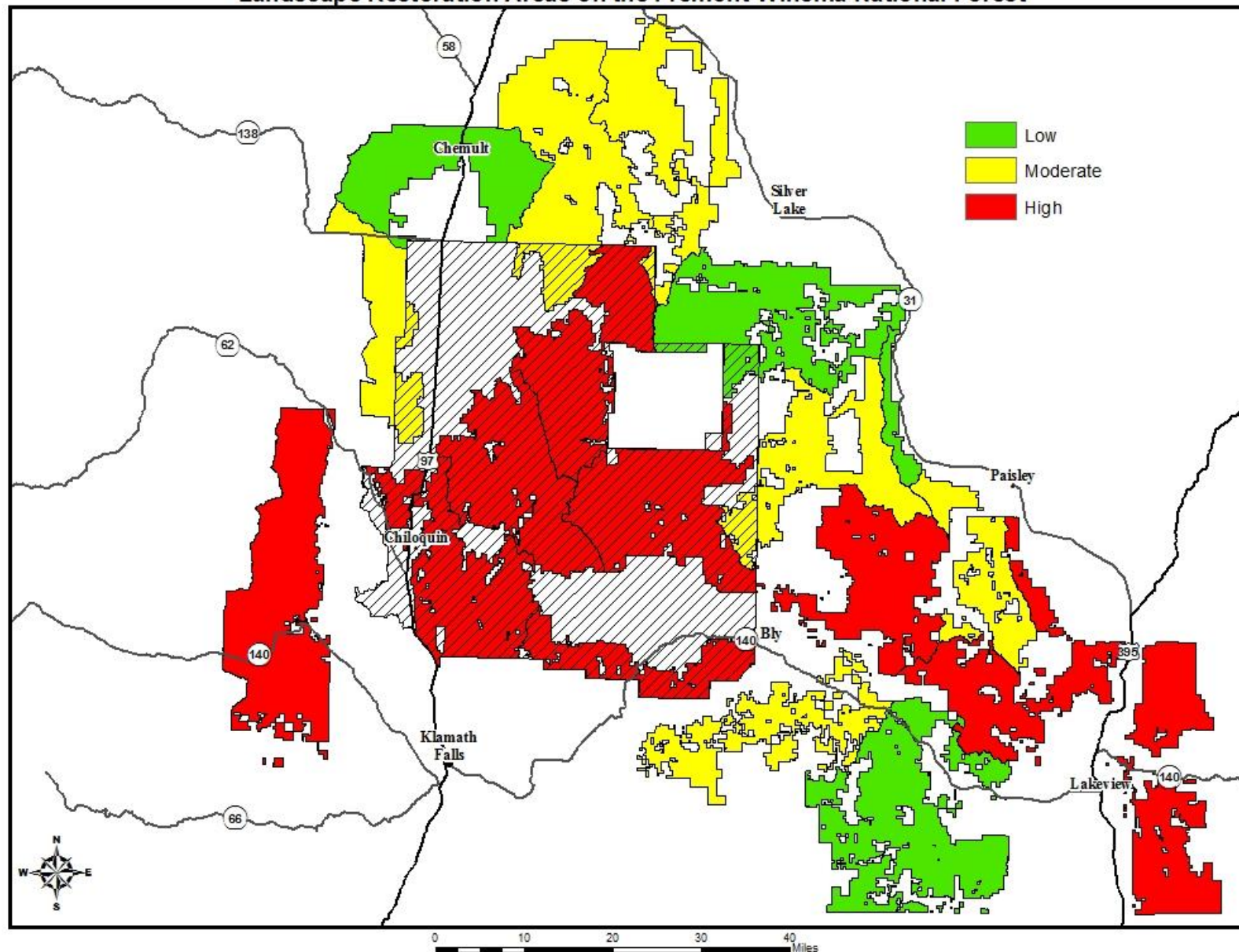
Mule deer (*Odocoileus hemionus*)





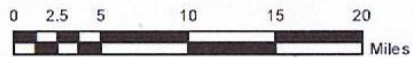
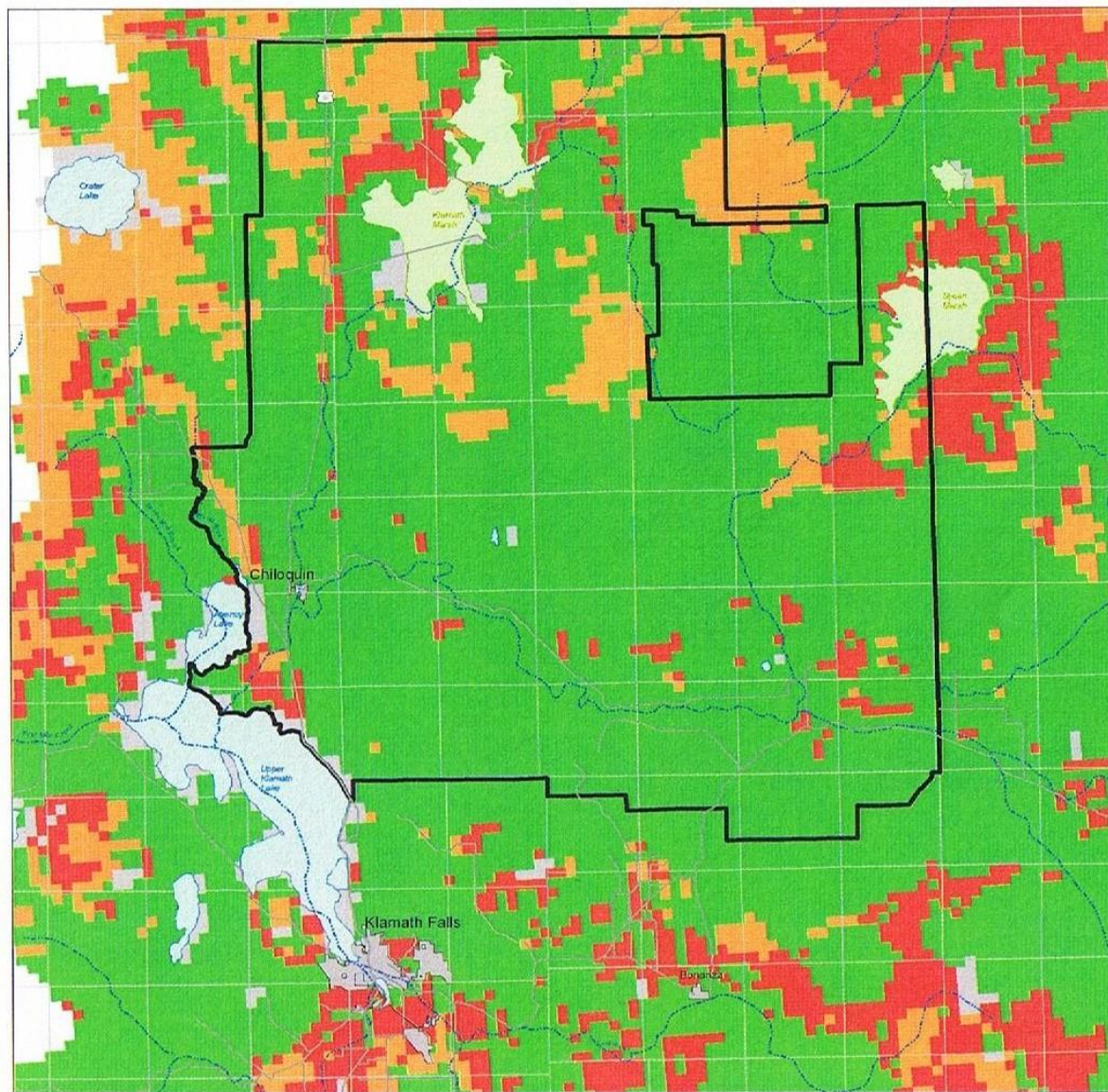
# Priority Landscape Restoration Areas

Priority for Restoration  
Landscape Restoration Areas on the Fremont-Winema National Forest

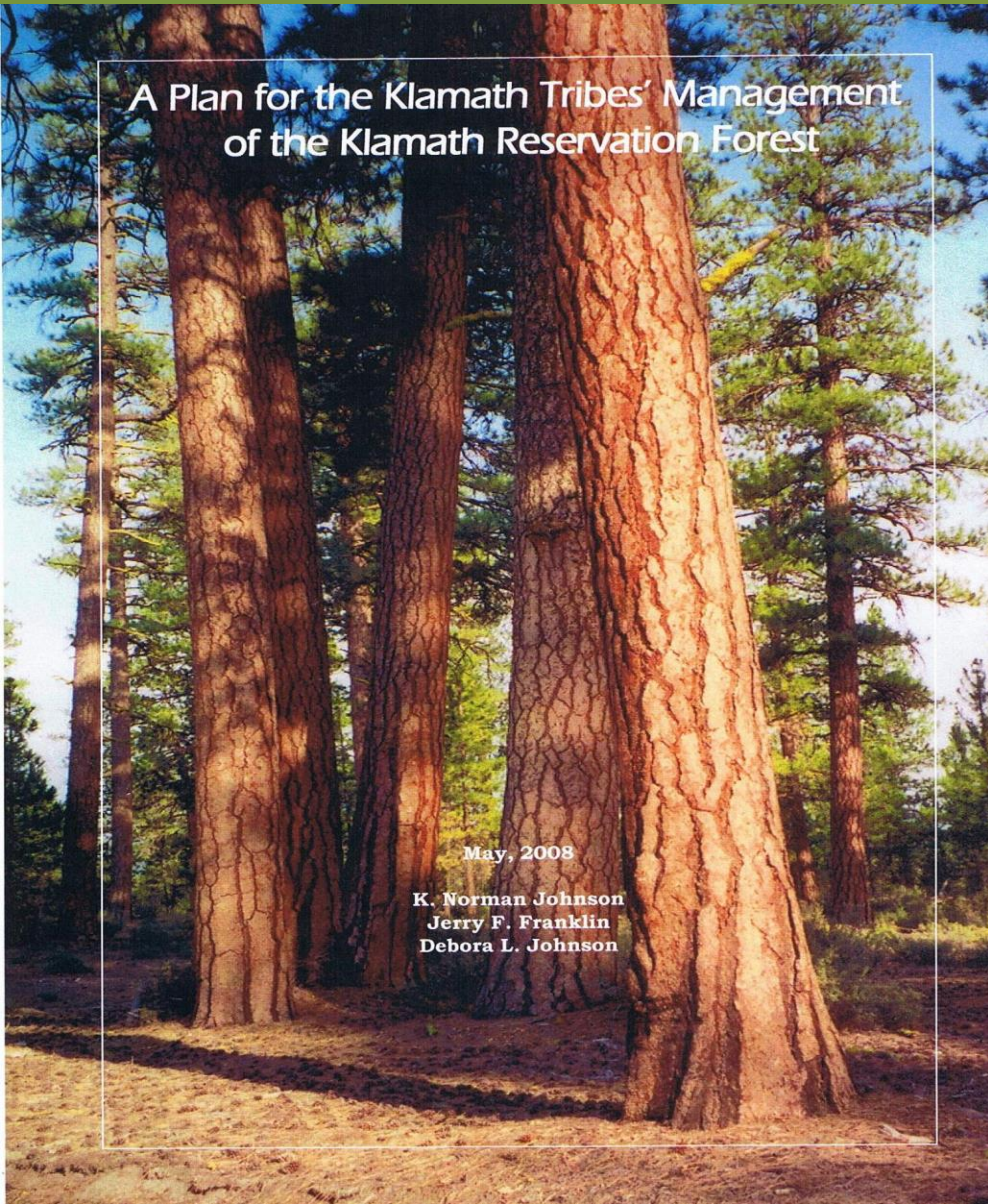


# Historical Fire Regimes for Forested Potential Vegetation Groups

## Klamath Reservation



# Goals for Restorative Management of the Klamath Reservation Forest



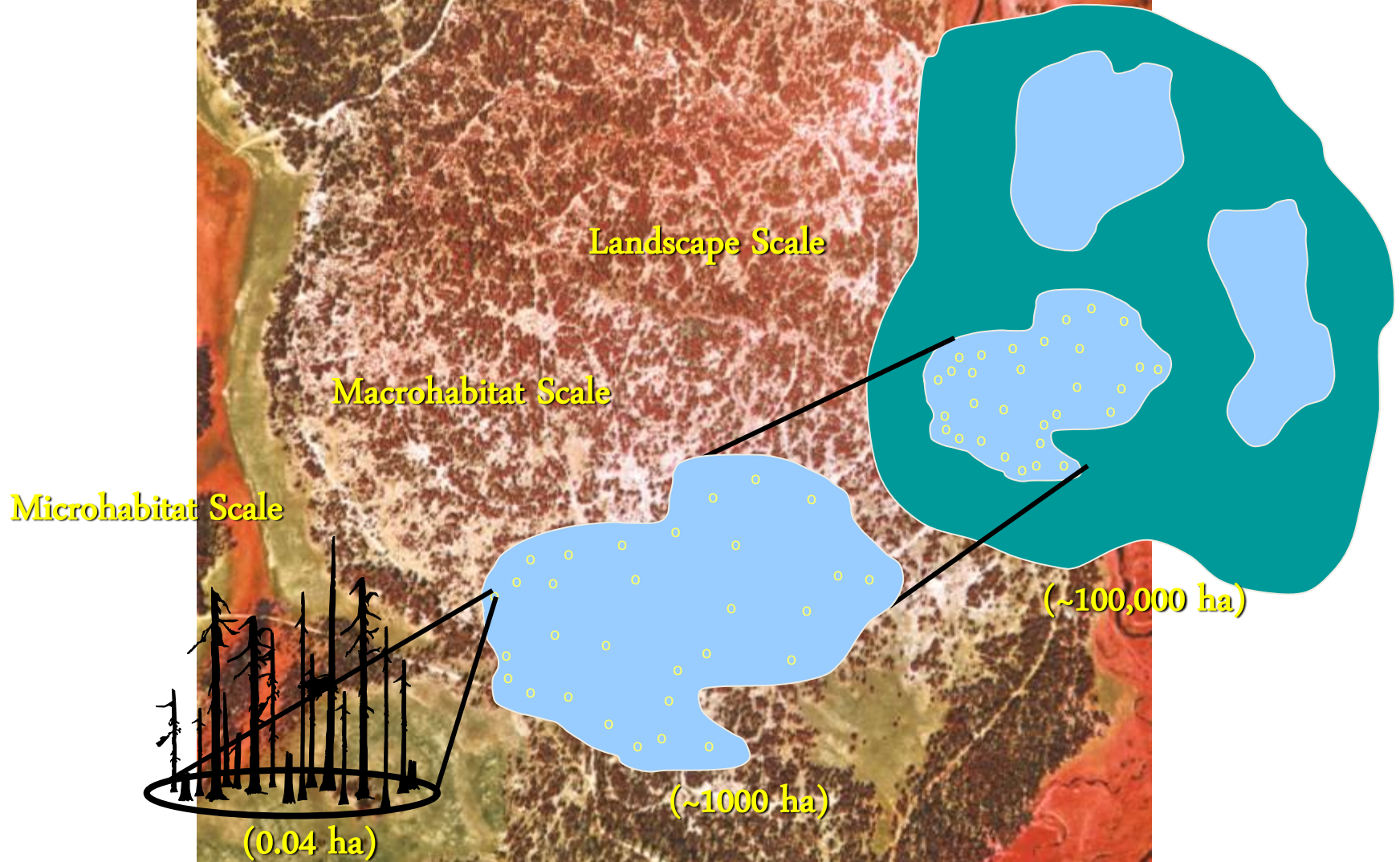
A Plan for the Klamath Tribes' Management  
of the Klamath Reservation Forest

May, 2008

K. Norman Johnson  
Jerry F. Franklin  
Debora L. Johnson

- Restoration of diverse, structurally complex forest ecosystems; and
- Enhancement and protection of the forest, wildlife, water, and soil resources of the reservation.

# Multi-Scale Approach



# The Klamath Tribes approach to ecosystem restoration workforce capacity development.



## Four Interrelated Initiatives:

- 1) Forming strategic partnerships
- 2) Recruiting and training a tribal restoration workforce
- 3) Securing long-term restoration agreements (MSA, MPA, CA, CCPI)
- 4) Building internal NRD staffing capacity for managing restoration programs and projects.

# Klamath Tribal Ecosystem Restoration Workforce Initiative

## Phase 1: 2011-2014

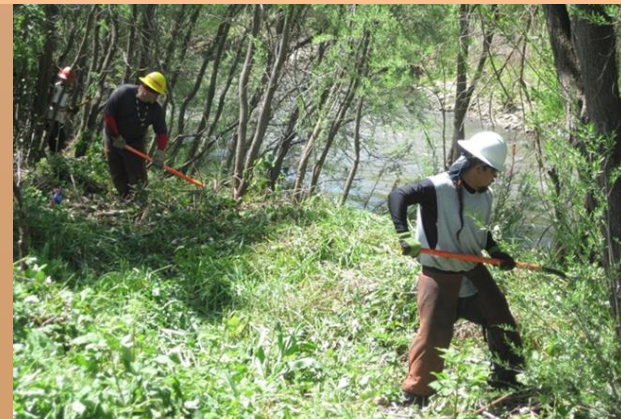
Classroom and field training on federal, state, municipal, and private forest lands.



20 person tribal crew established

## Phase 2: 2011-2014

Advanced technical skills training



# Stewardship Agreements

“Stewardship contracting is a means for federal agencies to contribute to the development of sustainable rural communities, restore and maintain healthy forest ecosystems and provide a continuing source of employment”.

-U.S Forest Service Contracting Guide



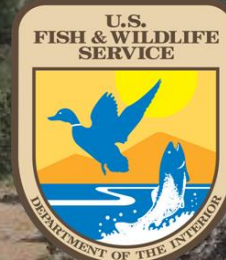
**Agencies Appropriations Act of 1999**  
Section 347 of that bill states the Forest Service may enter into stewardship projects.

# Tribal Stewardship Agreement

## Klamath Reservation Forest-Fremont-Winema NF



1.7 million acres where restoration projects can be developed and conducted.





# KLAMATH TRIBES' FOREST RESTORATION MASTER STEWARDSHIP AGREEMENT



Technical support,  
Project Design,  
Administrative  
Oversight

Senior Partner,  
Fiscal lead,  
Project Design,  
Technical Expertise



Contracting,  
Workforce Training  
& Development,  
Technical Expertise

Multi-Party  
Monitoring,  
Science delivery,  
Technical Expertise



# Master Stewardship Agreement with Supplemental Project Agreements (MSA with SPA's)

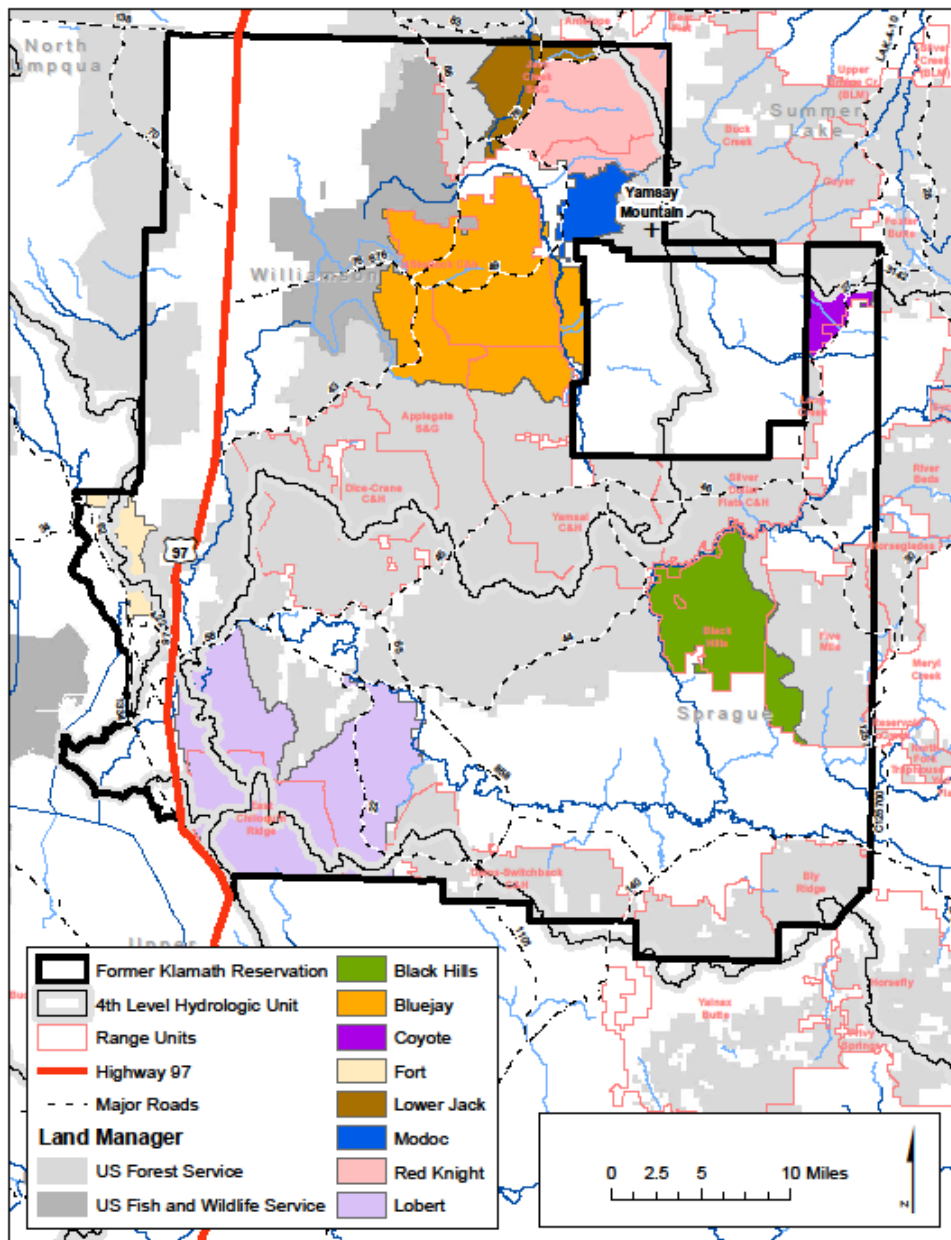
Klamath Tribes / Fremont-Winema NF  
Master Stewardship Agreement

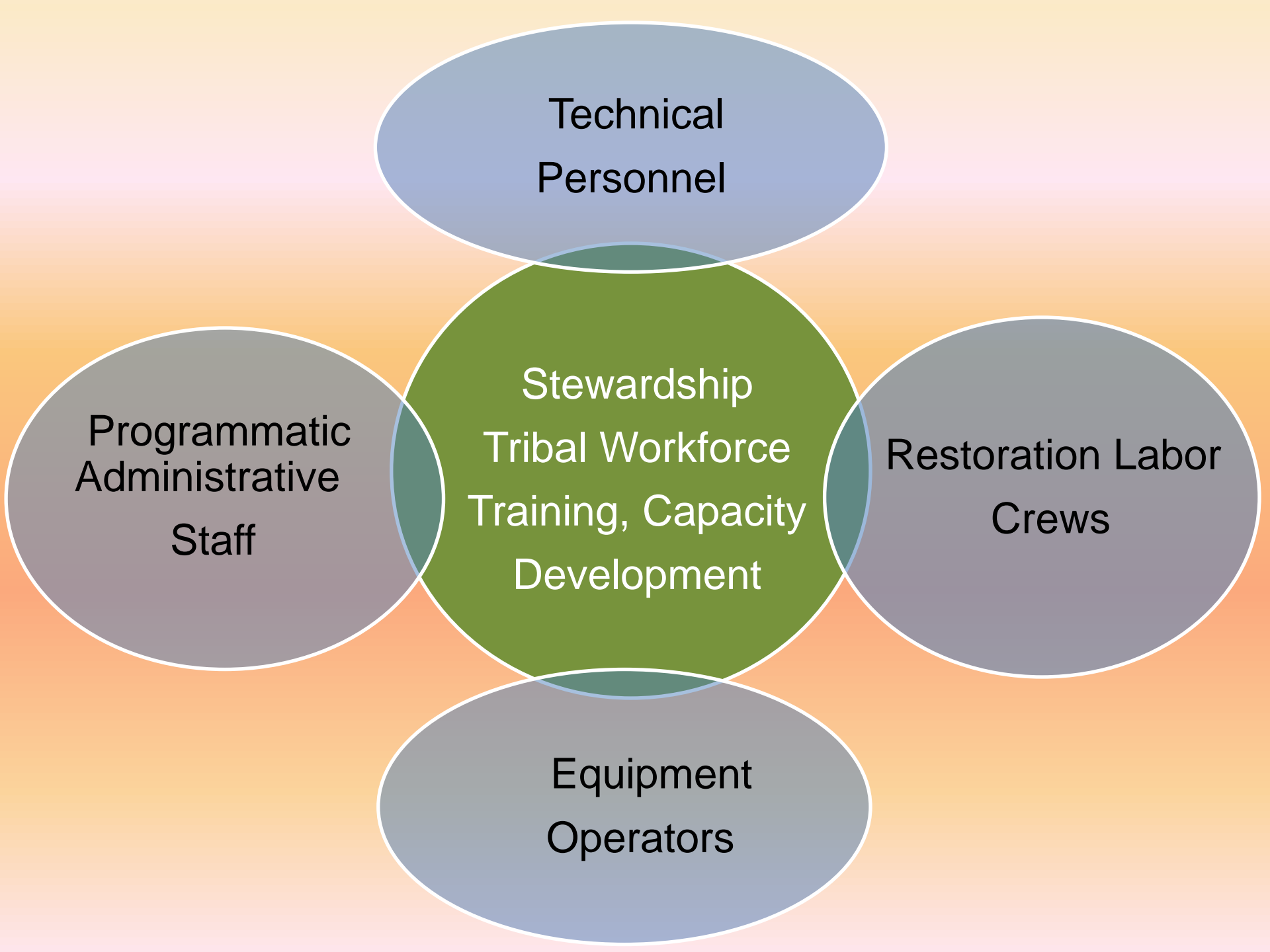
Black Hills  
SPA  
9,000 acres

Coyote Fuels  
SPA  
3,000 acres

Red Knight  
SPA  
32,000 acres

# Fremont-Winema Restoration Projects within Former Klamath Indian Reservation





# Stewardship Agreement Program Staffing Needs



# Klamath Tribal Ecosystem Restoration Workforce Initiative



## Summary of Program

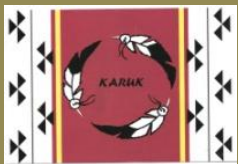
### Accomplishments 2011-2014

- Established 10-year Master Stewardship for restoration implementation on 1.7 million acres
- Approximately \$10 million in project funding secured by tribal partners through restoration revenue, federal, state, and private programs.
- 32 active habitat restoration projects developed and implemented
- 25 tribal workers employed

# Klamath Basin Tribal Youth Employment and Education Initiative

## VISION

*Engage and increase Tribal Youth participation in the preservation of natural resources and ecosystems through the effective use of water, conservation and restoration projects and mutual planning opportunities.*



# Developing Tribal Workforce Capacity for Ecological Restoration of Pit River Ancestral Lands



- Addressing impacts to aquatic / terrestrial habitats, and eco-cultural systems.
- Creating long-term sustainable employment for Pit River tribal members in ecosystem restoration.



# Autonomous Bands of the Pit River Tribe



The Pit River Tribe is a sovereign federally recognized California Indian Tribe, comprised of eleven different autonomous tribal bands that include:

Ajumawi, Aporige, Astariwi, Atsugewi,  
Atwamsini, Hammawi, Hewisedawi, Illmawi,  
Itsatawi, Kosealekte, and Madesi.



Oregon

Siskiyou

Modoc

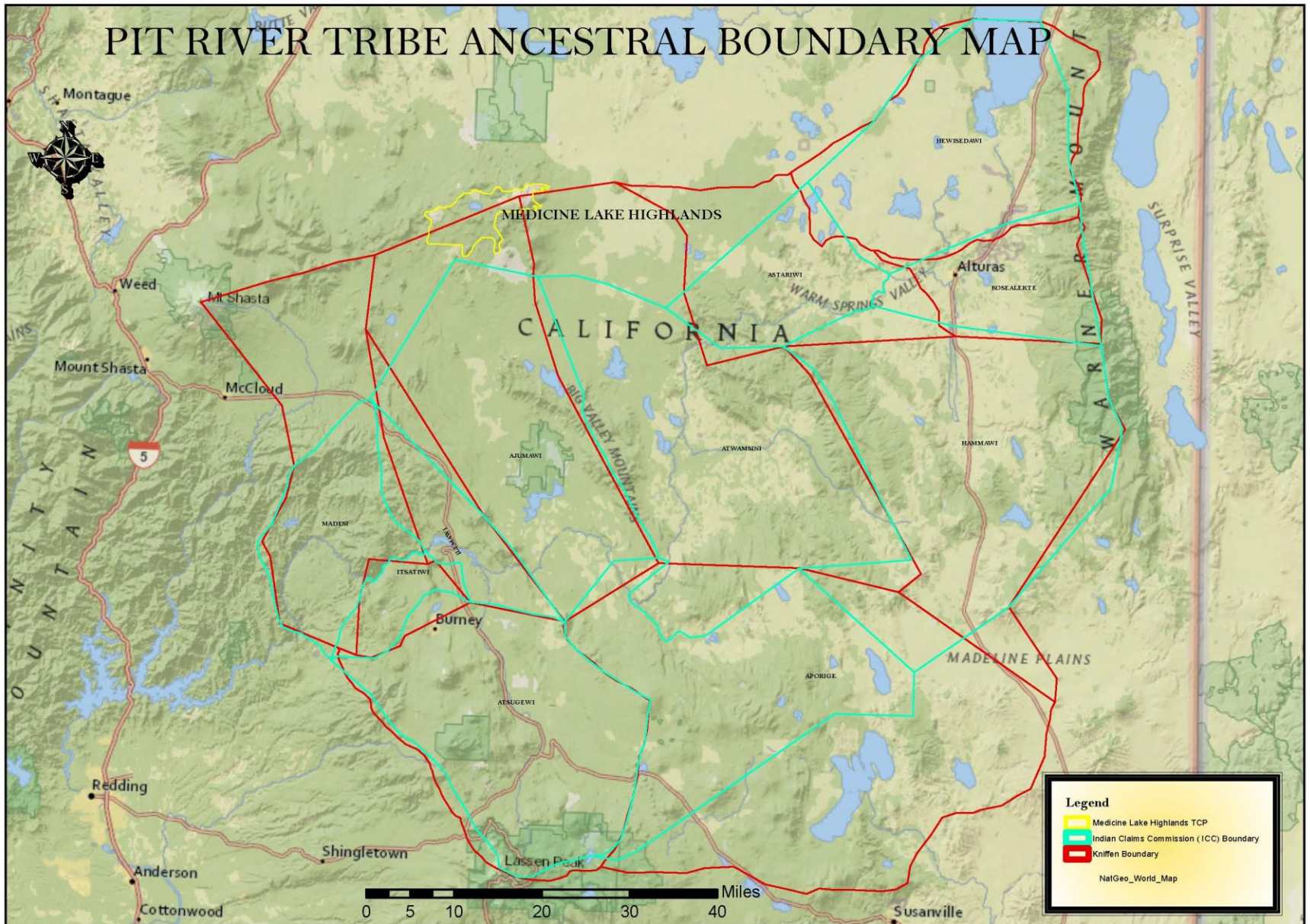
Shasta

Lassen

Nevada



# (The 100 Mile Square)



# The Pit River Tribe has great interest and legal stake in Regional Land-use Planning and Management

- Forests- source of traditional medicines, food, firewood, and basketry materials.
- Sacred sites- valued for their importance in sustaining cultural traditions and life-ways.
- Protection of endangered species, tribal water rights, fisheries water quality and quantity.
- Traditional Ecological Knowledge application to restore watershed and forests.
- Jobs creation for preservation and livelihood.

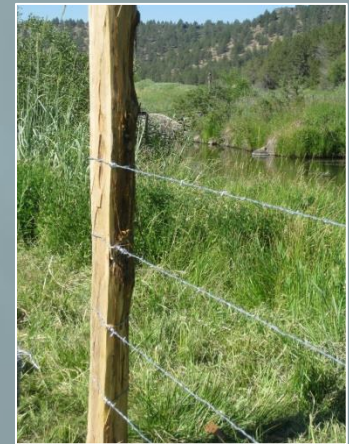
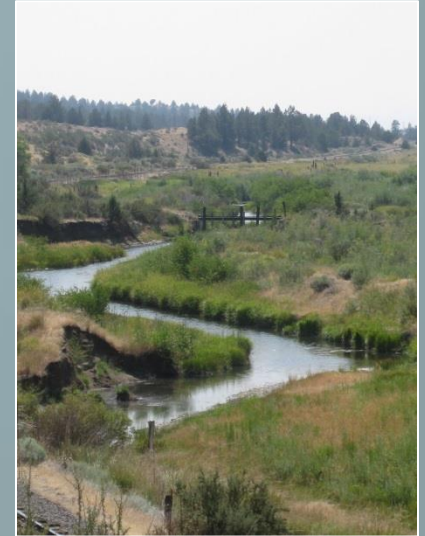
# WATER QUALITY DATA COLLECTION



# CWA 319 NON-POINT SOURCE POLLUTION PREVENTION GRANT



Protecting  
Riparian Buffer  
zone through  
solar offsite cattle  
watering systems.



## XL RIPARIAN RESERVATION FENCING PROJECT

# OFFSITE-SOLAR CATTLE WATERING SYSTEMS



Provide water to Cattle while protecting riparian vegetation; essential to:

- maintain trout fisheries
- Protect water quality
- reduce sediment loading and bank erosion..



# Cattle Exclusion with Riparian Fencing



Spring 2013



North Fork of the Pit River



January 2012

Restoring riparian  
vegetation buffer  
zones. on the



# Hat Creek Aquatic Habitat Restoration and Cultural Protection Project



# Pit River Tribal Restoration Workforce Initiative

## Pit River Tribe

- Staff
- Cultural monitors \$350,000
- Muskrats mitigation
- 20X30 Propagation Greenhouse



## Tribal Restoration Jobs

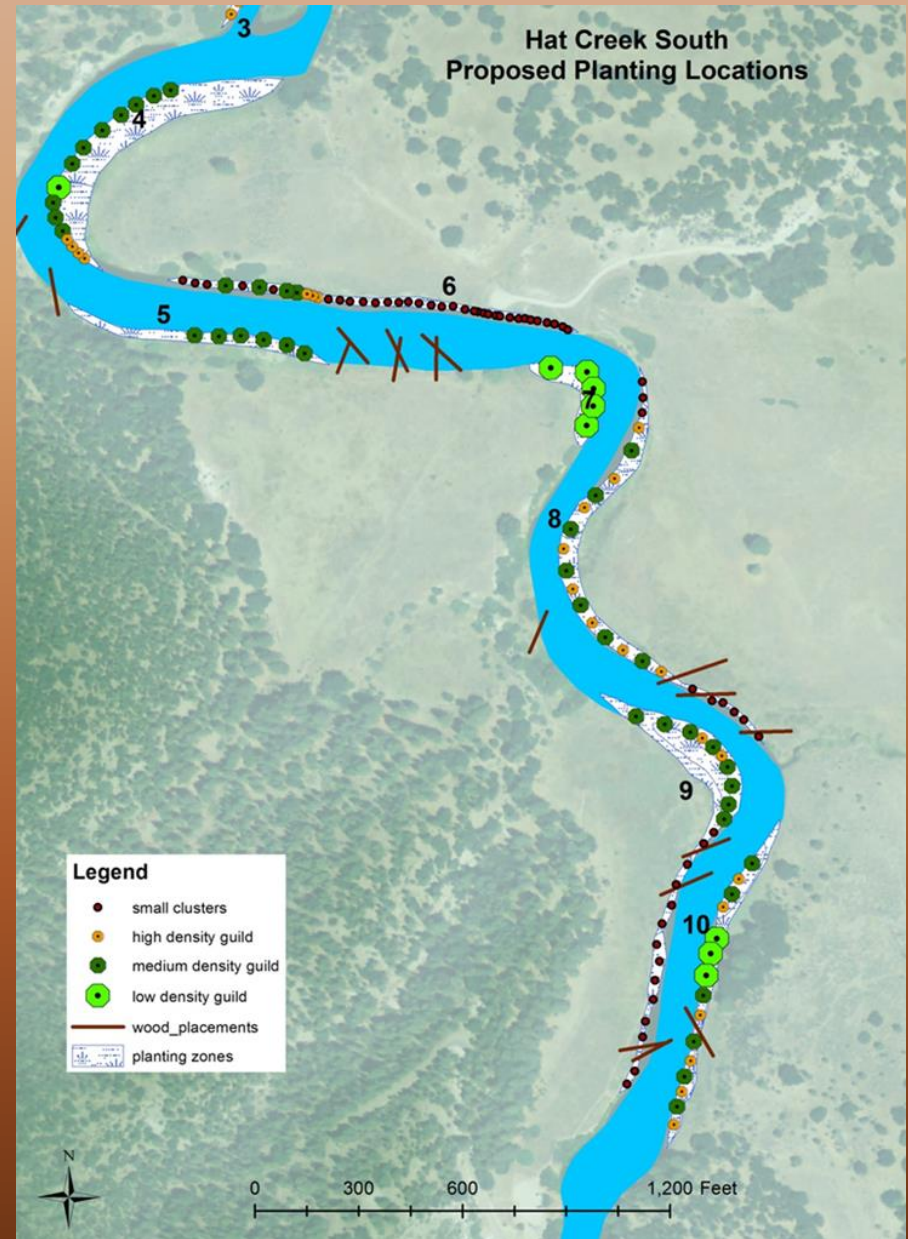
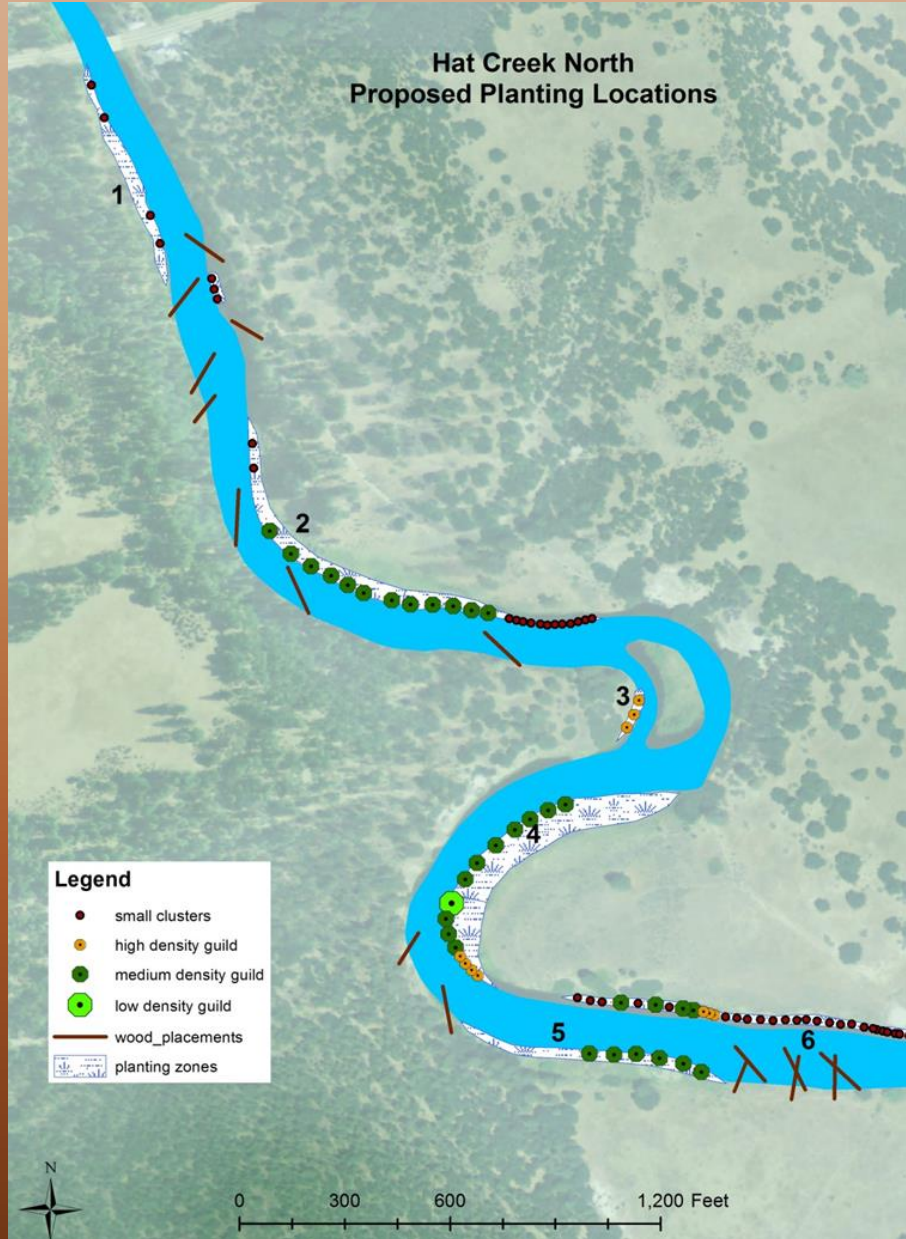
- Aquatic restoration
- Trail construction

## Workforce Training & Employment

15-20 Seasonal Jobs



# Restoring Stream and Riparian Habitat for Native Trout



“Ecological restoration is a process, a directed action aimed at repairing damage to *ecocultural* systems for which humans are responsible”.

*-Indigenous Peoples Restoration Network of the  
Society of Ecological Restoration*



# Species List

Common Name	Scientific Name	Type	Purpose	Composition	Total Number
Pacific willow	<i>Salix lasiandra</i>	hydrophytic	1	49.4%	2224
Cattail	<i>Typha</i> spp.	emergent	1	8.2%	368
Tule	<i>Scirpus</i> spp.	emergent	1	8.2%	368
Spreading rush	<i>Juncus patens</i>	hydrophytic	1	8.2%	368
"White Root" sedge	<i>Carex barbarae</i>	hydrophytic	1	7.7%	348
White alder	<i>Alnus rhombifolia</i>	hydrophytic	1	3.7%	165
Sierra gooseberry	<i>Ribes roezlii</i>	mesic	1, 2	2.5%	112
Douglas spirea	<i>Spiraea douglasii</i>	hydrophytic	1, 2	2.5%	112
Oregon ash	<i>Fraxinus latifolia</i>	hydrophytic	1, 2	1.3%	60
Black hawthorn	<i>Crataegus douglasii</i>	mesic	1, 2	1.2%	53
Klamath plum	<i>Prunus subcordata</i>	mesic	1, 2	1.2%	53
Red osier dogwood	<i>Cornus sericea</i>	mesic	1, 2	1.2%	52
Ponderosa pine	<i>Pinus ponderosa</i>	mesic/ xeric	1, 3	1.0%	44
Skunkbush	<i>Rhus trilobata</i>	mesic/ xeric	1, 2	1.0%	44
California rose	<i>Rosa californica</i>	mesic	1, 2	0.8%	37
Common chokecherry	<i>Prunus virginiana</i>	mesic/ xeric	1, 2	0.8%	37
Blue elderberry	<i>Sambucus mexicana</i>	mesic/ xeric	1, 2	0.8%	36
Incense cedar	<i>Calocedrus decurrens</i>	mesic/ xeric	1, 3	0.4%	17
Totals:				100%	4500

## Purpose codes:

1 = stabilize banks with dense root network

2 = increase native plant diversity

3 = provide for future in-stream large wood recruitment

# Cultural Plants

- Cultural uses of some of the plants suggested for the Hat Creek Planting Plan. Cultural use data source: Dennis Martinez, E

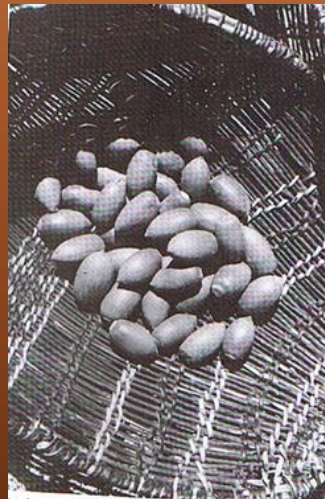
Common Name	Scientific Name	Cultural Use
Pacific willow	<i>Salix lasiandra</i>	basketry, clothing, medicine
Cattail	<i>Typha spp.</i>	food
"White Root" sedge	<i>Carex barbarae</i>	basketry
White alder	<i>Alnus rhombifolia</i>	tools, medicine, dye
Oregon ash	<i>Fraxinus latifolia</i>	tools, bows
Black hawthorn	<i>Crataegus douglasii</i>	food, tools, medicine
Chokecherry	<i>Prunus virginiana</i>	food, tools
Klamath plum	<i>Prunus subcordata</i>	food
Skunkbush	<i>Rhus trilobata</i>	basketry, food
Sierra gooseberry	<i>Ribes roezlii</i>	food
Blue elderberry	<i>Sambucus mexicana</i>	food, medicine
Dogwood	<i>Cornus spp.</i>	tools, medicine

# Riparian Upland Oak / Pine Restoration



# Riparian Upland Oak / Pine Restoration

- Legacy tree protection
- Recruitment of riparian zone wood
- Restoration of historic fire regime (Agee, 1996; Martinez, 2001)





# Acknowledgements

Will Hatcher, Klamath Tribes (photo credits)

Steve Rondeau, Klamath Tribes

Klamath Tribal Council

Pit River Tribal Council

Craig Benz, The Nature Conservancy (photo credits)

U.S. Fish and Wildlife Service Regions 1 and 8

U.S. Forest Service, Fremont-Winema National Forest

# Questions?



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