SEWARD PENINSULA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Meeting Materials

October 22-23, 2019
Nome

What's Inside

On the cover...

Muskox is feeding on grass in the Bering Land Bridge National Preserve.

NPS photo

What's Inside

SEWARD PENINSULA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Mini-Convention Center
Nome

October 22-23, 2019
9:00 a.m. daily

TELECONFERENCE: call the toll free number: 1-866-820-9854, then when prompted enter the passcode: 4801802.

PUBLIC COMMENTS: Public comments are welcome for each agenda item and for regional concerns not included on the agenda. The Council appreciates hearing your concerns and knowledge. Please fill out a comment form to be recognized by the Council chair. Time limits may be set to provide opportunity for all to testify and keep the meeting on schedule.

PLEASE NOTE: These are estimated times and the agenda is subject to change. Contact staff for the current schedule. Evening sessions are at the call of the chair.

AGENDA

*Asterisk identifies action item.

1. **Invocation**
2. **Call to Order** (*Chair*)
3. **Roll Call and Establish Quorum** (*Secretary*).....4
4. **Welcome and Introductions** (*Chair*)
5. **Review and Adopt Agenda*** (*Chair*) 1
6. **Review and Approve Previous Meeting Minutes*** (*Chair*) 5
7. **Reports**

   Council Member Reports

   Chair's Report
8. **Public and Tribal Comment on Non-Agenda Items** (available each morning)
9. **Old Business** (*Chair*)

   a. Wildlife Closure Reviews – information update (*OSM Wildlife*)

      1) WCR20-10 (Unit 22B muskox) 14

      2) WCR20-28 (Unit 22D muskox) 23

10. New Business (*Chair*)

11. Agency Reports

(Time limit of 15 minutes unless approved in advance)

Tribal Governments

Native Organizations

Comprehensive Unit 22 Muskox Report (Cooperative Management Muskox Plan)

(*ADF&G, BLM, and NPS*)

NPS

BLM

ADF&G

OSM

12. Future Meeting Dates*

13. Closing Comments

14. Adjourn (*Chair***)**

To teleconference into the meeting, call the toll free number: 1-866-820-9854, then when prompted enter the passcode: 4801802.

Reasonable Accommodations

The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for sign language interpreting services, closed captioning, or other accommodation needs to Karen Deatherage, 907-474-2270 or karen_deatherage@fws.gov or 800-877-8339 (TTY), by close of business on October 1, 2019.

REGION 7
Seward Peninsula Subsistence Regional Advisory Council

Seat	Year Appointed *Term Expires*	Member Name and Community	
1	2018 ***2021***	**Lloyd S. Kiyutelluk** Shishmaref	
2	2016 ***2019***	**Brandon D. Ahmasuk** Nome	
3	2010 ***2019***	**Louis H. Green, Jr.** Nome	**Chair**
4	2003 ***2019***	**Tom L. Gray** Nome	**Vice-Chair**
5	2017 ***2020***	**Deahl Katchatag** Unalakleet	
6	2016 ***2020***	**Leland H. Oyoumick** Unalakleet	
7	 ***2020***	***VACANT***	
8	1994 ***2021***	**Elmer K. Seetot, Jr.** Brevig Mission	**Secretary**
9	2012 ***2021***	**Charles F. Saccheus** Elim	
10	2015 ***2021***	**Ronald D. Kirk** Stebbins	

SEWARD PENINSULA SUBSISTENCE REGIONAL ADVISORY COUNCIL
April 23-24, 2019
Mini-Convention Center, Nome, Alaska

Meeting Minutes

The meeting was called to order at 9:00 am a.m.

Roll call
A quorum was established with the following Council members present in person or via teleconference: Louis Green, Jr., Elmer Seetot, Jr. (absent first day due to weather), Charles Saccheus, Leland Oyoumick, Tom Gray, Lloyd Kiyutelluk, and Ronald Kirk Absent: Deahl Katchatag (excused), Brandon Ahmasuk

Welcome and Introductions

Participating in Person
Karen Deatherage, Office of Subsistence Management (OSM), Fairbanks
Suzanne Worker, OSM, Anchorage
Megan Klosterman, OSM, Anchorage
Hannah Voorhees, OSM, Anchorage
Robbin La Vine, OSM, Anchorage
Ken Adkisson, Bering Land Bridge National Preserve, National Park Service (NPS) Nome
Nicole Braem, NPS, Nome
Tom Sparks, Bureau of Land Management (BLM), Nome
Walker Gruse, Law Enforcement, BLM, Nome
Brian Uberlaker, BLM, Nome
Bill Dunker, Alaska Department of Fish and Game (ADF&G), Nome
Tony Gorn, ADF&G, Kotzebue
Sarah Germain, ADF&G, Nome

Participating via Teleconference
Ben Mulligan, ADF&G, Juneau
George Pappas, OSM, Anchorage
Karen Hyer, OSM, Anchorage
Christina Brummer, OSM, Anchorage

Review and Adopt Agenda
Gray moved to adopt the agenda as amended: 1) Add the Bering Sea Western Interior Resource Monitoring Plan under New Business, following Board of Game proposals. Seconded by Kirk and approved unanimously as amended.

Review and Approve Previous Meeting Minutes
Kirk moved to approve the minutes from the fall, 2019 meeting. Seconded by Gray and carried unanimously.

Elections of Officers

Deatherage opened the floor for nominations for Council Chair. Seetot nominated Louis Green as Chair, seconded by Kirk and moved to close nominations. The Council unanimously elected Louis Green Jr. as Chair.

Chairman Green opened the floor for nominations for Vice Chair. Elmer Seetot Jr. nominated by Gray. The nomination was declined by Seetot. Seetot moved to nominate Tom Gray as Vice-Chair. Seconded by Kirk. Kirk moved to close nominations. The Council unanimously elected Tom Gray as Vice-Chair.

Chairman Green opened the floor for nominations for Secretary. Elmer Seetot Jr. nominated by Kirk. Seconded by Gray. Kirk moved to close nominations. The Council unanimously elected Elmer Seetot Jr. as Secretary

Council Member Reports

The following is a summary of individual Council member reports.

Saccheus - Saccheus reported that hunters going out between St. Michaels and Nome have been seeing Herring gulls and Old Squaws and other types of birds floating upside down on the water. He believes that North Korean bomb testing in the oceans and prevailing winds bring radioactive damage to the West Coast and to our oceans. This could also be what is happening to the salmon.

Oyoumick - Oyoumick reported that some hunters got their oogruk which were by the islands. There was no ice in the ocean and the weather has messed up everything. Some things we can change but some we cannot. Oyoumick stated he was hopeful that people would have time to have their say on the Bering Sea Western Interior Resource Management Plan. He concluded by stating hunters from the village had to go all the way up to Buckland for caribou this year.

Gray – Gray reported that ice conditions in the ocean were terrible. Only a couple of people went crabbing and then lost pots because of the ice. Moose season ended after only a half dozen days. Gray believes hunters are getting much more efficient at killing animals. Gray heard there were 18 storms through Nome, brought in by the east wind. The snow just wouldn't quit and is now frozen hard. Climate change is really impacting subsistence activities. There was a decent red and silver fishery this year with humpies swarming the river.

Kiyutelluk – Kiyutelluk said there were lots of caribou in the Shishmaref area right now. Now we have to wait until after Thanksgiving to cross over the ice due to climate change. Villagers had to go to Wales for oogruk this year because there was no ice in the ocean. There is a late freezing now, however, so we have to wait. Kiyutelluk expressed his appreciation for being able to serve on the Council.

Kirk – Kirk reported that climate change has a big impact on local subsistence. There wasn't any solid ice but men didn't have to go far for oogruk because they were out on Stewart Island. There was very little snow. There were moose and some wolves hanging around the village

which is odd. Kirk concluded that with climate change there are too many unknowns about what is going on with the animals and its hurting subsistence and people.

Green – Green reported that moose season went by quickly. He questions why there isn't a Tier II situation for moose as the population is definitely on a decline. Green was in Unit 22D remainder and saw three moose but they were hard to get to. There were lots of airplanes in the area. Green would like to see some action to close these lands to non-Federally qualified users. The priority should be to provide for locals. Up to 17 storms wreaked havoc on the ice. The ice goes in and out and is really unstable. Green's brother is a crab fisherman and was unable to get out due to weather and conditions. Green said there was a Board of Fish proposal for the Nome subdistrict to reinstate commercial fishing. The district has been in a Tier II situation since 1999 and is the only Tier II fishery in the State of Alaska. Green shared concerns as not all of the rivers in the region have salmon running abundantly. Some rivers have way too many pinks. If you are going to reinstate commercial, it should be a pink salmon fishery only with a purse seiner as they are very efficient. Last summer in Safety Sound, Green witnessed pink salmon coming in for two weeks straight – thousands and thousands of them. Most of the fish went up to the Nome River where Green believes there were 441 thousand fish in one day with a total run of 3.2 million. Green said the community could have capitalized on them if they had a purse seiner. Green remarked on the low water of the Nome River, with lots of algae. With all the snow there could be a lot of scouring. He is not sure if that is good or bad for salmon, but it's definitely time to adapt to the changing ice and conditions. The Pilgrim River is providing good salmon for the locals. The seals have apparently found areas on the islands to exist.

Green attended the Federal Subsistence Board meeting in April where all the chairs were in attendance. He shared about a fisheries special action in Unit 13 and how AHTNA was opposed to additional gear types because they did not want more people to fish. The Southcentral Council, however, made suggestions to ensure that there was a subsistence opportunity. Green was very glad to see that the Board found in favor of the Council in the area. Green reminded the Council that they are being heard and the Board continues to give deference to area Council positions.

Public and Tribal Comments on Non-Agenda Items

There were no public or Tribal comments on non-agenda items.

New Business

Robbin La Vine introduced the new wildlife closure policy which included considering closure reviews in the same manner as proposals and staggering them every four years with half reviewed during the wildlife cycle and half during the fisheries cycle, with even years for wildlife and odd years for fisheries. Closure review analysis will be handled similarly to proposal analysis and Council recommendations will be given deference by the Board in their decision making.

a) Wildlife Closure Reviews

1) WCR18-28 (Unit 22D muskox)

Megan Klosterman introduced WCR18-28. This closure affects the Unit 22D southwest hunt area and limits muskox harvests under Customary and Traditional Use to residents of Nome and Teller. Gray clarified that this area is closed to non-Federally qualified users. Klosterman shared that the number of permits issued is very low. Gray moved to retain the current closure in WCR18-28. Seconded by Kiyutelluk and passed unanimously.

The Council heard from the report that the harvestable surplus calculation method was changed in 2012 due to low abundance and low mature bull/cow ratios. As a result, the Council continues to be concerned about herd recovery and would like to see the closure remain in place to protect the population, while still allowing for a small harvest by local subsistence users.

2) WCR18-29 (Unit 22D remainder muskox). This closure affects Unit 22D remainder and limits muskox harvests under Customary and Traditional Use to residents of Elim, White Mountain, Nome, Teller and Brevig Mission. Klosterman reported that the populations have been more stable from 2015-2017 but still sustain an average harvest of only 2 animals annually. Gray moved to retain the closure under WRC18-29, seconded by Kirk and passed unanimously. The Council agreed with the OSM position to retain the closure to allow the population to grow with a small harvest from local users.

3) WCR 18-44 (Unit 22D Kuzitrin muskox). The closure covers muskox harvest for that portion of Unit 22D in the Kuzitrin drainages. Klosterman reported that muskox in this area have declined in the past and continued to decline from 2015-2017. Kirk moved to retain the closure under WCR18-44, seconded by Gray. Gray expressed his alarm at the abundance stating they were half of what they were 7 years ago. Dunker explained that it could be because of migration as they see a lot of movement between subunits. Adkisson stated that this area and the area under 22D remainder are managed under a single quota of 8-10 animals annually. NPS has issued 2 permits annually for the Kuzitrin part of Unit 22D with no reported success. BLM issues permits for the central upper portion of Unit 22D and the State issues the remaining permits. Past total quota has been reduced from 8 to 6 animals and will likely be just 1-2 animals in the Kuzitrin drainage for this season. Klosterman reported that annual harvest in the Kuzitrin area has averaged 4 muskox. Green inquired about predation. Dunker stated that wolf harvest is recorded through sealing and variable year to year due to effort, caribou location and trapping conditions. Brown bear harvest has been more stable in the last several years in Unit 22D. Gray expressed concern that if the bear population becomes too low it won't be able to recover. The motion to retain the current closure under WCR18-44 carried unanimously.

4) WCR 18-30 (Unit 22E muskox)
Klosterman explained that WCR18-30 closed muskox harvest in Unit 22E to non-Federally qualified users. Gray moved to retain WCR18-30, seconded by Kirk. Klosterman reported that, as with other subunits, the population started to decline in 2010. This population, however, has remained stable in more recent years. The Council

agreed with the OSM position to keep the closure in place to allow for healthy growth and a small harvest to meet subsistence needs. Motion carried unanimously.

5) WCR 18-10 (Unit 22B muskox)
Worker presented WCR18-10 which closed muskox harvest to non-Federally qualified users in Unit 22B. Worker stated that this population declined in both bulls and recruitment. Gray expressed concerns about the lack of population surveys and Green suggested closing the hunt altogether to allow recovery. The last population estimate was in 2017. Gray noted that the Muskox Cooperative Management group has not met for many years. He expressed concerns that the agencies did not have the information needed for the Council to make good decisions. Gray stated that the three agencies need to get out and keep track of these animals, particularly in the areas that are hunted heavily by Nome residents. Gray moved to retain WCR18-10, seconded by Kirk and carried unanimously. Kirk mentioned that animals move around a lot and that bears may be playing a role in muskox declines.

Bill Dunker, ADF&G shared a muskox overview, stating that after reintroduction the population experienced growth but peaked in 2010. The three managing agencies – BLM, NPS and ADF&G – use a range-wide protocol for surveys due to feasibility and precision. Collared animals reflect substantial movement between herds, some in excess of a hundred miles. As a result, it's not uncommon to see variability in smaller units. Declines began in 2010 with adult female mortality events. ADF&G now has a dedicated muskox biologist on staff, Brynn Parr. Dunker reported that weather was extremely challenging for a survey in 2019 so another attempt will be made in 2021. Surveys must be conducted in late winter/early spring due to the lack of snow in the fall. Gray expressed concern about the delay in a population survey and moved to submit a letter, with copies to the Board, for an earlier survey and comprehensive report from the managers. Oyoumick asked if there could be a photo census similar to the caribou surveys. Saccheus inquired about surveying on private land and whether muskox return to calving grounds. Dunker stated that muskox don't have the fidelity for calving grounds like caribou. When asked about the two year delay with surveying, Dunker responded it wasn't as much of a financial issue as a timing issue. Moose surveys in Unit 22D are a survey priority particularly given they have not been surveyed since 2014 when there was a large decline in the population.

b) Call for Wildlife Proposals
Suzanne Worker introduced the call for wildlife proposals and explained the extension given to Councils meeting later due to the lapse in Federal government funding. The Council discussed the cow season currently permitted in Unit 22D remainder under regulation but closed via special action. ADF&G confirmed that cow hunting season was closed on State lands in Unit 22D. Gray moved to permanently close cow hunting in Unit 22D remainder, seconded by Oyoumick and carried unanimously. The Council justified its position on this closure using information from the special action submitted by the BLM and approved by the Board. The moose population in this area continues to be of very low density, and is not growing at the rate needed to reach healthy sustainable levels.

Green expressed concerns regarding non-local moose harvest in Unit 22D remainder and inquired about the 2018 State harvest. Dunker did not have the harvest numbers but assumed it was pretty stable. Gray moved to close Unit 22D remainder moose harvest to non-Federally qualified users. Seconded by Kirk and carried unanimously. The Council requested that the regulation be written similarly to those for the rest of Unit 22D where Federal public lands are closed to the harvest of moose except by Federally-qualified subsistence users. Council members stated, as with the justification for a cow moose harvest prohibition, this moose population is struggling and any harvestable surplus should go to local subsistence users.

c) *Council Charter Review*
Deatherage shared the Council Charter renewal request and remarked on those areas where the Council could make recommendations. Kirk moved to make no recommendation for changing the current charter, seconded by Gray and passed unanimously

The Council discussed their concerns with the lack of public participation at meetings. Recommendations were made to hold potlucks, evening or weekend meetings, and engage youth and the schools.

d. *Approve FY2018 Annual Report*
Seetot moved to adopt the draft Annual Report as the final to the Board. Seconded by Kirk and carried unanimously.

e. *Alaska Board of Game Call for Proposals* (Arctic, Western, and the Interior Regions) for 2019/2020 Meeting Cycle
Deatherage read the Board of Game Call for Proposals for the Arctic, Western and Interior regions for the 2019/2020 meeting cycle. The deadline for submitting proposals is May 1. The Council did not wish to submit any proposals.

f. *Bering Sea Western Interior Resource Monitoring Plan.* (BSWI)
Tom Sparks, BLM, shared that the BSWI began in 2010 and will guide the BLM for managing this vast area for the next 20-30 years. Sparks informed the Council that a BSWI meeting was held in Unalakleet yesterday with local residents. The plan covers 62 million acres of which 14 million are BLM managed lands. Sparks shared a handout and went over the current alternatives, with Alternative C being the current preferred alternative. The comment period for BSWI ends on June 13. Sparks touched on major issues including transportation concerns on the Iditarod Trail and wild and scenic rivers, and communication towers. Although there are no road issues, there are mining concerns south of the Seward Peninsula. Interactions between reindeer and caribou are also discussed with the question as to whether certain areas should be opened to reindeer grazing. Multiple one-page fliers were provided covering a range of important topics in BSWI. Gray was concerned about the timeframe and the impacts of the Ambler Road on caribou. He noted that while stakeholders in Ambler were consulted, his traditional council was not despite the fact that impacts to caribou will affect the Seward Peninsula.

Sparks invited those interested to request government to government consultations. He also noted that the Central Yukon Resource Monitoring Plan covers the Ambler Road issue.

Meeting recessed at 4:43 p.m.

The Chair called the meeting to order at 9:05 a.m.

Public and Tribal Comments on Non-Agenda Items
There were no public or Tribal comments on non-agenda items.

Agency Reports

National Park Service Bering Land Bridge National Preserve, (BELA)
Ken Adkisson, NPS in Nome remarked on the importance of the Council's work and apologized for staff who were unable to make the meeting due to schedule conflicts. The NPS takes the work of the Council very seriously. Ken discussed duel management of the muskox hunts, the declines in both population and harvestable surplus and the need to rebuild the population. The NPS issued two permits for the Kuzitrin drainage hunt but no animals were taken. Two permits were also issued to Shishmaref for Unit 22E and both were filled. Seetot inquired about movements and Adkisson responded muskox did move but they were not sure if travel was individual or by small social groups.

Nikki Braem updated the Council on the beaver trapping clinics as well as an NPS proposal to OSM's Fisheries Resource Monitoring Program (FRMP) for baseline fish inventory data in the in BELA. Braem is hopeful that the inventory project, which focuses on major drainages, will be funded through the FRMP. The Village of Shishmaref expressed interest in beaver trapping clinics during Tribal consultation. The NPS will be looking at beaver expansion, fish above and below dams, and water quality. Additional research in BELA includes a moss/lichen study and possible contaminants, and the impacts of aircraft activity on subsistence.

Gray remarked on beaver dams and asked that researchers ensure fish are present. Gray also urged BLM, NPS and ADF&G to hold another muskox cooperators meeting. He is concerned that State permittees can hunt on Federal land but Federal permittees cannot hunt on State land. Gray would also like to see the youth involved and inquired about designating one or two muskox permits for a youth hunt to instill this important subsistence species into the future. Adkisson said the NPS would speak to ADF&G to bring together a cooperators meeting.

Alaska Department of Fish and Game (ADF&G)
Bill Dunker, area biologist, in Nome stated that proposals to the Board of Game (BOG) for the January 17-20, 2020 meeting in Nome are due May 1. Dunker discussed the moose situation in Unit 22D and how surveys have not been conducted due to weather. The bull/cow ratio is well below the management objective of 30 bulls:100 cows at 18 bulls:100 cows surveyed last fall. ADF&G has submitted a proposal to the BOG for a registration permit to help improve harvest reporting.

The bull:cow ratio shows that the population is overharvested. ADF&G would like discretionary permit authority to determine when, where and how many permits are issued. This occurs with Unit 22B west moose hunts and is effective. Green inquired about non-resident hunting in Unit 22E. Dunker confirmed that movement between animals in Unit 22E and 22D remainder occur but that impacts are unknown. Dunker also stated that recruitment was at 18% in Unit 22E but only 11% in Unit 22D remainder. Gray remarked that 13 tags go to non-residents in Unit 22E. Green shared frustration about the lack of restrictions for non-residents, particularly given the movement between the two populations between subunits.

Braem inquired about the harvestable surplus relative to Amount Necessary for Subsistence (ANS) in Unit 22. Dunker replied that the range-wide ANS for moose was between 250-300 animals. ANS was 314 moose. When the harvestable surplus is above 300 it is opened to everyone. When it is between 250-300 it becomes a Tier I. Below 250 and it becomes a Tier II. Braem commented that the mean harvest can be higher because there may be a high year and you don't get a lot of household surveys. Dunker responded that the latest data included in the average was from 2016.

Dunker reported that 33 moose were harvested in Unit 22D; 25 by locals and 8 by non-local residents. In Unit 22E, 29 moose were harvested with 13 by locals, 3 by non-locals and 13 by non-residents. Moose populations in Unit 22B show improvements, and in Unit 22C spring recruitment of 98% is encouraging. There has been increased bear take in Unit 22C. Currently, there is a harvestable surplus of 33 muskox bulls. Twenty-four bulls were harvested and 3 cows. A range-wide composition was conducted to look at mature bulls. There are lots of issues in Unit 22D with muskox. Kirk shared concerns with the non-resident take of moose in Unit 22E, as well as predation. Gray suggested an open season on wolves and harvest of female bears. Oyoumick said if there was a no fly zone people wouldn't hunt.

Council members suggested putting in a proposal to issue at least one muskox permit to a youth program that included hunter safety, Council meeting participation and harvest assistance.

OSM

Robbin La Vine, acting anthropology division supervisor, reported that due to the lapse in government funding, fisheries proposals adopted by the Federal Subsistence Board at their April meeting would not go into effect until after the fishing season began. As a result, the Board passed a number of temporary special actions to implement the changes before fishing season began. LaVine also updated the Council on OSM staffing, including the departure of Gene Peltola the Assistant Regional Director and Carl Johnson, the Council Coordination Division Chief. There are also other vacancies including the anthropology division chief, a fishery biologist and administrative assistant positions. LaVine announced that Greg Risdahl had been hired as the new Fisheries Division Chief, and Hannah Voorhees as a new Anthropologist who will be working with the Seward Peninsula Council.

La Vine and Voorhees discussed the Fisheries Resource Monitoring Program (FRMP) and proposals from BELA for baseline fisheries data and the Unalakleet River weir. The call for proposals closed March 15th. There were 28 proposals received and the Council will be provided with the results of the review at their fall meeting. Kirk inquired about the Norton Sound

Economic Development Corporation (NSEDC) and La Vine encouraged their participation in the FRMP program to address fish counting issues in the southern portion of the region. Karen Hyer, Fisheries Biologist with OSM, remarked that OSM currently partners with NSEDC on the North and Unalakleet river projects. In response to an inquiry by Kirk, Hyer said she would speak with NSEDC regarding fish counts on the Pikmiktalik River, which had been conducted in past years. Kirk agreed to bring the subject up with the Tribal Council.

La Vine said the call for proposals for the Partners Program had also closed with 14 applications in a very competitive process.

Gray asked that the issue of encouraging Americans to engage in outdoor recreation in the Council Charter be re-examined. Deatherage explained that this portion of the Charter was included as a result of an Executive Order from the current Administration. While the Council is not permitted to remove or change the language, it is certainly welcome to put forth its concerns to the Board. Gray requested that the issue be put on the Agenda for the Council's fall meeting in Nome.

Future Meeting Dates

The Council confirmed its fall meeting dates of October 22-23, 2019 in Nome. The Council then selected March 11-12, 2020 for its winter meeting in Nome.

Closing Comments

Kirk thanked the staff for preparing the meeting and getting us here and home on time. It was a very good meeting. He said there wasn't much moose hunting in the area because of high water. Seetot thanked staff, and State and Federal agency participation. He mentioned open water and the need to adapt to the changing times. Oyoumick said it was a good meeting and he had good conversations with people. Gray enjoyed the meeting but was frustrated with the lack of public participation. He thanked agency staff for their participation.

Adjourn

Kirk moved to adjourn, seconded by Seetot. The motion carried unanimously.

I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.

April 24, 2019

/s/_____
Karen Deatherage, DFO
Office of Subsistence Management, USFWS

/s/_____
Louis Green Jr., Chair
Seward Peninsula Subsistence Regional Advisory Council

These minutes will be formally considered by the Seward Peninsula Subsistence Regional Advisory Council at its next meeting, and any corrections or notations will be incorporated in the minutes of that meeting.

FEDERAL WILDLIE CLOSURE REVIEW
WCR20-10

Closure Location: Unit 22B—Muskox

Current Federal Regulation

Unit 22−Muskox

Unit 22B—1 bull by Federal permit or State permit.	*Aug. 1 – Mar. 15*
Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations	

Closure Dates: Year-round

Current State Regulation

Unit 22−Muskox

Residents: Unit 22B, east of the Darby Mtns., including drainages of Kwiniuk, Tubutulik, Koyuk and Inglutalik rivers—one bull by permit	*TX105*	*Aug. 1 – Mar. 15*
Residents: Unit 22B remainder—one bull by permit	*TX105*	*Jan. 1 – Mar. 15*

Regulatory Year Initiated: 2001

Regulatory History

The Federal public lands closure for muskox in Unit 22B has been in place since 2001, when the Federal Subsistence Board (Board) adopted WP01-35. As a result of this proposal, which was submitted by the Seward Peninsula Muskox Cooperators' Group (the Cooperators), muskox harvest in Unit 22B was allowed by Federal regulation for the first time. The season was open Aug. 1 – Mar. 15 throughout the unit, harvest was limited to one bull by Federal or State permit, and Federal public lands were closed except to Federally qualified subsistence users. The harvest quota was set at 8 bulls.

The State season in Unit 22B was also implemented in 2001. At that time, the harvest of one bull was allowed by Tier II permit (TX105). In the portion of Unit 22B within the Fox River drainage upstream of the Fox River bridge and within one mile of the Council Road east of the Fox River bridge, the season was Nov. 1 – Mar. 15. In Unit 22B remainder, the season was Aug. 1 – Mar. 15.

In 2002, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted WP02-27, requesting that the Superintendent of the Western Arctic National Parklands be delegated the authority to set annual harvest quotas, in consultation with the Bureau of Land Management (BLM) and the Alaska Department of Fish and Game (ADF&G). They believed this would result in more efficient management of the Seward Peninsula muskox population. This proposal was adopted by the Board with modification to make minor adjustments to the regulatory language, as recommended by the Seward Peninsula and Northwest Arctic Subsistence Regional Advisory Councils.

In 2003, the Board considered WP03-41, submitted by Thomas Sparks of Nome. Originally submitted as a proposal to expand the customary and traditional use determination (C&T), the proponent amended the proposal to request that the Federal public lands closures in Units 22B and 22D be rescinded. The proponent argued that many Tier II users with a history of subsistence use of muskoxen were being excluded from Federal lands. The Seward Peninsula and the Northwest Arctic Subsistence Regional Advisory Councils recommended that the proposal be deferred until after it was considered by the Cooperators. ADF&G and the Interagency Staff Committee concurred with this recommendation and the Board deferred the proposal.

During the 2004 regulatory cycle, the proponent of WP03-41 withdrew the amended proposal and instead submitted WP04-71, requesting that the C&T in Units 22B and 22D be extended to all residents of Unit 22, except those from St. Lawrence Island. Previously, only residents of Unit 22B had C&T in Unit 22B and only residents of Unit 22D, excluding residents of St. Lawrence Island, had C&T in Unit 22D. The Board adopted the proposal with modification, as recommend by the Council, to 1) add residents of Unit 22C to the C&T determination in the portion of Unit 22B west of the Darby Mountains, and 2) add residents of Unit 22C and White Mountain to the C&T determination in the portion of Unit 22D in the Kougarok, Kuzitrin and Pilgrim River drainages.

In 2006, the Cooperators submitted WP06-41. This proposal requested that a designated hunter system be implemented for muskoxen throughout Unit 22. This request was supported by the Council, which noted that it was well aligned with traditional harvest and sharing practices. The Board adopted the proposal. The same year, the Federal public lands closure was reviewed through WCR06-10. The Office of Subsistence Management's analysis, which recommended retaining the closure, was presented to the Council, but the Council did not take action on the review.

In 2008, the Alaska Board of Game (BOG) made several regulatory changes affecting muskox in Unit 22B. Notably, the Unit 22B hunts become registration hunts, rather than Tier II hunts, with permit distribution limited to vendors in Nome and Unit 22B. Unit 22B hunt area boundaries were also adjusted. Within the portion of Unit 22B east of the Darby Mountains, including drainages of the Kwiniuk, Tubutulik, Koyuk and Inglutalik rivers, the season remained Aug. 1 – Mar. 15. In Unit 22B remainder, which now encompassed the entire western portion of the unit, the season was Jan. 1 – Mar. 15. The harvest limit remained one bull. Trophy destruction was required for all skulls removed from Unit 22.

The same year, the Cooperators submitted Temporary Special Action WSA08-08, requesting that the Federal muskox hunt in Unit 22B west of the Darby Mountains be limited to the communities of White

Mountain and Golovin. This request followed a meeting of the Cooperators focused on developing recommendations for State and Federal muskox regulations. Specifically, the Special Action was submitted in response to the proposed Aug. 1 – Mar. 15 State season in the western portion of Unit 22B. The BOG's decision to delay opening the season until January 1, along with limited permitting locations and trophy destruction requirements, were influential in the Board's decision to reject this request.

The Federal public lands closure was reviewed in 2010 through WCR10-10. At that time, the Council voted to maintain the status quo. They believed the harvestable surplus was not sufficient to support use by non-Federally qualified users, and that maintaining the Federal lands closure was good for the conservation status of the population and allowed for the continuation of subsistence uses.

The BOG implemented changes for the 2012 regulatory year that allowed ADF&G flexibility to administer muskox hunt using Tier I, Tier II, or a combination of the two permit types, depending on the relationship between the estimated harvestable surplus and the amount necessary for subsistence. Under the State regulatory system, Tier I permits are used when it is anticipated that a reasonable opportunity can be provided to all residents who desire to engage in that subsistence use. In contrast, Tier II permits are used where it is anticipated that a reasonable opportunity to engage in the subsistence use cannot be provided to all eligible residents. In these situations, permit applications are scored to determine who is eligible for the limited number of permits. As consequence of the BOG's decision, implementation of Tier II muskox hunts in Unit 22B began in 2012.

In 2014, BLM submitted WP14-39, requesting that permit requirements be updated, that the BLM Anchorage Field Office Manager be designated as the Federal manager, and that language be added to authorize the Federal manager to restrict the number of Federal permits to be issued. The Council was supportive of the proposal but also recommended that the muskox season be shortened. Because changes in season openings were not considered by the public, tribes, or ANCSA corporations, the interagency staff committee recommended that the Board not act on this aspect of the Council's recommendation. The Board agreed and adopted this proposal with modification to make minor changes in the regulatory language and to delegate authority to close the season and determine annual quotas, the number of permits to be issued, and the method of permit allocation via a delegation of authority letter only.

Unit 22B is comprised of approximately 42% Federal public lands, consisting of 39% BLM managed lands, 2% National Park Service (NPS) managed lands, and less than 1% U.S. Fish and Wildlife Service (USFWS). See Figure 1.

Closure last reviewed: 2010 – WCR10-10. This closure was formally reviewed in 2010. However, the Unit 22B Federal muskox hunt was also the subject of Proposal WP14-39, in 2014.

Justification for Original Closure (ANILCA Section 815 (3) criteria):

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law…*

Proposal WP01-35, which initiated the closure, was the result of a multi-year, cooperative effort of the Cooperators to establish a muskox harvest system that would be biologically sound and provide for continued subsistence use of this population. The Cooperators, composed of staff from ADF&G, BLM, NPS, USFWS, Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities, and representatives from other interested groups and organizations, have been involved in muskox management since the 1990s and have provided guidance for establishing harvest regulations under both State and Federal jurisdictions.

Council Recommendation for Original Closure:

The Seward Peninsula and Northwest Arctic Subsistence Regional Advisory Councils supported WP01-35 because it provided additional subsistence opportunity to Federally qualified subsistence users.

State Recommendation for Original Closure:

ADF&G supported the recommendation of the Councils for WP01-35. The regulatory changes, including the closure of Federal public lands in Unit 22B, were developed cooperatively at the August 2000 meeting of the Cooperators.

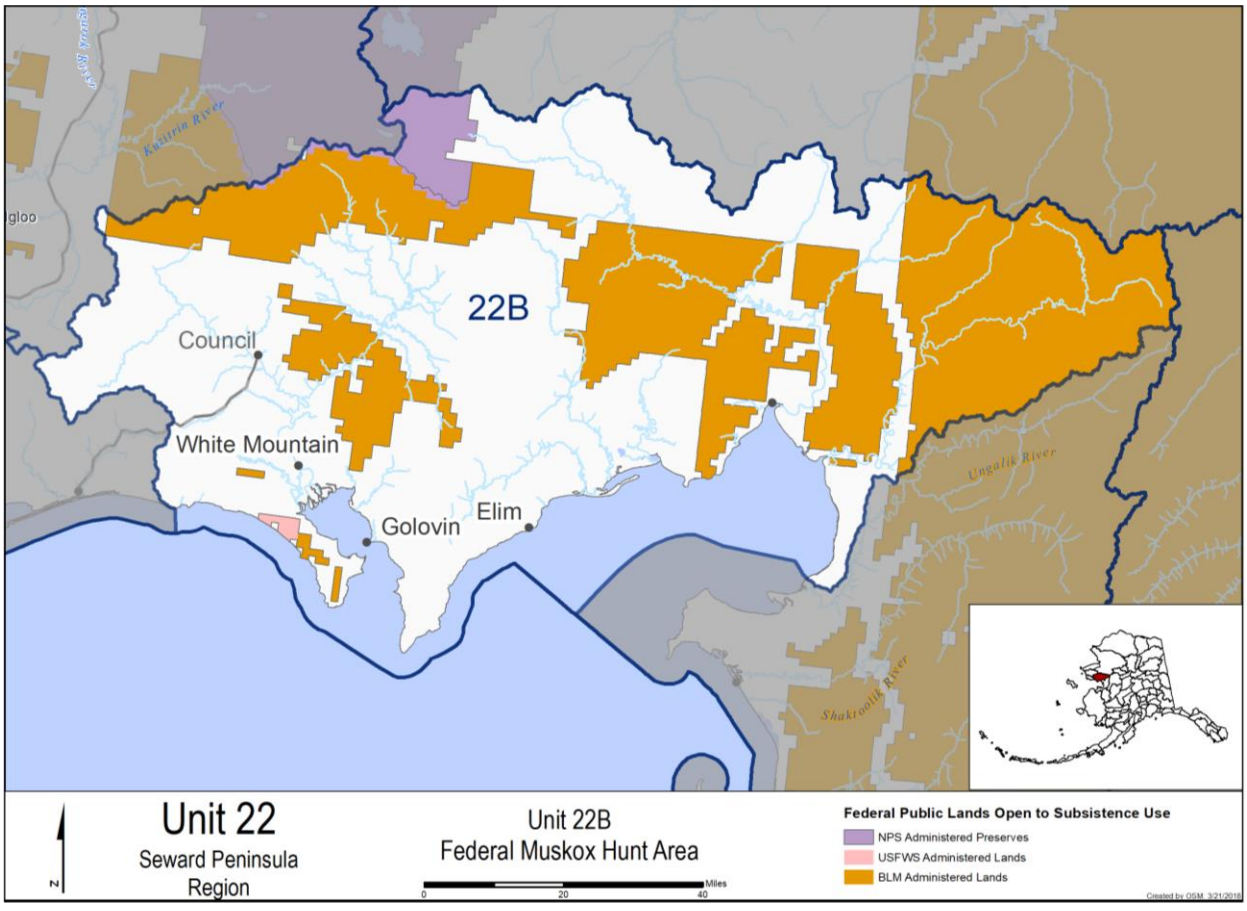


Figure 1. Unit 22B muskox hunt area.

Biological Background

Muskoxen, which were once distributed throughout northern and western Alaska, were extirpated across their range by the late nineteenth century. A series of reintroductions and translocations in the twentieth century resulted in reestablishment of muskox populations in Units 18, 22, 23 and 26 (Gorn and Dunker 2015; Jones 2015; Hughes 2016). The first of these reintroductions occurred on Nunivak Island in 1935 and 1936, when 31 muskoxen were transported from Greenland. The Nunivak population was the source of the subsequent translocations of muskoxen to the southern Seward Peninsula in 1970 and 1981 (Gorn and Dunker 2015; Hughes 2016). While specific targets for population size and composition have not been established for the Unit 22 muskox population, management goals include allowing for continued growth and range expansion, and providing for sustained yield harvest.

The new muskox population on the Seward Peninsula demonstrated high annual growth rates for several decades. By 2010, the population had reached its peak of approximately 2,900 animals. Population growth was accompanied by range expansion to suitable habitat throughout the peninsula, resulting in well-established populations in Units 22A, 22B, 22C, 22D, 22E and southwest Unit 23, as well as continued colonization of peripheral areas (Gorn and Dunker 2015). Range-wide, the population experienced an apparent decline between 2010 and 2012, but has remained relatively stable since. The 2017 range-wide population estimate, which includes peripheral areas, including portions of Units 22A and 21D, was 2,353 muskoxen (Gorn and Dunker 2015; Dunker 2017a).

Composition surveys indicate a range-wide decrease in mature bulls (≥4 years of age) and short yearlings (10 – 15 months of age) since 2002, with low recruitment rates of particular concern (Gorn and Dunker 2015). As a result, composition data has become more important in harvest management of this population, with increased consideration given to the number of mature bulls in a population, rather than relying solely on estimates of abundance. Following reduced harvest rates beginning in 2012, the proportion of mature bulls showed improvement when surveyed in 2015 and remained relatively stable into 2017 (18% bulls), while recruitment climbed from 8% to 15% between 2015 and 2017 (Dunker 2017b).

Unit 22B population dynamics have been broadly similar to the range-wide population. The Unit 22B population appears to have peaked in 2012 – 2015 at over 450 muskoxen. The lag between the Seward Peninsula population peak and the Unit 22B population peak is likely the result of eastward redistribution of muskoxen from neighboring units, rather than factors relating to productivity or harvest (Gorn and Dunker 2015). Like the Seward Peninsula population, the Unit 22B population declined following its peak, declining 10% annually between 2015 and 2017 (**Table 1**). Also similar to the Seward Peninsula population, the proportion of mature bulls in the Unit 22B population declined after 2002, recovering somewhat and stabilizing in 2015 – 2017 at 22 – 25% bulls (**Table 1**). Recruitment in the Unit 22B population has also declined since 2002, when it was 18% (**Table 1**). Though it appears to have stabilized 2015 – 2017, it remains among the lowest values on record at 7% (Dunker 2017b). Due to the important social role prime-aged bulls play in predator defense and other activities, it is believed that high harvest rates of mature bulls may have contributed to the decline in bull:cow ratios and recruitment (Schmidt and Gorn 2013).

Table 1. Population and composition estimates for the Unit 22B muskox population (Gorn and Dunker 2015; Dunker 2017a, 2017b).

Year	Population estimate[a]	Mature Bulls: 100 cows	Short Yearlings: 100 cows	% Mature bulls (95% CI)	% Short yearlings (95% CI)
1992	3	-	-	-	-
1994	11	-	-	-	-
1996	51	-	-	-	-
1998	27	-	-	-	-
2000	159	-	-	-	-
2002	189	58	48	22% (20 – 24%)	18% (17 - 19%)
2004	-	39	39	18% (13 - 23%)	18% (13 - 23%)
2005	326	-	-	-	-
2007	329	48	35	21% (20 - 22%)	15% (14 - 16%)
2009	-	38	26	17% (12 - 22%)	11% (6 - 16%)
2010	420	30	25	17% (13 - 21%)	14% (11 - 17%)
2012	460	28	19	16% (13 - 19%)	10% (8 - 12%)
2015	455	44	12	22% (18 - 26%)	6% (4 - 8%)
2017	368	44	13	25% (22 - 29%)	7% (5 - 9%)

[a]Population estimates were obtained using minimum counts 1992 – 2007, and distance sampling 2010 – present.

Harvest History

Prior to 2012, muskox harvest rates on the Seward Peninsula were calculated as a proportion of total population size. However, following declines in recruitment, bull:cow ratios, and overall population size, managers reassessed this strategy. Consequently, a new harvest management strategy was implemented in 2012. Since, Unit 22 muskox harvest rates have been based primarily on the number of mature bulls in the population. Specifically, harvest quotas are calculated as 10% of the estimated number of mature bulls within the hunt area, and range-wide harvest targets are set at 2% of the estimated population size (Gorn and Schmidt 2013; Gorn and Dunker 2015).

This shift in harvest management was accompanied by a significant reduction in harvest. Range-wide, harvest declined from 111 muskox in 2011 (5.6% of the total population) to 28 muskoxen in 2012 (1.4%

of the total population). Total harvest has remained below 2% of the total population, which has likely been influential in the subsequent increase in mature bulls (Gorn and Dunker 2015).

Within Unit 22B, harvest is currently administered by Tier II permit in State regulation and by registration permit in Federal regulation. Similar to range-wide harvest patterns, Unit 22B harvest rates dropped notably in 2012 under the revised harvest management strategy (**Figure 2**). In the six year period leading up to the change (2006 – 2011) harvest in Unit 22B averaged 18.7 muskoxen annually. In the most recent six year period (2012 – 2017) harvest has averaged 5.5 muskoxen annually (ADF&G 2018). Hunter success also differed among these two time periods, with 60% of hunters reporting successful harvest during the earlier time period and 45% reporting success since 2012.

Also notable since 2012 is the proportion of harvest taken by Federal registration permit (**Figure 2**). Since 2012, 42% of the Unit 22B muskox harvest has been taken by Federal permit, in contrast to 15% during the earliest years of the hunt, 2001 – 2007. The four-year period of 2008 – 2012 saw only 1% of successful hunters using Federal permits (ADF&G 2018). Low utilization of Federal permits during these years coincides with the period that the ADF&G did not administer the hunt with Tier II permits. Given that less than half of the land in Unit 22B is Federal, and considering the remoteness of those lands, it is likely that local hunters prefer to hunt under State regulation when possible but may be unable to do so in Tier II hunts, where permit availability is limited.

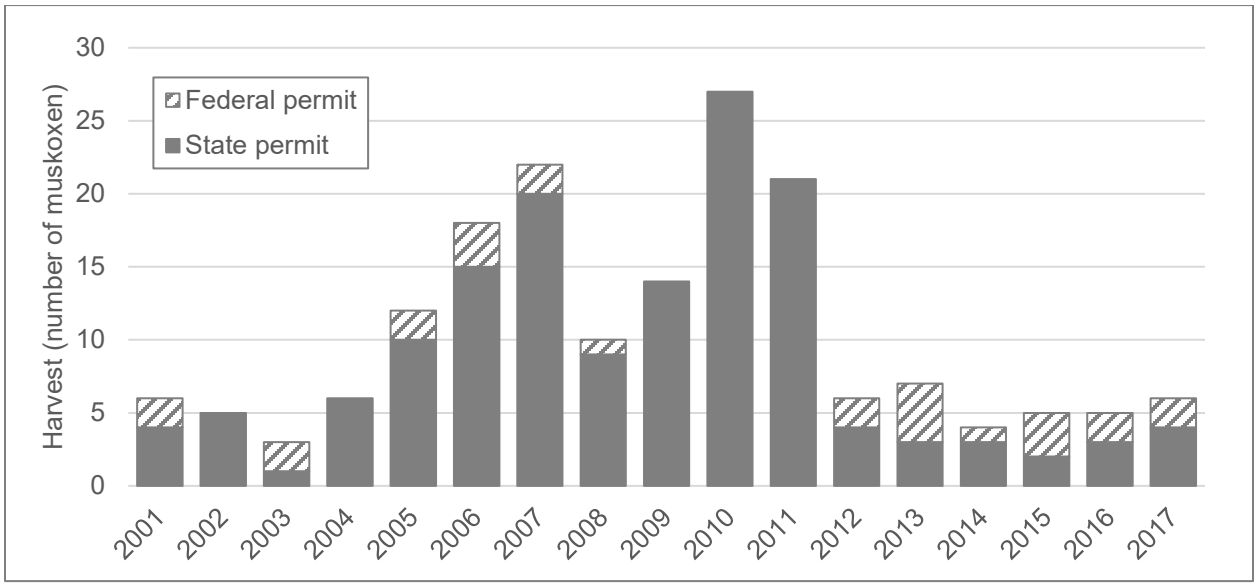


Figure 2. Reported muskox harvest in Unit 22B by State and Federal permit for regulatory years 2001 – 2017 (ADF&G 2018). Harvest of muskox in Unit 22 is limited to bulls.

OSM Preliminary Conclusion:

X maintain status quo
_ modify or eliminate the closure

Justification

The muskox population in Unit 22B has declined since 2015. It has also experienced declines in the proportion of mature bulls, and the estimated rate of recruitment is among the lowest on record. Given these conservation concerns, the current management approach, which includes a more conservative harvest strategy, the use of Tier II permits, and the closure of Federal public lands except to Federally qualified subsistence users, appears to be appropriate for the Unit 22B muskox population.

The consequence of this approach is that fewer muskoxen available for harvest. Relatively high Federal permit usage since 2012, when the new harvest guidelines were implemented and the Tier II hunt was reinstated, suggests that Federally qualified subsistence users are relying more heavily on Federal subsistence regulations to meet their subsistence needs. Retaining the Federal public lands closure will ensure that Federally qualified subsistence users continue to have the opportunity to meet their subsistence needs and, in combination with the State's current management approach, provides for continued maintenance and improvement of the Seward Peninsula muskox population status.

Literature Cited

ADF&G. 2018. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm?fuseaction=harvestreports.main. Retrieved: September 19, 2018.

Dunker. W.R. 2017a. 2017 Seward Peninsula muskox population survey summary. Unpublished memo. ADF&G. Nome, AK. 17pp.

Dunker. W.R. 2017b. 2017 Seward Peninsula muskox composition survey summary. Unpublished memo. ADF&G. Nome, AK. 11pp.

Gorn, T. and W.R. Dunker. 2015. Unit 22 muskox. Chapter 2, pages 2-1 – 2-44 *in* P. Harper and L.A. McCarthy, eds. Muskox management report of survey and inventory activities 1 July 2012 – 30 June 2014. ADF&G. Juneau, AK.

Gorn, T. and J.H. Schmidt. 2013. Possible secondary population-level effects of selective harvest of adult male muskoxen. PLos ONE. 8(6): e67493. doi:10.1371/journal.pone.0067493.

Hughes, L.J. 2016. Unit 23 and 26A muskox. Chapter 3, pages 3-1 – 3-19 *in* P. Harper and L.A. McCarthy, eds. Muskox management report of survey and inventory activities 1 July 2012 – 30 June 2014. ADF&G. Juneau, AK.

Jones, P. 2015. Unit 18 muskox. Chapter 1, pages 1-1 – 1-17 *in* P. Harper and L.A. McCarthy, eds. Muskox management report of survey and inventory activities 1 July 2012 – 30 June 2014. ADF&G. Juneau, AK.

SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATION

Seward Peninsula Subsistence Regional Advisory Council

Maintain status quo for WCR20-10. The Council voted to maintain the status quo for all of the Unit 22 muskox closure reviews due to the currently low muskox population in the region. The Council expressed that they are worried about extremely low population numbers, potential overharvest and susceptibility to bear predation. Overharvest could lead to a population decline to the point where the population may never be able to recover. The Council expressed alarm with the decline in muskox numbers and lack of herd recovery. The Council would like to see the closure remain in place to protect the remaining population while still allowing for a very small harvest by local subsistence users. Some Council members were open to closing the hunt entirely to give the muskox population an opportunity to grow.

FEDERAL WILDLIFE CLOSURE REVIEW
WCR20-28

Closure Location: Unit 22D—Muskox

Current Federal Regulation

Unit 22D−Muskox

Unit 22D—that portion west of the Tisuk River drainage and Canyon Creek—1 bull by Federal Permit or State Permit.	*Sept. 1 – Mar. 15*
Federal public lands are closed to the harvest of musk ox except by residents of Nome and Teller hunting under these regulations.	

Closure Dates: Year-round

Current State Regulation

Unit 22D−Muskox

Unit 22D—that portion west of the Tisuk River drainage, west of the west bank of the unnamed creek originating at the unit boundary opposite the headwaters of McAdam's Creek and west of the west bank of Canyon Creek to its confluence with Tuksuk Channel—One bull by permit	*TX103*	*Jan 1 – Mar 15*
All skulls require trophy destruction at time of take in the field subject to permit conditions; specimens required		

Regulatory Year Initiated: 1996

Regulatory History

A cooperative muskox management effort for the Seward Peninsula was begun in 1993 with the creation of the Seward Peninsula Muskox Cooperators Group. Muskox management efforts were guided by recommendations from this group, and the Seward Peninsula Cooperative Muskox Management Plan (1994) established the guiding management goals for muskoxen in this region.

In 1995, Proposal WP95-44 was adopted by the Federal Subsistence Board (Board) to establish the first Federal muskoxen hunt on the Seward Peninsula and granted a Federal subsistence priority for rural Alaskan residents with a customary and traditional determination for muskoxen in Unit 22. The Board established a season of Sept. 1 – Jan. 31 for Units 22D, 22E, and 23 west of and including the Buckland River drainage (Unit 23SW), and limited the harvest to bulls with a quota of 3% of the population from the most recent census (FSB 1995a).

In August 1995, the Board rejected two Requests for Reconsideration (R95-04 and R95-05), but revised the harvest quota for Unit 22D reducing it from 12 to 2 muskoxen. The Board made this change in response to concerns for the maintenance of a healthy muskox population (FSB 1995b).

In 1996, Proposal WP96-51 was adopted by the Board to increase the harvest from two to eight muskoxen in Unit 22D. The proposal was submitted by the Seward Peninsula Subsistence Regional Advisory Council to increase the harvest quota to 12 muskoxen but was adopted with modification to increase the harvest quota to 8 muskoxen.

In 1997, the Board denied a Request for Reconsideration (R96-06) to keep the harvest quota set at eight muskox, but stratified Unit 22D into two permit areas comprising Bureau of Land Management (BLM) lands and Bering Land Bridge National Preserve (NPS lands), with half of permits designated in each area (FSB 1997:49) . This decision was based on harvest information indicating all muskoxen harvest in Unit 22D was on BLM land. The split of permits was intended to encourage subsistence hunters to harvest from NPS lands in the eastern end of the unit.

In 1998, the Seward Peninsula Subsistence Regional Advisory Council submitted Proposal WP98-89 to extend the season (Sept. 1 – Jan. 31) three months to Aug. 1 – Mar. 31 for Units 22D, 22E, and Unit 23SW. However, as part of the consensus agenda, Proposal 89 was adopted with modification by the Board to extend the season to Aug. 1 – Mar. 15 in Units 22D and 22E and that portion of Unit 23. This modification was made due to biological concerns that hunting in late March could stress cows shortly before the calving season.

A shared Federal and State permit system for muskox on the Seward Peninsula was supported by the Seward Peninsula and Northwest Arctic Subsistence Regional Advisory Councils and adopted by the Board in 1998 (FSB 1998). In January 1998, the Seward Peninsula Muskox Cooperators met to discuss options for a combined Federal and State muskox harvest on the Seward Peninsula. The group reached consensus involving management on a subunit basis, allowing for continued growth of the population and increased harvest opportunities, with the intent that the Muskox Management Plan would be amended in the future to reflect these changes. Six affected villages considered allowing State harvest as a means to

increase harvest opportunities. Individual villages made decisions on the percent harvest rate and how the harvest should be divided between the State and Federal systems within their respective subunits. Village recommendations were summarized in a resolution written and adopted by the Seward Peninsula Subsistence Regional Advisory Council in 1998 and subsequently presented to the Alaska Board of Game (BOG), which approved a Tier II subsistence muskox hunt for the Seward Peninsula with the assumption that this would be part of a combined Federal/State harvest program. Also in 1998, the Board followed the recommendations of the Seward Peninsula and Northwest Arctic Councils and approved a special action (WSA97-14) establishing these regulations for the 1998/99 Federal subsistence muskox season (FSB 1998:24).

In 1999, Proposal WP99-46 put the temporary regulations in WSA97-14 into permanent regulation. Due to the long traveling distances needed to reach Federal lands and the poor travel/snow conditions during that time, the six affected villages supported the combination of the State and Federal harvest systems to create more harvest opportunities due to declining hunter success rates under the Federal subsistence harvest. The combined Federal and State harvest was adopted into permanent State regulation by the BOG in 1998. The consensus was to manage on a subunit basis within Unit 22 and Unit 23SW, to allow for continued growth of the muskoxen population in this region and to increase harvest opportunities. Sharing the harvest quota between Federal and State systems helped meet the subsistence needs of the local users that may not have been met under only the Federal or State system separately. The cooperative management dispersed hunting pressure over an entire area regardless of land ownership to create a more biologically sound management approach (OSM 2001).

In 2000, the Board adopted Proposal WP00-56 to remove the split of two Federal permit areas, one on NPS land and the other on BLM land, as designated in 1997 in Unit 22D. Six of the Federal permits were then transferred into the State Tier II system.

In 2001, Proposal WP01-35 was adopted and changed the harvest limits in Unit 22 and Unit 23SW from one bull to one muskox and quotas were put in place for each hunt area

Proposal WP02-37 was adopted by the Board at its May 2002 meeting and authorized the Superintendent of the Western Arctic National Parklands to announce harvest quotas and any needed closures in consultation with the Alaska Department of Fish and Game (ADF&G) and BLM.

In 2004, Proposal WP04-71 requested that the customary and traditional use determination for muskox for Units 22B and 22D be expanded to include all residents of Unit 22, excluding residents of St. Lawrence Island. The proposal was adopted with modification by the Board and divided the Unit 22D customary and traditional use area into Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages and Unit 22D remainder and added residents of Unit 22C and White Mountain to the customary and traditional use determination for Unit 22D in the Kougarok, Kuzitrin, and Pilgrim River drainages hunt area.

In 2006, Proposal WP06-41 established the use of a designated hunter permit for muskoxen in Unit 22 by Federally qualified subsistence users. Special provisions allowed a Federally qualified subsistence user to

designate another Federally qualified subsistence user to take muskoxen on their behalf, unless the recipient is a member of a community operating under a community harvest system.

In 2008, the BOG adopted Proposal 77 with modification. This changed the framework of the Seward Peninsula muskoxen hunts by adopting a combination of Tier I Subsistence registration hunts and drawing permit hunts. This ended the Tier II permit hunts that had been in place since 1998 (Gorn 2011, Hughes 2018, pers. comm.)

In 2009, State Emergency Order 05-11-09 closed the State subsistence hunting season for muskoxen by registration permit in Unit 22D remainder on October 13, 2009, because the joint State/Federal harvest quota of 16 muskoxen had been reached. Based on this closure, the Federal manager closed the Federal subsistence muskoxen hunt in Unit 22D remainder on October 17, 2009.

The Board approved Emergency Special Action WSA09-06 on December 30, 2009, reopening the winter muskoxen season within Unit 22D remainder (that portion within the Kougarok, Kuzitrin, and Pilgrim River drainages) from January 15 to March 15, 2009.

An expansion of the customary and traditional use determination for muskox in Unit 22D (WP10-73) was adopted with modification by the Board in May of 2010. This combined the portion of Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages customary and traditional use area with the Unit 22D remainder area. This also added residents of Unit 22B (White Mountain, Golovin, Elim, Council, and Koyuk) and Unit 22E (Wales and Shishmaref) to the customary and traditional use determination for all of Unit 22D.

In 2010, Proposal WP10-77 requested the Federal hunt areas for muskoxen within Unit 22D remainder be aligned with State regulations by establishing hunts in the Kougarok, Kuzitrin, and Pilgrim river drainages. The Board adopted Proposal WP10-77 with modification to establish the current Unit 22D Kuzitrin hunt area, which encompasses the Kougarok and Pilgrim river drainages (**Figure 1**).

Proposal WP10-108 requested rescinding the closure of Federal public lands to the taking of muskoxen, except by Federally qualified subsistence users, in Unit 22D Southwest (that portion west of the Tisuk River drainage and Canyon Creek). The Board adopted this proposal, which ended the Federal lands closure in Unit 22D Southwest.

In 2011, the BOG adopted Proposal RC34 (A) making the muskox hunting regulation in Unit 22D part of a threshold-based hunt regime conditioned on the harvestable portion and the Amounts Necessary for Subsistence (ANS) available for the Seward Peninsula population, which includes all of Unit 22 and Unit 23SW (Dunker 2018, pers. comm.). The regulatory thresholds for this portion of the population define conditions for Tier II hunts (harvestable portion below the ANS), Tier I registration hunts (harvestable portion within the ANS range) and registration/drawing hunts (harvestable portion above ANS). This change was in response to significant population declines, low bull:cow ratios, and high harvest of mature bulls documented by the ADF&G. Based on the implementation of the new harvest guidelines intended to address the high harvest of mature bulls and the decline in bull:cow ratios and based on further population declines revealed in March 2012 population surveys, State Tier II hunts were required in Unit

22D for 2012-2013 regulatory year due to the reduction of the harvestable surplus being below the lower end of the ANS (Dunker 2018, pers. comm.).

In 2014, Proposal WP14-35 was adopted with modification by the Board and eliminated the cow hunt, provided the BLM Anchorage Field Manager with the authority to restrict the number of Federal permits to be issued, and closed Federal public lands to the harvest of muskox except by residents of Nome and Teller for Unit 22D Southwest. This restriction was suggested following an 804 user prioritization analysis.

Bureau of Land Management lands comprise approximately 11% of all lands in the 22D Southwest muskox hunt area. These are the only Federal public lands in this specified muskox hunt area.

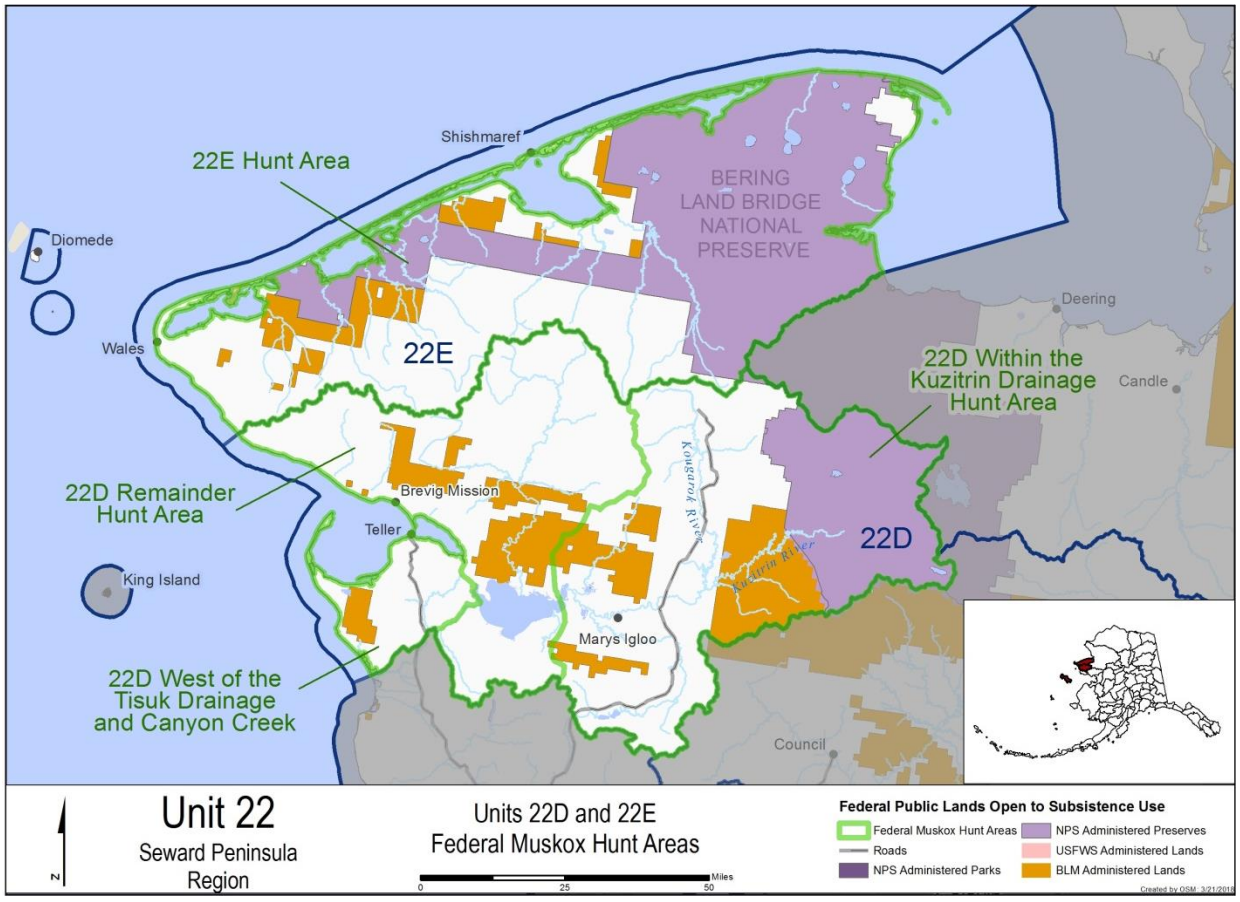


Figure 1. Current muskox hunt areas in Units 22D and 22E.

Closure last reviewed: 2014– WP14-35

Justification for Original Closure (ANILCA Section 815 (3) criteria):

Section §815(3) of ANILCA states:

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments)*

> *unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law…*

The Federal Subsistence Board's intent was to provide a subsistence priority for Alaskan residents with a Customary &Traditional use determination for muskox. The Board did not feel the State muskox seasons would provide adequate opportunity and priority for subsistence users who provided active participation in the cooperative muskox management plan. Therefore, the Board determined that a Federal season managed via a Federal registration permit and the closure of Federal public lands to non-Federally qualified users was necessary.

Council Recommendation for Original Closure:

Proposal 44 (1995): Seward Peninsula Subsistence Regional Advisory Council recommendation – Support, to provide a subsistence priority for local users due to a lack of subsistence priority under State regulations; Northwest Arctic Subsistence Regional Advisory Council recommendation - No recommendation for Unit 22 since Unit 23 wasn't originally included in the proposal. Although these were the original recommendations from the Councils, both Councils agreed to support the modified proposal, voted on by the Board, which included that portion of Unit 23 including and west of the Buckland River drainage (FSB 1995a: 348).

State Recommendation for Original Closure:

Although ADF&G agreed with the intent of the cooperative muskox management planning effort, they believed it was advisable to postpone a decision on the proposal to close Federal public lands (Proposal 44) until the BOG had decided on State Regulations for a muskox hunt in Unit 22 and Unit 23SW. When the amendment that contained the closure language was proposed, the State had concerns in regards to permitting and wanted to be kept informed; however, no direct comments about the closure were made and the State's official recommendation was neutral.

Biological Background

Muskoxen have many adaptations to allow for their survival in arctic habitats, but some of these adaptations also limit muskoxen in some areas. The large body size, and therefore rumen size, allows muskoxen to consume and process large quantities of low quality forage that may be found on the tundra (Jingfors 1982, Klein 1992, Ihl and Klein 2001). This large body size, in addition to their thick undercoat and long guard hairs, allow muskoxen to stay warm in arctic climates and conserve energy (Klein 1992). However, these adaptations make it difficult for muskoxen to regulate their body temperature following high exertion activities, such as running, and lead to groups remaining more localized rather than migrating long distances like other arctic species, such as caribou (Klein 1992).

Muskoxen are more limited by snow than caribou due to their greater foot loading, low chest height, and smaller hooves making it more difficult to travel through deep or wind-hardened snow (Klein 1992, Ihl and Klein 2001) and therefore, tend towards coastal areas potentially due to the higher winds which reduce the snow depth during winter (Dau 2005). However, muskoxen in Unit 22 tend towards higher windblown slopes during the winter on the Seward Peninsula to avoid the deep snow drifts (Ihl and Klein

2001, Adkisson pers. comm. 2009). Muskoxen tend to be more sedentary during periods of heavy snow cover; however, adult bulls generally tend to be less conservative than the general population and will enter previously unused winter habitats due to distant movements during the fall in search of harems (Smith 1989).

The general lack of winter movements is a conservative energy budget survival strategy by muskoxen (Jingfors 1982). Winter forage for muskoxen is of very poor quality (Thing et al. 1987). As a behavioral response to poor forage quality, muskoxen settle onto sites with readily available forage so that minimum energy expenditures are made during foraging bouts (Klein 1992). Additionally, muskoxen spend significantly more time resting in early and late winter than in the post-calving, mid-summer, and rut periods (Jingfors 1982).

Muskoxen in winter appear to be particularly susceptible to disturbance, with sufficient disturbance causing site abandonment (Jonkel et al. 1975). Muskoxen that abandon a preferred wintering site may need to travel considerable distances before reaching an alternative foraging site.

Muskoxen were extirpated in Alaska by the late 1800s, and perhaps hundreds of years earlier on the Seward Peninsula (Gorn and Dunker 2015). Muskoxen were reintroduced to Units 22C and 22D of the Seward Peninsula in 1970, and have since expanded their range to the north and east (Gorn and Dunker 2015). Currently, muskoxen occupy suitable habitat in Units 22A, 22B West, 22C, 22D, 22E, and 23-Southwest.

Muskox management on the Seward Peninsula has been guided by recommendations from the Seward Peninsula Muskox Cooperators Group. The group is composed of staff from ADF&G, NPS, BLM, U.S. Fish and Wildlife Service (USFWS), Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities, and representatives from other interested groups or organizations. The Cooperators Group has not met since January of 2008, but information has been regularly provided to the Chair since that time (ADF&G 2016). The following management goals form the basis of the cooperative interagency management plan for Seward Peninsula muskoxen developed from 1992 through 1994 (Nelson 1994) and follow the guidelines of ADF&G Muskox Management Policies (ADF&G 1980):

- Manage population to allow for continued growth and range expansion of the Seward Peninsula Muskox.

- Provide for a limited harvest in a manner consistent with existing State and Federal laws by following the goals/objectives endorsed by the Seward Peninsula Muskox Cooperators Group and the Seward Peninsula Cooperative Muskox Management Plan.

- Manage muskoxen along the Nome road systems of Unit 22B and 22C for viewing, education, and other nonconsumptive uses.

- Work with local reindeer herding interests to minimize conflicts between reindeer and muskoxen.

• Protect and maintain the habitats and other components of the ecosystem upon which muskoxen depend.

• Encourage cooperation and sharing of information among agencies and users of the resource in developing and executing management and research programs.

After reintroduction, the muskox population experienced periods of growth between 1970 and 2000 (14% annual rate of increase) and 2000 and 2010 (3.8% annual rate of increase) (Gorn 2011). However, between 2010 and 2012 the muskox population declined 12.5% annually throughout the Seward Peninsula (Gorn 2012). Aspects of the recent decline were likely related to the high mortality rates of adult cows and declines in the number of short yearlings (10-11 month-old muskoxen) (Gorn 2012); however, some caution should be used when interpreting these mortality rates as they are based on a small sample of the population (Gorn 2011). Composition surveys also indicated declines in mature bulls between 2002 and 2010, which prompted changes to the method of determining harvest rates (Gorn 2011). Recent research suggested that selective harvest of mature bulls on the Seward Peninsula could be a driver of reduced population growth and that annual harvest be restricted to less than 10% of the estimated number of mature bulls (Schmidt and Gorn 2013). Following this change in methodology, the Seward Peninsula muskox population remained stable through 2017 (Dunker 2017).

In Unit 22D, the population followed a similar trend as the overall Seward Peninsula population. The population experienced growth from 1992 until approximately 2010, at which point the population declined and then remained stable until the most recent population survey in 2017 (Gorn and Dunker 2013, Dunker 2017; **Table 1, Figure 2**). The Unit 22D Southwest permit area similarly experienced a decline since 2010, but appeared to increase from 2015 through 2017 (Gorn and Dunker 2013, Dunker 2017; **Table 2**). Short yearling composition in Unit 22D showed an inverse trend to the population estimates (**Table 3, Figure 3**). The bull:cow ratios in Unit 22D followed the same trend as the population, with the number of mature bulls per 100 cows increasing through 2010 and then declining and stabilizing 2015-2017 (**Table 4, Figure 4**).

Table 1. Muskox population estimates in Unit 22D from 1992 to 2017.

Year	Unit	Muskox Population
1992	22D	340
1994	22D	405
1996	22D	308
1998	22D	714
2000	22D	774
2002	22D	771
2005	22D	796
2007	22D	746
2010	22D	878
2012	22D	629
2015	22D	523
2017	22D	556

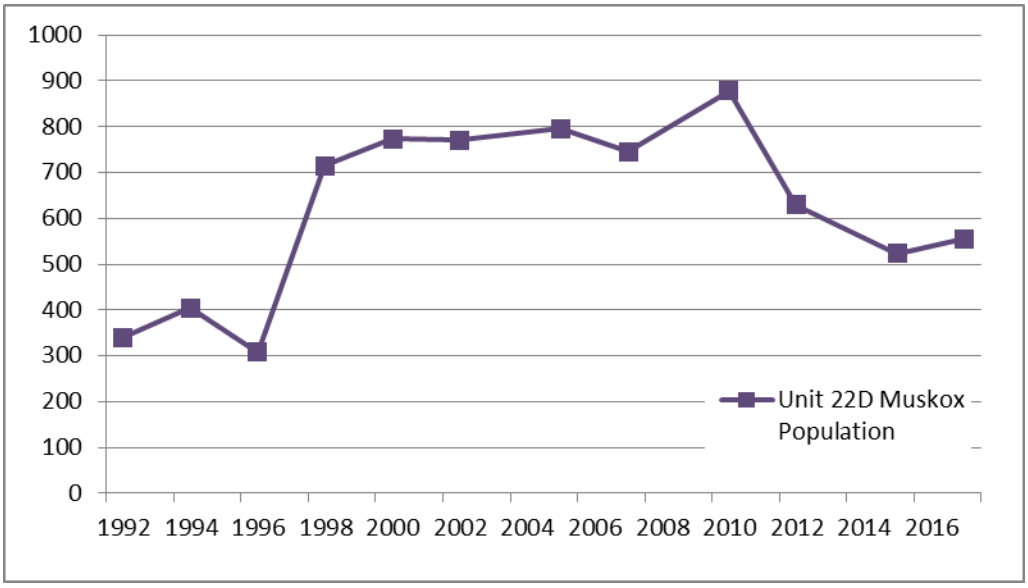


Figure 2. Population fluctuations in Unit 22D between 1992 and 2017.

Table 2. Unit 22D Southwest hunt area muskox population estimates from 2010 to 2017

Year	Unit	Population
2010	22D SW	160
2012	22D SW	77
2015	22D SW	78
2017	22D SW	142

Table 3. Composition survey results in Unit 22D from 2002 to 2017.

Year	Unit	Mature Bulls:100 Cows	Short Yearlings:100 Cows
2002	22D	33	41
2006	22D	42	36
2010	22D	54	18
2011	22D	29	24
2012	22D	22	13
2015	22D	26	19
2017	22D	27	38

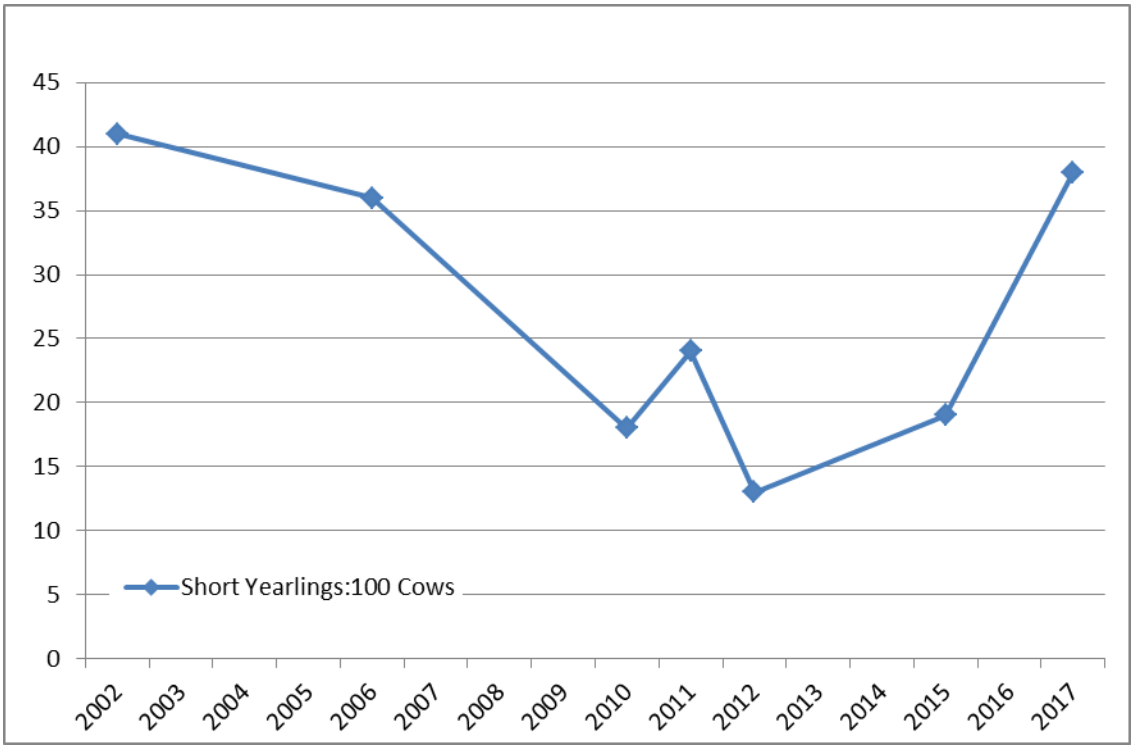


Figure 3. Short yearling composition survey estimates, in Unit 22D, between 2002 and 2017.

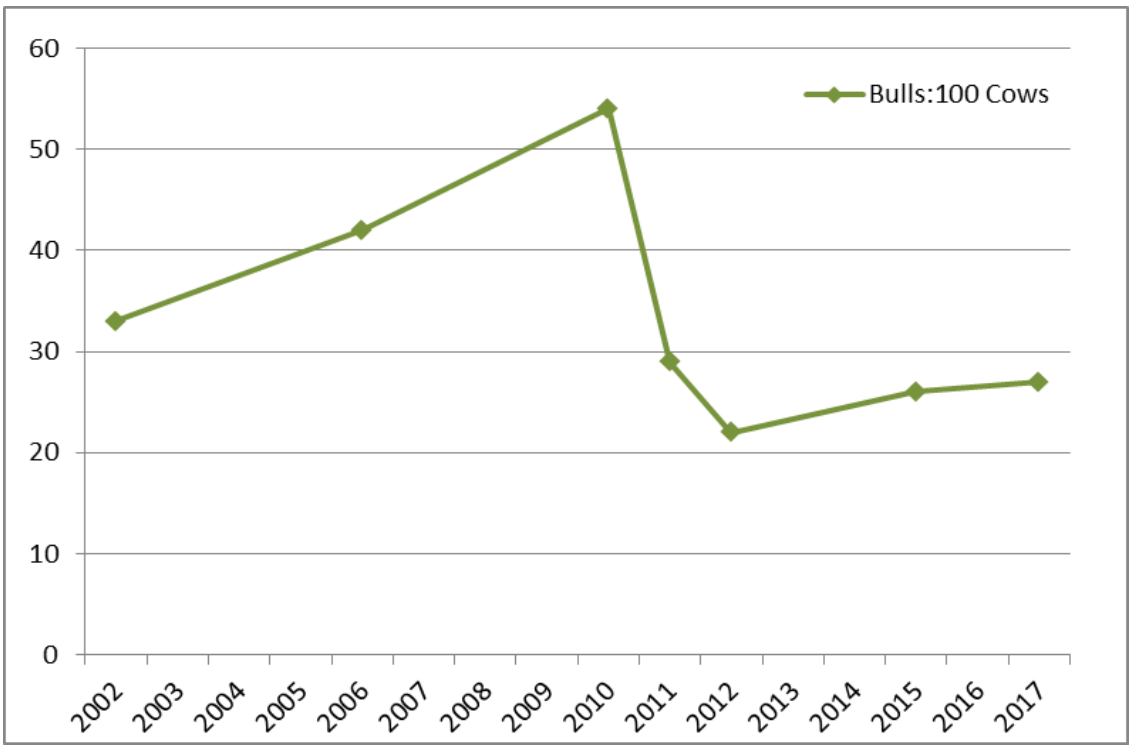


Figure 4. Bull composition survey estimates, in Unit 22D, between 2002 and 2017.

Harvest History

Muskox harvest in Unit 22 is based on population survey estimates on the Seward Peninsula. The allowable harvest is currently calculated as approximately 10% of the estimated number of mature bulls in a hunt area, and the overall range-wide harvest is calculated to be approximately 2% of the Seward Peninsula muskox population (Gorn and Dunker 2015). This method for evaluating the harvestable portion on the Seward Peninsula was put in place, starting in 2012, due to a decline in muskox abundance and mature bull:cow ratios (Schmidt and Gorn 2013, Dunker 2018, pers. comm.). Prior to this change, from 1998 to 2011, the harvest strategy was solely based on a percentage of hunt area muskox populations, with the harvest rate reaching up to 8% of a population in some areas (OSM 2014).

In Unit 22D, the average annual muskox harvest was 42 muskoxen from 2007 through 2011 (ADF&G 2018, Dunker 2018, pers. comm; **Table 4, Figure 5**). When the harvest management strategy was modified, in 2012, the harvest of muskox greatly decreased; nonresident harvest was no longer permitted and nonlocal resident harvest was greatly reduced (ADF&G 2018). Starting in 2012 through 2017, the State managed average annual harvest dropped to eight muskoxen in Unit 22D (ADF&G 2018), with Federally qualified subsistence users harvesting an average of one additional muskox by Federal registration permit annually (OSM 2018).

Unit 22D Southwest is currently managed under the Federal harvest permit FX2205 and State Tier II permit TX103 (**Table 5, Table 6**). In Unit 22D Southwest, the State harvest quota was reduced to one muskox in 2012, following the modification in harvest strategy (Dunker 2018, pers.comm.). Since 2012, the allowable harvest has remained low in this hunt area. In 2014, Federal public lands in Unit 22D

Southwest were closed to the taking of muskox except by residents of Nome and Teller and the hunt was limited to bull muskox only under both Federal and State regulations. Following this modification, average annual harvest in this subunit was reported as one muskox for the 2014-2017 timeframe (Adkisson 2018, pers. comm., OSM 2018).

Table 4. Harvest of muskox by user residency in Unit 22D from 2007 through 2017 (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm.).

Year	GMU	Unit Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Unspecified	Total
2007	22D	33	2	0	0	35
2008	22D	23	8	2	0	33
2009	22D	25	14	0	4	43
2010	22D	30	24	1	3	58
2011	22D	22	19	1	1	43
2012	22D	9	0	0	0	9
2013	22D	11	0	0	0	11
2014	22D	9	0	0	0	9
2015	22D	7	0	0	0	7
2016	22D	6	0	0	0	6
2017	22D	7	0	0	0	7

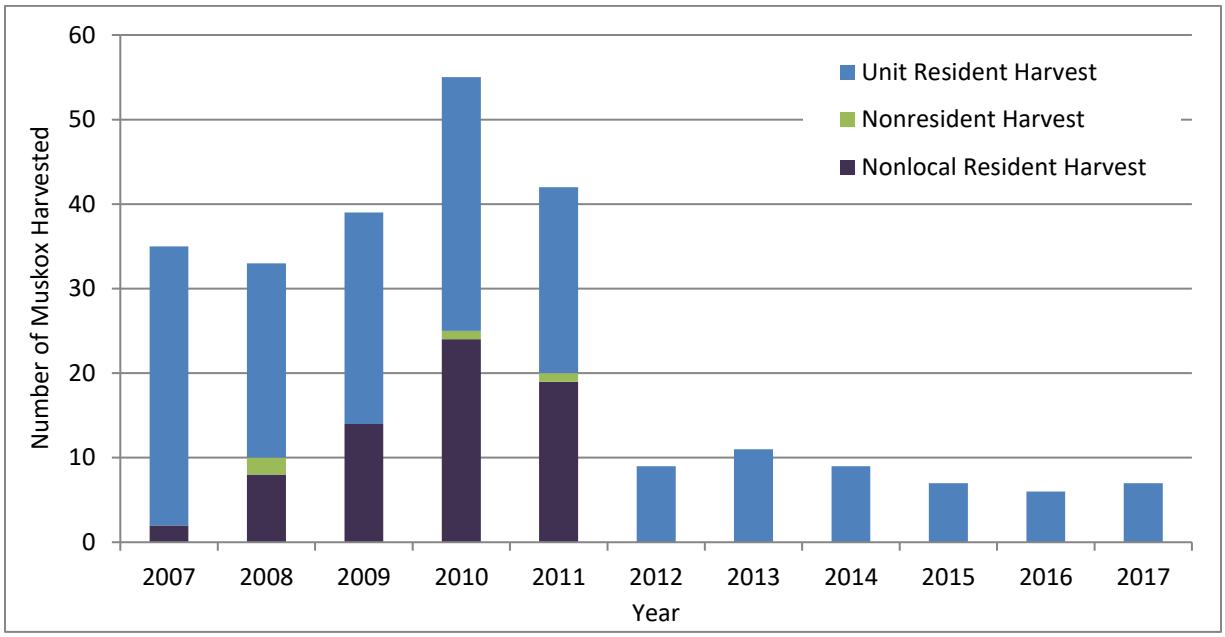


Figure 5. Harvest of muskox in Unit 22D by user residency (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm.).

Table 5. Muskox harvest in Unit 22D Southwest broken down by State and Federal reported harvest (ADF&G 2018, Dunker 2018, pers. comm., OSM 2018).

Year	GMU	Federal Harvest (FX2205)	State Harvest (TX103)	Total Harvest	Allowable Harvest Estimate
2012	22D Southwest	0	0	0	1
2013	22D Southwest	0	1	1	1
2014	22D Southwest	1	1	2	1
2015	22D Southwest	0	0	0	1
2016	22D Southwest	0	1	1	1
2017	22D Southwest	0	1	0	1
2018	22D Southwest	-	-	-	2

Table 6. Permits issued for muskox harvest in Unit 22D Southwest (ADF&G 2018, Dunker 2018, pers. comm., OSM 2018).

Hunt Area	Year	Federal Permits Issued	State Permits Issued	Federal Hunt Permit	State Hunt Permit
22D West of Tisuk River	2012	0	1	FX2205	TX103
22D West of Tisuk River	2013	0	1	FX2205	TX103
22D West of Tisuk River	2014	1	1	FX2205	TX103
22D West of Tisuk River	2015	1	1	FX2205	TX103
22D West of Tisuk River	2016	1	1	FX2205	TX103
22D West of Tisuk River	2017	1	1	FX2205	TX103

OSM Preliminary Conclusion:

X maintain status quo
_ modify or eliminate the closure

Justification

In addition to direct mortality due to harvest, muskox survival could be susceptible to herd disturbances during winter months if caloric expenditures are too high. Harvest on the Seward Peninsula was reevaluated and reduced in 2012 due to a declining muskox population. Recently, some localized populations have experienced a slight increase in population size or have remained stable, but these populations still remain at much lower numbers than in the past. The current closure, in conjunction with decreased harvest quotas, have slowed or stalled the decline in muskox populations in this portion of the Seward Peninsula. This closure should remain in place to ensure that these muskox populations have the opportunity to reach healthy levels and to ensure that Federally qualified subsistence users continue to have the opportunity to harvest this subsistence resource into the future.

LITERATURE CITED

ADF&G. 1980. Muskox management policies. Pages X-1-X-4 *in* Alaska Wildlife Management Plans: Species Management Policies. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Miscellaneous Report. Project W-20-2. Juneau, AK.

ADF&G. 2016. Alaska Department of Fish and Game wildlife restoration grant. Federal Aid Annual Performance Report. Alaska Department of Fish and Game. Juneau, AK.

ADF&G. 2018. General Harvest Reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 3, 2018.

Adkisson, K. 2009. Subsistence Program Manager. Personal Communication: phone conversation. National Park Service. Nome, AK.

Adkisson, K. 2018. Subsistence Program Manager. Personal Communication: email. National Park Service. Nome, AK.

Dau, J. 2005. Unit 23 muskox management report. Page 38–48 in C. Brown, editor. Muskox management report of survey and inventory activities 1 July 2002–30 June 2004. Alaska Department of Fish and Game. Juneau, AK.

Dunker, W.R. 2017. 2017 Seward Peninsula muskox population survey summary. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

Dunker, W.R. 2018. Area Biologist. Personal Communication: email. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

FSB. 1995a. Transcripts of Federal Subsistence Board proceedings, April 12, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1995b. Transcript of Federal Subsistence Board proceedings, August 15, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1997. Transcripts of Federal Subsistence Board proceedings, April 10, 1997. Office of Subsistence Management, FWS. Anchorage, AK

FSB. 1998. Transcripts of Federal Subsistence Board proceedings, May 4, 1998. Office of Subsistence Management, FWS. Anchorage, AK

Gorn, T. 2011. Unit 22 muskox. Pages 16–47 *in* P. Harper, editor. Muskox management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 16.0. Juneau, AK.

Gorn, T. 2012. 2012 muskox survey results memorandum. Alaska Department of Fish and Game. Nome, AK.

Gorn, T. and W. R. Dunker. 2013. Unit 22 muskox. Pages 17-51 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2010-30 June 2012. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2013-2, Juneau, AK.

Gorn, T. and W. R. Dunker. 2015. Unit 22 muskox. Chapter 2, pages 2-1 through 2-44 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2012-30 June 2014. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2015-2, Juneau, AK.

Hughes, L. 2018. Wildlife Biologist. Personal Communication: email. National Park Service. Nome, AK.

Ihl, C. and D. R. Klein. 2001. Habitat and diet selection by muskoxen and reindeer in western Alaska. Journal of Wildlife Management. 65(4):964-972.

Jingfors. K. T. 1982. Seasonal activity budgets and movements of a reintroduced Alaskan muskox herd. Journal of Wildlife Management. 46(2):344-350.

Jonkel, C. J., D.R. Gray, and B. Hubert. 1975. Immobilizing and marking wild muskoxen in arctic Canada. Journal of Wildlife Management. 39(1):112-117.

Klein, D. R. 1992. Comparative ecological and behavioral adaptations of Obivos moschatus and Rangifer tarandus. Rangifer. 12(2):47-55.

Nelson, R. 1994. Seward Peninsula cooperative muskox management plan. Unpublished report. Nome, AK.

OSM. 2001. Staff Analysis WP01-35. Pages 432–448 in Federal Subsistence Board Meeting Materials April 30–May 3, 2001. Office of Subsistence Management, FWS. Anchorage, AK. 615 pages.

OSM. 2014. Staff Analysis WP14-38. Supplemental Materials for Federal Subsistence Board Meeting April 15–May 17, 2014. Office of Subsistence Management, FWS. Anchorage, AK.

OSM. 2018. Federal Subsistence Permit System. https://subsistence.fws.gov/apex/f?p=104:53:14184345113765:::. Retrieved: August 3, 2018.

Schmidt, J.H. and T.S. Gorn. 2013. Possible secondary population-level effects of selective harvest of adult male muskoxen. PLoS ONE 8(6): e67493.doi:10.1371/journal.pone.0067493.

Smith, T. E. 1989. The role of bulls in pioneering new habitats in an expanding muskox population on the Seward Peninsula, Alaska. Can. J. Zool. 67: 1096-1101.

Thing, H., D. R. Klein. K. Jingfors, and S. Holt, 1987. Ecology of muskoxen in Jameson Land, northeast Greenland. Holarctic Ecology. 10:95-103.

SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

Seward Peninsula Subsistence Regional Advisory Council

Maintain status quo for WCR20-28. The Council voted to maintain the status quo for all of the Unit 22 muskox closure reviews due to the currently low muskox population in the region. The Council expressed that they are worried about extremely low population numbers, potential overharvest and susceptibility to bear predation. Overharvest could lead to a population decline to the point where the population may never be able to recover. The Council expressed alarm with the decline in muskox numbers and lack of herd recovery. The Council would like to see the closure remain in place to protect the remaining population while still allowing for a very small harvest by local subsistence users. Some Council members were open to closing the hunt entirely to give the muskox population an opportunity to grow.

FEDERAL WILDLIFE CLOSURE REVIEW
WCR20-29

Closure Location: Unit 22D—Muskox

Current Federal Regulation

Unit 22D−Muskox

Unit 22D remainder—1 bull by Federal permit or State permit.	*Aug. 1 – Mar. 15*
Federal public lands are closed to the taking of muskox except by residents of Elim, White Mountain, Nome, Teller, and Brevig Mission hunting under these regulations	

Closure Dates: Year-round

Current State Regulation

Unit 22D−Muskox

Unit 22D remainder—One bull by permit	*TX102*	*Aug 1 – Mar 15*
All skulls require trophy destruction at time of take in the field subject to permit conditions; specimens required		

Regulatory Year Initiated: 1996

Regulatory History

A cooperative muskox management effort for the Seward Peninsula was begun in 1993 with the creation of the Seward Peninsula Muskox Cooperators Group. Muskox management efforts were guided by recommendations from this group and the Seward Peninsula Cooperative Muskox Management Plan (1994) established the guiding management goals for muskoxen in this region.

In 1995, Proposal WP95-44 was adopted by the Federal Subsistence Board (Board) to establish the first Federal muskoxen hunt on the Seward Peninsula and granted a Federal subsistence priority for rural Alaskan residents with a customary and traditional determination for muskoxen in Unit 22. The Board established a season of Sept. 1 – Jan. 31 for Units 22D, 22E, and 23 west of and including the Buckland River drainage, and limited the harvest to bulls with a quota of 3% of the population from the most recent census (FSB 1995a).

In August 1995, the Board rejected two Requests for Reconsideration (R95-04 and R95-05), but revised the harvest quota for Unit 22D reducing it from 12 to 2 muskoxen. The Board made this change in response to concerns for the maintenance of a healthy muskox population (FSB 1995b).

In 1996, Proposal WP96-51 was adopted by the Board to increase the harvest from two to eight muskoxen in Unit 22D. The proposal was submitted by the Seward Peninsula Subsistence Regional Advisory Council to increase the harvest quota to 12 muskoxen but was adopted with modification to increase the harvest quota to 8 muskoxen.

In 1997, the Board denied a Request for Reconsideration (R96-06) to keep the harvest quota set at eight muskox, but stratified Unit 22D into two permit areas comprising Bureau of Land Management (BLM) lands and Bering Land Bridge National Preserve (NPS lands), with half of permits designated in each area (FSB 1997:49) . This decision was based on harvest information indicating all muskoxen harvest in Unit 22D was on BLM land. The split of permits was intended to encourage subsistence hunters to harvest from NPS lands in the eastern end of the unit.

In 1998, the Seward Peninsula Subsistence Regional Advisory Council submitted Proposal WP98-89 to extend the season (Sept. 1 – Jan. 31) three months to Aug. 1 – Mar. 31 for Units 22D, 22E, and Unit 23 SW. However, as part of the consensus agenda, Proposal 89 was adopted with modification by the Board to extend the season to Aug. 1 – Mar. 15 in Units 22D and 22E and that portion of Unit 23. This modification was made due to biological concerns that hunting in late March could stress cows shortly before the calving season.

A shared Federal and State permit system for muskox on the Seward Peninsula was supported by the Seward Peninsula and Northwest Arctic Subsistence Regional Advisory Councils and adopted by the Board in 1998 (FSB 1998). In January 1998, the Seward Peninsula Muskox Cooperators met to discuss options for a combined Federal and State muskox harvest on the Seward Peninsula. The group reached consensus involving management on a subunit basis, allowing for continued growth of the population and increased harvest opportunities, with the intent that the Muskox Management Plan would be amended in the future to reflect these changes. Six affected villages considered allowing State harvest as a means to increase harvest opportunities. Individual villages made decisions on the percent harvest rate and how the harvest should be divided between the State and Federal systems within their respective subunits. Village recommendations were summarized in a resolution written and adopted by the Seward Peninsula Subsistence Regional Advisory Council in 1998 and subsequently presented to the Alaska Board of Game (BOG), which approved a Tier II subsistence muskox hunt for the Seward Peninsula with the assumption that this would be part of a combined Federal/State harvest program. Also in 1998, the Board followed the recommendations of the Seward Peninsula and Northwest Arctic Councils and approved a special action (WSA97-14) establishing these regulations for the 1998/99 Federal subsistence muskox season (FSB 1998:24).

In 1999, Proposal WP99-46 put the temporary regulations approved in WSA97-14 into permanent regulation. Due to the long traveling distances needed to reach Federal lands and the poor travel/snow conditions during that time, the six affected villages supported the combination of the State and Federal

harvest systems to create more harvest opportunities due to declining hunter success rates under the Federal subsistence harvest. The combined Federal and State harvest was adopted into permanent State regulation by the BOG in 1998. The consensus was to manage on a subunit basis within Unit 22 and Unit 23SW to allow for continued growth of the muskoxen population in this region and to increase harvest opportunities. Sharing the harvest quota between Federal and State systems helped meet the subsistence needs of the local users that may not have been met under only the Federal or State system separately. The cooperative management dispersed hunting pressure over an entire area regardless of land ownership to create a more biologically sound management approach (OSM 2001).

In 2000, the Board adopted Proposal WP00-56 to remove the split of two Federal permit areas, one on NPS land and the other on BLM land, as designated in 1997 in Unit 22D. Six of the Federal permits were then transferred into the State Tier II system.

In 2001, Proposal WP01-35 was adopted and changed the harvest limits in Unit 22 and Unit 23SW from one bull to one muskox; additionally quotas were put in place for each hunt area.

Proposal WP02-37 was adopted by the Board at its May 2002 meeting and authorized the Superintendent of the Western Arctic National Parklands to announce harvest quotas and any needed closures in consultation with Alaska Department of Fish and Game (ADF&G) and BLM.

In 2004, Proposal WP04-71 requested that the customary and traditional use determination for muskox for Units 22B and 22D be expanded to include all residents of Unit 22, excluding residents of St. Lawrence Island. The proposal was adopted with modification by the Board and divided the Unit 22D customary and traditional use area into Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages and Unit 22D remainder and added residents of Unit 22C and White Mountain to the customary and traditional use determination for Unit 22D in the Kougarok, Kuzitrin, and Pilgrim River drainages hunt area.

In 2006, Proposal WP06-41 established the use of a designated hunter permit for muskoxen in Unit 22 by Federally qualified subsistence users. Special provisions allowed a Federally qualified subsistence user to designate another Federally qualified subsistence user to take muskoxen on their behalf, unless the recipient is a member of a community operating under a community harvest system.

In 2008, the BOG adopted Proposal 77 with modification. This changed the framework of the Seward Peninsula muskoxen hunts by adopting a combination of Tier I Subsistence registration hunts and drawing permit hunts. This ended the Tier II permit hunts that had been in place since 1998 (Gorn 2011, Hughes 2018, pers. comm.)

In 2009, State Emergency Order 05-11-09 closed the State subsistence hunting season for muskoxen by registration permit in Unit 22D remainder on October 13, 2009, because the joint State/Federal harvest quota of 16 muskoxen had been reached. Based on this closure, the Federal manager closed the Federal subsistence muskoxen hunt in Unit 22D remainder on October 17, 2009.

The Board approved Emergency Special Action WSA09-06 on December 30, 2009, reopening the winter muskoxen season within Unit 22D remainder (that portion within the Kougarok, Kuzitrin, and Pilgrim River drainages) from January 15 to March 15, 2009.

An expansion of the customary and traditional use determination for muskox in Unit 22D (WP10-73) was adopted with modification by the Board in May of 2010. This combined the portion of Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages customary and traditional use area with the Unit 22D remainder area. This also added residents of Unit 22B (White Mountain, Golovin, Elim, Council, and Koyuk) and Unit 22E (Wales and Shishmaref) to the customary and traditional use determination for all of Unit 22D.

In 2010, Proposal WP10-77 requested the Federal hunt areas for muskoxen within Unit 22D remainder be aligned with State regulations by establishing hunts in the Kougarok, Kuzitrin, and Pilgrim river drainages. The Board adopted WP10-77 with modification to establish the current Unit 22D Kuzitrin hunt area, which encompasses the Kougarok and Pilgrim river drainages (**Figure 1**).

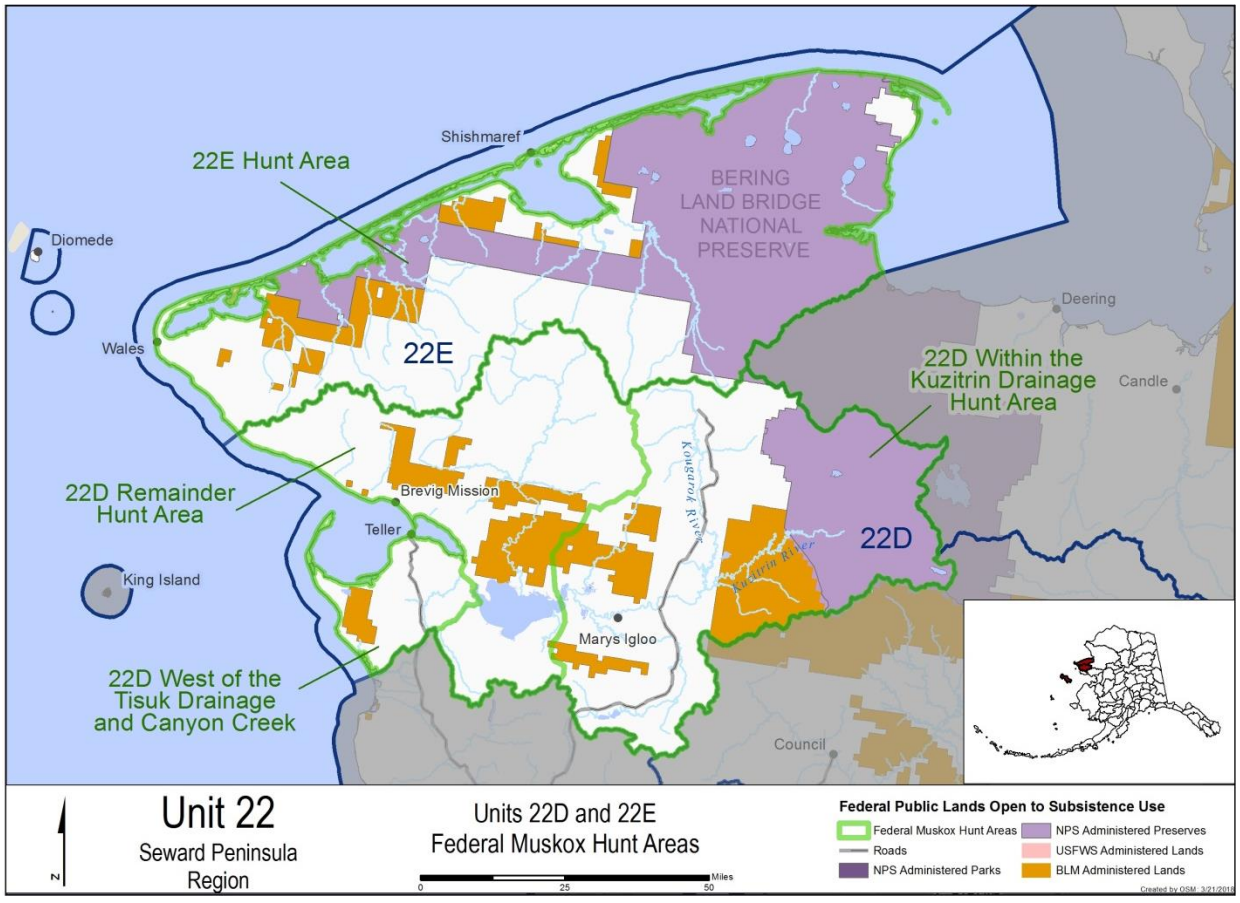


Figure 1. Current muskox hunt areas in Units 22D and 22E.

In 2011, the BOG adopted Proposal RC34 (A) making the muskox hunting regulation in Unit 22D part of a threshold-based hunt regime conditioned on the harvestable portion and the Amounts Necessary for Subsistence (ANS) available for the Seward Peninsula population, which includes all of Unit 22 and Unit

23SW (Dunker 2018, pers. comm.). The regulatory thresholds for this portion of the population define conditions for Tier II hunts (harvestable portion below the ANS), Tier I registration hunts (harvestable portion within the ANS range) and registration/drawing hunts (harvestable portion above ANS). This change was in response to significant population declines, low bull:cow ratios, and high harvest of mature bulls documented by the Alaska Department of Fish and Game (ADF&G). Based on the implementation of the new harvest guidelines intended to address the high harvest of mature bulls and the decline in bull:cow ratios and based on further population declines revealed in March 2012 population surveys, State Tier II hunts were required in Unit 22D for 2012-2013 regulatory year due to the reduction of the harvestable surplus being below the lower end of the ANS (Dunker 2018, pers. comm.).

In 2014, Proposal WP14-38 was adopted with modification by the Board and eliminated the cow hunt, provided the BLM Anchorage Field Manager with the authority to restrict the number of Federal registration permits to be issued, and further closed Federal public lands in Unit 22D remainder to the harvest of muskox except by residents of Elim, White Mountain, Nome, Teller, and Brevig Mission. This further restriction was suggested following an 804 user prioritization analysis.

Bureau of Land Management lands comprise approximately 15% of all lands in the 22D Remainder muskox hunt area. These are the only Federal public lands in this specified muskox hunt area.

Closure last reviewed: 2014– WP14-38

Justification for Original Closure (ANILCA Section 815 (3) criteria):

Section §815(3) of ANILCA states:

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law…*

The Federal Subsistence Board's intent was to provide a subsistence priority for Alaskan residents with a Customary &Traditional use determination for muskox. The Board did not feel that the State muskox seasons would provide adequate opportunity and priority for subsistence users who provided active participation in the cooperative muskox management plan, and therefore determined that a Federal season managed via a Federal registration permit and the closure of Federal public lands to non-Federally qualified users was necessary.

Council Recommendation for Original Closure:

Proposal 44 (1995): Seward Peninsula Subsistence Regional Advisory Council recommendation – Support, to provide a subsistence priority for local users due to a lack of subsistence priority under State regulations; Northwest Arctic Subsistence Regional Advisory Council recommendation - No recommendation for Unit 22 since Unit 23 wasn't originally included in the proposal. Although these were the original recommendations from the Councils, both Councils agreed to support the modified

proposal, voted on by the Board, which included that portion of Unit 23 including and west of the Buckland River drainage (FSB 1995a: 348).

State Recommendation for Original Closure:

Although ADF&G agreed with the intent of the cooperative muskox management planning effort, they believed it was advisable to postpone a decision on the proposal to close Federal public lands (Proposal 44) until the BOG had decided on State Regulations for a muskox hunt in Unit 22 and Unit 23SW. When the amendment that contained the closure language was proposed, the State had concerns in regards to permitting and wanted to be kept informed; however, no direct comments about the closure were made and the State's official recommendation was neutral.

Biological Background

Muskoxen have many adaptations to allow for survival in arctic habitats, but some of these adaptations also limit muskoxen in some areas. The large body size, and therefore rumen size, allows muskoxen to consume and process large quantities of low quality forage that may be found on the tundra (Jingfors 1982, Klein 1992, Ihl and Klein 2001). This large body size, in addition to their thick undercoat and long guard hairs, allow muskoxen to stay warm in arctic climates and conserve energy (Klein 1992). However, these adaptations make it difficult for muskoxen to regulate their body temperature following high exertion activities, such as running, and lead to groups remaining more localized rather than migrating long distances like other arctic species, such as caribou (Klein 1992).

Muskoxen are more limited by snow than caribou due to their greater foot loading, low chest height, and smaller hooves making it more difficult to travel through deep or wind-hardened snow (Ihl and Klein 2001, Klein 1992) and therefore, tend towards coastal areas potentially due to the higher winds which reduce the snow depth during winter (Dau 2005). However, muskoxen in Unit 22 tend towards higher windblown slopes during the winter on the Seward Peninsula to avoid the deep snow drifts (Ihl and Klein 2001, Adkisson pers comm. 2009). Muskoxen tend to be more sedentary during periods of heavy snow cover; however, adult bulls generally tend to be less conservative than the general population and will enter previously unused winter habitats due to distant movements during the fall in search of harems (Smith 1989).

The general lack of winter movements is a conservative energy budget survival strategy by muskoxen (Jingfors 1982). Winter forage for muskoxen is of very poor quality (Thing et al. 1987). As a behavioral response to poor forage quality, muskoxen settle onto sites with readily available forage so that minimum energy expenditures are made during foraging bouts (Klein 1992). Additionally, muskoxen spend significantly more time resting in early and late winter than in the post-calving, mid-summer, and rut periods (Jingfors 1982).

Muskoxen in winter appear to be particularly susceptible to disturbance, with sufficient disturbance causing site abandonment (Jonkel et al. 1975). Muskoxen that abandon a preferred wintering site may need to travel considerable distances before reaching an alternative foraging site.

Muskoxen were extirpated in Alaska by the late 1800s, and perhaps hundreds of years earlier on the Seward Peninsula (Gorn and Dunker 2015). Muskoxen were reintroduced to Units 22C and 22D of the Seward Peninsula in 1970, and have since expanded their range to the north and east (Gorn and Dunker 2015). Currently, muskoxen occupy suitable habitat in Units 22A, 22B West, 22C, 22D, 22E, and 23-Southwest.

Muskox management on the Seward Peninsula has been guided by recommendations from the Seward Peninsula Muskox Cooperators Group. The group is composed of staff from ADF&G, NPS, BLM, U.S. Fish and Wildlife Service (USFWS), Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities, and representatives from other interested groups or organizations. The Cooperators Group has not met since January of 2008, but information has been regularly provided to the Chair since that time (ADF&G 2016). The following management goals form the basis of the cooperative interagency management plan for Seward Peninsula muskoxen developed from 1992 through 1994 (Nelson 1994) and follow the guidelines of ADF&G Muskox Management Policies (ADF&G 1980):

- Manage population to allow for continued growth and range expansion of the Seward Peninsula Muskox.

- Provide for a limited harvest in a manner consistent with existing State and Federal laws by following the goals/objectives endorsed by the Seward Peninsula Muskox Cooperators Group and the Seward Peninsula Cooperative Muskox Management Plan.

- Manage muskoxen along the Nome road systems of Unit 22B and 22C for viewing, education, and other nonconsumptive uses.

- Work with local reindeer herding interests to minimize conflicts between reindeer and muskoxen.

- Protect and maintain the habitats and other components of the ecosystem upon which muskoxen depend.

- Encourage cooperation and sharing of information among agencies and users of the resource in developing and executing management and research programs.

After reintroduction, the muskox population experienced periods of growth between 1970 and 2000 (14% annual rate of increase) and 2000 and 2010 (3.8% annual rate of increase) (Gorn 2011). However, between 2010 and 2012 the muskox population declined 12.5% annually throughout the Seward Peninsula (Gorn 2012). Aspects of the recent decline were likely related to the high mortality rates of adult cows and declines in the number of short yearlings (10-11 month-old muskoxen) (Gorn 2012); however, some caution should be used when interpreting these mortality rates as they are based on a small sample of the population (Gorn 2011). Composition surveys also indicated declines in mature bulls between 2002 and 2010, which prompted changes to the method of determining harvest rates (Gorn 2011). Recent research suggested that selective harvest of mature bulls on the Seward Peninsula could be

a driver of reduced population growth and that annual harvest be restricted to less than 10% of the estimated number of mature bulls (Schmidt and Gorn 2013). Following this change in methodology, the Seward Peninsula muskox population remained stable through 2017 (Dunker 2017).

In Unit 22D, the population followed a similar trend as the overall Seward Peninsula population. The population experienced growth from 1992 until approximately 2010, at which point the population declined and then remained stable until the most recent population survey in 2017 (Dunker 2017a, Gorn and Dunker 2013, 2015; **Table 1, Figure 2**). The Unit 22D remainder permit area has similarly experienced a decline since 2010, but has appeared to stabilize from 2015-2017 (Gorn and Dunker 2013, 2015, Dunker 2017a; **Table 2**). Short yearling composition in Unit 22D showed an inverse trend to the population estimates (Dunker 2017b; **Table 3, Figure 3**). The bull:cow ratios in Unit 22D followed the same trend as the population, with the number of mature bulls per 100 cows increasing through 2010 and then declining and stabilizing 2015-2017 (Dunker 2017b; **Table 3, Figure 4**).

Table 1. Muskox population estimates in Unit 22D from 1992 to 2017.

Year	Unit	Muskox Population
1992	22D	340
1994	22D	405
1996	22D	308
1998	22D	714
2000	22D	774
2002	22D	771
2005	22D	796
2007	22D	746
2010	22D	878
2012	22D	629
2015	22D	523
2017	22D	556

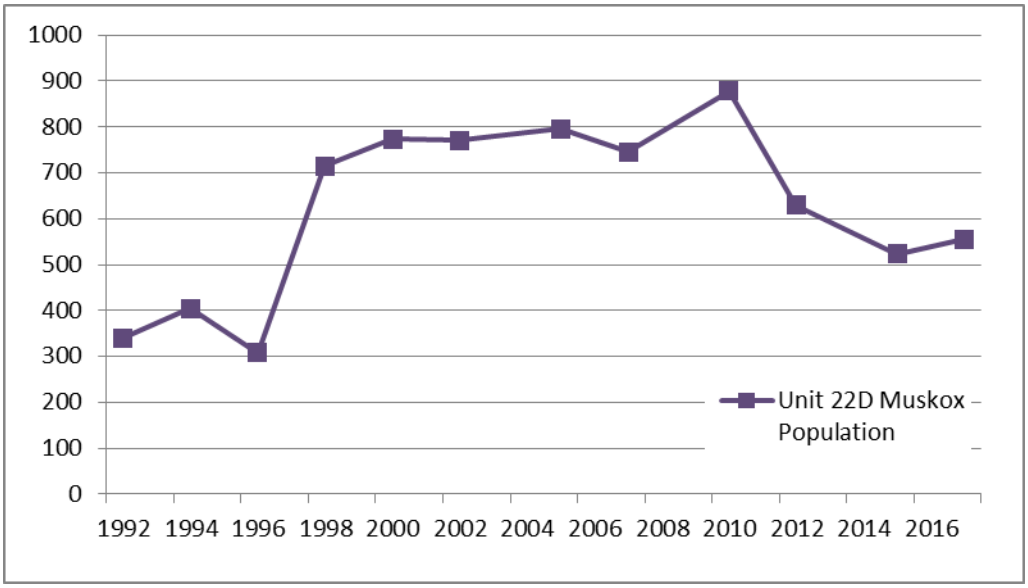


Figure 2. Population fluctuations in Unit 22D between 1992 and 2017.

Table 2. Unit 22D remainder population estimates from 2010 to 2017.

Year	Unit	Population
2010	22D Remainder	532
2012	22D Remainder	344
2015	22D Remainder	258
2017	22D Remainder	278

Table 3. Composition survey results in Unit 22D from 2002 to 2017.

Year	Unit	Mature Bulls:100 Cows	Short Yearlings:100 Cows
2002	22D	33	41
2006	22D	42	36
2010	22D	54	18
2011	22D	29	24
2012	22D	22	13
2015	22D	26	19
2017	22D	27	38

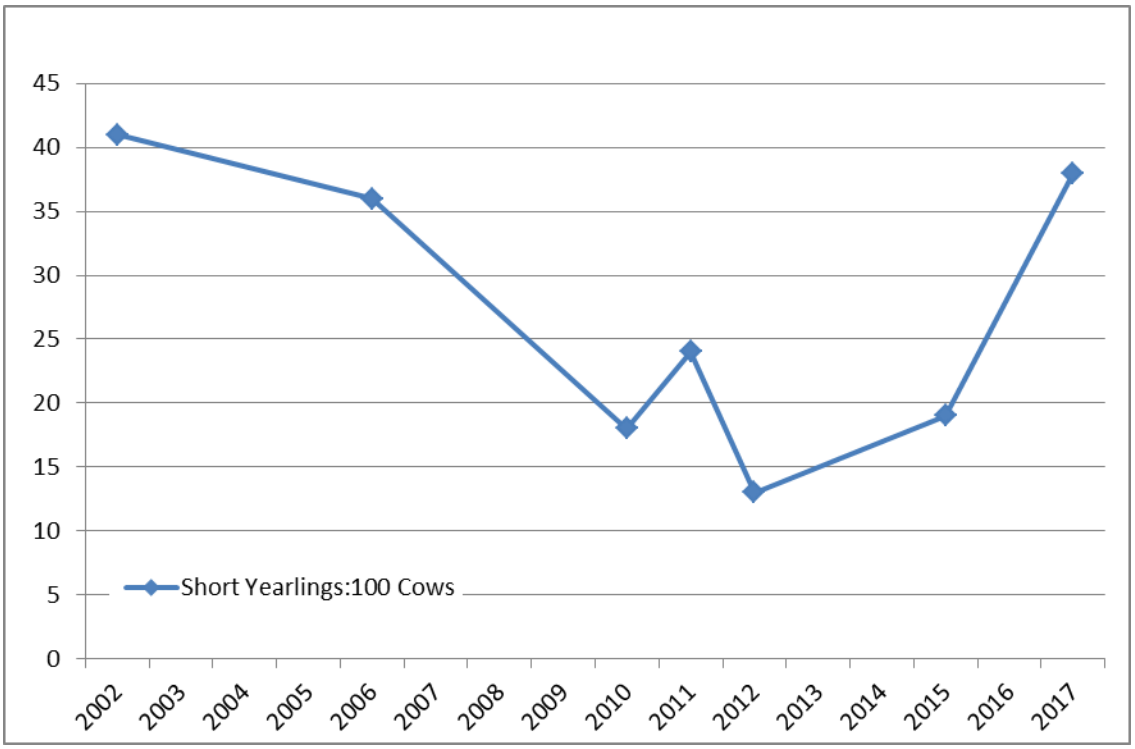


Figure 3. Short yearling composition survey estimates, in Unit 22D, between 2002 and 2017.

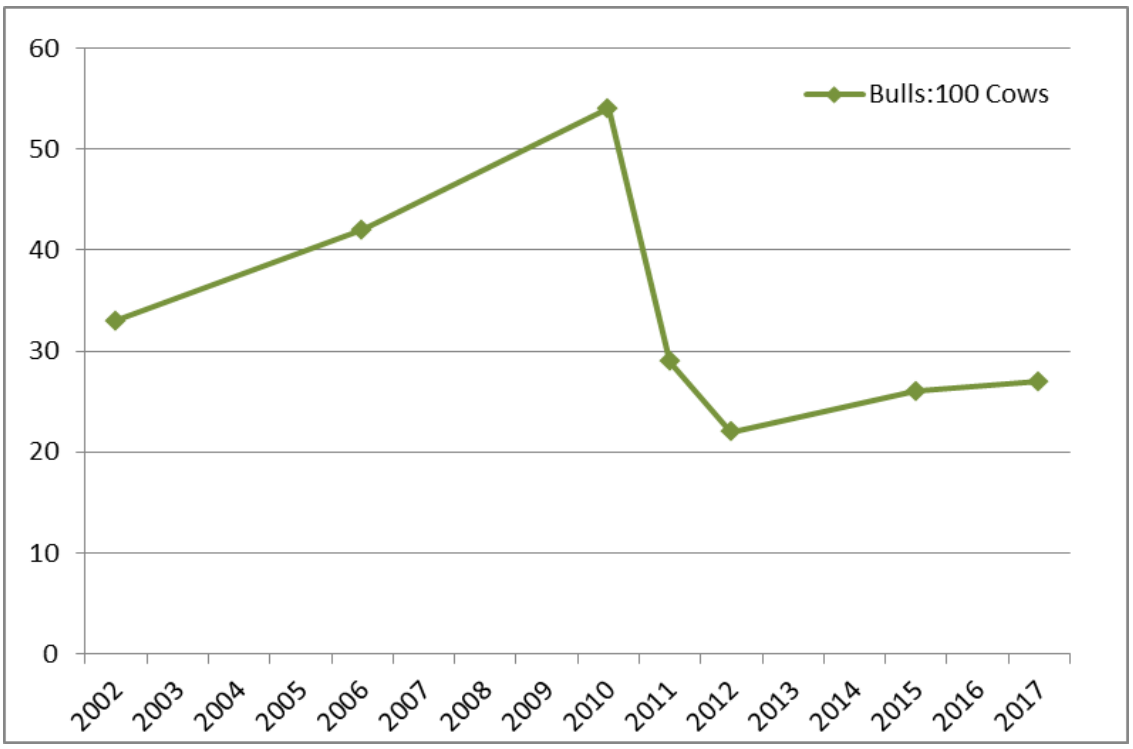


Figure 4. Bull composition survey estimates, in Unit 22D, between 2002 and 2017.

Harvest History

Muskox harvest in Unit 22 is based on population survey estimates on the Seward Peninsula. The allowable harvest is currently calculated as approximately 10% of the estimated number of mature bulls in a hunt area, and the overall range-wide harvest is calculated to be approximately 2% of the Seward Peninsula muskox population (Gorn and Dunker 2015). This method for evaluating the harvestable portion on the Seward Peninsula was put in place, starting in 2012, due to a decline in muskox abundance and mature bull:cow ratios (Schmidt and Gorn 2013, Dunker 2018, pers. comm.). Prior to this change, from 1998 to 2011, the harvest strategy was solely based on a percentage of hunt area muskox populations, with the harvest rate reaching up to 8% of a population in some areas (OSM 2014).

In Unit 22D, the average annual muskox harvest was 42 muskoxen from 2007 through 2011 (ADF&G 2018, Dunker 2018, pers. comm.; **Table 4, Figure 5**). When the harvest management strategy was modified, in 2012, the harvest of muskox greatly decreased; nonresident harvest was no longer permitted and nonlocal resident harvest was greatly reduced (ADF&G 2018). Starting in 2012 through 2017, the State managed average annual harvest dropped to eight muskoxen in Unit 22D (ADF&G 2018); with Federally qualified subsistence users harvesting an average of one additional muskox by Federal registration permit annually (OSM 2018).

Unit 22D remainder is currently managed under the Federal harvest permit FX2208 and State Tier II permit TX102 (**Table 5, Table 6**). In Unit 22D remainder the State harvest quota was reduced to seven muskoxen in 2012, following the modification in harvest strategy (Dunker 2018, pers.comm.). Since 2012, the allowable harvest has remained low in this hunt area. In 2014, Federal public lands in Unit 22D remainder were closed to the taking of muskox except by residents of Elim, White Mountain, Nome, Teller, and Brevig Mission and the hunt was limited to bull muskox only under both Federal and State regulations. Following this modification, average annual harvest in this subunit was reported as two muskoxen for the 2014-2017 timeframe (Adkisson 2018, pers. comm., OSM 2018).

Table 4. Harvest of muskox by user residency in Unit 22D from 2007 through 2017 (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm.).

Year	GMU	Unit Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Unspecified	Total
2007	22D	33	2	0	0	35
2008	22D	23	8	2	0	33
2009	22D	25	14	0	4	43
2010	22D	30	24	1	3	58
2011	22D	22	19	1	1	43
2012	22D	9	0	0	0	9
2013	22D	11	0	0	0	11
2014	22D	9	0	0	0	9
2015	22D	7	0	0	0	7
2016	22D	6	0	0	0	6
2017	22D	7	0	0	0	7

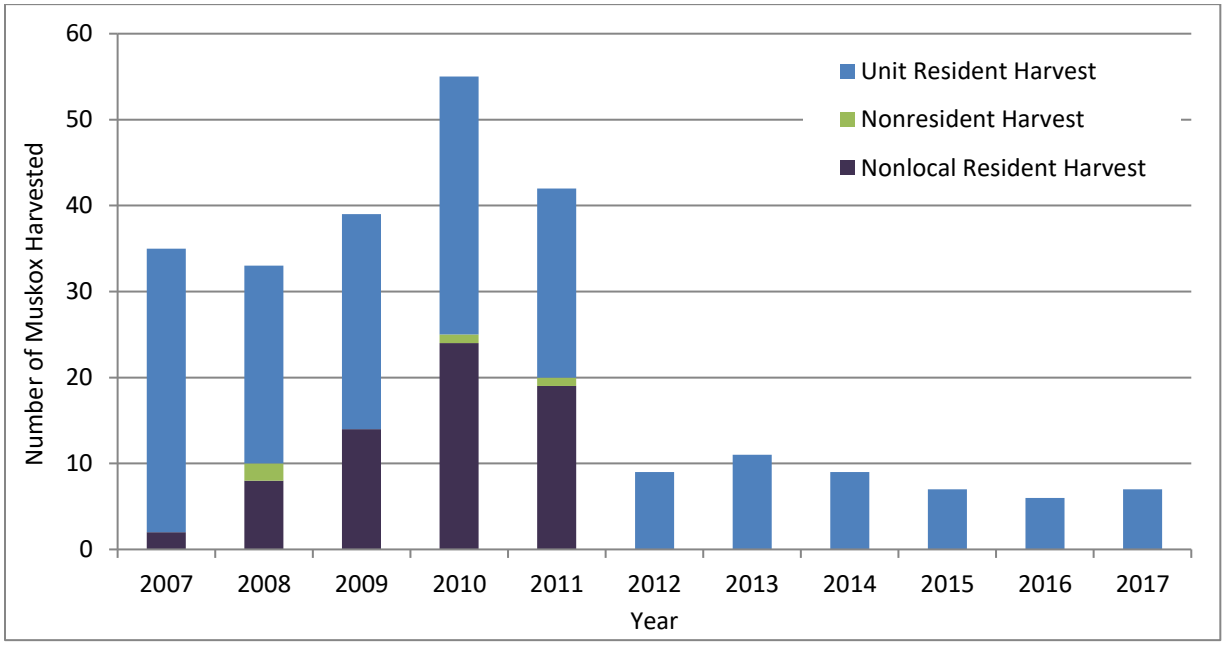


Figure 5. Harvest of muskox in Unit 22D by user residency (ADF&G 2018, Adkisson 2018, pers.comm., Dunker 2018, pers. comm.).

Table 5. Muskox harvest in Unit 22D remainder broken down by State and Federal reported harvest (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm., OSM 2018)

Year	GMU	Federal Harvest (FX2208)	State Harvest (TX102)	Total Harvest	Allowable Harvest Estimate
2012	22D Remainder	0	5	5	7
2013	22D Remainder	1	2	3	7
2014	22D Remainder	0	4	4	7
2015	22D Remainder	1	2	3	7
2016	22D Remainder	0	1	1	5
2017	22D Remainder	0	0	0	5
2018	22D Remainder	-	-	-	4

Table 6. Permits issued for muskox harvest in Unit 22D remainder (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm., OSM 2018).

Hunt Area	Year	Federal Permits Issued	State Permits Issued	Federal Hunt Permit	State Hunt Permit
22D Remainder	2012	0	7	FX2208	TX102
22D Remainder	2013	2	7	FX2208	TX102
22D Remainder	2014	2	7	FX2208	TX102
22D Remainder	2015	2	7	FX2208	TX102
22D Remainder	2016	2	5	FX2208	TX102
22D Remainder	2017	2	5	FX2208	TX102

OSM Preliminary Conclusion:

X maintain status quo

_ modify or eliminate the closure

Justification

In addition to direct mortality due to harvest, muskox survival could be susceptible to herd disturbances during winter months if caloric expenditures are too high. Harvest on the Seward Peninsula was reevaluated and reduced in 2012 due to a declining muskox population. Recently, some localized populations have experienced a slight increase in population size or have remained stable, but these populations still remain at much lower numbers than in the past. The current closure, in conjunction with decreased harvest quotas, have slowed or stalled the decline in muskox populations in this portion of the Seward Peninsula. This closure should remain in place to ensure that these muskox populations have the opportunity to reach healthy levels and to ensure that Federally qualified subsistence users continue to have the opportunity to harvest this subsistence resource into the future.

Literature Cited

ADF&G. 1980. Muskox management policies. Pages X-1-X-4 *in* Alaska Wildlife Management Plans: Species Management Policies. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Miscellaneous Report. Project W-20-2. Juneau, AK.

ADF&G. 2016. Alaska Department of Fish and Game wildlife restoration grant. Federal Aid Annual Performance Report. Alaska Department of Fish and Game. Juneau, AK.

ADF&G. 2018. General Harvest Reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 3, 2018.

Adkisson, Ken. 2009. Subsistence Program Manager. Personal Communication: phone conversation. National Park Service. Nome, AK.

Adkisson, Ken. 2018. Subsistence Program Manager. Personal Communication: email. National Park Service. Nome, AK.

Dau, J. 2005. Unit 23 muskox management report. Page 38–48 in C. Brown, editor. Muskox management report of survey and inventory activities 1 July 2002–30 June 2004. Alaska Department of Fish and Game. Juneau, Alaska.

Dunker, W.R. 2017a. 2017 Seward Peninsula muskox population survey summary. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

Dunker, W.R. 2017b. 2017 Seward Peninsula muskox composition survey summary. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

Dunker, W.R. 2018. 2017Area Biologist. Personal Communication: email. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

FSB. 1995a. Transcripts of Federal Subsistence Board proceedings, April 12, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1995b. Transcript of proceedings, August 15, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1997. Transcripts of Federal Subsistence Board proceedings, April 10, 1997. Office of Subsistence Management, FWS. Anchorage, AK

FSB. 1998. Transcripts of Federal Subsistence Board proceedings, May 4, 1998. Office of Subsistence Management, FWS. Anchorage, AK

Gorn, T. 2011. Unit 22 muskox. Pages 16–47 *in* P. Harper, editor. Muskox management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 16.0. Juneau, AK.

Gorn, T. 2012. 2012 muskox survey results memorandum. Alaska Department of Fish and Game. Nome, AK.

Gorn, T. and W. R. Dunker. 2013. Unit 22 muskox. Pages 17-51 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2010-30 June 2012. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2013-2, Juneau, AK.

Gorn, T. and W. R. Dunker. 2015. Unit 22 muskox. Chapter 2, pages 2-1 through 2-44 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2012-30 June 2014. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2015-2, Juneau, AK.

Hughes, L. 2018. Wildlife Biologist. Personal Communication: email. National Park Service. Nome, AK.

Ihl, C. and D. R. Klein. 2001. Habitat and diet selection by muskoxen and reindeer in western Alaska. Journal of Wildlife Management. 65(4):964-972.

Jingfors. K. T. 1982. Seasonal activity budgets and movements of a reintroduced Alaskan muskox herd. Journal of Wildlife Management. 46(2):344-350.

Jonkel, C. J., D.R. Gray, and B. Hubert. 1975. Immobilizing and marking wild muskoxen in arctic Canada. Journal of Wildlife Management. 39(1):112-117.

Klein, D. R. 1992. Comparative ecological and behavioral adaptations of Obivos moschatus and Rangifer tarandus. Rangifer. 12(2):47-55.

Nelson, R. 1994. Seward Peninsula cooperative muskox management plan. Unpublished report. Nome, AK.

OSM. 2001. Staff Analysis WP01-35. Pages 432–448 in Federal Subsistence Board Meeting Materials April 30–May 3, 2001. Office of Subsistence Management, FWS. Anchorage, AK. 615 pages.

OSM. 2014. Staff Analysis WP14-38. Supplemental Materials for Federal Subsistence Board Meeting April 15–May 17, 2014. Office of Subsistence Management, FWS. Anchorage, AK.

OSM. 2018. Federal Subsistence Permit System. https://subsistence.fws.gov/apex/f?p=104:53:14184345113765::::. Retrieved: August 3, 2018.

Schmidt, J.H. and T.S. Gorn. 2013. Possible secondary population-level effects of selective harvest of adult male muskoxen. PLoS ONE 8(6): e67493.doi:10.1371/journal.pone.0067493.

Smith, T. E. 1989. The role of bulls in pioneering new habitats in an expanding muskox population on the Seward Peninsula, Alaska. Can. J. Zool. 67: 1096-1101.

Thing, H., D. R. Klein. K. Jingfors, and S. Holt, 1987. Ecology of muskoxen in Jameson Land, northeast Greenland. Holarctic Ecology. 10:95-103.

SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

Seward Peninsula Subsistence Regional Advisory Council

Maintain status quo for WCR20-29. The Council voted to maintain the status quo for all of the Unit 22 muskox closure reviews due to the currently low muskox population in the region. The Council expressed that they are worried about extremely low population numbers, potential overharvest and susceptibility to bear predation. Overharvest could lead to a population decline to the point where the population may never be able to recover. The Council expressed alarm with the decline in muskox numbers and lack of herd recovery. The Council would like to see the closure remain in place to protect the remaining population while still allowing for a very small harvest by local subsistence users. Some Council members were open to closing the hunt entirely to give the muskox population an opportunity to grow.

FEDERAL WILDLIFE CLOSURE REVIEW
WCR20-30

Closure Location: Unit 22E—Muskox

Current Federal Regulation

Unit 22E−Muskox

Unit 22E—1 bull by Federal permit or State permit.	*Aug. 1 – Mar. 15*
Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations.	

Closure Dates: Year-round

Current State Regulation

Unit 22E−Muskox

Unit 22E—one bull by permit	*TX104*	*Aug 1 – Mar 15*
All skulls require trophy destruction at time of take in the field subject to permit conditions; specimens required		

Regulatory Year Initiated: 1996

Regulatory History

A cooperative muskox management effort for the Seward Peninsula was begun in 1993 with the creation of the Seward Peninsula Muskox Cooperators Group. Muskox management efforts were guided by recommendations from this group and the Seward Peninsula Cooperative Muskox Management Plan (1994) established the guiding management goals for muskoxen in this region. The Seward Peninsula Muskox Cooperators Group began the process of initiating harvest seasons for muskox on the Seward Peninsula and providing input for regulatory proposals throughout the years.

In 1995, Proposal WP95-44 was adopted by the Federal Subsistence Board (Board) to establish the first Federal muskoxen hunt on the Seward Peninsula and granted a Federal subsistence priority for rural Alaskan residents with a customary and traditional determination for muskoxen in Unit 22. The Board established a season of Sept. 1 – Jan. 31 for Units 22D, 22E, and 23 west of and including the Buckland River drainage (Unit 23SW), and limited the harvest to bulls with a quota of 3% of the population from the most recent census (FSB 1995; **Figure 1**).

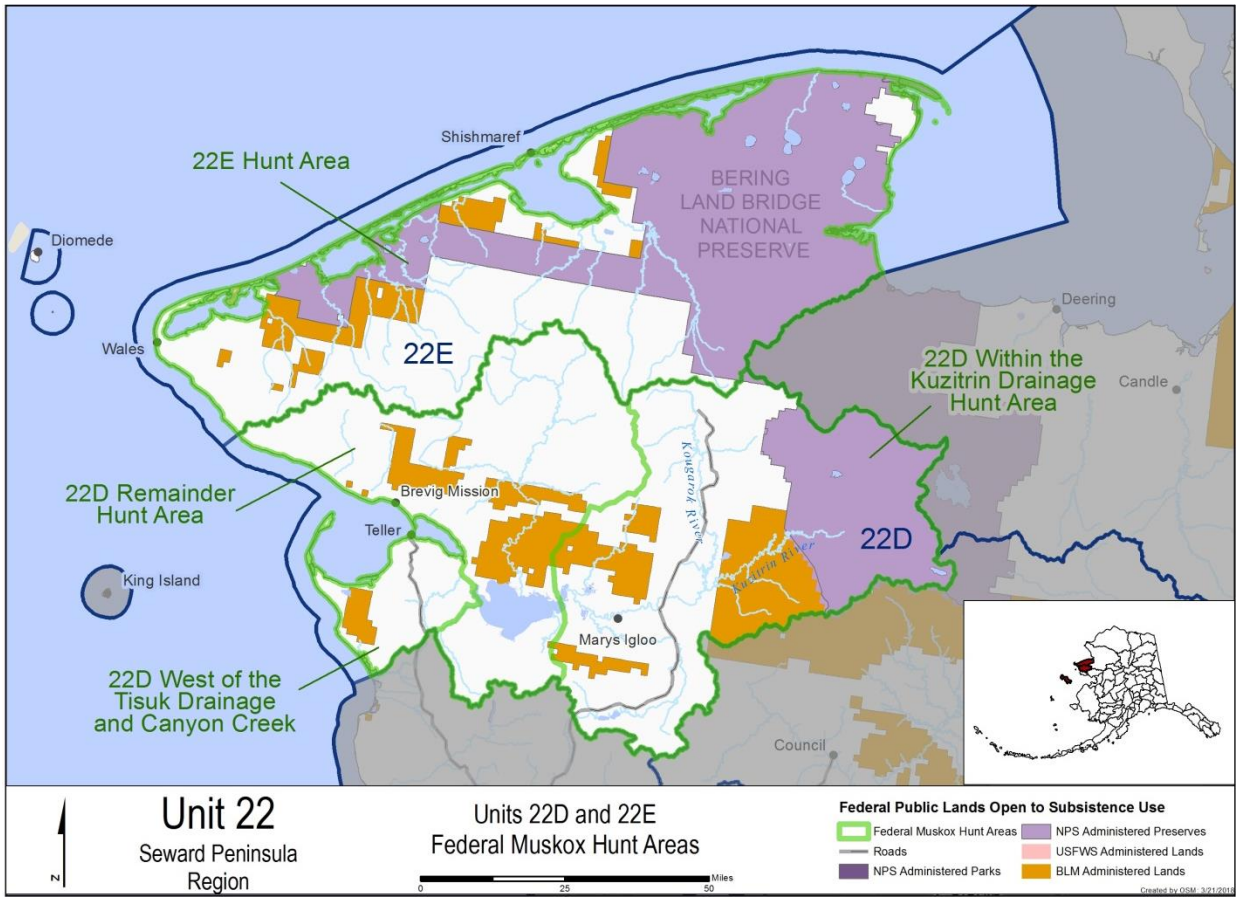


Figure 1. Current muskox hunt areas in Units 22D and 22E.

In 1998, the Seward Peninsula Subsistence Regional Advisory Council submitted Proposal WP98-89 to extend the season (Sept. 1 – Jan. 31) three months to Aug. 1 – Mar. 31 for Units 22D, 22E, and Unit 23SW. However, as part of the consensus agenda, Proposal 89 was adopted with modification by the Board to extend the season to Aug. 1 – Mar. 15 in Units 22D and 22E and that portion of Unit 23. This modification was made due to biological concerns that hunting in late March could stress cows shortly before the calving season.

A shared Federal and State permit system for muskox on the Seward Peninsula was supported by the Seward Peninsula and Northwest Arctic Subsistence Regional Advisory Councils and adopted by the Board in 1998 (FSB 1998). In January 1998, the Seward Peninsula Muskox Cooperators met to discuss options for a combined Federal and State muskox harvest on the Seward Peninsula. The group reached consensus involving management on a subunit basis, allowing for continued growth of the population and increased harvest opportunities, with the thought that the Muskox Management Plan would be amended in the future to reflect these changes. Six affected villages considered allowing State harvest as a means to increase harvest opportunities. Individual villages made decisions on the percent harvest rate and how the harvest should be divided between the State and Federal systems within their respective subunits. Village recommendations were summarized in a resolution written and passed by the Seward Peninsula Subsistence Regional Advisory Council in 1998 and subsequently presented to the Alaska Board of Game

(BOG), which approved a Tier II subsistence muskox hunt for the Seward Peninsula with the assumption that this would be part of a combined Federal/State harvest program. Also in 1998, the Federal Subsistence Board followed the recommendations of the Seward Peninsula and Northwest Arctic Councils and approved a special action (WSA97-14) establishing these regulations for the 1998/99 Federal subsistence muskox season (FSB 1998:24).

In 1999, Proposal WP99-46 put the temporary regulations in WSA97-14 into permanent regulation. Due to the long traveling distances needed to reach Federal lands and the poor travel/snow conditions during that time, the six affected villages supported the combination of the State and Federal harvest systems to create more harvest opportunities due to declining hunter success rates under the Federal subsistence harvest. The combined Federal and State harvest was adopted into permanent State regulation by the BOG in 1998. The consensus was to manage on a subunit basis within Unit 22 and Unit 23SW, to allow for continued growth of the muskoxen population in this region and to increase harvest opportunities. Sharing the harvest quota between Federal and State systems helped meet the subsistence needs of the local users that may not have been met under only the Federal or State system separately. The cooperative management dispersed hunting pressure over an entire area regardless of land ownership to create a more biologically sound management approach (OSM 2001).

In 2001, Proposal WP01-35 was adopted and changed the harvest limits in Unit 22 and Unit 23SW from one bull to one muskox, additionally quotas were put in place for each hunt area.

Proposal WP02-37 was adopted by the Board at its May 2002 meeting and authorized the Superintendent of the Western Arctic National Parklands to announce harvest quotas and any needed closures in consultation with Alaska Department of Fish and Game (ADF&G) and the Bureau of Land Management (BLM).

In 2005, the BOG established a Tier I subsistence registration hunt, previously a Tier II hunt, in Unit 22E as proposed by the Seward Peninsula Muskox Cooperators Group. This was expected to help users reach the harvest quota in an area where the harvestable surplus was greater than the number of permit applicants.

In 2006, Proposal WP06-41 established the use of a designated hunter permit for muskoxen in Unit 22 by Federally qualified subsistence users. Special provisions allowed a Federally qualified subsistence user to designate another Federally qualified subsistence user to take muskoxen on their behalf, unless the recipient is a member of a community operating under a community harvest system.

In 2008, the BOG adopted Proposal 77 with modification. This changed the framework of the Seward Peninsula muskoxen hunts by adopting a combination of Tier I Subsistence registration hunts and drawing permit hunts. This ended the Tier II permit hunts, throughout the Seward Peninsula, that had been in place since 1998 (Gorn 2011, Hughes 2018, pers. comm.)

In 2010, Proposal WP10-74 requested rescinding the closure of Federal public lands to the harvest of muskoxen in Unit 22E, except by Federally qualified subsistence users, and was adopted by the Board.

This same year, the Board adopted WP10-75 which requested the harvest of cow muskoxen be allowed for the entire Aug. 1–Mar. 15 season in Unit 22E, rather than restricting it to Jan. 1–Mar. 15.

Tier II permit hunts were reinstated by the BOG in 2011(Proposal A, RC34). The BOG adopted regulations to allow more flexibility in management of Tier I and Tier II subsistence hunts. This increased regulatory flexibility lead to the adoption of Tier II permit hunts in Units 22B, 22C, 22D, 22E, and 23 Southwest, although from 2012 to 2014 Tier I permits were administered for Unit 22E (Gorn and Dunker 2015).

In 2014, Proposal WP14-36 was adopted with modification by the Board. This eliminated the cow hunt, provided the Superintendent of the Bering Land Bridge National Preserve with the authority to restrict the number of Federal registration permits to be issued, and closed Federal public lands in Unit 22E to the harvest of muskox except by Federally qualified subsistence users hunting under these regulations. This restriction was suggested following an 804 user prioritization analysis.

In 2018, using the flexibility that was adopted into regulations in 2011, the BOG began administering the Unit 22E muskox harvest as a Tier II hunt (TX104). This modification resulted from population surveys suggesting that the harvest strategy that was in place resulted in a harvestable portion that would continue to be below the lower end of the ADF&G's goals for the amount necessary for subsistence (Dunker 2018, pers. comm.)

Federal public lands comprise approximately 62% of Unit 22E and consist of 55% National Park Service (NPS) managed lands, 7% Bureau of Land Management (BLM) managed lands, and 0.12% U.S. Fish and Wildlife Service (USFWS) managed lands.

Closure last reviewed: 2014 – WP14-36

Justification for Original Closure (ANILCA Section 815 (3) criteria):

Section §815(3) of ANILCA states:

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law…*

The Federal Subsistence Board's intent was to provide a subsistence priority for Alaskan residents with a Customary &Traditional use determination for muskox. The Board did not feel that the State muskox seasons would provide adequate opportunity and priority for subsistence users who provided active participation in the cooperative muskox management plan, and therefore determined that a Federal season managed via a Federal registration permit and the closure of Federal public lands to non-Federally qualified users was necessary.

Council Recommendation for Original Closure:

Proposal 44 (1995): Seward Peninsula Subsistence Regional Advisory Council recommendation – Support, to provide a subsistence priority for local users due to a lack of subsistence priority under State regulations; Northwest Arctic Subsistence Regional Advisory Council recommendation - No recommendation for Unit 22 since Unit 23 wasn't originally included in the proposal. Although these were the original recommendations from the Councils, both Councils agreed to support the modified proposal, voted on by the Board, which included that portion of Unit 23 including and west of the Buckland River drainage (FSB 1995: 348).

State Recommendation for Original Closure:

Although ADF&G agreed with the intent of the cooperative muskox management planning effort, they believed it was advisable to postpone a decision on the proposal to close Federal public lands (Proposal 44) until the BOG had decided on State Regulations for a muskox hunt in Unit 22 and Unit 23SW. When the amendment that contained the closure language was proposed, the State had concerns in regards to permitting and wanted to be kept informed; however, no direct comments about the closure were made and the State's official recommendation was neutral.

Biological Background

Muskoxen have many adaptations to allow for their survival in arctic habitats, but some of these adaptations also limit muskoxen in some areas. The large body size, and therefore rumen size, allows muskoxen to consume and process large quantities of low quality forage that may be found on the tundra (Jingfors 1982, Klein 1992, Ihl and Klein 2001). This large body size, in addition to their thick undercoat and long guard hairs, allow muskoxen to stay warm in arctic climates and conserve energy (Klein 1992). However, these adaptations make it difficult for muskoxen to regulate their body temperature following high exertion activities, such as running, and lead to groups remaining more localized rather than migrating long distances like other arctic species, such as caribou (Klein 1992).

Muskoxen are more limited by snow than caribou due to their greater foot loading, low chest height, and smaller hooves making it more difficult to travel through deep or wind-hardened snow (Klein 1992, Ihl and Klein 2001) and therefore, tend towards coastal areas potentially due to the higher winds which reduce the snow depth during winter (Dau 2005). By the same token, muskoxen in Unit 22 tend towards higher windblown slopes during the winter on the Seward Peninsula to avoid the deep snow drifts (Ihl and Klein 2001, Adkisson pers comm. 2009). Muskoxen tend to be more sedentary during periods of heavy snow cover; however, adult bulls generally tend to be less conservative than the general population and will enter previously unused winter habitats due to distant movements during the fall in search of harems (Smith 1989).

The general lack of winter movements is a conservative energy budget survival strategy by muskoxen (Jingfors 1982). Winter forage for muskoxen is of very poor quality (Thing et al. 1987). As a behavioral response to poor forage quality, muskoxen settle onto sites with readily available forage so that minimum energy expenditures are made during foraging bouts (Klein 1992). Additionally, muskoxen spend

significantly more time resting in early and late winter than in the post-calving, mid-summer, and rut periods (Jingfors 1982).

Muskoxen in winter appear to be particularly susceptible to disturbance, with sufficient disturbance causing site abandonment (Jonkel et al. 1975). Muskoxen that abandon a preferred wintering site may need to travel considerable distances before reaching alternative foraging sites.

Muskoxen were extirpated in Alaska by the late 1800s, and perhaps hundreds of years earlier on the Seward Peninsula (Gorn and Dunker 2015). Muskoxen were reintroduced to Units 22C and 22D of the Seward Peninsula in 1970, and have since expanded their range to the north and east (Gorn and Dunker 2015). Currently, muskoxen occupy suitable habitat in Units 22A, 22B West, 22C, 22D, 22E, and 23-Southwest.

Muskox management on the Seward Peninsula has been guided by recommendations from the Seward Peninsula Muskox Cooperators Group. The group is composed of staff from ADF&G, NPS, BLM, USFWS, Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities, and representatives from other interested groups or organizations. The Cooperators Group has not met since January of 2008, but information has been regularly provided to the Chair since that time (ADF&G 2016). The following management goals form the basis of the cooperative interagency management plan for Seward Peninsula muskoxen developed from 1992 through 1994 (Nelson 1994) and follow the guidelines of ADF&G Muskox Management Policies (ADF&G 1980):

- Manage population to allow for continued growth and range expansion of the Seward Peninsula Muskox.

- Provide for a limited harvest in a manner consistent with existing State and Federal laws by following the goals/objectives endorsed by the Seward Peninsula Muskox Cooperators Group and the Seward Peninsula Cooperative Muskox Management Plan.

- Manage muskoxen along the Nome road systems of Unit 22B and 22C for viewing, education, and other nonconsumptive uses.

- Work with local reindeer herding interests to minimize conflicts between reindeer and muskoxen.

- Protect and maintain the habitats and other components of the ecosystem upon which muskoxen depend.

- Encourage cooperation and sharing of information among agencies and users of the resource in developing and executing management and research programs.

After reintroduction, the muskox population experienced periods of growth between 1970 and 2000 (14% annual rate of increase) and 2000 and 2010 (3.8% annual rate of increase) (Gorn 2011). However,

between 2010 and 2012 the muskox population declined 12.5% annually throughout the Seward Peninsula (Gorn 2012). Aspects of the recent decline were likely related to the high mortality rates of adult cows and declines in the number of short yearlings (10-11 month-old muskoxen) (Gorn 2012); however, some caution should be used when interpreting these mortality rates as they are based on a small sample of the population (Gorn 2011). Composition surveys also indicated declines in mature bulls between 2002 and 2010, which prompted changes to the method of determining harvest rates (Gorn 2011). Recent research suggested that selective harvest of mature bulls on the Seward Peninsula could be a driver of reduced population growth and that annual harvest be restricted to less than 10% of the estimated number of mature bulls (Schmidt and Gorn 2013). Following this change in methodology, the Seward Peninsula muskox population remained stable through 2017 (Dunker 2017a).

In Unit 22E, the population followed a similar trend as the overall Seward Peninsula population. The population experienced growth from 1992 until approximately 2007, at which point the population declined and then remained stable from 2015 until the most recent population survey in 2017 (Gorn and Dunker 2013, Dunker 2017a; **Table 1, Figure 2**). Short yearling composition in Unit 22E fluctuated substantially since 2002, with 2017 reaching a high point of 62 short yearlings: 100 cows (Gorn and Dunker 2013, Dunker 2017b; **Table 2, Figure 3**). The bull:cow ratios in Unit 22E declined since 2002, with the lowest count taking place in 2017 at 29 mature bulls:100 cows (Gorn and Dunker 2013, Dunker 2017b; **Table 2, Figure 4**).

Table 1. Muskox population estimates, in Unit 22E, from 1992 to 2017.

Year	Unit	Muskox Population
1992	22E	180
1994	22E	184
1996	22E	327
1998	22E	362
2000	22E	461
2002	22E	632
2005	22E	863
2007	22E	949
2010	22E	879
2012	22E	431
2015	22E	291
2017	22E	306

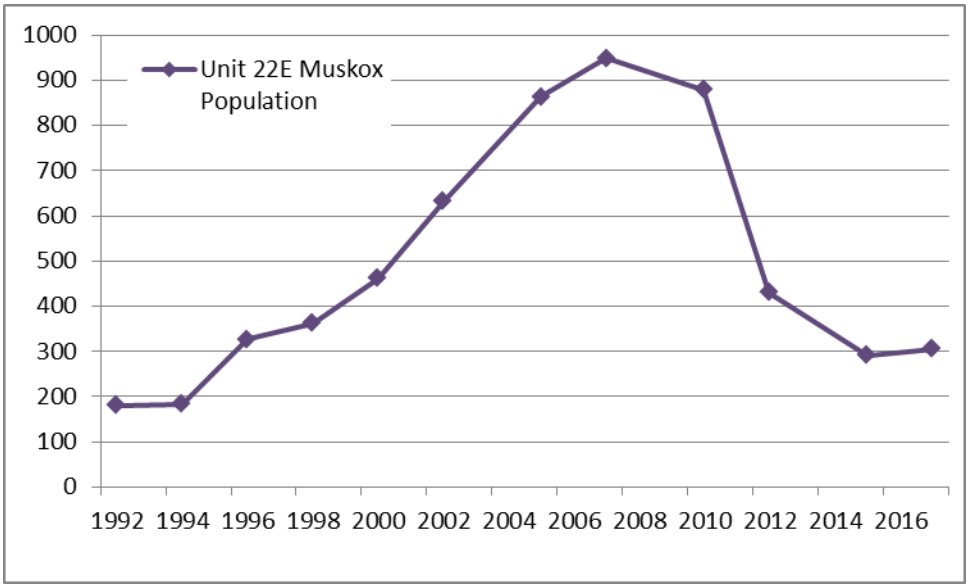


Figure 2. Population fluctuations in Unit 22E from 1992 to 2017.

Table 2. Composition survey results in Unit 22E from 2002 to 2017.

Year	Unit	Mature Bulls:100 Cows	Short Yearlings:100 Cows
2002	22E	49	49
2005	22E	35	32
2010	22E	51	32
2011	22E	53	59
2012	22E	33	28
2015	22E	39	21
2017	22E	29	62

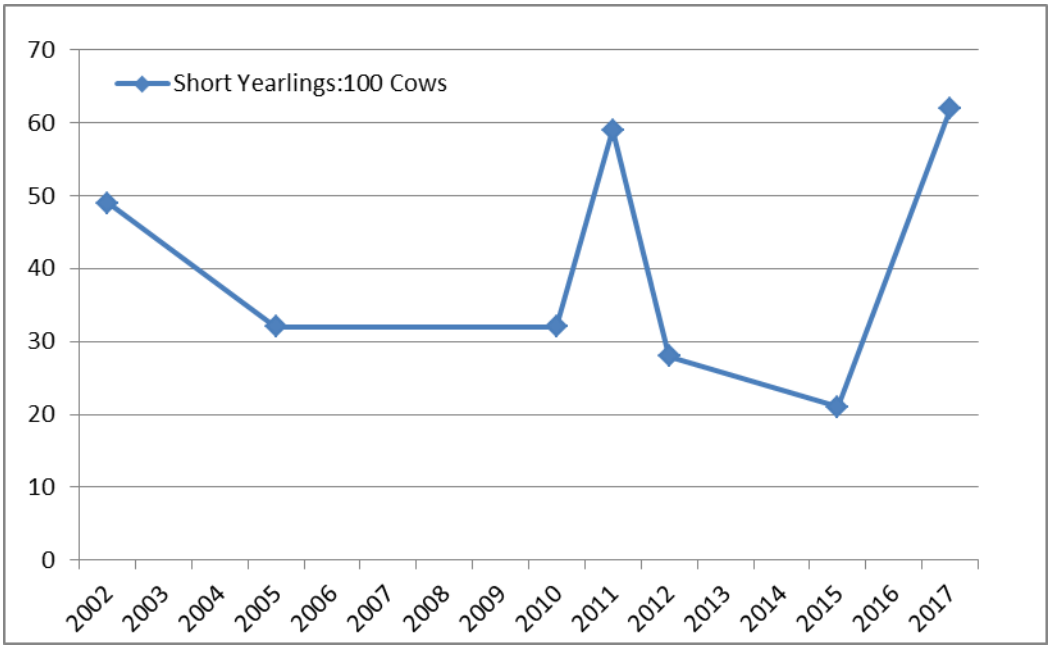


Figure 3. Short yearling composition survey estimates, in Unit 22E, from 2002 to 2017.

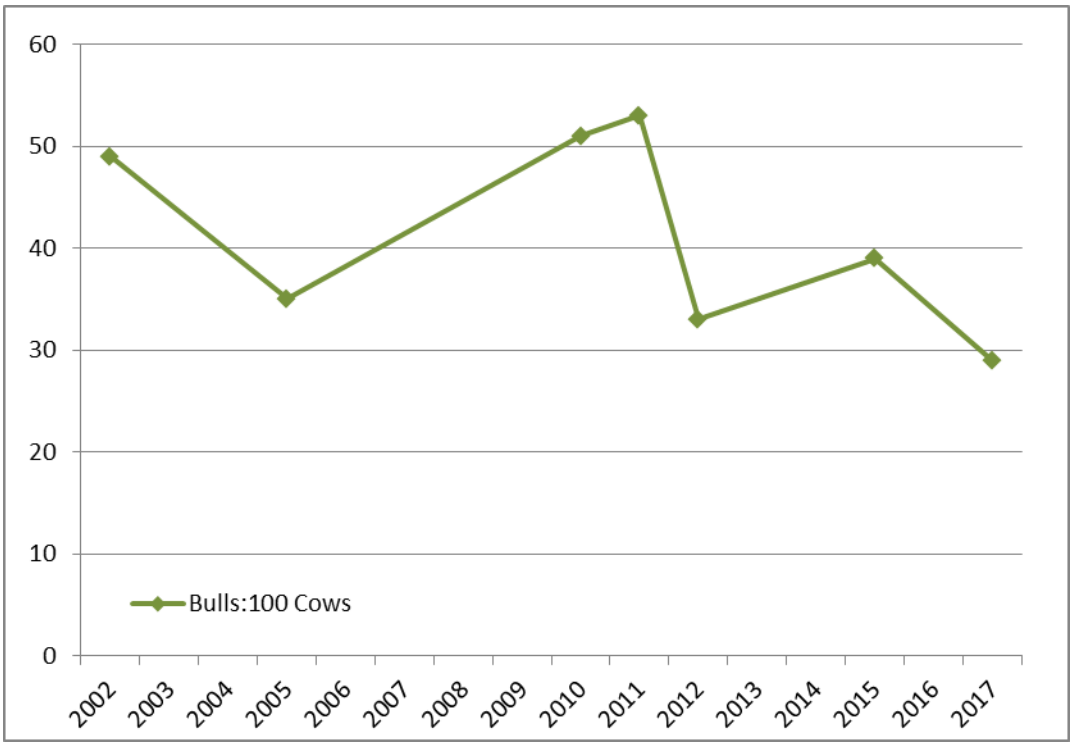


Figure 4. Bull composition survey estimates, in Unit 22E, from 2002 to 2017.

Harvest History

Muskox harvest in Unit 22 is based on population survey estimates on the Seward Peninsula. The allowable harvest is currently calculated as approximately 10% of the estimated number of mature bulls in a hunt area, and the overall range-wide harvest is calculated to be approximately 2% of the Seward Peninsula muskox population (Gorn and Dunker 2015). This method for evaluating the harvestable portion on the Seward Peninsula was put in place, starting in 2012, due to a decline in muskox abundance and mature bull:cow ratios (Schmidt and Gorn 2013, Dunker 2018, pers. comm.). Prior to this change, from 1998 to 2011, the harvest strategy was solely based on a percentage of hunt area muskox populations, with the harvest rate reaching up to 8% of a population in some areas (OSM 2014).

In Unit 22E, the average annual muskox harvest was 36 muskoxen from 2007 through 2011 (ADF&G 2018). When the harvest management strategy was modified in 2012, the harvest of muskox greatly decreased; nonresident harvest was no longer permitted and nonlocal resident harvest was greatly reduced (ADF&G 2018; **Table 3, Figure 5**). Starting in 2012 through 2017, the State managed average annual harvest dropped to five muskoxen in Unit 22E (ADF&G 2018), with Federally qualified subsistence users harvesting an average of two additional muskoxen by Federal registration permit annually (OSM 2018).

Unit 22E is currently managed under the Federal harvest permit FX2210 and State Tier II permit TX104. In Unit 22E the State harvest quota was reduced to 10 muskoxen in 2012, following the modification in harvest strategy (Dunker 2018, pers.comm.; **Table 4**, **Table 5**). Since 2012, the harvest quota has remained low in this hunt area and is currently down to four muskoxen. In 2014, Federal public lands in Unit 22E were closed to the taking of muskox except by Federally qualified subsistence users and the hunt was limited to bull muskox only. Following this modification, average annual harvest in this subunit was reported as six muskoxen for the 2014-2017 timeframe (Adkisson 2018, pers. comm., OSM 2018).

Table 3. Harvest of muskox by user residency in Unit 22E from 2007 through 2017 (ADF&G 2018, Adkisson 2018, pers. comm.)

Year	Unit	Unit Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Unspecified	Total
2007	22E	9	32	1	0	42
2008	22E	7	24	3	2	36
2009	22E	14	30	2	0	46
2010	22E	8	16	0	0	24
2011	22E	5	24	1	2	32
2012	22E	2	3	0	0	5
2013	22E	3	2	0	0	5
2014	22E	6	3	0	0	9
2015	22E	4	0	0	0	4
2016	22E	4	3	0	0	7
2017	22E	2	2	0	0	4

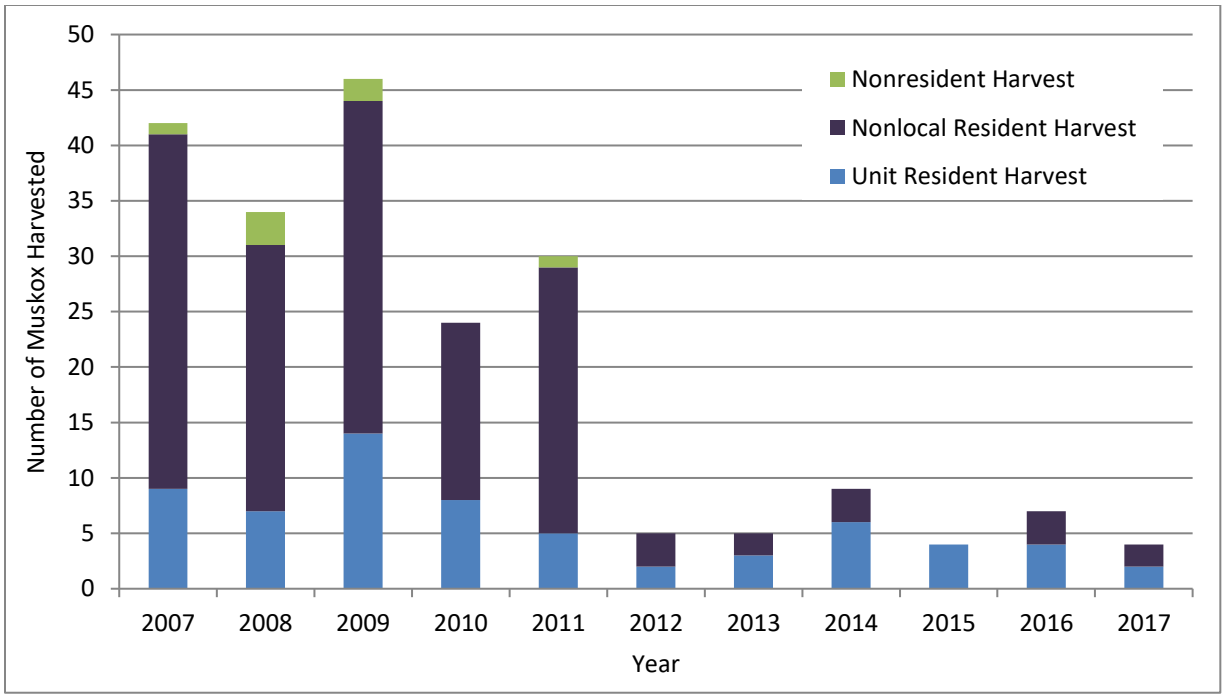


Figure 5. Harvest of muskox in Unit 22E by user residency (ADF&G 2018, Adkisson 2018, pers. comm.)

Table 4. Muskox harvest in Unit 22E broken down by State and Federal reported harvest (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm.).

Year	GMU	Federal Harvest (FX2210)	State Harvest (RX104)	Total Harvest	Allowable Harvest Estimate
2012	22E	0	5	5	10
2013	22E	2	3	5	10
2014	22E	3	6	9	10
2015	22E	2	2	4	6
2016	22E	2	5	7	6
2017	22E	0	4	4	4
2018	22E	-	-	-	4

Table 5. Permits issued for muskox harvest in Unit 22E (Adkisson 2018, pers. comm., Dunker 2018, pers. comm.).

Hunt Area	Year	Federal Permits Issued	State Permits Issued	Federal Hunt Permit	State Hunt Permit
22E	2012	0	10	FX2210	RX104
22E	2013	2	10	FX2210	RX104
22E	2014	5	10	FX2210	RX104
22E	2015	2	6	FX2210	RX104
22E	2016	2	6	FX2210	RX104
22E	2017	0	4	FX2210	RX104

OSM Preliminary Conclusion:

X maintain status quo
_ modify or eliminate the closure

Justification

In addition to direct mortality due to harvest, muskox survival could be susceptible to herd disturbances during winter months if caloric expenditures are too high. Harvest on the Seward Peninsula was reevaluated and reduced in 2012 due to a declining muskox population. Recently, some localized populations have experienced a slight increase in population size or have remained stable, but these populations still remain at much lower numbers than in the past. The current closure, in conjunction with decreased harvest quotas, have slowed or stalled the decline in muskox populations in this portion of the Seward Peninsula. This closure should remain in place to ensure that these muskox populations have the opportunity to reach healthy levels and to ensure that Federally qualified subsistence users continue to have the opportunity to harvest this subsistence resource into the future.

LITERATURE CITED

ADF&G. 1980. Muskox management policies. Pages X-1-X-4 *in* Alaska Wildlife Management Plans: Species Management Policies. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Miscellaneous Report. Project W-20-2. Juneau, AK.

ADF&G. 2016. Alaska Department of Fish and Game wildlife restoration grant. Federal Aid Annual Performance Report. Alaska Department of Fish and Game. Juneau, AK.

ADF&G. 2018. General Harvest Reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 3, 2018.

Adkisson, Ken. 2009. Subsistence Program Manager. Personal Communication: phone conversation. National Park Service. Nome, AK.

Adkisson, Ken. 2018. Subsistence Program Manager. Personal Communication: email. National Park Service. Nome, AK.

Dau, J. 2005. Unit 23 muskox management report. Page 38–48 in C. Brown, editor. Muskox management report of survey and inventory activities 1 July 2002–30 June 2004. Alaska Department of Fish and Game. Juneau, AK.

Dunker, W.R. 2017a. 2017 Seward Peninsula muskox population survey summary. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

Dunker, W.R. 2017b. 2017 Seward Peninsula muskox composition survey summary. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, Alaska.

Dunker, W. R. 2018. Area Biologist. Personal Communication: email. Alaska Department of Fish and Game, Division of Wildlife conservation. Nome, AK.

FSB. 1995. Transcripts of Federal Subsistence Board proceedings, April 12, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1998. Transcripts of Federal Subsistence Board proceedings, May 4, 1998. Office of Subsistence Management, FWS. Anchorage, AK

Gorn, T. 2011. Unit 22 muskox. Pages 16–47 *in* P. Harper, editor. Muskox management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 16.0. Juneau, AK.

Gorn, T. 2012. 2012 muskox survey results memorandum. Alaska Department of Fish and Game. Nome, AK.

Gorn, T. and W. R. Dunker. 2013. Unit 22 muskox. Pages 17-51 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2010-30 June 2012. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2013-2, Juneau, AK.

Gorn, T. and W. R. Dunker. 2015. Unit 22 muskox. Chapter 2, pages 2-1 through 2-44 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2012-30 June 2014. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2015-2, Juneau, AK.

Hughes, L. 2018. Wildlife Biologist. Personal Communication: email. National Park Service. Nome, AK.

Ihl, C. and D. R. Klein. 2001. Habitat and diet selection by muskoxen and reindeer in western Alaska. Journal of Wildlife Management. 65(4):964-972.

Jingfors. K. T. 1982. Seasonal activity budgets and movements of a reintroduced Alaskan muskox herd. Journal of Wildlife Management. 46(2):344-350.

Jonkel, C. J., D.R. Gray, and B. Hubert. 1975. Immobilizing and marking wild muskoxen in arctic Canada. Journal of Wildlife Management. 39(1):112-117.

Klein, D. R. 1992. Comparative ecological and behavioral adaptations of Obivos moschatus and Rangifer tarandus. Rangifer. 12(2):47-55.

Nelson, R. 1994. Seward Peninsula cooperative muskox management plan. Unpublished report. Nome, AK.

OSM. 2001. Staff Analysis WP01-35. Pages 432–448 in Federal Subsistence Board Meeting Materials April 30–May 3, 2001. Office of Subsistence Management, FWS. Anchorage, AK. 615 pages.

OSM. 2014. Staff Analysis WP14-38. Supplemental Materials for Federal Subsistence Board Meeting April 15–May 17, 2014. Office of Subsistence Management, FWS. Anchorage, AK.

OSM. 2018. Federal Subsistence Permit System. https://subsistence.fws.gov/apex/f?p=104:53:14184345113765::::. Retrieved: August 3, 2018.

Schmidt, J.H. and T.S. Gorn. 2013. Possible secondary population-level effects of selective harvest of adult male muskoxen. PLoS ONE 8(6): e67493.doi:10.1371/journal.pone.0067493.

Smith, T. E. 1989. The role of bulls in pioneering new habitats in an expanding muskox population on the Seward Peninsula, Alaska. Can. J. Zool. 67: 1096-1101.

Thing, H., D. R. Klein. K. Jingfors, and S. Holt, 1987. Ecology of muskoxen in Jameson Land, northeast Greenland. Holarctic Ecology. 10:95-103.

SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

Seward Peninsula Subsistence Regional Advisory Council

Maintain status quo for WCR20-30. The Council voted to maintain the status quo for all of the Unit 22 muskox closure reviews due to the currently low muskox population in the region. The Council expressed that they are worried about extremely low population numbers, potential overharvest and susceptibility to bear predation. Overharvest could lead to a population decline to the point where the population may never be able to recover. The Council expressed alarm with the decline in muskox numbers and lack of herd recovery. The Council would like to see the closure remain in place to protect the remaining population while still allowing for a very small harvest by local subsistence users. Some Council members were open to closing the hunt entirely to give the muskox population an opportunity to grow.

FEDERAL WILDLIFE CLOSURE REVIEW
WCR20-44

Closure Location: Unit 22D—Muskox

Current Federal Regulation

Unit 22D−Muskox

Unit 22D—That portion within the Kuzitrin River drainages—1 bull by Federal permit or State permit.	*Aug. 1 - Mar. 15*
Federal public lands are closed to the taking of muskox except for residents of Council, Golovin, White Mountain, Nome, Teller, and Brevig Mission hunting under these regulations.	

Closure Dates: Year-round

Current State Regulation

Unit 22D−Muskox

Unit 22D—Kuzitrin River drainage (Includes Kougarok and Pilgrim rivers) —One bull by permit	*TX102*	*Jan 1 - Mar 15*
All skulls require trophy destruction at time of take in the field subject to permit conditions; specimens required		

Regulatory Year Initiated: 1996

Regulatory History

A cooperative muskox management effort for the Seward Peninsula was begun in 1993 with the creation of the Seward Peninsula Muskox Cooperators Group. Muskox management efforts were guided by recommendations from this group and the Seward Peninsula Cooperative Muskox Management Plan (1994) established the guiding management goals for muskoxen in this region.

In 1995, Proposal WP95-44 was adopted by the Federal Subsistence Board (Board) to establish the first Federal muskoxen hunt on the Seward Peninsula and granted a Federal subsistence priority for Alaskan rural residents with a customary and traditional determination for muskoxen in Unit 22. The Board established a season of Sept. 1 – Jan. 31 for Units 22D, 22E, and 23 west of and including the Buckland

River drainage (Unit 23SW), and limited the harvest to bulls with a quota of 3% of the population from the most recent census (FSB 1995a).

In August 1995, the Board rejected two Requests for Reconsideration (R95-04 and R95-05), but revised the harvest quota for Unit 22D reducing it from 12 to 2 muskoxen. The Board made this change in response to concerns for the maintenance of a healthy muskox population (FSB 1995b).

In 1996, Proposal WP96-51 was adopted by the Board to increase the harvest from two to eight muskoxen in Unit 22D. The proposal was submitted by the Seward Peninsula Subsistence Regional Advisory Council to increase the harvest limit to 12 muskoxen but was adopted with modification to increase the harvest to 8 muskoxen.

In 1997, the Board denied a Request for Reconsideration (R96-06) to keep the harvest quota set at eight muskox, but stratified Unit 22D into two permit areas comprising Bureau of Land Management (BLM) lands and Bering Land Bridge National Preserve (NPS lands), with half of permits designated in each area (FSB 1997:49) . This decision was based on harvest information indicating all muskoxen harvest in Unit 22D was on BLM land. The split of permits was intended to encourage subsistence hunters to harvest from NPS lands in the eastern end of the unit.

In 1998, the Seward Peninsula Subsistence Regional Advisory Council submitted Proposal WP98-89 to extend the season (Sept. 1 – Jan. 31) three months to Aug. 1 – Mar. 31 for Units 22D, 22E, and Unit 23SW. However, as part of the consensus agenda, Proposal 89 was adopted with modification by the Board to extend the season to Aug. 1 – Mar. 15 in Units 22D and 22E and that portion of Unit 23. This modification was made due to biological concerns that hunting in late March could stress cows shortly before the calving season.

A shared Federal and State permit system for muskox on the Seward Peninsula was supported by the Seward Peninsula and Northwest Arctic Subsistence Regional Advisory Councils and adopted by the Board in 1998 (FSB 1998). In January 1998, the Seward Peninsula Muskox Cooperators met to discuss options for a combined Federal and State muskox harvest on the Seward Peninsula. The group reached consensus involving management on a subunit basis, allowing for continued growth of the population and increased harvest opportunities, with the thought that the Muskox Management Plan would be amended in the future to reflect these changes. Six affected villages considered allowing State harvest as a means to increase harvest opportunities. Individual villages made decisions on the percent harvest rate and how the harvest should be divided between the State and Federal systems within their respective subunits. Village recommendations were summarized in a resolution written and passed by the Seward Peninsula Regional Advisory Council in 1998 and subsequently presented to the Alaska Board of Game (BOG), which approved a Tier II subsistence muskox hunt for the Seward Peninsula with the assumption that this would be part of a combined Federal/State harvest program. Also in 1998, the Federal Subsistence Board followed the recommendations of the Seward Peninsula and Northwest Arctic Councils and approved a special action (WSA97-14) establishing these regulations for the 1998/99 Federal subsistence muskox season (FSB 1998:24).

In 1999, Proposal WP99-46 put the temporary regulations in WSA97-14 into permanent regulation. Due to the long traveling distances needed to reach Federal lands and the poor travel/snow conditions during that time, the six affected villages supported the combination of the State and Federal harvest systems to create more harvest opportunities due to declining hunter success rates under the Federal subsistence harvest. The combined Federal and State harvest was adopted into permanent State regulation by the BOG in 1998. The consensus was to manage on a subunit basis within Unit 22 and Unit 23SW, to allow for continued growth of the muskoxen population in this region and to increase harvest opportunities. Sharing the harvest quota between Federal and State systems helped meet the subsistence needs of the local users that may not have been met under only the Federal or State system separately. The cooperative management dispersed hunting pressure over an entire area regardless of land ownership to create a more biologically sound management approach (OSM 2001).

In 2000, the Board approved Proposal WP00-56 to remove the split of two Federal permit areas, one on NPS land and the other on BLM land, as designated in 1997 in Unit 22D. Six of the Federal permits were then transferred into the State Tier II system.

In 2001, Proposal WP01-35 was adopted and changed the harvest limits in Unit 22 and Unit 23SW from one bull to one muskox; additionally quotas were put in place for each hunt area.

Proposal WP02-37 was adopted by the Board at its May 2002 meeting and authorized the Superintendent of the Western Arctic National Parklands to announce harvest quotas and any needed closures in consultation with Alaska Department of Fish and Game (ADF&G) and BLM.

In 2004, Proposal WP04-71 requested that the customary and traditional use determination for muskox for Units 22B and 22D be expanded to include all residents of Unit 22, excluding residents of St. Lawrence Island. The proposal was adopted with modification by the Board and divided the Unit 22D customary and traditional use area into Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages and Unit 22D remainder and added residents of Unit 22C and White Mountain to the customary and traditional use determination for Unit 22D in the Kougarok, Kuzitrin, and Pilgrim River drainages hunt area.

In 2006, Proposal WP06-41 established the use of a designated hunter permit for muskoxen in Unit 22 by Federally qualified subsistence users. Special provisions allowed a Federally qualified subsistence user to designate another Federally qualified subsistence user to take muskoxen on their behalf, unless the recipient is a member of a community operating under a community harvest system.

In 2008, the BOG adopted Proposal 77 with modification. This changed the framework of the Seward Peninsula muskoxen hunts by adopting a combination of Tier I Subsistence registration hunts and drawing permit hunts. This ended the Tier II permit hunts that had been in place since 1998 (Gorn 2011, Hughes 2018, pers. comm.)

In 2009, State Emergency Order 05-11-09 closed the State subsistence hunting season for muskoxen by registration permit in Unit 22D remainder on October 13, 2009, because the joint State/Federal harvest

quota of 16 muskoxen had been reached. Based on this closure, the Federal manager closed the Federal subsistence muskoxen hunt in Unit 22D remainder on October 17, 2009.

The Board approved Emergency Special Action WSA09-06 on December 30, 2009, reopening the winter muskoxen season within Unit 22D remainder (that portion within the Kougarok, Kuzitrin, and Pilgrim River drainages) from January 15 to March 15, 2009.

An expansion of the customary and traditional use determination for muskox in Unit 22D (WP10-73) was adopted with modification by the Board in May of 2010. This combined the portion of Unit 22D within the Kougarok, Kuzitrin, and Pilgrim river drainages customary and traditional use area with the Unit 22D remainder area. This also added residents of Unit 22B (White Mountain, Golovin, Elim, Council, and Koyuk) and Unit 22E (Wales and Shishmaref) to the customary and traditional use determination for all of Unit 22D.

In 2010, Proposal WP10-77 requested the Federal hunt areas for muskoxen within Unit 22D remainder be aligned with State regulations by establishing hunts in the Kougarok, Kuzitrin, and Pilgrim river drainages. The Board adopted Proposal WP10-77 with modification to establish the current Unit 22D Kuzitrin hunt area, which encompasses the Kougarok and Pilgrim river drainages (**Figure 1**).

In 2011, the BOG adopted Proposal RC34 (A) making the muskox hunting regulation in Unit 22D part of a threshold-based hunt regime conditioned on the harvestable portion and the Amounts Necessary for Subsistence (ANS) available for the Seward Peninsula population, which includes all of Unit 22 and Unit 23SW (Dunker 2018, pers. comm.). The regulatory thresholds for this portion of the population define conditions for Tier II hunts (harvestable portion below the ANS), Tier I registration hunts (harvestable portion within the ANS range) and registration/drawing hunts (harvestable portion above ANS). This change was in response to significant population declines, low bull:cow ratios, and high harvest of mature bulls documented by the Alaska Department of Fish and Game (ADF&G). Based on the implementation of the new harvest guidelines intended to address the high harvest of mature bulls and the decline in bull:cow ratios and based on further population declines revealed in March 2012 population surveys, State Tier II hunts were required in Unit 22D for 2012-2013 regulatory year due to the reduction of the harvestable surplus being below the lower end of the ANS (Dunker 2018, pers. comm.).

In 2014, Proposal WP14-33 was adopted with modification by the Board. This eliminated the cow hunt, provided the Superintendent of the Bering Land Bridge National Preserve with the authority to restrict the number of Federal registration permits to be issued, and further closed Federal public lands in Unit 22 D, that portion within the Kuzitrin River drainages, to the harvest of muskox except by residents of Council, Golovin, White Mountain, Nome, Teller, and Brevig Mission. This further restriction was suggested following an 804 user prioritization analysis.

Bureau of Land Management lands comprise approximately 18% of all lands and NPS lands comprise approximately 28% of all lands in the Unit 22D Kuzitrin drainage muskox hunt area. These are the only Federal public lands in this specified muskox hunt area and together make up approximately 46% of all lands in the hunt area.

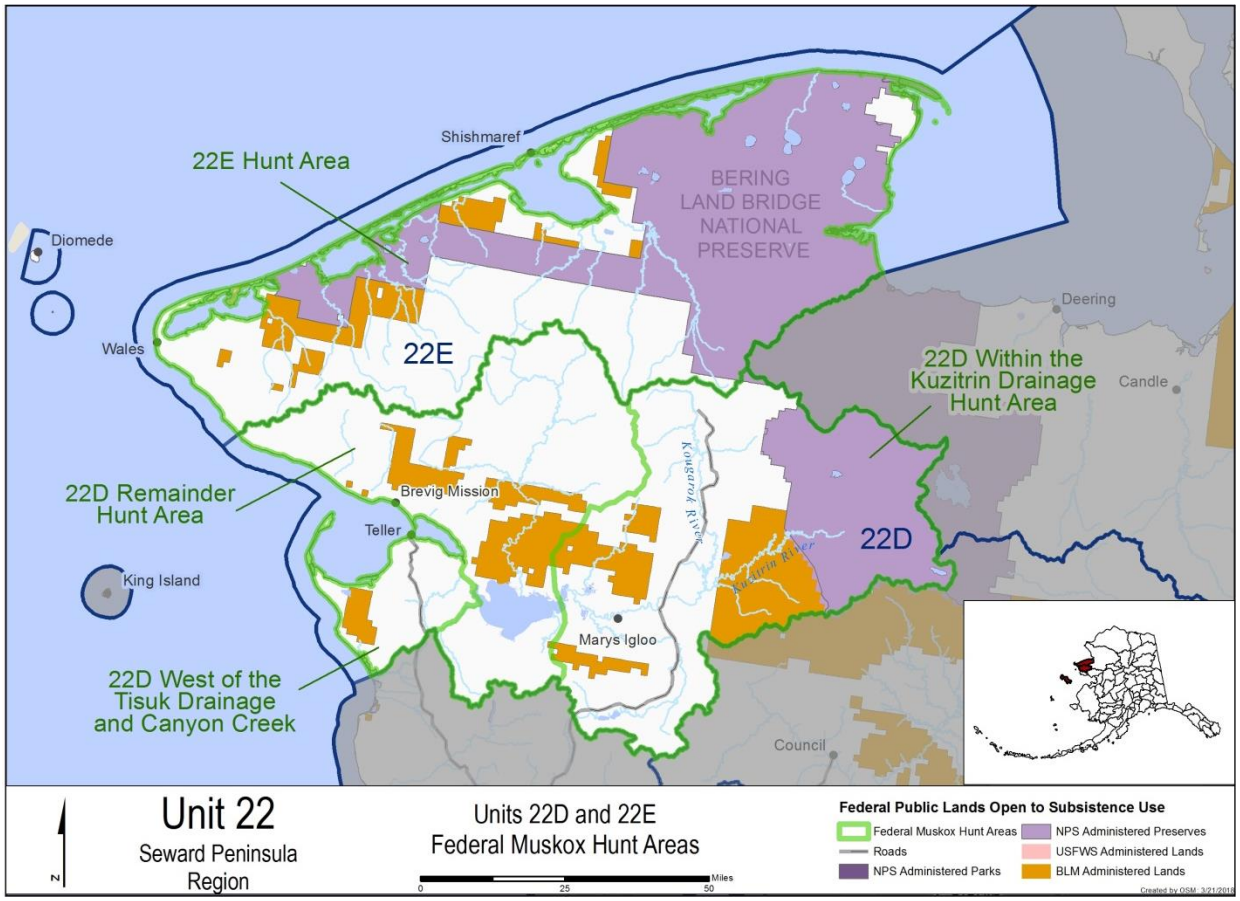


Figure 1. Current muskox hunt areas in Units 22D and 22E.

Closure last reviewed: 2014 – WP14-33

Justification for Original Closure (ANILCA Section 815 (3) criteria):

Section §815(3) of ANILCA states:

> *Nothing in this title shall be construed as – (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on public lands (other than national parks and monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in section 816, to continue subsistence uses of such populations, or pursuant to other applicable law…*

The Federal Subsistence Board's intent was to provide a subsistence priority for Alaskan residents with a Customary &Traditional use determination for muskox. The Board did not feel the State muskox seasons would provide adequate opportunity and priority for subsistence users who provided active participation in the cooperative muskox management plan. Therefore, the Board determined that a Federal season managed via a Federal registration permit and the closure of Federal public lands to non-Federally qualified users was necessary.

Council Recommendation for Original Closure:

Proposal 44 (1995): Seward Peninsula Subsistence Regional Advisory Council recommendation – Support, to provide a subsistence priority for local users due to a lack of subsistence priority under State regulations; Northwest Arctic Subsistence Regional Advisory Council recommendation - No recommendation for Unit 22, since Unit 23 wasn't originally included in the proposal. Although these were the original recommendations from the Councils, both Councils agreed to support the modified proposal, voted on by the Board, which included that portion of Unit 23 including and west of the Buckland River drainage (FSB 1995a: 348).

State Recommendation for Original Closure:

Although ADF&G agreed with the intent of the cooperative muskox management planning effort, they believed it was advisable to postpone a decision on the proposal to close Federal public lands (Proposal 44) until the BOG had decided on State Regulations for a muskox hunt in Unit 22 and Unit 23SW. When the amendment that contained the closure language was proposed, the State had concerns in regards to permitting and wanted to be kept informed; however, no direct comments about the closure were made and the State's official recommendation was neutral.

Biological Background

Muskoxen have many adaptations to allow for their survival in arctic habitats, but some of these adaptations also limit muskoxen in some areas. The large body size, and therefore rumen size, allows muskoxen to consume and process large quantities of low quality forage that may be found on the tundra (Jingfors 1982, Klein 1992, Ihl and Klein 2001). This large body size, in addition to their thick undercoat and long guard hairs, allow muskoxen to stay warm in arctic climates and conserve energy (Klein 1992). However, these adaptations make it difficult for muskoxen to regulate their body temperature following high exertion activities, such as running, and lead to groups remaining more localized rather than migrating long distances like other arctic species, such as caribou (Klein 1992).

Muskoxen are more limited by snow than caribou due to their greater foot loading, low chest height, and smaller hooves making it more difficult to travel through deep or wind-hardened snow (Klein 1992, Ihl and Klein 2001) and therefore, tend towards coastal areas potentially due to the higher winds which reduce the snow depth during winter (Dau 2005). However, muskoxen in Unit 22 tend towards higher windblown slopes during the winter on the Seward Peninsula to avoid the deep snow drifts (Ihl and Klein 2001, Adkisson, pers. comm. 2009). Muskoxen tend to be more sedentary during periods of heavy snow cover; however, adult bulls generally tend to be less conservative than the general population and will enter previously unused winter habitats due to distant movements during the fall in search of harems (Smith 1989).

The general lack of winter movements is a conservative energy budget survival strategy by muskoxen (Jingfors 1982). Winter forage for muskoxen is of very poor quality (Thing et al. 1987). As a behavioral response to poor forage quality, muskoxen settle onto sites with readily available forage so that minimum energy expenditures are made during foraging bouts (Klein 1992). Additionally, muskoxen spend

significantly more time resting in early and late winter than in the post-calving, mid-summer, and rut periods (Jingfors 1982).

Muskoxen in winter appear to be particularly susceptible to disturbance, with sufficient disturbance causing site abandonment (Jonkel et al. 1975). Muskoxen that abandon a preferred wintering site may need to travel considerable distances before reaching alternative foraging sites.

Muskoxen were extirpated in Alaska by the late 1800s, and perhaps hundreds of years earlier on the Seward Peninsula (Gorn and Dunker 2015). Muskoxen were reintroduced to Units 22C and 22D of the Seward Peninsula in 1970, and have since expanded their range to the north and east (Gorn and Dunker 2015). Currently, muskoxen occupy suitable habitat in Units 22A, 22B West, 22C, 22D, 22E, and 23-Southwest.

Muskox management on the Seward Peninsula has been guided by recommendations from the Seward Peninsula Muskox Cooperators Group. The group is composed of staff from ADF&G, NPS, BLM, U.S. Fish and Wildlife Service (USFWS), Bering Straits Native Corporation, Kawerak Inc., Reindeer Herders Association, Northwest Alaska Native Association, residents of Seward Peninsula communities, and representatives from other interested groups or organizations. The Cooperators Group has not met since January of 2008, but information has been regularly provided to the Chair since that time (ADF&G 2016). The following management goals form the basis of the cooperative interagency management plan for Seward Peninsula muskoxen developed from 1992 through 1994 (Nelson 1994) and follow the guidelines of ADF&G Muskox Management Policies (ADF&G 1980):

- Manage population to allow for continued growth and range expansion of the Seward Peninsula Muskox.

- Provide for a limited harvest in a manner consistent with existing State and Federal laws by following the goals/objectives endorsed by the Seward Peninsula Muskox Cooperators Group and the Seward Peninsula Cooperative Muskox Management Plan.

- Manage muskoxen along the Nome road systems of Unit 22B and 22C for viewing, education, and other nonconsumptive uses.

- Work with local reindeer herding interests to minimize conflicts between reindeer and muskoxen.

- Protect and maintain the habitats and other components of the ecosystem upon which muskoxen depend.

- Encourage cooperation and sharing of information among agencies and users of the resource in developing and executing management and research programs.

After reintroduction, the muskox population experienced periods of growth between 1970 and 2000 (14% annual rate of increase) and 2000 and 2010 (3.8% annual rate of increase) (Gorn 2011). However,

between 2010 and 2012 the muskox population declined 12.5% annually throughout the Seward Peninsula (Gorn 2012). Aspects of the recent decline were likely related to the high mortality rates of adult cows and declines in the number of short yearlings (10-11 month-old muskoxen) (Gorn 2012); however, some caution should be used when interpreting these mortality rates as they are based on a small sample of the population (Gorn 2011). Composition surveys also indicated declines in mature bulls between 2002 and 2010, which prompted changes to the method of determining harvest rates (Gorn 2011). Recent research suggested that selective harvest of mature bulls on the Seward Peninsula could be a driver of reduced population growth and that annual harvest be restricted to less than 10% of the estimated number of mature bulls (Schmidt and Gorn 2013). Following this change in methodology, the Seward Peninsula muskox population remained stable through 2017 (Dunker 2017).

In Unit 22D, the population followed a similar trend as the overall Seward Peninsula population. The population experienced growth from 1992 until approximately 2010, at which point the population declined and then remained stable until the most recent population survey in 2017 (Gorn and Dunker 2013, Dunker 2017; **Table 1, Figure 2**). The Unit 22D Kuzitrin drainage permit area similarly experienced a population decline since 2010, but this population has also continued to decline through 2017 (Gorn and Dunker 2013, Dunker 2017; **Table 2**). Short yearling composition in Unit 22D showed an inverse trend to the population estimates (**Table 3, Figure 3**). Bull:cow ratios in Unit 22D followed the same trend as the population, with the number of mature bulls per 100 cows increasing through 2010 and then declining and stabilizing 2015-2017 (**Table 3, Figure 4**).

Table 1. Muskox population estimates in Unit 22D from 1992 to 2017.

Year	Unit	Muskox Population
1992	22D	340
1994	22D	405
1996	22D	308
1998	22D	714
2000	22D	774
2002	22D	771
2005	22D	796
2007	22D	746
2010	22D	878
2012	22D	629
2015	22D	523
2017	22D	556

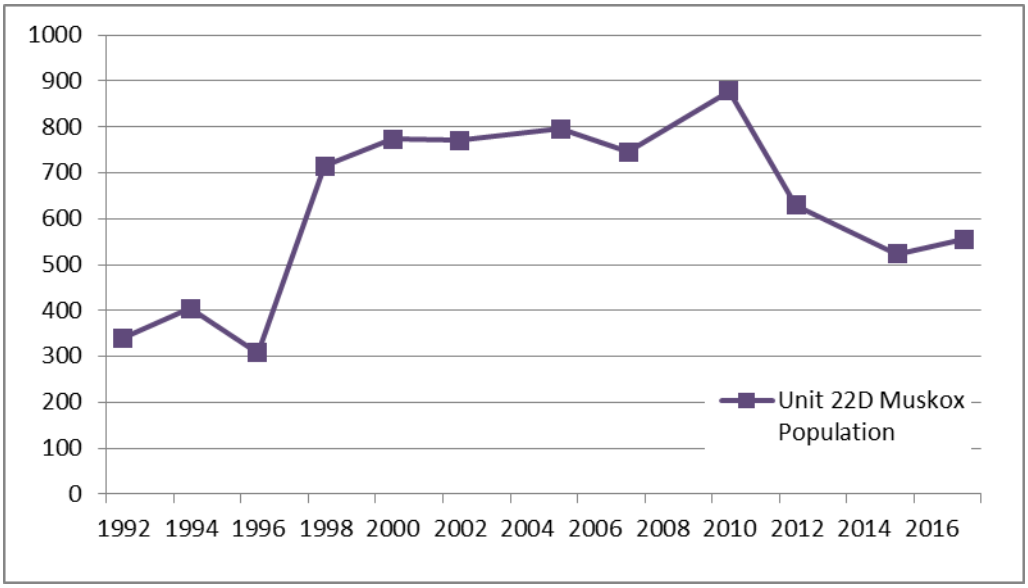


Figure 2. Population fluctuations in Unit 22D from 1992 to 2017.

Table 2. Unit 22D Kuzitrin River drainage hunt area muskox population estimates from 2010 to 2017.

Year	Unit	Population
2010	22D Kuzitrin Drainage	285
2012	22D Kuzitrin Drainage	208
2015	22D Kuzitrin Drainage	187
2017	22D Kuzitrin Drainage	136

Table 3. Composition survey results in Unit 22D from 2002 to 2017.

Year	Unit	Mature Bulls:100 Cows	Short Yearlings:100 Cows
2002	22D	33	41
2006	22D	42	36
2010	22D	54	18
2011	22D	29	24
2012	22D	22	13
2015	22D	26	19
2017	22D	27	38

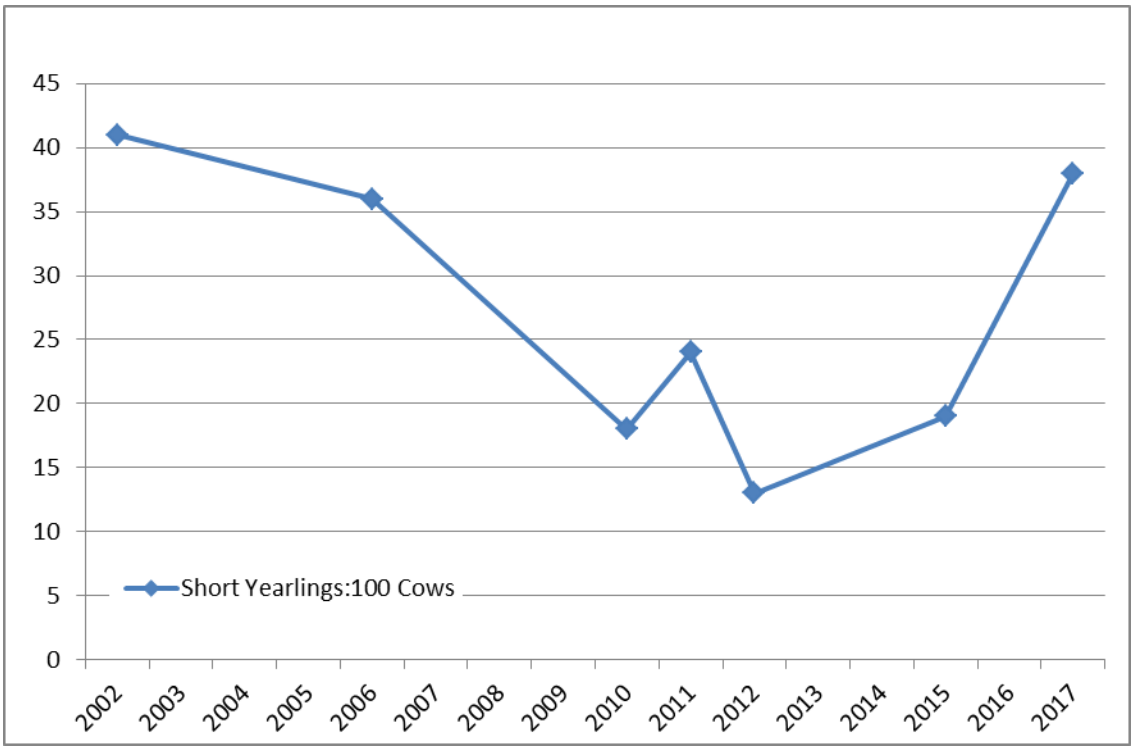


Figure 3. Short yearling composition survey estimates, in Unit 22D, from 2002 to 2017.

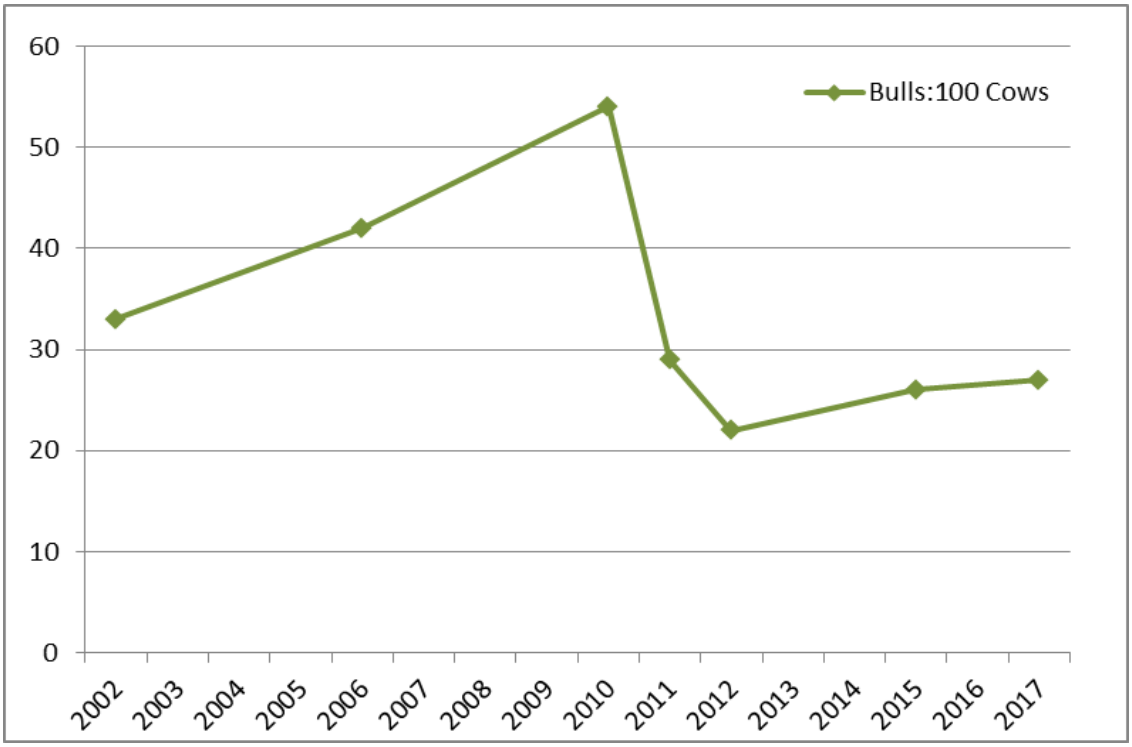


Figure 4. Bull composition survey estimates, in Unit 22D, from 2002 to 2017.

Harvest History

Muskox harvest in Unit 22 is based on population survey estimates on the Seward Peninsula. The allowable harvest is currently calculated as approximately 10% of the estimated number of mature bulls in a hunt area, and the overall range-wide harvest is calculated to be approximately 2% of the Seward Peninsula muskox population (Gorn and Dunker 2015). This method for evaluating the harvestable portion on the Seward Peninsula was put in place, starting in 2012, due to a decline in muskox abundance and mature bull:cow ratios (Schmidt and Gorn 2013, Dunker 2018, pers. comm.). Prior to this change, from 1998 to 2011, the harvest strategy was solely based on a percentage of hunt area muskox populations, with the harvest rate reaching up to 8% of a population in some areas (OSM 2014).

In Unit 22D, the average annual muskox harvest was 42 muskoxen from 2007 through 2011 (ADF&G 2018, Dunker 2018, pers. comm; **Table 4, Figure 5**). When the harvest management strategy was modified, in 2012, the harvest of muskox greatly decreased; nonresident harvest was no longer permitted and nonlocal resident harvest was greatly reduced (ADF&G 2018). Starting in 2012 through 2017, the State managed average annual harvest dropped to eight muskoxen in Unit 22D (ADF&G 2018), with Federally qualified subsistence users harvesting an average of one additional muskox by Federal registration permit annually (OSM 2018).

The Unit 22D Kuzitrin drainage area is currently managed under the Federal harvest permit FX2206 and State Tier II permit TX102 (**Table 5, Table 6**). In the Unit 22D Kuzitrin drainage area the State harvest quota was reduced to four muskoxen in 2012, following the modification in harvest strategy (Dunker 2018, pers.comm.). Since 2012, the allowable harvest has remained low in this hunt area. In 2014,

Federal public lands in the Unit 22D Kuzitrin drainage hunt area were closed to the taking of muskox except by residents of Council, Golovin, White Mountain, Nome, Teller, and Brevig Mission and the hunt was limited to bull muskox only under both Federal and State regulations. Following this modification, average annual harvest in this subunit was reported as four muskoxen for the 2014-2017 timeframe (Adkisson 2018, pers. comm., OSM 2018).

Table 4. Harvest of muskox by user residency in Unit 22D from 2007 through 2017 (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm.).

Year	GMU	Unit Resident Harvest	Nonlocal Resident Harvest	Nonresident Harvest	Unspecified	Total
2007	22D	33	2	0	0	35
2008	22D	23	8	2	0	33
2009	22D	25	14	0	4	43
2010	22D	30	24	1	3	58
2011	22D	22	19	1	1	43
2012	22D	9	0	0	0	9
2013	22D	11	0	0	0	11
2014	22D	9	0	0	0	9
2015	22D	7	0	0	0	7
2016	22D	6	0	0	0	6
2017	22D	7	0	0	0	7

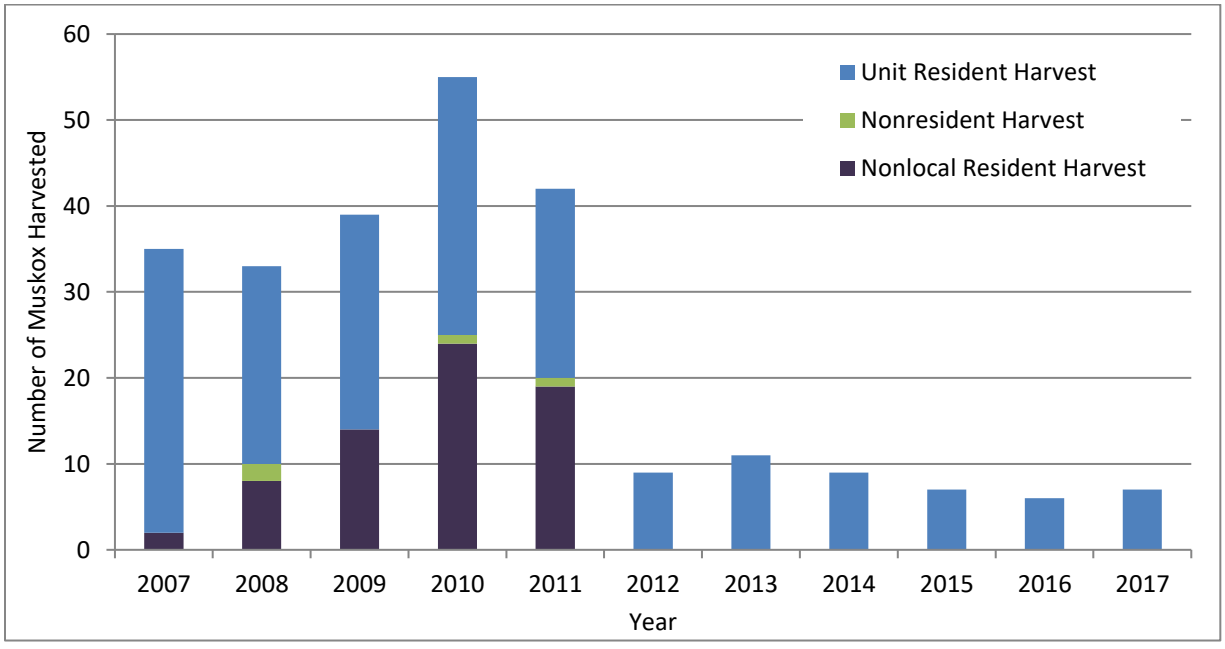


Figure 5. Harvest of muskox in Unit 22D by user residency (ADF&G 2018, Adkisson 2018, pers.comm., Dunker 2018, pers. comm.).

Table 5. Muskox harvest in Unit 22D Kuzitrin drainage broken down by State federal reported harvest (ADF&G 2018, Adkisson 2018, pers. comm., Dunker 2018, pers. comm., OSM 2018).

Year	GMU	Federal Harvest (FX2206)	State Harvest (TX102)	Total Harvest	Allowable Harvest Estimate
2012	22D Kuzitrin Drainage	0	2	2	4
2013	22D Kuzitrin Drainage	3	4	7	4
2014	22D Kuzitrin Drainage	1	2	3	3
2015	22D Kuzitrin Drainage	0	4	4	4
2016	22D Kuzitrin Drainage	0	4	4	3
2017	22D Kuzitrin Drainage	0	6	6	3
2018	22D Kuzitrin Drainage	-	-	-	2

Table 6. Permits issued for muskox harvest in Unit 22D Kuzitrin drainage (ADF&G 2018, Adkisson 2018, pers. comm. Dunker 2018, pers. comm., OSM 2018).

Hunt Area	Year	Federal Permits Issued	State Permits Issued	Federal Hunt Permit	State Hunt Permit
22D Kuzitrin Drainage	2012	5	4	FX2206	TX102
22D Kuzitrin Drainage	2013	4	4	FX2206	TX102
22D Kuzitrin Drainage	2014	2	4	FX2206	TX102
22D Kuzitrin Drainage	2015	2	4	FX2206	TX102
22D Kuzitrin Drainage	2016	2	3	FX2206	TX102
22D Kuzitrin Drainage	2017	2	3	FX2206	TX102

OSM Preliminary Conclusion:

X maintain status quo
_ modify or eliminate the closure

Justification

In addition to direct mortality due to harvest, muskox survival could be susceptible to herd disturbances during winter months if caloric expenditures are too high. Harvest on the Seward Peninsula was reevaluated and reduced in 2012 due to a declining muskox population. Recently, some localized populations have experienced a slight increase in population size or have remained stable, but these populations still remain at much lower numbers than in the past. The current closure, in conjunction with decreased harvest quotas, have slowed or stalled the decline in muskox populations in this portion of the Seward Peninsula. This closure should remain in place to ensure that these muskox populations have the opportunity to reach healthy levels and to ensure that Federally qualified subsistence users continue to have the opportunity to harvest this subsistence resource into the future.

LITERATURE CITED

ADF&G. 1980. Muskox management policies. Pages X-1-X-4 *in* Alaska Wildlife Management Plans: Species Management Policies. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration Miscellaneous Report. Project W-20-2. Juneau, AK.

ADF&G. 2016. Alaska Department of Fish and Game wildlife restoration grant. Federal Aid Annual Performance Report. Alaska Department of Fish and Game. Juneau, AK.

ADF&G. 2018. General Harvest Reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 3, 2018.

Adkisson, Ken. 2009. Subsistence Program Manager. Personal Communication: phone conversation. National Park Service. Nome, AK.

Adkisson, Ken. 2018. Subsistence Program Manager. Personal Communication: email. National Park Service. Nome, AK.

Dau, J. 2005. Unit 23 muskox management report. Page 38–48 in C. Brown, editor. Muskox management report of survey and inventory activities 1 July 2002–30 June 2004. Alaska Department of Fish and Game. Juneau, Alaska.

Dunker, W.R. 2017. 2017 Seward Peninsula muskox population survey summary. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

Dunker, W.R. 2018. Area Biologist. Personal Communication: email. Alaska Department of Fish and Game, Division of Wildlife Conservation. Nome, AK.

FSB. 1995a. Transcripts of Federal Subsistence Board proceedings, April 12, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1995b. Transcript of Federal Subsistence Board proceedings, August 15, 1995. Office of Subsistence Management. FWS. Anchorage, AK.

FSB. 1997. Transcripts of Federal Subsistence Board proceedings, April 10, 1997. Office of Subsistence Management, FWS. Anchorage, AK

FSB. 1998. Transcripts of Federal Subsistence Board proceedings, May 4, 1998. Office of Subsistence Management, FWS. Anchorage, AK

Gorn, T. 2011. Unit 22 muskox. Pages 16–47 *in* P. Harper, editor. Muskox management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 16.0. Juneau, AK.

Gorn, T. 2012. 2012 muskox survey results memorandum. Alaska Department of Fish and Game. Nome, AK.

Gorn, T. and W. R. Dunker. 2013. Unit 22 muskox. Pages 17-51 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2010-30 June 2012. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2013-2, Juneau, AK.

Gorn, T. and W. R. Dunker. 2015. Unit 22 muskox. Chapter 2, pages 2-1 through 2-44 *in* P. Harper and L. A. McCarthy, editors. Muskox management report of survey and inventory activities 1 July 2012-30 June 2014. Alaska Department of Fish and Game, Division of Wildlife Conservation, Species Management Report ADF&G/DWC/SMR-2015-2, Juneau, AK.

Hughes, L. 2018. Wildlife Biologist. Personal Communication: email. National Park Service. Nome, AK.

Ihl, C. and D. R. Klein. 2001. Habitat and diet selection by muskoxen and reindeer in western Alaska. Journal of Wildlife Management. 65(4):964-972.

Jingfors. K. T. 1982. Seasonal activity budgets and movements of a reintroduced Alaskan muskox herd. Journal of Wildlife Management. 46(2):344-350.

Jonkel, C. J., D.R. Gray, and B. Hubert. 1975. Immobilizing and marking wild muskoxen in arctic Canada. Journal of Wildlife Management. 39(1):112-117.

Klein, D. R. 1992. Comparative ecological and behavioral adaptations of Obivos moschatus and Rangifer tarandus. Rangifer. 12(2):47-55.

Nelson, R. 1994. Seward Peninsula cooperative muskox management plan. Unpublished report. Nome, AK.

OSM. 2001. Staff Analysis WP01-35. Pages 432–448 in Federal Subsistence Board Meeting Materials April 30–May 3, 2001. Office of Subsistence Management, FWS. Anchorage, AK. 615 pages.

OSM. 2014. Staff Analysis WP14-38. Supplemental Materials for Federal Subsistence Board Meeting April 15–May 17, 2014. Office of Subsistence Management, FWS. Anchorage, AK.

OSM. 2018. Federal Subsistence Permit System. https://subsistence.fws.gov/apex/f?p=104:53:14184345113765::::. Retrieved: August 3, 2018.

Schmidt, J.H. and T.S. Gorn. 2013. Possible secondary population-level effects of selective harvest of adult male muskoxen. PLoS ONE 8(6): e67493.doi:10.1371/journal.pone.0067493.

Smith, T. E. 1989. The role of bulls in pioneering new habitats in an expanding muskox population on the Seward Peninsula, Alaska. Can. J. Zool. 67: 1096-1101.

Thing, H., D. R. Klein. K. Jingfors, and S. Holt, 1987. Ecology of muskoxen in Jameson Land, northeast Greenland. Holarctic Ecology. 10:95-103.

SUBSISTENCE REGIONAL ADVISORY COUNCIL RECOMMENDATIONS

Seward Peninsula Subsistence Regional Advisory Council

Maintain status quo for WCR20-44. The Council voted to maintain the status quo for all of the Unit 22 muskox closure reviews due to the currently low muskox population in the region. The Council expressed that they are worried about extremely low population numbers, potential overharvest and susceptibility to bear predation. Overharvest could lead to a population decline to the point where the population may never be able to recover. The Council expressed alarm with the decline in muskox numbers and lack of herd recovery. The Council would like to see the closure remain in place to protect the remaining population while still allowing for a very small harvest by local subsistence users. Some Council members were open to closing the hunt entirely to give the muskox population an opportunity to grow.

Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199

FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

FOREST SERVICE

OSM 19035 KW

JUN 19 2019

Louis R. Green Jr., Chair
Seward Peninsula Subsistence Regional Advisory Council
c/o Office of Subsistence Management
1011 E. Tudor Road, M/S 121
Anchorage, Alaska 99503-6199

Dear Mr. Green:

The Federal Subsistence Board (Board) met on April 15-18, 2019, regarding proposed changes to subsistence fish and shellfish regulations. This letter and the enclosed report identify action taken on proposals affecting residents of the Seward Peninsula Region.

Section 805(c) of the Alaska National Interest Lands Conservation Act (ANILCA) provides that the Board will accept the recommendations of a Regional Advisory Council regarding take unless (1) the recommendation is not supported by substantial evidence, (2) the recommendation violates recognized principles of fish and wildlife management, or (3) adopting the recommendation would be detrimental to the satisfaction of subsistence needs. When a Council's recommendation is not adopted, the Board is required by Secretarial regulations to set forth the factual basis and reasons for the decision. This letter and enclosure satisfy that requirement.

Out of twenty proposals submitted, one was withdrawn by a proponent and the Board accepted the majority recommendations of the Regional Advisory Councils, in whole or with modifications, on 18 of the 19 proposals. Details of these actions and the Boards' deliberations are contained in the meeting transcriptions. Copies of the transcripts may be obtained by calling toll free number, 1-800-478-1456, and are available online at the Federal Subsistence Management Program website, https://www.doi.gov/subsistence.

The Board uses a consensus agenda on those proposals where there is agreement among the affected Subsistence Regional Advisory Council(s), a majority of the Interagency Staff Committee, and the Alaska Department of Fish and Game concerning a proposed regulatory action. These proposals were deemed non-controversial and did not require a separate discussion. The consensus agenda contained five proposals affecting the Seward Peninsula

Green 2

Region, which the Board deferred to the Seward Peninsula Subsistence Regional Advisory Council's (Council) recommendation as follows: the Board *adopted with the Office of Subsistence Management modification* proposal **FP19-05** to condtionally remove restrictions requiring fin-clipping of subsistence caught Chinook Salmon in Lower Yukon River Districts 1, 2, and 3 and adopted proposal **FP19-07** to add dip net as a gear type for subsistence harvest of salmon on the Yukon River. The Board *rejected* proposals **FP19-02** and **FP19-03/04** to remove the closures to subsistence salmon fishing before, during and after commercial openings in the Yukon River and rejected proposal **FP19-06** to protect the first pulse of Chinook Salmon in Federal waters of the Yukon River Districts **FP19-06** 1 through 5.

The remaining proposal affecting the Seward Peninsula Region appeared on the non-consensus agenda. The Board took action consistent with the Council's recommendation and *adopted* proposal **FP19-01** to allow the use of gillnets and rescind the net depth restrictions in Yukon River sub-districts 4B and 4C. The Board's action is discussed in the enclosed report.

The Federal Subsistence Board appreciates the Council's active involvement in and diligence with the regulatory process. The ten Regional Advisory Councils continue to be the foundation of the Federal Subsistence Management Program, and the stewardship shown by the Regional Advisory Council chairs and their representatives at the Board meeting is much appreciated.

If you have any questions regarding the summary of the Board's actions, please contact Karen Deatherage, Council Coordinator, at 907-786-3564 or karen_deatherage@fws.gov.

Sincerely,

Anthony Christianson, Chair
Federal Subsistence Board

Enclosure

cc: Federal Subsistence Board
Seward Peninsula Subsistence Regional Advisory Council members
Thomas Doolittle, Acting Assistant Regional Director, Office of Subsistence Management
Jennifer Harding, PhD, Acting Deputy Assistant Regional Director, Office of Subsistence Management
George Pappas, State Subsistence Liaison, Office of Subsistence Management
Greg Risdahl, Fisheries Division Supervisor, Office of Subsistence Management
Katerina Wessels, Acting Council Coordination Division Supervisor, Office of Subsistence Management
Karen Deatherage, Subsistence Council Coordinator,
Interagency Staff Committee
Administrative Record

FEDERAL SUBSISTENCE BOARD 805(c) REPORT
April 15-18, 2019
Anchorage, Alaska

Section 805(c) of the Alaska National Interest Lands Conservation Act provides that the "Secretary … shall consider the report and recommendations of the regional advisory councils concerning the taking of fish and wildlife on the public lands within their respective regions for subsistence uses." The Secretary has delegated authority to issue regulations for the take of fish and wildlife to the Federal Subsistence Board. Pursuant to this language in Section 805(c), the Board defers to the Council's recommendations. However, Section 805(c) also provides that the Board "may choose not to follow any recommendations which [it] determines is not supported by substantial evidence, violates recognized principles of fish and wildlife conservation, or would be detrimental to the satisfaction of subsistence needs." The purpose of this report is to detail how the Board's action differed from the Council's recommendations based on these criteria.

YUKON-NORTHERN AREA PROPOSALS

Proposal FP19-01: to allow use of gillnets and rescind net depth restrictions in Yukon River Sub-Districts 4B and 4C

DESCRIPTION: Proposal FP19-01 requests an expansion of the area and fishing time for the Federal subsistence drift gillnet fishery in Subdistricts 4B and 4C of the Yukon/Northern Federal Subsistence Fishery Management Area. The proponent also requests repealing the maximum mesh depth restriction of 35 meshes for drift gill nets used in Subdistricts 4B and 4C in the fishery. *Submitted by Jack Reakoff.*

COUNCIL RECOMMENDATIONS:

Eastern Interior Alaska Subsistence Regional Advisory Council – **Opposed**
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council – **Supported**
Western Interior Alaska Subsistence Regional Advisory Council – **Supported**
Seward Peninsula Subsistence Regional Advisory Council – **Supported**

BOARD ACTION: **Adopt with modification as presented by the USFWS Board member**

Modification: to mirror the liberalization to the Yukon River drainage salmon fisheries in District 4 enacted by the Alaska Board of Fisheries in January of 2019. This includes allowing drift gillnet fishing for salmon in all of District 4 and removing season dates so it is legal to harvest all salmon species with drift gillnets in this area. This also includes the removal of the net mesh depth restriction of 35 meshes currently in Federal regulations but absent from State regulations in this district.

JUSTIFICATION: Adopting this modified proposal would insure that Federal regulations are not more restrictive than State regulations for this fishery and will also fully align State and Federal regulations pertaining to drift gillnetting of salmon in District 4 of the Yukon River northern fishery management area.

This modified proposal will increase the efficiency and opportunity for Federally-qualified subsistence users to harvest salmon and will have minimal biological impacts. The modified language does not prevent the managers from specifying mesh size to target different salmon species, which is important for salmon conservation. Potential conservation concerns for salmon expressed by the Eastern Interior Regional Advisory Council can be addressed via restrictions implemented by the in-season management if required. This would align State and Federal regulations, which is helpful to reduce confusion for user groups and finally the proposal supports the position of the Western Interior, the Yukon Delta and the Seward Peninsula Regional Advisory Councils.

Presentation Procedure for Proposals

1. **Introduction and presentation of analysis**
2. **Report on Board Consultations**:
    a. Tribes;
    b. ANCSA Corporations
3. **Agency Comments**:
    a. ADF&G;
    b. Federal;
    c. Tribal
4. **Advisory Group Comments**:
    a. Other Regional Council(s);
    b. Fish and Game Advisory Committees;
    c. Subsistence Resource Commissions
5. **Summary of written public comments**
6. **Public testimony**
7. **Regional Council recommendation** (motion to adopt)
8. **Discussion/Justification**
    - Is the recommendation consistent with established fish or wildlife management principles?
    - Is the recommendation supported by substantial evidence such as biological and traditional ecological knowledge?
    - Will the recommendation be beneficial or detrimental to subsistence needs and uses?
    - If a closure is involved, is closure necessary for conservation of healthy fish or wildlife populations, or is closure necessary to ensure continued subsistence uses?
    - Discuss what other relevant factors are mentioned in OSM analysis
9. **Restate final motion for the record, vote**

WP20–38 Executive Summary	
General Description	Wildlife Proposal WP20-38 requests that the December and January moose harvest seasons in Unit 22D remainder be combined into a "may be announced" season, that the Oct. 1–Nov. 30 season be eliminated, and that the harvest limit be modified to one bull by State registration permit for both remaining seasons. *Submitted by: Alaska Department of Fish and Game (ADF&G).*
Proposed Regulation	**Unit 22D—Moose** *Unit 22D remainder—1 bull* ***by State registration permit*** — *Aug. 10–Sep. 14.* ~~*Oct. 1-Nov. 30.*~~ ~~*Unit 22D remainder—1 moose; however, no person may take a calf or cow accompanied by a calf*~~ — ~~*Dec. 1-31.*~~ *Unit 22D remainder—1* ~~*antlered*~~ *bull* ***by State registration permit*** — ***Season may be announced*** ~~***—Jan.***~~ ***Dec.*** *1–****Jan.*** *31.*
OSM Preliminary Conclusion	**Support** Proposal WP20-38 **with modification** to delegate authority to the Federal manager to open a "may be announced" season between Dec. 1 and Jan. 31 via a delegation of authority letter only.
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-38

ISSUES

Wildlife Proposal WP20-38, submitted by the Alaska Department of Fish and Game (ADF&G), requests that the December and January moose harvest seasons in Unit 22D remainder be combined into a "may be announced" season, that the Oct. 1–Nov. 30 season be eliminated, and that the harvest limit be modified to one bull by State registration permit for both remaining seasons.

Note: A similar proposal (WP20-39) was also submitted regarding the harvest limit for moose in Unit 22D remainder. The outcome of either proposal will impact the action taken on the other. Therefore, it is important to consider both of these proposals prior to taking action. A complimentary proposal (WP20-40) was additionally submitted regarding the closure of the hunt area to non-Federally qualified users. It may also be important to consider how an action on WP20-40 would impact actions taken on either WP20-38 or WP20-39.

DISCUSSION

The proponent is concerned with the harvest of cow moose and the disturbance of breeding bulls during the rut in Unit 22D remainder, due to a declining population trend since 2011. The proponent states that moose population surveys showed an annual decline of 14% between 2011 and 2014, which resulted in the Alaska Board of Game (BOG) closing antlerless moose hunts in the area in 2015 and closing nonresident hunting starting in 2017. Moose harvest in Unit 22D remainder has increased through the years and, according to the proponent, fall composition surveys conducted in 2018 found a decline in the bull:cow ratio, suggesting that the current level of harvest is not sustainable. The proponent states that requiring a State registration permit will provide them with more accurate harvest reporting, and therefore, provide them with the tools necessary to better manage harvest at sustainable levels. The proponent claims that continued harvest of cow moose and breeding bulls in Unit 22D remainder will lead to further declines in the population. It is mentioned that a similar proposal will be submitted to the BOG in 2020 to align regulations and reduce overall harvest of moose in Unit 22D remainder.

Existing Federal Regulation

Unit 22—Moose

Unit 22D remainder—1 bull	*Aug. 10–Sep. 14.* *Oct. 1–Nov. 30.*
Unit 22D remainder—1 moose; however, no person may take a calf or cow accompanied by a calf	*Dec. 1–31.*

Unit 22D remainder—1 antlered bull	*Jan. 1–31.*

Proposed Federal Regulation

Unit 22D—Moose

Unit 22D remainder—1 bull ***by State registration permit***	*Aug. 10–Sep. 14.* ~~*Oct. 1-Nov. 30.*~~
~~*Unit 22D remainder—1 moose; however, no person may take a calf or cow accompanied by a calf*~~	~~*Dec. 1-31.*~~
Unit 22D remainder—1 ~~*antlered*~~ *bull* ***by State registration permit***	***Season may be announced*** ~~*Jan.*~~ ***Dec.*** *1–****Jan.*** *31.*

Existing State Regulation

Unit 22D—Moose

22D remainder	*Residents: One bull*	*Aug. 10 – Sept. 14*
	OR	
	One bull	*Oct. 1 – Nov. 30*
	OR	
	One antlered bull	*Dec. 1 – Jan. 31*
	Nonresidents	*no open season*

Extent of Federal Public Lands/Waters

Unit 22D is comprised of approximately 23% Federal public lands and consists of 12% Bureau of Land Management (BLM) managed lands, and 11% National Park Service (NPS) managed lands (**Figure 1**).

Note: Federal public lands comprise 8% of the Unit 22D remainder moose hunt area, specifically. All of these Federal public lands are managed by BLM.

Customary and Traditional Use Determinations

Residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

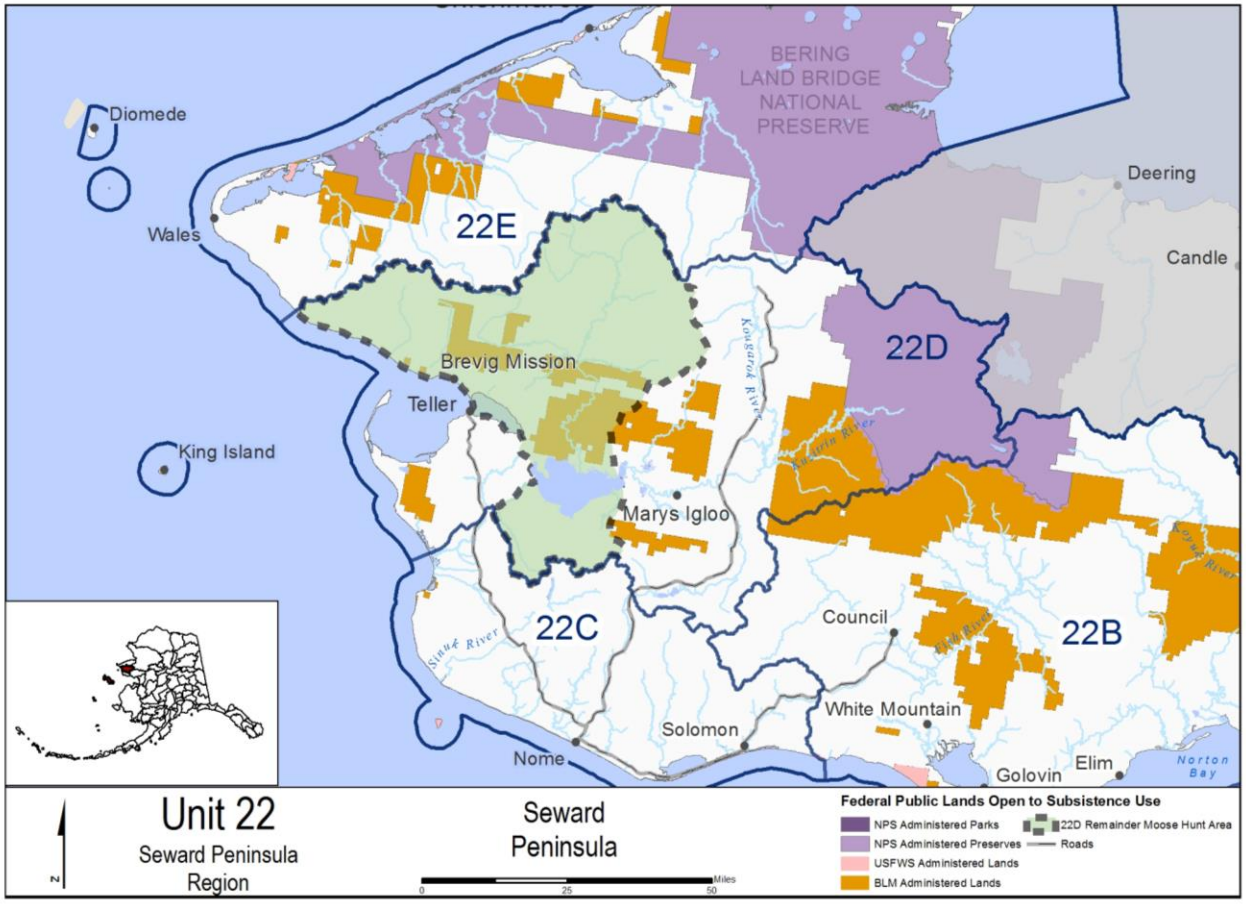


Figure 1. Unit 22D remainder moose hunt area.

Regulatory History

In 1998, the Federal Subsistence Board (Board) adopted Proposal WP98-087, which changed the harvest limit from one moose to one antlered bull in that portion of Unit 22D that lies within the Kuzitrin River drainage, just east of Unit 22D remainder, due to a declining local moose population and heavy hunting pressure. As a result of a continuing regional trend in declining moose populations, the Board also restricted the harvest in adjacent Unit 22B in 2000.

In 2001, the Board approved with modification, two Special Action Requests (WSA01-09 and WSA01-11) to close Federal public lands to the harvest of moose by non-Federally qualified users in Unit 22B west of the Darby Mountains, Unit 22D within the Kuzitrin River drainage and west of the Tisuk River drainage and Canyon Creek, and Unit 22E, shorten the seasons in all these hunt areas except for Unit 22D west of the Tisuk River drainage, and modify Unit 22E harvest limits from one moose to one bull for the 2001 fall and winter seasons. As a follow-up to these actions, the BOG addressed concerns about declining moose

populations in parts of Unit 22 by shortening seasons in portions of Units 22B and 22D, adding registration permit requirements in Unit 22D, dividing Unit 22D into additional hunt areas, modifying harvest limits, and closing nonresident hunts in portions of Units 22B, 22D, and 22E. The BOG decided to restrict the season in Unit 22D remainder, despite a relatively healthier moose population. The fall season was closed from Sept. 15–30, to match other portions of Unit 22D, in order to prevent focusing hunting efforts on the American and Agiapuk River drainages when all the other areas would have been closed. These changes went into effect in regulatory year 2002/03.

In May 2002, the Board adopted Proposal WP02-34 with modification to add State registration permit requirements to the portion of Unit 22B west of the Darby Mountains, the portion of Unit 22D that lies within the Kuzitrin River drainage, and the portion of Unit 22D west of the Tisuk River drainage, revise harvest limits to bull only hunts in Units 22B, portions of 22D (Kuzitrin River drainage and west of the Tisuk River drainage), and Unit 22E, and shorten seasons in these areas. It also closed Federal public lands in Unit 22D remainder and Unit 22E to the taking of moose except by Federally qualified subsistence users. The Board's justification stated that the closure "would improve rural subsistence harvest opportunities in an area recently deemed necessary by the State to restrict the moose harvest" (OSM 2002: 15).

ADF&G issued an emergency order in 2005, changing the State fall moose hunt in Unit 22D to Sept. 1–14. In 2005, the Board approved Special Action Request WSA05-01, which shortened the hunting season for all of Unit 22D from Aug. 20–Sept. 30 to Sept. 1–14, in response to conservation concerns from harvests exceeding the joint State/Federal harvest quota for the Kuzitrin River drainage in 2003 and 2004 (OSM 2005). Overharvest occurred in 2003 and 2004, despite State and Federal efforts to reduce the harvest by closing the seasons early.

Upon consideration of Wildlife Closure Review WCR06-15 in 2006, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted Proposal WP07-38 to eliminate the closure put in place in 2002 to all non-Federally qualified users. In 2007, the Board adopted WP07-38, eliminating the closure to non-Federally qualified users in Unit 22D remainder, and aligning Federal and State hunting season dates. The Council justified the request by stating that "land closures are no longer necessary to protect the moose population because numbers have increased unit-wide and have remained stable for at least ten years; recruitment rates are up; and bull:cow ratios are consistently high despite a five-month Federal season" (OSM 2007: 468).

In 2015, the BOG modified State regulations, transitioning to a bull moose hunt within Unit 22D remainder. In addition, for regulatory years 2015/16 and 2016/17, ADF&G established a three moose harvest quota for nonresident hunters in Unit 22D remainder to prevent excessive harvest. This harvest quota was enacted due to a decline in moose populations since 2011. ADF&G issued emergency orders in regulatory years 2015/16 and 2016/17 to close this season early due to the quota being met (ADF&G 2016a).

At its March 2016 meeting, the Council submitted Proposal 28 to the BOG, requesting elimination of the nonresident moose season in Units 22E and 22D remainder until the relationship between the changing moose population distribution and growth and decline between the subunits was better understood.

During discussion of the proposal, ADF&G was asked for an overview of the moose population in the area. ADF&G brought concern about the decreasing population numbers in Unit 22D to the attention of the Council, mentioning that moose in Unit 22D were last counted in 2014, and that declines in the population were observed in both of the major survey areas. Additionally, ADF&G noted that some Unit 22D moose may have migrated to Unit 22E. Even with the possible migration taken into consideration, a significant decline in Unit 22D moose was observed during the 2014 survey (SPRAC 2016). Proposal 28 was adopted in Unit 22D remainder by the BOG prior to the 2017/18 regulatory year.

Special Action Request WSA16-07, submitted by BLM and requesting that the December cow season be closed, was presented to the Council on November 2, 2016. The Council supported WSA16-07, stating that hunters had expressed concern about the moose populations in the area. In particular, the Council Chair discussed the need to refrain from harvesting cow moose during population declines and asked ADF&G to explain the current levels of antlerless moose harvest and the potential impacts to the population. ADF&G noted that the average annual reported harvest of cow moose in Unit 22D over the last ten years totaled one moose per year, but that an antlerless harvest as low as 3% could have a substantial negative impact to the population. The Council Chair emphasized that this Special Action would only close the Federal cow moose hunting season for one month. The Board approved WSA16-07 on November 30, 2016.

In 2017, the same request was submitted as Special Action Request WSA17-06. The proponent, BLM, submitted this request because they believed that continued harvest of cow moose in Unit 22D remainder would lead to further declines in the moose population. The Board approved WSA17-06 with modification to change the harvest limit from one bull to one antlered bull for the harvest season of Dec. 1–Dec. 31, 2017. This modification was approved to prevent the accidental harvest of cows, since most larger bulls would have dropped their antlers by December. An antlered moose hunt was also preferred to reduce mid-winter harassment of non-antlered moose by hunters trying to distinguish the sex of the animal. It was stated that approval of this modification would help to ensure the long term viability of the moose population in Unit 22D remainder.

Similarly, in 2018, the same request was submitted as Special Action Request WSA18-03. The Board again approved this request with modification. The modified WSA18-03 that was approved by the Board limited harvest from one moose to one antlered bull in Unit 22D remainder for the remainder of the current wildlife regulatory cycle (through June 30, 2020). The harvest limit was modified through the remainder of the wildlife regulatory cycle to ensure that antlerless moose in Unit 22D remainder were protected until a proposal could be submitted to change Federal subsistence regulations.

Biological Background

Moose have been present in Unit 22 for a relatively short time, with very few being observed prior to 1930. The moose population on the Seward Peninsula grew and reached its peak in the mid-1980s (Nelson 1995, Gorn and Dunker 2014). This rise in the population was followed by multiple severe winters, which greatly reduced the population and overall moose density due to limited winter browse (Nelson 1995).

Brown bear predation on calves is now considered the main limiting factor on the Unit 22 moose population; although no formal study has yet been conducted to confirm this (Gorn and Dunker 2014).

State management goals for moose in Unit 22 include maintaining a unit-wide combined population of 5,100–6,800 moose, and more specifically, maintaining a population of 2,000–2,500 moose in Unit 22D while maintaining a minimum bull:cow ratio of 30:100. The population goal in Unit 22D would provide for an increased and stabilized population following recent declines (Gorn and Dunker 2014).

During a moose population survey conducted in 2014, the population estimate for moose in all of Unit 22D was 1,106 observable moose, which represents a 13% annual rate of decline from 2011 (1,681 observable moose). Specifically in the Agiapuk River drainage survey area (within which, the Unit 22D remainder hunt area is located), the population estimate was 491 (0.39 moose/mi²) observable moose (**Figure 2**). This is a 14% annual rate of decline since the 2011 survey (Gorn 2012, Dunker 2016, pers. comm.). These numbers were reported as observable moose, rather than an overall population estimate, due to the lack of a sightability correction factor for these surveys. Another population survey was planned for March of 2018 in Units 22D and 22E, but due to inclement weather, the survey did not take place (Seppi 2018, pers. comm.).

Fall composition surveys indicate a negative change in the composition within Unit 22D remainder. Composition surveys in the Agiapuk River Drainage were conducted in 2011 for the first time since 2003, and found 38 bulls:100 cows, which is within State management goals (Gorn 2012, Dunker 2019 pers. comm.). In 2013, efforts to complete composition surveys were hampered by poor weather conditions. The limited data obtained from these attempts indicated that the bull:cow ratio had likely declined since the 2011 surveys (Dunker 2016, pers. comm.). This was confirmed during the most recent composition surveys in the area, which were completed in fall of 2016 and 2018. Results showed a bull:cow ratio of 23 and 18 bulls:100 cows, respectively, both of which are below the State management objective of 30 bulls: 100 cows (Dunker 2017, pers. comm.).

Weight measurements were collected on short-yearling (10-month old) moose in Unit 22D in April 2007–2009. Annual average weights ranged 372–393 pounds. Snowfall was greater than normal levels in both 2008 and 2009, but did not have a significant impact on average short-yearling weights. Research indicates that short-yearling weights of less than 385 pounds are considered an indication that moose are resource limited, but browse does not seem to be limiting factor in this area (Gorn and Dunker 2014). A spring recruitment survey was completed by ADF&G in April of 2018 for Unit 22D remainder. This survey provided a 12% estimate of recruitment, which suggests that recruitment is poor and the population is likely still in need of rebuilding efforts at this time (ADF&G 2018a).

Habitat

There is limited habitat data for Unit 22D. Although winter browse was seen as a limiting factor when moose density/numbers were at their highest during the mid-1980s, current moose populations have been managed based on what winter browse can easily support throughout Unit 22D. Browse is no longer viewed as a limiting factor to moose in this unit, and brown bear predation on calves is now seen as the most significant factor influencing moose numbers (Gorn and Dunker 2014).

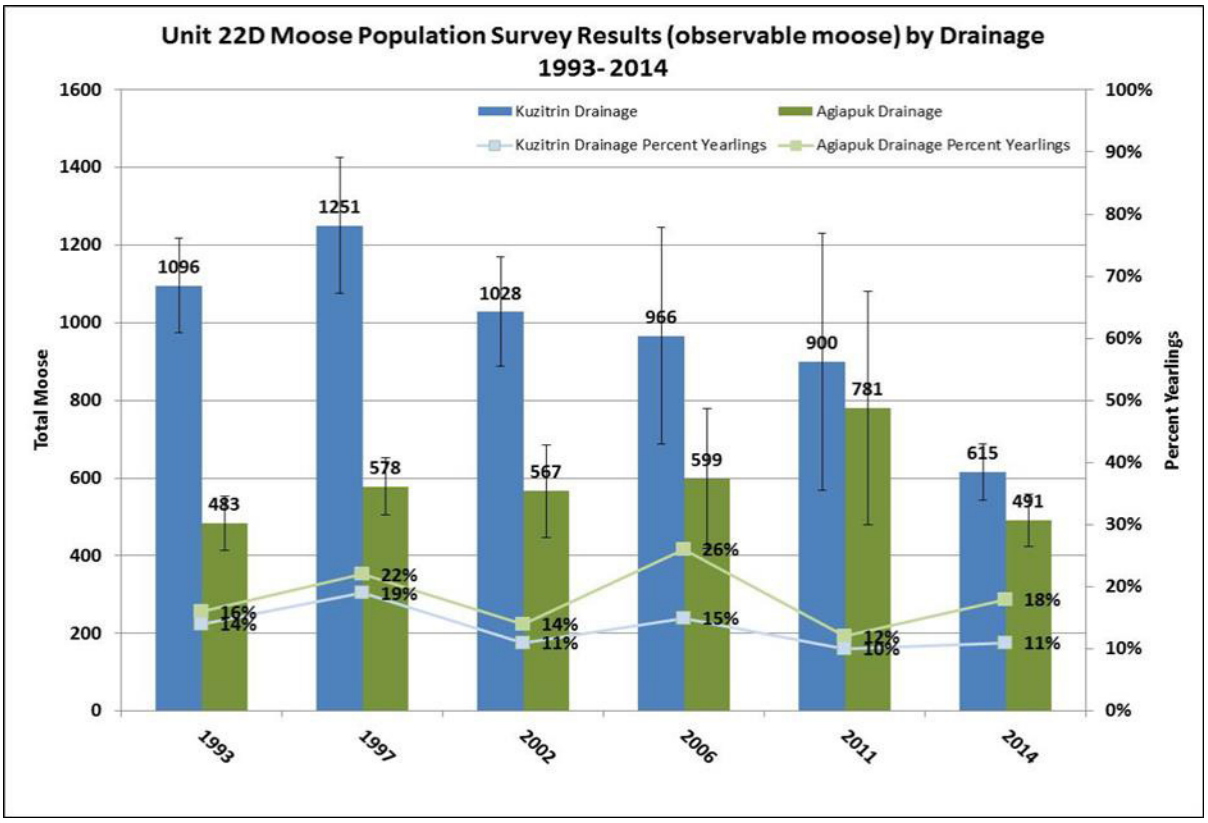


Figure 2. Unit 22D moose population survey results (Figure from Dunker 2016, pers. comm.).

Cultural Knowledge and Traditional Practices

The Seward Peninsula has been inhabited by humans for at least 12,000 years. The Kauweramiut, Malemiut, and Unalikmiut Inupiat of the Seward Peninsula have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources (Ray 1984, Kawerak 2019). Until the establishment of mission settlements and later, government schools, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources. Gold was discovered in Anvil Creek in 1898, precipitating a gold rush, settlement by outsiders, and re-distribution of the local population. Major epidemics including influenza in 1918 further reshaped populations on the Seward Peninsula (Ray 1984).

The western boundary of unit 22D remainder is contiguous with the villages of Teller and Brevig Mission; both communities hunt moose within this area (Mikow et al. 2018). The present location of Teller was established in 1900 when the Bluestone Placer Mine was created 15 miles to the south. In the 2010 (U.S. Census), Teller had 229 year-round, permanent residents (U.S. Census 2010). Brevig Mission is named after the Lutheran minister who established a reindeer herd at the current town site in 1900. During the most recent census, there were 388 year-round permanent residents of Brevig Mission (U.S. Census 2010).

Moose did not start migrating into the Seward Peninsula until the 1940s, and while caribou were hunted traditionally, their numbers declined in the region in the mid-1800s (Dau 2000). Introduced reindeer were the economic base for Brevig Mission until the 1970s, a source of food and income which has since

declined (Finstad 2007). Historically, people in the Seward Peninsula area hunted a variety of species, but as moose moved into the region in the mid-20th century, harvest of these animals grew.

Between May 2015 and May 2016, the most recent study period for which big game subsistence data is available for the area, 85% of Brevig Mission households and 55% of Teller households used moose (Mikow et al. 2018). The percentage of households using moose in each community in 2015-2016 was greater compared to a previous study period, 2011-2012, during which 43.3% of Brevig Mission and 30.5% of Teller households used moose (Mikow et al. 2014).

For the 2015-2016 study period, Brevig Mission households harvested 33 pounds of edible moose per capita, with 90% of the harvest occurring within unit 22D remainder. Teller households harvested 32 pounds of edible moose per capita, 27% of which were harvested from 22D remainder. For Teller, a higher percentage of households used moose than caribou, but that situation was reversed for Brevig Mission. The fall moose hunting season was most important for both communities. In Brevig mission, 85% of moose were taken in the fall, while in Teller 100% were taken in that season (Mikow et al. 2018).

Harvest History

Reported harvest remains well below levels seen in the 1980s, in part, due to more stringent hunting regulations in Unit 22D. According to the ADF&G harvest report website, 178 (133 male, 45 female) moose were harvested throughout Unit 22D in 1986, with 39.9% hunter success throughout the subunit (ADF&G 2018b). Conversely, 61 moose were harvested in Unit 22D in 2018, with 28% hunter success throughout the subunit (ADF&G 2018b, 2019). Average annual reported harvest from 2005 to 2018 was 66 moose (**Table 1**). The majority of moose taken over these years have been bulls. Residents of Unit 22 accounted for 73% of the total harvest between 2005 and 2018 (**Table 1**). In Unit 22D remainder, specifically, the average annual reported moose harvest by State residents between 2007 and 2017 was 17 moose (Dunker 2018, pers. comm.). Unit 22 residents, most of which were residents of Nome, accounted for 74% of the total reported harvest between 2013 and 2018 in Unit 22D remainder and a majority of harvest took place during the month of October (**Table 2, Figure 3**).

Table 1. Reported moose harvest in Unit 22D for 2005–2018. Local resident harvest refers to harvest by residents of Unit 22 (ADF&G 2016b, 2017, 2018b, 2019).

Year	Species	Local Resident Harvest	Nonlocal Resident Harvest	Total Resident Harvest	Unknown Residency Harvest	Nonresident Harvest	Total Harvest	Male	Female	Unknown
2005	Moose	47	4	51	0	6	57	56	0	1
2006	Moose	47	11	58	0	8	66	65	1	0
2007	Moose	52	14	66	1	5	72	70	2	0
2008	Moose	42	10	52	1	7	60	57	1	2
2009	Moose	54	15	69	0	7	76	74	1	1
2010	Moose	39	12	51	3	4	58	55	2	1
2011	Moose	50	19	69	1	9	79	76	2	1
2012	Moose	50	12	62	1	6	69	66	2	1
2013	Moose	45	10	55	1	3	59	58	1	0
2014	Moose	43	11	54	2	8	64	61	2	1
2015	Moose	54	12	66	1	5	72	69	0	3
2016	Moose	52	8	60	0	3	63	63	0	0
2017	Moose	59	12	71	0	0	71	69	0	2
2018	Moose	47	14	61	0	0	61	61	0	0
Average:		**49**	**12**	**60**	**1**	**5**	**66**	**64**	**1**	**1**
Total:		**679**	**164**	**843**	**11**	**71**	**925**	**899**	**14**	**12**

Table 2. Unit 22D remainder moose harvest, 2013–2018, according to ADF&G Unit 22D GM000 harvest reports (ADF&G 2019). Local harvest refers to harvest by residents of Unit 22.

		Local harvest		Non-local harvest	
Year	Total Harvest	Number of moose	% of total	Number of moose	% of total
2013	12	7	58%	5	42%
2014	16	11	69%	5	31%
2015	22	17	77%	5	23%
2016	22	16	73%	6	27%
2017	35	28	80%	7	20%
2018	33	25	76%	8	24%

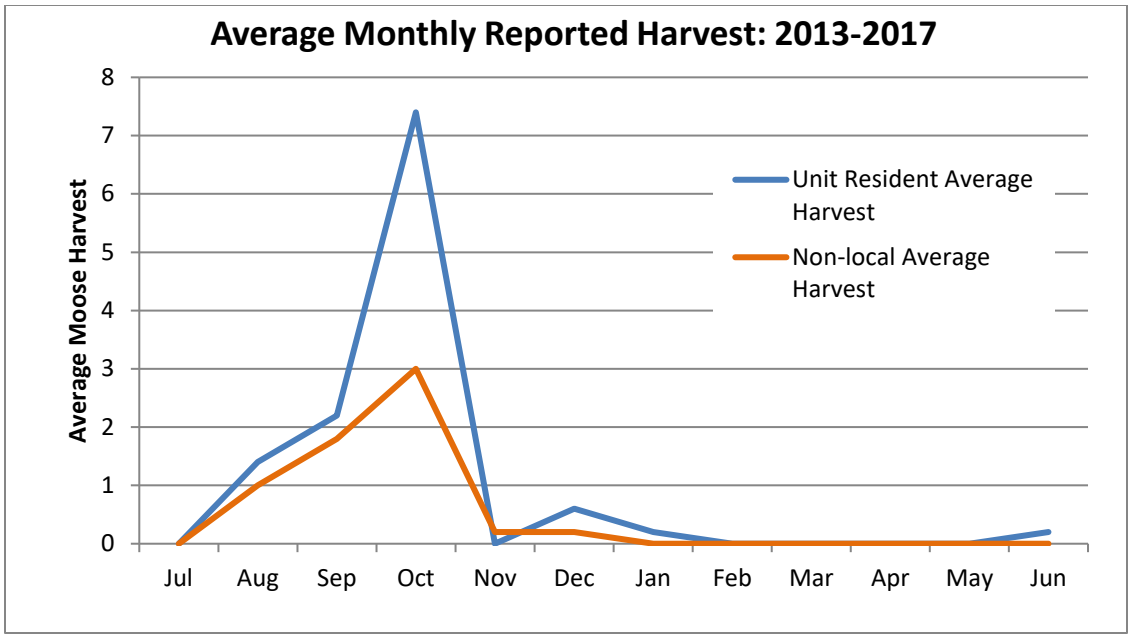


Figure 3. Unit 22D remainder average moose harvest by month, 2013–2017, according to ADF&G Unit 22D GM000 harvest data (WinfoNet 2018).

Other Alternatives Considered

One alternative that was considered for this proposal was to maintain the harvest season for the month of October. This alternative was considered due to October being the primary month that moose are harvested by local residents in Unit 22D remainder. Due to conservation concerns for the moose population and the vulnerability of rutting bulls during this time of the year, this alternative was not further considered.

A different alternative considered was to additionally close Federal public lands in Unit 22D remainder to the harvest of moose except by Federally qualified subsistence users. This would further protect the moose population in the hunt area and maintain priority for Federally qualified subsistence users. This modification was considered beyond the scope of the proposal and was not further considered.

Effects of the Proposal

Only 8% of the Unit 22D remainder moose hunt area consists of Federal public lands. All of these Federal public lands are managed by BLM. The low amount of Federal lands located in the hunt area may limit the impact that this proposal would have on Federally qualified subsistence users and the moose population.

If this proposal is adopted, it would limit subsistence opportunity for Federally qualified subsistence users in Unit 22D remainder, but it would also help to ensure that users have the moose resource available for future generations. Adoption of this proposal would eliminate cow harvest and shorten the overall harvest season, which, due to low moose densities in the area and a declining population that is below State management goals, could provide benefits to the moose population in the unit. Requiring a registration permit would put more of a burden on users, but it would allow for more accurate tracking of moose harvest in the hunt area.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-38 **with modification** to delegate authority to the Federal manager to open a "may be announced" season between Dec. 1 and Jan. 31 via a delegation of authority letter only (**Appendix 1**).

Justification

The moose population in Unit 22D remainder is currently below State management goals and has been declining at a rate of 14% annually since 2011. In addition, the current estimated annual harvest may be above sustainable levels. Cow hunts are typically used to reduce increasing populations that are above sustainable levels. Due to this declining population, the State has removed antlerless hunts from their regulations in Unit 22 and eliminated non-resident harvest opportunity in the area. Requiring a registration permit will help to obtain more accurate harvest data, which is necessary to properly manage this moose population. Although eliminating the cow moose season and requiring a registration permit may limit short-term subsistence opportunity for Federally qualified subsistence users, it will help to assure the long term viability of this moose population.

LITERATURE CITED

ADF&G. 2016a. State Closes Nonresident Moose Hunt in Remainder of Unit 22D. Emergency Order 05-05-16. Division of Wildlife Conservation. Nome, AK.

ADF&G. 2016b. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: October 26, 2016.

ADF&G. 2017. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: November 20, 2017.

ADF&G. 2018a. Wildlife Special Action WSA 18-03: Temporary Special Action Request. Letter of Comment to the Federal Subsistence Board. October 5, 2018.

ADF&G. 2018b. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 30, 2018.

ADF&G. 2019. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: July 5, 2019.

Braem, N.M., E.H. Mikow, and M.L. Kostick, eds. 2014. Chukchi Seas and Norton Sound observation network: harvest and use of wildlife resources in 9 communities in Arctic Alaska, 2012–2014. ADF&G Division of Subsistence Technical Paper No. 403. Fairbanks, AK. 797 pages.

Dau, J. 2000. Managing reindeer and wildlife on Alaska's Seward Peninsula. Polar Research 19(1), 57-62.

Dunker, W. 2016. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2017. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2018. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2019. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Finstad, G. L., Kielland, K. K., and W.S. Schneider, W. S. 2007. Reindeer herding in transition: historical and modern day challenges for Alaskan reindeer herders. Nomadic Peoples, 10(2): 31–49.

Gorn, T. 2012. Unit 22 moose management report. Pages 534–559 in P. Harper, editor. Moose management report of survey and inventory activities 1 July 2009–30 June 2011. ADF&G, Species Management Report, ADF&G/DWC/SMR-2012-5, Juneau, AK.

Gorn, T. and W. R. Dunker. 2014. Unit 22 moose management report. Pages 31-1 through 31-38 in P. Harper and Laura A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 2011–30 June 2013. ADF&G, Species Management Report ADF&G/DWC/SMR-2014-6, Juneau, AK.

Kawerak Inc. 2019. https://kawerak.org/our-region/nome/. Retrieved: May 28th, 2019.

MacLean, E.A. 2012. Iñupiatun Uqaluit Taniktun Sivunniuġutiŋit: North Slope Iñupiaq to English Dictionary. Alaska Native Languages Archives, University of Alaska Fairbanks. 50 pp.

Mikow, E. H., Gonzalez, D., and M.L. Kostick. 2018. Subsistence Wildlife Harvests in Brevig Mission, Teller, and White Mountain, Alaska , 2015 – 2016. ADF&G Division of Subsistence Special Publication No. 2018-03. Fairbanks, AK. 42 pages.

Mikow, E., Braem, N. M., and M. Kostick, M. 2014. Subsistence Wildlife Harvests in Brevig Mission, Deering, Noatak, and Teller, Alaska, 2011-2012. ADF&G Division of Subsistence Special Publication No. 2014-02. Fairbanks, AK. 47 pages.

Nelson, R.R. 1995. Unit 22 moose survey-inventory progress report. Pages 405-419 in M.V. Hicks, editor. Management report of survey-inventory activities 1 July 1993 – 30 June 1995. Federal aid in wildlife restoration progress report, Project W-24-2, W-24-3, Study 1.0. Juneau, AK.

OSM. 2002. Staff Analysis WP02-34. Pages 12-26 in Federal Subsistence Board Meeting Materials May 13-15, 2002. Office of Subsistence Management, USFWS. Anchorage, AK. 676 pp.

OSM. 2005. Staff Analysis WSA05-01. Office of Subsistence Management, USFWS. Anchorage, AK.

OSM. 2007. Staff Analysis WP07-37. Pages 467-475 in Federal Subsistence Board Meeting Materials April 30-May 2, 2007. Office of Subsistence Management, USFWS. Anchorage, AK. 643 pp.

Ray, D.J. 1984. Bering Strait Eskimo. Pages 285–302 *in* W.C Sturtevant, ed. The handbook of North American Indians, Volume 5: Arctic. Smithsonian Institution, Washington D.C.

Seppi, B. 2018. Wildlife biologist. Personal communication: phone. BLM. Nome, AK.

SPRAC. 2016. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings, March 09, 2016 in Anchorage, Alaska. Office of Subsistence Management, USFWS. Anchorage, AK.

Stern, O., E.L. Arobio, L.L. Naylor, and W.C. Thomas. 1980. Eskimos, Reindeer, and Land. University of Alaska Fairbanks – School of Agriculture and Land Resources Management Bulletin. 59: 93 pp.

U.S. Census Bureau. 2010. https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Retrieved: June 3, 2019.

WinfoNet. 2018. https://winfonet.alaska.gov/. Retrieved: July 18, 2018.

APPENDIX 1

Federal Subsistence Board

1011 East Tudor Road, MS121
Anchorage, Alaska 99503-6199

FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

FOREST SERVICE

OSM

Anchorage Field Office Manager
Bureau of Land Management
4700 BLM Road
Anchorage, Alaska 99507

Dear Field Office Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the manager of the Bureau of Land Management (BLM) Anchorage Field Office to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of a wildlife population. This delegation only applies to the Federal public lands subject to Alaska National Interest Land Conservation Act (ANILCA) Title VIII jurisdiction within Unit 22D remainder as it applies to moose on these lands.

It is the intent of the Board that actions related to management of moose by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G), representatives of the Office of Subsistence Management (OSM), and the Chair of the affected Council(s) to the extent possible. The Office of Subsistence Management will be used by managers to facilitate communication of actions and to ensure proposed actions are technically and administratively aligned with legal mandates and policies. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair or alternate, local tribes, and Alaska Native Corporations to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

1. <u>Delegation:</u> The BLM Anchorage Field Office manager is hereby delegated authority to issue emergency or temporary special actions affecting moose on Federal lands as outlined under the

Scope of Delegation. Any action greater than 60 days in length (temporary special action) requires a public hearing before implementation. Special actions are governed by Federal regulation at 36 CFR 242.19 and 50 CFR 100.19.

2. Authority: This delegation of authority is established pursuant to 36 CFR 242.10(d)(6) and 50 CFR 100.10(d)(6), which state: "The Board may delegate to agency field officials the authority to set harvest and possession limits, define harvest areas, specify methods or means of harvest, specify permit requirements, and open or close specific fish or wildlife harvest seasons within frameworks established by the Board."

3. Scope of Delegation: The regulatory authority hereby delegated is limited to the following authorities within the limits set by regulation at 36 CFR 242.26 and 50 CFR 100.26:

- You may announce a season between the dates of Dec. 1 – Jan. 31 for moose on Federal public lands in Unit 22D remainder.

This delegation also permits you to close and reopen Federal public lands to nonsubsistence hunting, but does not permit you to specify methods and means, permit requirements, or harvest and possession limits for State-managed hunts.

This delegation may be exercised only when necessary to conserve moose populations, to continue subsistence uses, for reasons of public safety, or to assure the continued viability of the populations. All other proposed changes to codified regulations, such as customary and traditional use determinations or adjustments to methods and means of take, shall be directed to the Board.

The Federal public lands subject to this delegated authority are those within Unit 22D remainder.

4. Effective Period: This delegation of authority is effective from the date of this letter and continues until superseded or rescinded.

5. Guidelines for Delegation: You will become familiar with the management history of the wildlife species relevant to this delegation in the region, with current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will provide subsistence users in the region a local point of contact about Federal subsistence issues and regulations and facilitate a local liaison with State managers and other user groups.

You will review special action requests or situations that may require a special action and all supporting information to determine (1) consistency with 50 CFR 100.19 and 36 CFR 242.19, (2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected Federally qualified subsistence users and non-Federally qualified users. Requests not within your delegated authority will be forwarded to the Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in OSM no later than sixty days after development of the document.

For management decisions on special actions, consultation is not always possible, but to the extent practicable, two-way communication will take place before decisions are implemented. You will also establish meaningful and timely opportunities for government-to-government consultation related to pre-season and post-season management actions as established in the Board's Government-to-Government Tribal Consultation Policy (Federal Subsistence Board Government-to-Government Tribal Consultation Policy 2012 and Federal Subsistence Board Policy on Consultation with Alaska Native Claim Settlement Act Corporations 2015).

You will immediately notify the Board through the Assistant Regional Director for OSM, and coordinate with the Chair(s) or alternate of the affected Council(s), local ADF&G managers, and other affected Federal conservation unit managers concerning emergency and temporary special actions being considered. You will ensure that you have communicated with OSM to ensure the special action is aligned with ANILCA Title VIII, Federal Subsistence regulations and policy, and that the perspectives of the Chair(s) or alternate of the affected Council(s), OSM, and affected State and Federal managers have been fully considered in the review of the proposed special action.

If the timing of a regularly scheduled meeting of the affected Council(s) permits without incurring undue delay, you will seek Council recommendations on the proposed temporary special action(s). If the affected Council(s) provided a recommendation, and your action differs from that recommendation, you will provide an explanation in writing in accordance with 50 CFR 100.10(e)(1) and 36 CFR 242.10(e)(1).

You will issue decisions in a timely manner. Before the effective date of any decision, reasonable efforts will be made to notify the public, OSM, affected State and Federal managers, law enforcement personnel, and Council members. If an action is to supersede a State action not yet in effect, the decision will be communicated to the public, OSM, affected State and Federal managers, and the local Council members at least 24 hours before the State action would be effective. If a decision to take no action is made, you will notify the proponent of the request immediately. A summary of special action requests and your resultant actions must be provided to the coordinator of the appropriate Council(s) at the end of each calendar year for presentation to the Council(s).

You may defer a special action request, otherwise covered by this delegation of authority, to the Board in instances when the proposed management action will have a significant impact on a large number of Federal subsistence users or is particularly controversial. This option should be exercised judiciously and may be initiated only when sufficient time allows for it. Such deferrals should not be considered when immediate management actions are necessary for conservation purposes. The Board may determine that a special action request may best be handled by the Board, subsequently rescinding the delegated regulatory authority for the specific action only.

6. <u>Support Services:</u> Administrative support for regulatory actions will be provided by the Office of Subsistence Management.

Sincerely,

Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board
Assistant Regional Director, Office of Subsistence Management
Deputy Assistant Regional Director, Office of Subsistence Management
Subsistence Policy Coordinator, Office of Subsistence Management
Wildlife Division Supervisor, Office of Subsistence Management
Subsistence Council Coordinator, Office of Subsistence Management
Chair, Seward Peninsula Regional Advisory Council
Commissioner, Alaska Department of Fish and Game
Special Assistant to the Commissioner, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

WP20–39 Executive Summary	
General Description	Wildlife Proposal WP20-39 requests modifying the harvest limit for the December moose season in Unit 22D remainder from one moose to one bull. *Submitted by: Seward Peninsula Subsistence Regional Advisory Council.*
Proposed Regulation	**Unit 22D—Moose** *Unit 22D remainder—1 bull* — *Aug. 10–Sep. 14. Oct. 1–Nov. 30.* *Unit 22D remainder—1* ***bull*** ~~*moose; however, no person may take a calf or cow accompanied by a calf*~~ — *Dec. 1–31.* *Unit 22D remainder—1 antlered bull* — *Jan. 1–31.*
OSM Preliminary Conclusion	**Support**
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-39

ISSUES

Wildlife Proposal WP20-39, submitted by the Seward Peninsula Subsistence Regional Advisory Council (Council), requests modifying the harvest limit for the December moose season in Unit 22D remainder from one moose to one bull.

Note: A similar proposal (WP20-38) was also submitted regarding the harvest limit for moose in Unit 22D remainder. The outcome of either proposal will impact the action taken on the other. Therefore, it is important to consider both of these proposals prior to taking action. A complimentary proposal (WP20-40) was additionally submitted regarding the closure of the hunt area to non-Federally qualified users. It may also be important to consider how an action on WP20-40 would impact actions taken on either WP20-39 or WP20-38.

DISCUSSION

The proponent is concerned with the harvest of cow moose in Unit 22D remainder due to a declining population trend since 2011. The proponent states that moose population surveys conducted by the Alaska Department of Fish and Game (ADF&G) showed severe declines between 2011 and 2014. The Council mentions that it was recently informed by ADF&G that low moose recruitment remains a concern in Unit 22D remainder, and that action is needed to protect this population. The Unit 22D remainder cow moose harvest has been closed, by special actions, for the last few years, and this proposal is being submitted to incorporate this change into regulation. This change would also be consistent with those made to State regulations to remove cow harvest in this hunt area.

Existing Federal Regulation

Unit 22—Moose

Unit 22D remainder—1 bull	*Aug. 10–Sep. 14.* *Oct. 1–Nov. 30.*
Unit 22D remainder—1 moose; however, no person may take a calf or cow accompanied by a calf	*Dec. 1–31.*
Unit 22D remainder—1 antlered bull	*Jan. 1–31.*

Proposed Federal Regulation

Unit 22D—Moose

Unit 22D remainder—1 bull	*Aug. 10–Sep. 14.* *Oct. 1–Nov. 30.*
Unit 22D remainder—1 ***bull*** ~~*moose; however, no person may take a calf or cow accompanied by a calf*~~	*Dec. 1–31.*
Unit 22D remainder—1 antlered bull	*Jan. 1–31.*

Existing State Regulation

Unit 22D—Moose

22D remainder	*Residents: One bull*	*Aug. 10 – Sept. 14*
	OR	
	One bull	*Oct. 1 – Nov. 30*
	OR	
	One antlered bull	*Dec. 1 – Jan. 31*
	Nonresidents	*no open season*

Extent of Federal Public Lands/Waters

Unit 22D is comprised of approximately 23% Federal public lands and consists of 12% Bureau of Land Management (BLM) managed lands, and 11% National Park Service (NPS) managed lands (**Figure 1**).

Note: Federal public lands comprise 8% of the Unit 22D remainder moose hunt area, specifically. All of these Federal public lands are managed by BLM.

Customary and Traditional Use Determinations

Residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

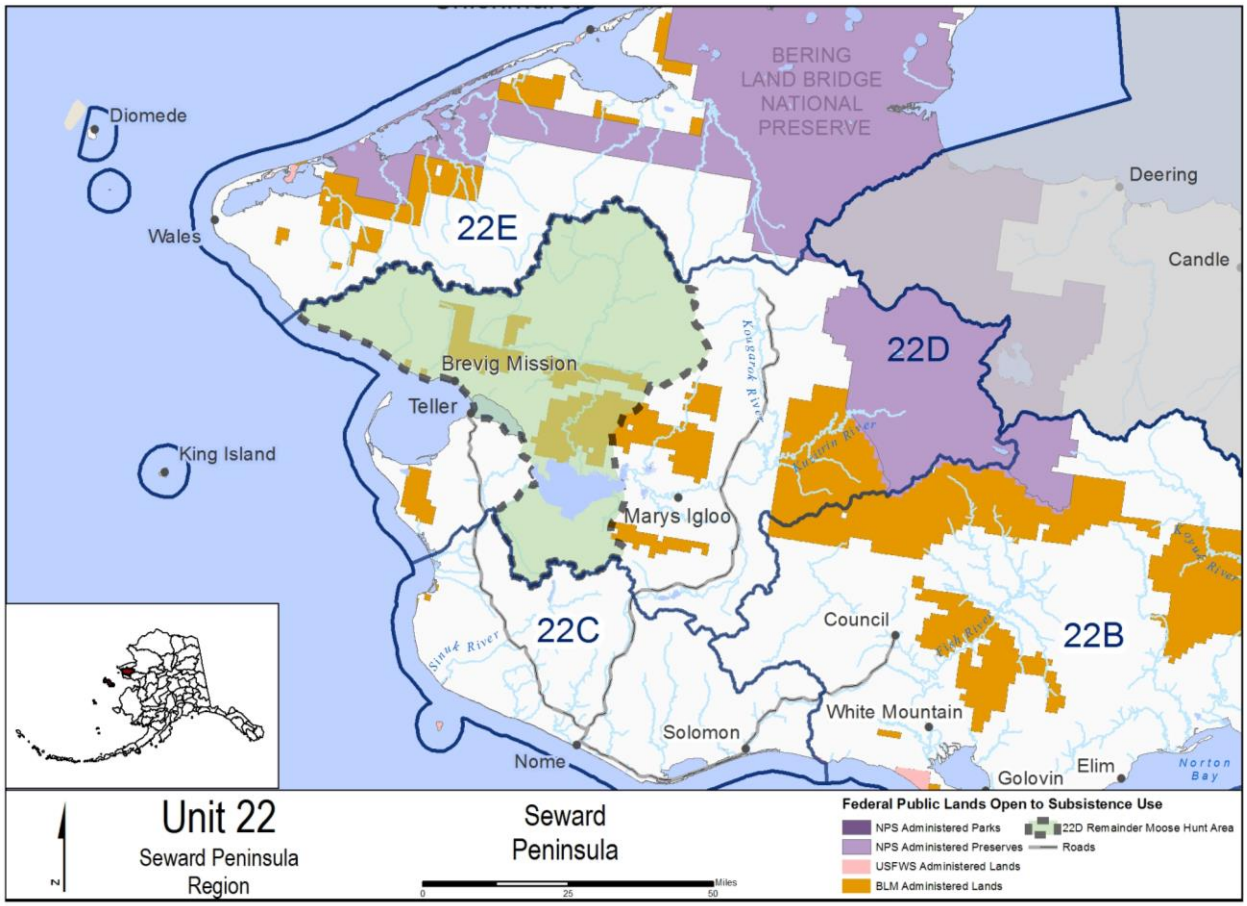


Figure 1. Unit 22D remainder moose hunt area.

Regulatory History

In 1998, the Federal Subsistence Board (Board) adopted Proposal WP98-087, which changed the harvest limit from one moose to one antlered bull in that portion of Unit 22D that lies within the Kuzitrin River drainage, just east of Unit 22D remainder, due to a declining local moose population and heavy hunting pressure. As a result of a continuing regional trend in declining moose populations, the Board also restricted the harvest in adjacent Unit 22B in 2000.

In 2001, the Board approved with modification, two Special Action Requests (WSA01-09 and WSA01-11) to close Federal public lands to the harvest of moose by non-Federally qualified users in Unit 22B west of the Darby Mountains, Unit 22D within the Kuzitrin River drainage and west of the Tisuk River drainage and Canyon Creek, and Unit 22E, shorten the seasons in all these hunt areas except for Unit 22D west of the Tisuk River drainage, and modify Unit 22E harvest limits from one moose to one bull for the 2001 fall and winter seasons. As a follow-up to these actions, the Alaska Board of Game (BOG) addressed concerns about declining moose populations in parts of Unit 22 by shortening seasons in portions of Units 22B and 22D, adding registration permit requirements in Unit 22D, dividing Unit 22D into additional hunt areas, modifying harvest limits, and closing nonresident hunts in portions of Units 22B, 22D, and 22E. The BOG decided to restrict the season in Unit 22D remainder, despite a relatively healthier moose population. The

fall season was closed from Sept. 15–30, to match other portions of Unit 22D, in order to prevent focusing hunting efforts on the American and Agiapuk River drainages when all the other areas would have been closed. These changes went into effect in regulatory year 2002/03.

In May 2002, the Board adopted Proposal WP02-34 with modification to add State registration permit requirements to the portion of Unit 22B west of the Darby Mountains, the portion of Unit 22D that lies within the Kuzitrin River drainage, and the portion of Unit 22D west of the Tisuk River drainage, revise harvest limits to bull only hunts in Units 22B, portions of 22D (Kuzitrin River drainage and west of the Tisuk River drainage), and Unit 22E, and shorten seasons in these areas. It also closed Federal public lands in Unit 22D remainder and Unit 22E to the taking of moose except by Federally qualified subsistence users. The Board's justification stated that the closure "would improve rural subsistence harvest opportunities in an area recently deemed necessary by the State to restrict the moose harvest" (OSM 2002: 15).

ADF&G issued an emergency order in 2005, changing the State fall moose hunt in Unit 22D to Sept. 1–14. In 2005, the Board approved Special Action Request WSA05-01, which shortened the hunting season for all of Unit 22D from Aug. 20–Sept. 30 to Sept. 1–14, in response to conservation concerns from harvests exceeding the joint State/Federal harvest quota for the Kuzitrin River drainage in 2003 and 2004 (OSM 2005). Overharvest occurred in 2003 and 2004, despite State and Federal efforts to reduce the harvest by closing the seasons early.

Upon consideration of Wildlife Closure Review WCR06-15 in 2006, the Council submitted Proposal WP07-38 to eliminate the closure put in place in 2002 to all non-Federally qualified users. In 2007, the Board adopted WP07-38, eliminating the closure to non-Federally qualified users in Unit 22D remainder, and aligning Federal and State hunting season dates. The Council justified the request by stating that "land closures are no longer necessary to protect the moose population because numbers have increased unit-wide and have remained stable for at least ten years; recruitment rates are up; and bull:cow ratios are consistently high despite a five-month Federal season" (OSM 2007: 468).

In 2015, the BOG modified State regulations, transitioning to a bull moose hunt within Unit 22D remainder. In addition, for regulatory years 2015/16 and 2016/17, ADF&G established a three moose harvest quota for nonresident hunters in Unit 22D remainder to prevent excessive harvest. This harvest quota was enacted due to a decline in moose populations since 2011. ADF&G issued emergency orders in regulatory years 2015/16 and 2016/17 to close this season early due to the quota being met (ADF&G 2016a).

At its March 2016 meeting, the Council submitted Proposal 28 to the BOG, requesting elimination of the nonresident moose season in Units 22E and 22D remainder until the relationship between the changing moose population distribution and growth and decline between the subunits was better understood. During discussion of the proposal, ADF&G was asked for an overview of the moose population in the area. ADF&G brought concern about the decreasing population numbers in Unit 22D to the attention of the Council, mentioning that moose in Unit 22D were last counted in 2014, and that declines in the population were observed in both of the major survey areas. Additionally, ADF&G noted that some Unit 22D moose may have migrated to Unit 22E. Even with the possible migration taken into consideration, a significant

decline in Unit 22D moose was observed during the 2014 survey (SPRAC 2016). Proposal 28 was adopted in Unit 22D remainder by the BOG prior to the 2017/18 regulatory year.

Special Action Request WSA16-07, submitted by BLM and requesting that the December cow season be closed, was presented to the Council on November 2, 2016. The Council supported WSA16-07, stating that hunters had expressed concern about the moose populations in the area. In particular, the Council Chair discussed the need to refrain from harvesting cow moose during population declines and asked ADF&G to explain the current levels of antlerless moose harvest and the potential impacts to the population. ADF&G noted that the average annual reported harvest of cow moose in Unit 22D over the last ten years totaled one moose per year, but that an antlerless harvest as low as 3% could have a substantial negative impact to the population. The Council Chair emphasized that this Special Action would only close the Federal cow moose hunting season for one month. The Board approved WSA16-07 on November 30, 2016.

In 2017, the same request was submitted as Special Action Request WSA17-06. The proponent, BLM, submitted this request because they believed that continued harvest of cow moose in Unit 22D remainder would lead to further declines in the moose population. The Board approved WSA17-06 with modification to change the harvest limit from one bull to one antlered bull for the harvest season of Dec. 1–Dec. 31, 2017. This modification was approved to prevent the accidental harvest of cows, since most larger bulls would have dropped their antlers by December. An antlered moose hunt was also preferred to reduce mid-winter harassment of non-antlered moose by hunters trying to distinguish the sex of the animal. It was stated that approval of this modification would help to ensure the long term viability of the moose population in Unit 22D remainder.

Similarly, in 2018, the same request was submitted as Special Action Request WSA18-03. The Board again approved this request with modification. The modified WSA18-03 that was approved by the Board limited harvest from one moose to one antlered bull in Unit 22D remainder for the remainder of the current wildlife regulatory cycle (through June 30, 2020). The harvest limit was modified through the remainder of the wildlife regulatory cycle to ensure that antlerless moose in Unit 22D remainder were protected until a proposal could be submitted to change Federal subsistence regulations.

Biological Background

Moose have been present in Unit 22 for a relatively short time, with very few being observed prior to 1930. The moose population on the Seward Peninsula grew and reached its peak in the mid-1980s (Nelson 1995, Gorn and Dunker 2014). This rise in the population was followed by multiple severe winters, which greatly reduced the population and overall moose density due to limited winter browse (Nelson 1995). Brown bear predation on calves is now considered the main limiting factor on the Unit 22 moose population; although no formal study has yet been conducted to confirm this (Gorn and Dunker 2014).

State management goals for moose in Unit 22 include maintaining a unit-wide combined population of 5,100–6,800 moose, and more specifically, maintaining a population of 2,000–2,500 moose in Unit 22D while maintaining a minimum bull:cow ratio of 30:100. The population goal in Unit 22D would provide for an increased and stabilized population following recent declines (Gorn and Dunker 2014).

During a moose population survey conducted in 2014, the population estimate for moose in all of Unit 22D was 1,106 observable moose, which represents a 13% annual rate of decline from 2011 (1,681 observable moose). Specifically in the Agiapuk River drainage survey area (within which, the Unit 22D remainder hunt area is located), the population estimate was 491 (0.39 moose/mi²) observable moose (**Figure 2**). These numbers were reported as observable moose, rather than an overall population estimate, due to the lack of a sightability correction factor for these surveys. This is a 14% annual rate of decline since the 2011 survey (Gorn 2012, Dunker 2016, pers. comm.). Another population survey was planned for March of 2018 in Units 22D and 22E, but due to inclement weather, the survey did not take place (Seppi 2018, pers. comm.).

Fall composition surveys indicate a negative change in the composition within Unit 22D remainder. Composition surveys in the Agiapuk River Drainage were conducted in 2011 for the first time since 2003, and found 38 bulls:100 cows, which is within State management goals (Gorn 2012, Dunker 2019 pers. comm.). In 2013, efforts to complete composition surveys were hampered by poor weather conditions. The limited data obtained from these attempts indicated that the bull:cow ratio had likely declined since the 2011 surveys (Dunker 2016, pers. comm.). This was confirmed during the most recent composition surveys in the area, which were completed in fall of 2016 and 2018. Results showed a bull:cow ratio of 23 and 18 bulls:100 cows, respectively, both of which are below the State management objective of 30 bulls: 100 cows (Dunker 2017, pers. comm.).

Weight measurements were collected on short-yearling (10-month old) moose in Unit 22D in April 2007–2009. Annual average weights ranged 372–393 pounds. Snowfall was greater than normal levels in both 2008 and 2009, but did not have a significant impact on average short-yearling weights. Research indicates that short-yearling weights of less than 385 pounds are considered an indication that moose are resource limited, but browse does not seem to be limiting factor in this area (Gorn and Dunker 2014). A spring recruitment survey was completed by ADF&G in April of 2018 for Unit 22D remainder. This survey provided a 12% estimate of recruitment, which suggests that recruitment is poor and the population is likely still in need of rebuilding efforts at this time (ADF&G 2018a).

Habitat

There is limited habitat data for Unit 22D. Although winter browse was seen as a limiting factor when moose density/numbers were at their highest during the mid-1980s, current moose populations have been managed based on what winter browse can easily support throughout Unit 22D. Browse is no longer viewed as a limiting factor to moose in this unit, and brown bear predation on calves is now seen as the most significant factor influencing moose numbers (Gorn and Dunker 2014).

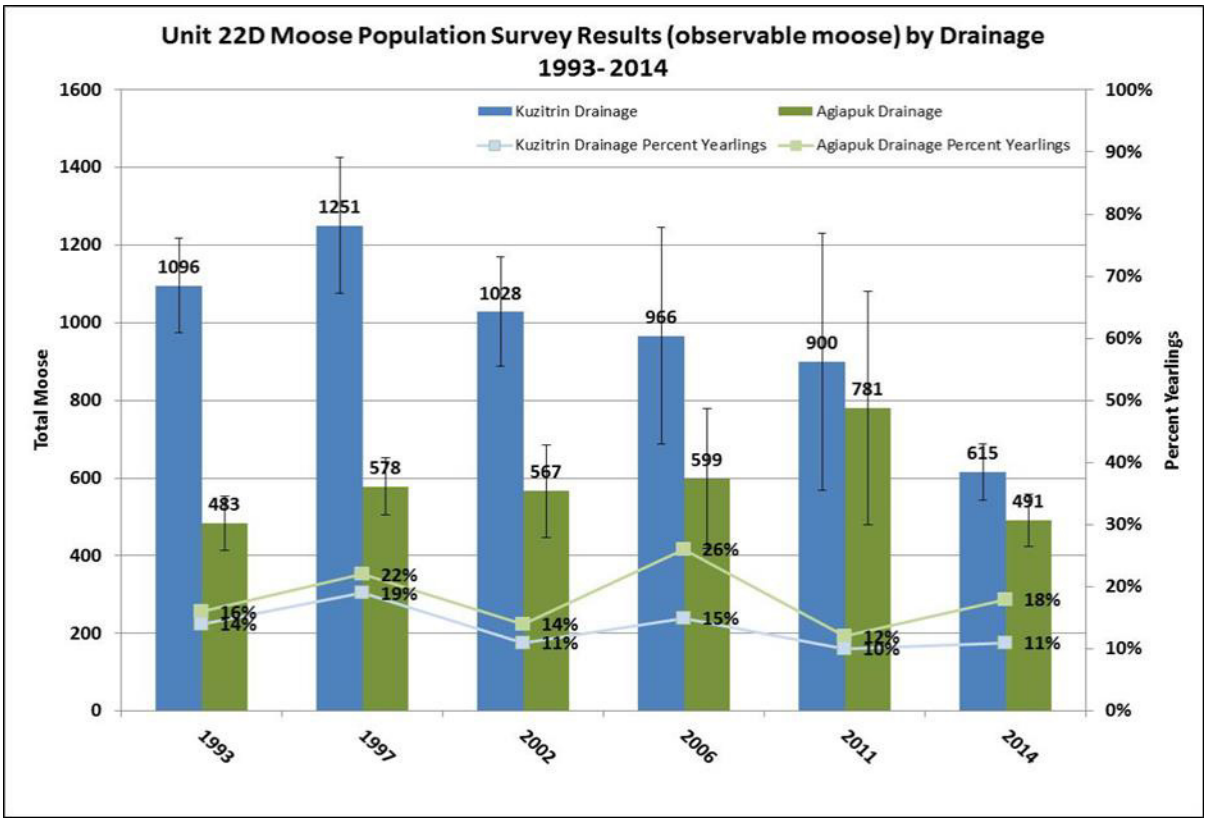


Figure 2. Unit 22D moose population survey results (Figure from Dunker 2016, pers. comm.).

Cultural Knowledge and Traditional Practices

The Seward Peninsula has been inhabited by humans for at least 12,000 years. The Kauweramiut, Malemiut, and Unalikmiut Inupiat of the Seward Peninsula have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources (Ray 1984, Kawerak 2019). Until the establishment of mission settlements and later, government schools, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources. Gold was discovered in Anvil Creek in 1898, precipitating a gold rush, settlement by outsiders, and re-distribution of the local population. Major epidemics including influenza in 1918 further reshaped populations on the Seward Peninsula (Ray 1984).

The western boundary of unit 22D remainder is contiguous with the villages of Teller and Brevig Mission; both communities hunt moose within this area (Mikow et al. 2018). The present location of Teller was established in 1900 when the Bluestone Placer Mine was created 15 miles to the south. In the 2010 (U.S. Census), Teller had 229 year-round, permanent residents (U.S. Census 2010). Brevig Mission is named after the Lutheran minister who established a reindeer herd at the current town site in 1900. During the most recent census, there were 388 year-round permanent residents of Brevig Mission (U.S. Census 2010).

Moose did not start migrating into the Seward Peninsula until the 1940s, and while caribou were hunted traditionally, their numbers declined in the region in the mid-1800s (Dau 2000). Introduced reindeer were the economic base for Brevig Mission until the 1970s, a source of food and income which has since

declined (Finstad 2007). Historically, people in the Seward Peninsula area hunted a variety of species, but as moose moved into the region in the mid-20th century, harvest of these animals grew.

Between May 2015 and May 2016, the most recent study period for which big game subsistence data is available for the area, 85% of Brevig Mission households and 55% of Teller households used moose (Mikow et al. 2018). The percentage of households using moose in each community in 2015-2016 was greater compared to a previous study period, 2011–2012, during which 43.3% of Brevig Mission and 30.5% of Teller households used moose (Mikow et al. 2014).

For the 2015-2016 study period, Brevig Mission households harvested 33 pounds of edible moose per capita, with 90% of the harvest occurring within unit 22D remainder. Teller households harvested 32 pounds of edible moose per capita, 27% of which were harvested from 22D remainder. For Teller, a higher percentage of households used moose than caribou, but that situation was reversed for Brevig Mission. The fall moose hunting season was most important for both communities. In Brevig mission, 85% of moose were taken in the fall, while in Teller 100% were taken in that season (Mikow et al. 2018).

Harvest History

Reported harvest remains well below levels seen in the 1980s, in part, due to more stringent hunting regulations in Unit 22D. According to the ADF&G harvest report website, 178 (133 male, 45 female) moose were harvested throughout Unit 22D in 1986, with 39.9% hunter success throughout the subunit (ADF&G 2018b). Conversely, 61 moose were harvested in Unit 22D in 2018, with 28% hunter success throughout the subunit (ADF&G 2018b, 2019). Average annual reported harvest from 2005 to 2018 was 66 moose (**Table 1**). The majority of moose taken over these years have been bulls. Residents of Unit 22 accounted for 73% of the total harvest between 2005 and 2018 (**Table 1**). In Unit 22D remainder, specifically, the average annual reported moose harvest by State residents between 2007 and 2017 was 17 moose (Dunker 2018, pers. comm.). Unit 22 residents, most of which were residents of Nome, accounted for 74% of the total reported harvest between 2013 and 2018 in Unit 22D remainder (**Table 2**).

Table 1. Reported moose harvest in Unit 22D for 2005–2018. Local resident harvest refers to harvest by residents of Unit 22 (ADF&G 2016b, ADF&G 2017, ADF&G 2018b, ADF&G 2019).

Year	Species	Local Resident Harvest	Nonlocal Resident Harvest	Total Resident Harvest	Unknown Residency Harvest	Nonresident Harvest	Total Harvest	Male	Female	Unknown
2005	Moose	47	4	51	0	6	57	56	0	1
2006	Moose	47	11	58	0	8	66	65	1	0
2007	Moose	52	14	66	1	5	72	70	2	0
2008	Moose	42	10	52	1	7	60	57	1	2
2009	Moose	54	15	69	0	7	76	74	1	1
2010	Moose	39	12	51	3	4	58	55	2	1
2011	Moose	50	19	69	1	9	79	76	2	1
2012	Moose	50	12	62	1	6	69	66	2	1
2013	Moose	45	10	55	1	3	59	58	1	0
2014	Moose	43	11	54	2	8	64	61	2	1
2015	Moose	54	12	66	1	5	72	69	0	3
2016	Moose	52	8	60	0	3	63	63	0	0
2017	Moose	59	12	71	0	0	71	69	0	2
2018	Moose	47	14	61	0	0	61	61	0	0
Average:		**49**	**12**	**60**	**1**	**5**	**66**	**64**	**1**	**1**
Total:		**679**	**164**	**843**	**11**	**71**	**925**	**899**	**14**	**12**

Table 2. Unit 22D remainder moose harvest, 2013–2018, according to ADF&G Unit 22D GM000 harvest reports (ADF&G 2019). Local harvest refers to harvest by residents of Unit 22.

		Local harvest		Non-local harvest	
Year	Total Harvest	Number of moose	% of total	Number of moose	% of total
2013	12	7	58%	5	42%
2014	16	11	69%	5	31%
2015	22	17	77%	5	23%
2016	22	16	73%	6	27%
2017	35	28	80%	7	20%
2018	33	25	76%	8	24%

Effects of the Proposal

If this proposal is adopted, it would limit subsistence opportunity for Federally qualified subsistence users in Unit 22D remainder, but it would also help to ensure that users have the moose resource available for future generations. Adoption of this Proposal would eliminate cow harvest, which, due to low moose densities in the area and a declining population that is below State management goals, could provide benefits to the moose population in the unit.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-39.

Justification

The moose population in Unit 22D remainder is currently below State management goals and has been declining at a rate of 14% annually since 2011. In addition, the current estimated annual harvest is above sustainable levels. Cow hunts are typically used to reduce increasing populations that are above sustainable levels. Due to this declining population, the State has removed antlerless hunts from their regulations in Unit 22 and eliminated non-resident harvest opportunity in the area. Although eliminating the cow moose season may limit short-term subsistence opportunity for Federally qualified subsistence users, it will help to assure the long term viability of this moose population.

LITERATURE CITED

ADF&G. 2016a. State Closes Nonresident Moose Hunt in Remainder of Unit 22D. Emergency Order 05-05-16. Division of Wildlife Conservation. Nome, AK.

ADF&G. 2016b. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: October 26, 2016.

ADF&G. 2017. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: November 20, 2017.

ADF&G. 2018a. Wildlife Special Action WSA 18-03: Temporary Special Action Request. Letter of Comment to the Federal Subsistence Board. October 5, 2018.

ADF&G. 2018b. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 30, 2018.

ADF&G. 2019. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: March 1, 2019.

Braem, N.M., E.H. Mikow, and M.L. Kostick, eds. 2014. Chukchi Seas and Norton Sound observation network: harvest and use of wildlife resources in 9 communities in Arctic Alaska, 2012–2014. ADF&G Division of Subsistence Technical Paper No. 403. Fairbanks, AK. 797 pages.

Dau, J. 2000. Managing reindeer and wildlife on Alaska's Seward Peninsula. Polar Research 19(1), 57-62.

Dunker, W. 2016. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2017. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2018. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2019. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Finstad, G. L., Kielland, K. K., and W.S. Schneider, W. S. 2007. Reindeer herding in transition: historical and modern day challenges for Alaskan reindeer herders. Nomadic Peoples, 10(2): 31–49.

Gorn, T. 2012. Unit 22 moose management report. Pages 534–559 in P. Harper, editor. Moose management report of survey and inventory activities 1 July 2009–30 June 2011. ADF&G, Species Management Report, ADF&G/DWC/SMR-2012-5, Juneau, AK.

Gorn, T. and W. R. Dunker. 2014. Unit 22 moose management report. Pages 31-1 through 31-38 in P. Harper and Laura A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 2011–30 June 2013. ADF&G, Species Management Report ADF&G/DWC/SMR-2014-6, Juneau, AK.

Kawerak Inc. 2019. https://kawerak.org/our-region/nome/ . Retrieved: May 28th, 2019.

Mikow, E. H., Gonzalez, D., and M.L. Kostick. 2018. Subsistence Wildlife Harvests in Brevig Mission, Teller, and White Mountain, Alaska , 2015 – 2016. ADF&G Division of Subsistence Special Publication No. 2018-03. Fairbanks, AK. 42 pages.

Mikow, E., Braem, N. M., and M. Kostick, M. 2014. Subsistence Wildlife Harvests in Brevig Mission, Deering, Noatak, and Teller, Alaska, 2011-2012. ADF&G Division of Subsistence Special Publication No. 2014-02. Fairbanks, AK. 47 pages.

Nelson, R.R. 1995. Unit 22 moose survey-inventory progress report. Pages 405-419 in M.V. Hicks, editor. Management report of survey-inventory activities 1 July 1993 – 30 June 1995. Federal aid in wildlife restoration progress report, Project W-24-2, W-24-3, Study 1.0. Juneau, AK.

OSM. 2002. Staff Analysis WP02-34. Pages 12-26 in Federal Subsistence Board Meeting Materials May 13-15, 2002. Office of Subsistence Management, USFWS. Anchorage, AK. 676 pp.

OSM. 2005. Staff Analysis WSA05-01. Office of Subsistence Management, USFWS. Anchorage, AK.

OSM. 2007. Staff Analysis WP07-37. Pages 467-475 in Federal Subsistence Board Meeting Materials April 30-May 2, 2007. Office of Subsistence Management, USFWS. Anchorage, AK. 643 pp.

Ray, D.J. 1984. Bering Strait Eskimo. Pages 285–302 *in* W.C Sturtevant, ed). The handbook of North American Indians, Volume 5: Arctic. Smithsonian Institution, Washington D.C.

Seppi, B. 2018. Wildlife biologist. Personal communication: phone. BLM. Nome, AK.

SPRAC. 2016. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings, March 09, 2016 in Anchorage, Alaska. Office of Subsistence Management, USFWS. Anchorage, AK.

Stern, O., E.L. Arobio, L.L. Naylor, and W.C. Thomas. 1980. Eskimos, Reindeer, and Land. University of Alaska Fairbanks – School of Agriculture and Land Resources Management Bulletin. 59: 93 pp.

U.S. Census Bureau. 2010. https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Retrieved: June 3, 2019.

WP20–40 Executive Summary	
General Description	Wildlife Proposal WP20-40 requests that Federal public lands in Unit 22D remainder be closed to moose hunting except by Federally qualified subsistence users. *Submitted by: Seward Peninsula Subsistence Regional Advisory Council.*
Proposed Regulation	***Unit 22D—Moose*** *Unit 22D, remainder—1 bull* — *Aug. 10–Sep. 14. Oct. 1–Nov. 30.* ***Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.*** *Unit 22D, remainder—1 moose; however, no person may take a calf or a cow accompanied by a calf* — *Dec. 1–31.* ***Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.*** *Unit 22D, remainder—1 antlered bull* — *Jan. 1–31.* ***Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.***
OSM Preliminary Conclusion	**Support**
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	

WP20–40 Executive Summary	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-40

ISSUES

Wildlife Proposal WP20-40, submitted by the Seward Peninsula Subsistence Regional Advisory Council (Council), requests that Federal public lands in Unit 22D remainder be closed to moose hunting except by Federally qualified subsistence users.

Note: Two proposals (WP20-38 and WP20-39) were also submitted regarding the harvest of moose in Unit 22D remainder. The outcome of those proposals may impact the action taken on this proposal. Therefore, it may be important to consider all three of these proposals prior to taking action.

DISCUSSION

The proponent is concerned with the harvest of cow moose in Unit 22D remainder due to a declining population trend since 2011. The proponent states that moose population surveys conducted by the Alaska Department of Fish and Game (ADF&G) showed severe declines between 2011 and 2014. The Council mentions that it was recently informed by ADF&G that low moose recruitment remains a concern in Unit 22D remainder, and that action is needed to protect this population. The proponent states that closing Federal public lands in the Unit 22D remainder hunt area to the harvest of moose except by Federally qualified subsistence users would contribute to conservation of moose and allow for local subsistence users to meet their subsistence harvest needs.

Existing Federal Regulation

Unit 22D—Moose

Unit 22D, remainder—1 bull	*Aug. 10–Sep. 14.* *Oct. 1–Nov. 30.*
Unit 22D, remainder—1 moose; however, no person may take a calf or a cow accompanied by a calf	*Dec. 1–31.*
Unit 22D, remainder—1 antlered bull	*Jan. 1–31.*

Proposed Federal Regulation

Unit 22D—Moose

Unit 22D, remainder—1 bull	*Aug. 10–Sep. 14.* *Oct. 1–Nov. 30.*

Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.

Unit 22D, remainder—1 moose; however, no person may take a calf or a cow accompanied by a calf	*Dec. 1–31.*

Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.

Unit 22D, remainder—1 antlered bull	*Jan. 1–31.*

Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.

Existing State Regulation

Unit 22D—Moose

22D remainder	*Residents: One bull*	*Aug. 10 – Sept. 14*
	OR	
	One bull	*Oct. 1 – Nov. 30*
	OR	
	One antlered bull	*Dec. 1 – Jan. 31*
	Nonresidents	*no open season*

Extent of Federal Public Lands/Waters

Unit 22D is comprised of approximately 23% of Federal public lands and consists of 12% Bureau of Land Management (BLM) managed lands, and 11% National Park Service (NPS) managed lands (**Figure 1**).

Note: Federal public lands comprise 8% of the Unit 22D remainder moose hunt area, specifically. All of these Federal public lands are managed by BLM.

Customary and Traditional Use Determinations

Residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

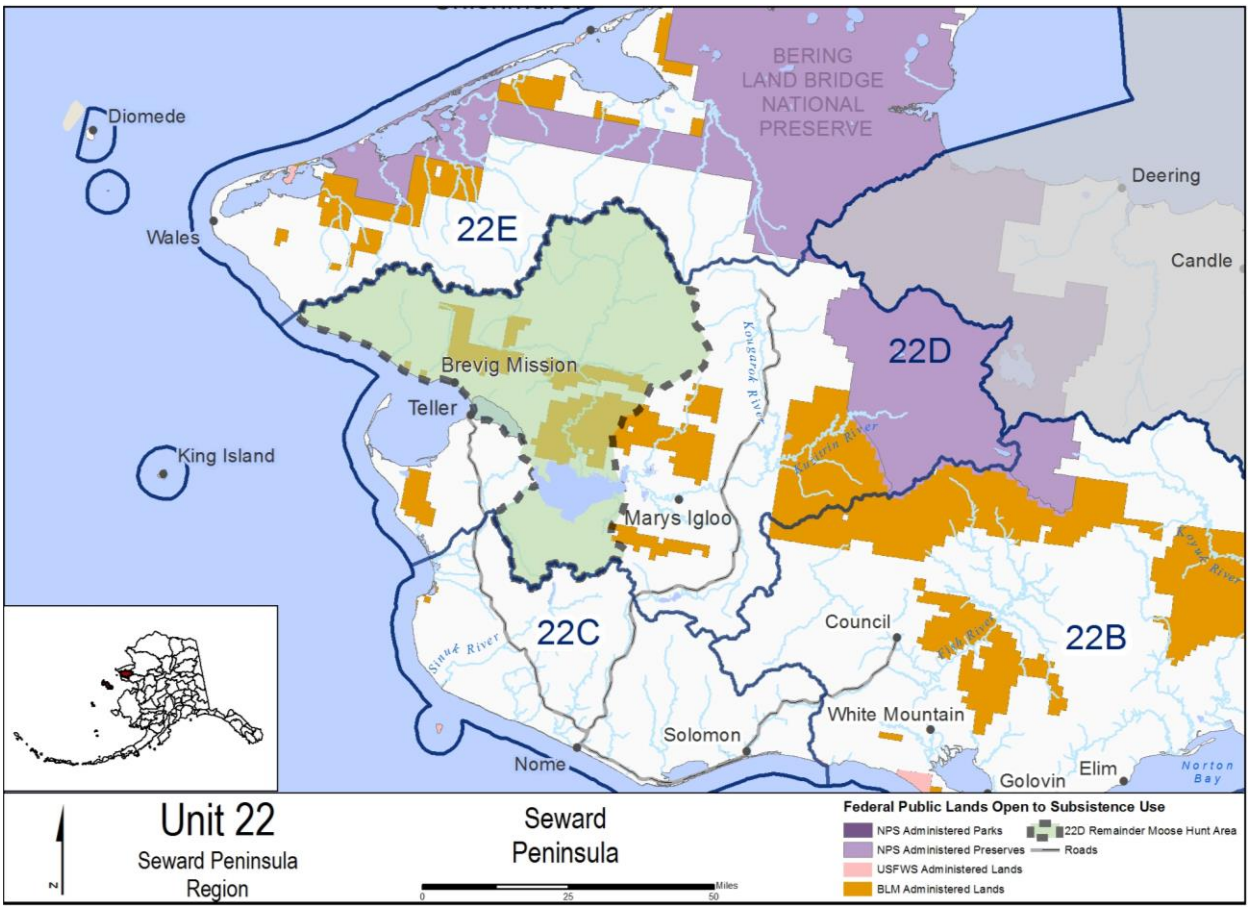


Figure 1. Unit 22D remainder moose hunt area.

Regulatory History

In 1998, the Federal Subsistence Board (Board) adopted Proposal WP98-087, which changed the harvest limit from one moose to one antlered bull in that portion of Unit 22D that lies within the Kuzitrin River drainage, just east of Unit 22D remainder, due to a declining local moose population and heavy hunting pressure. As a result of a continuing regional trend in declining moose populations, the Board also restricted the harvest in adjacent Unit 22B in 2000.

In 2001, the Board approved with modification, two Special Action Requests (WSA01-09 and WSA01-11) to close Federal public lands to the harvest of moose by non-Federally qualified users in Unit 22B west of the Darby Mountains, Unit 22D within the Kuzitrin River drainage and west of the Tisuk River drainage and Canyon Creek, and Unit 22E, shorten the seasons in all these hunt areas except for Unit 22D west of the Tisuk River drainage, and modify Unit 22E harvest limits from one moose to one bull for the 2001 fall and winter seasons. As a follow-up to these actions, the Alaska Board of Game (BOG) addressed concerns about declining moose populations in parts of Unit 22 by shortening seasons in portions of Units 22B and 22D, adding registration permit requirements in Unit 22D, dividing Unit 22D into additional hunt areas, modifying harvest limits, and closing nonresident hunts in portions of Units 22B, 22D, and 22E. The BOG decided to restrict the season in Unit 22D remainder, despite a relatively healthier moose population. The

fall season was closed from Sept. 15–30, to match other portions of Unit 22D, in order to prevent focusing hunting efforts on the American and Agiapuk River drainages when all the other areas would have been closed. These changes went into effect in regulatory year 2002/03.

In May 2002, the Board adopted Proposal WP02-34 with modification to add State registration permit requirements to the portion of Unit 22B west of the Darby Mountains, the portion of Unit 22D that lies within the Kuzitrin River drainage, and the portion of Unit 22D west of the Tisuk River drainage, revise harvest limits to bull only hunts in Units 22B, portions of 22D (Kuzitrin River drainage and west of the Tisuk River drainage), and Unit 22E, and shorten seasons in these areas. It also closed Federal public lands in Unit 22D remainder and Unit 22E to the taking of moose except by Federally qualified subsistence users. The Board's justification stated that the closure "would improve rural subsistence harvest opportunities in an area recently deemed necessary by the State to restrict the moose harvest" (OSM 2002: 15).

ADF&G issued an emergency order in 2005, changing the State fall moose hunt in Unit 22D to Sept. 1–14. In 2005, the Board approved Special Action Request WSA05-01, which shortened the hunting season for all of Unit 22D from Aug. 20–Sept. 30 to Sept. 1–14, in response to conservation concerns from harvests exceeding the joint State/Federal harvest quota for the Kuzitrin River drainage in 2003 and 2004 (OSM 2005). Overharvest occurred in 2003 and 2004, despite State and Federal efforts to reduce the harvest by closing the seasons early.

Upon consideration of Wildlife Closure Review WCR06-15 in 2006, the Council submitted Proposal WP07-38 to eliminate the closure put in place in 2002 to all non-Federally qualified users. In 2007, the Board adopted WP07-38, eliminating the closure to non-Federally qualified users in Unit 22D remainder, and aligning Federal and State hunting season dates. The Council justified the request by stating that "land closures are no longer necessary to protect the moose population because numbers have increased unit-wide and have remained stable for at least ten years; recruitment rates are up; and bull:cow ratios are consistently high despite a five-month Federal season" (OSM 2007: 468).

In 2015, the BOG modified State regulations, transitioning to a bull moose hunt within Unit 22D remainder. In addition, for regulatory years 2015/16 and 2016/17, ADF&G established a three moose harvest quota for nonresident hunters in Unit 22D remainder to prevent excessive harvest. This harvest quota was enacted due to a decline in moose populations since 2011. ADF&G issued emergency orders in regulatory years 2015/16 and 2016/17 to close this season early due to the quota being met (ADF&G 2016a).

At its March 2016 meeting, the Council submitted Proposal 28 to the BOG, requesting elimination of the nonresident moose season in Units 22E and 22D remainder until the relationship between the changing moose population distribution and growth and decline between the subunits was better understood. During discussion of the proposal, ADF&G was asked for an overview of the moose population in the area. ADF&G brought concerns about the decreasing population numbers in Unit 22D to the attention of the Council, mentioning that moose in Unit 22D were last counted in 2014, and that declines in the population were observed in both of the major survey areas. Additionally, ADF&G noted that some Unit 22D moose may have migrated to Unit 22E. Even with the possible migration taken into consideration, a significant

decline in Unit 22D moose was observed during the 2014 survey (SPRAC 2016). Proposal 28 was adopted in Unit 22D remainder by the BOG prior to the 2017/18 regulatory year.

Special Action Request WSA16-07, submitted by BLM and requesting that the December cow season be closed, was presented to the Council on November 2, 2016. The Council supported WSA16-07, stating that hunters had expressed concern about the moose populations in the area. In particular, the Council Chair discussed the need to refrain from harvesting cow moose during population declines and asked ADF&G to explain the current levels of antlerless moose harvest and the potential impacts to the population. ADF&G noted that the average annual reported harvest of cow moose in Unit 22D over the last ten years totaled one moose per year, but that an antlerless harvest as low as 3% could have a substantial negative impact to the population. The Council Chair emphasized that this Special Action would only close the Federal cow moose hunting season for one month. The Board approved WSA16-07 on November 30, 2016.

In 2017, the same request was submitted as Special Action Request WSA17-06. The proponent, BLM, submitted this request because they believed that continued harvest of cow moose in Unit 22D remainder would lead to further declines in the moose population. The Board approved WSA17-06 with modification to change the harvest limit from one bull to one antlered bull for the harvest season of Dec. 1–Dec. 31, 2017. This modification was approved to prevent the accidental harvest of cows, since most larger bulls would have dropped their antlers by December. An antlered moose hunt was also preferred to reduce mid-winter harassment of non-antlered moose by hunters trying to distinguish the sex of the animal. It was stated that approval of this modification would help to ensure the long term viability of the moose population in Unit 22D remainder.

Similarly, in 2018, the same request was submitted as Special Action Request WSA18-03. The Board again approved this request with modification. The modified WSA18-03 that was approved by the Board limited harvest from one moose to one antlered bull in Unit 22D remainder for the remainder of the current wildlife regulatory cycle (through June 30, 2020). The harvest limit was modified through the remainder of the wildlife regulatory cycle to ensure that antlerless moose in Unit 22D remainder were protected until a proposal could be submitted to change Federal subsistence regulations.

Biological Background

Moose have been present in Unit 22 for a relatively short time, with very few being observed prior to 1930. The moose population on the Seward Peninsula grew and reached its peak in the mid-1980s (Nelson 1995, Gorn and Dunker 2014). This rise in the population was followed by multiple severe winters, which greatly reduced the population and overall moose density due to limited winter browse (Nelson 1995). Brown bear predation on calves is now considered the main limiting factor on the Unit 22 moose population; although no formal study has yet been conducted to confirm this (Gorn and Dunker 2014).

State management goals for moose in Unit 22 include maintaining a unit-wide combined population of 5,100–6,800 moose, and more specifically, maintaining a population of 2,000–2,500 moose in Unit 22D while maintaining a minimum bull:cow ratio of 30:100. The population goal in Unit 22D would provide for an increased and stabilized population following recent declines (Gorn and Dunker 2014).

During a moose population survey conducted in 2014, the population estimate for moose in all of Unit 22D was 1,106 observable moose, which represents a 13% annual rate of decline from 2011 (1,681 observable moose). Specifically in the Agiapuk River drainage survey area (within which, the Unit 22D remainder hunt area is located), the population estimate was 491 (0.39 moose/mi²) observable moose (**Figure 2**). These numbers were reported as observable moose, rather than an overall population estimate, due to the lack of a sightability correction factor for these surveys. This is a 14% annual rate of decline since the 2011 survey (Gorn 2012, Dunker 2016, pers. comm.). Another population survey was planned for March of 2018 in Units 22D and 22E, but due to inclement weather, the survey did not take place (Seppi 2018, pers. comm.).

Fall composition surveys indicate a negative change in the composition within Unit 22D remainder. Composition surveys in the Agiapuk River Drainage were conducted in 2011 for the first time since 2003, and found 38 bulls:100 cows, which was within State management goals (Gorn 2012, Dunker 2019 pers. comm.). In 2013, efforts to complete composition surveys were hampered by poor weather conditions. The limited data obtained from these attempts indicated that the bull:cow ratio had likely declined since the 2011 surveys (Dunker 2016, pers. comm.). This was confirmed during the most recent composition surveys in the area, which were completed in fall of 2016 and 2018. Results showed a bull:cow ratio of 23 and 18 bulls:100 cows, respectively, both of which are below the State management objective of 30 bulls: 100 cows (Dunker 2017, pers. comm.).

Weight measurements were collected on short-yearling (10-month old) moose in Unit 22D in April 2007–2009. Annual average weights ranged 372–393 pounds. Snowfall was greater than normal levels in both 2008 and 2009, but did not have a significant impact on average short-yearling weights. Research indicates that short-yearling weights of less than 385 pounds are considered an indication that moose are resource limited, but browse does not seem to be limiting factor in this area (Gorn and Dunker 2014). A spring recruitment survey was completed by ADF&G in April of 2018 for Unit 22D remainder. This survey provided a 12% estimate of recruitment, suggesting that recruitment is poor and the population is likely still in need of rebuilding efforts at this time (ADF&G 2018a).

Habitat

There is limited habitat data for Unit 22D. Although winter browse was seen as a limiting factor when moose density/numbers were at their highest during the mid-1980s, current moose populations have been managed based on what winter browse can easily support throughout Unit 22D. Browse is no longer viewed as a limiting factor to moose in this unit, and brown bear predation on calves is now seen as the most significant factor influencing moose numbers (Gorn and Dunker 2014).

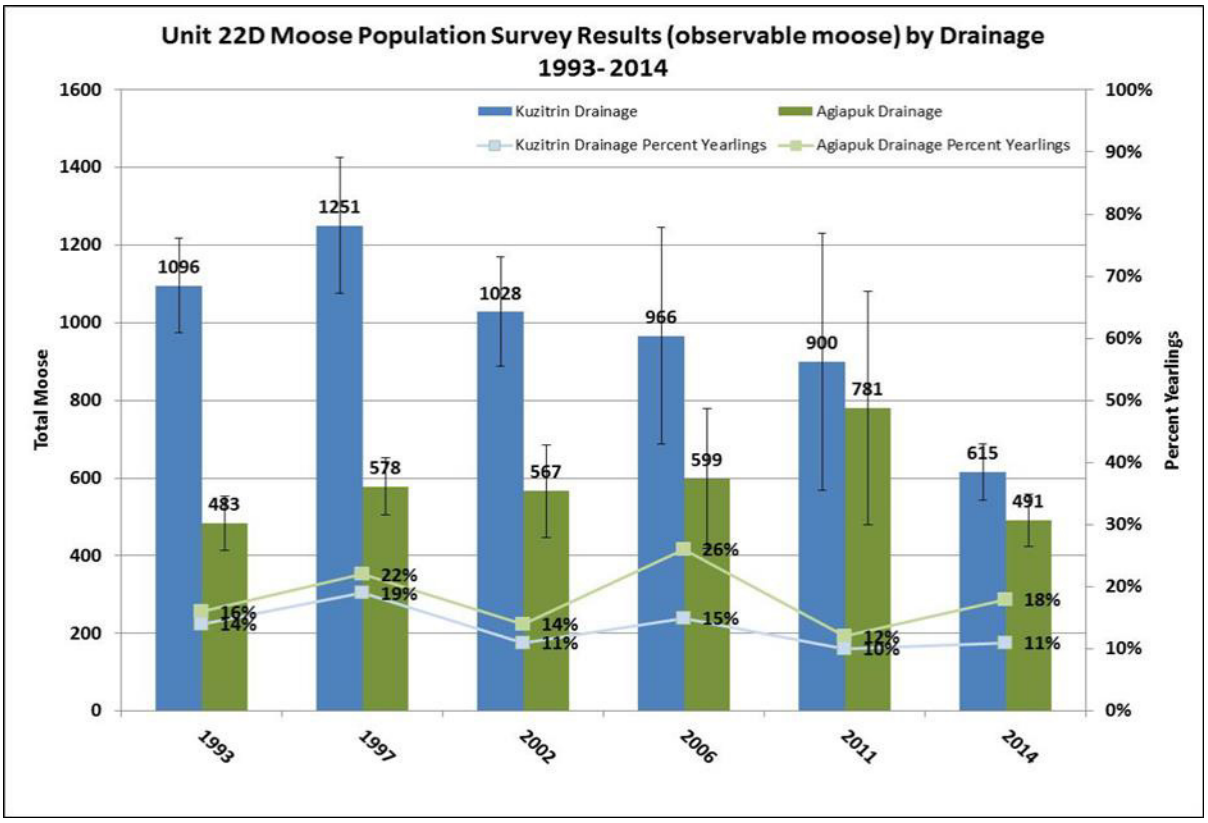


Figure 2. Unit 22D moose population survey results (Figure from Dunker 2016, pers. comm.).

Cultural Knowledge and Traditional Practices

The Seward Peninsula has been inhabited by humans for at least 12,000 years. The Kauweramiut, Malemiut, and Unalikmiut Inupiat of the Seward Peninsula have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources (Ray 1984, Kawerak 2019). Until the establishment of mission settlements and later, government schools, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources. Gold was discovered in Anvil Creek in 1898, precipitating a gold rush, settlement by outsiders, and re-distribution of the local population. Major epidemics including influenza in 1918 further reshaped populations on the Seward Peninsula (Ray 1984).

The western boundary of unit 22D remainder is contiguous with the villages of Teller and Brevig Mission; both communities hunt moose within this area (Mikow et al. 2018). The present location of Teller was established in 1900 when the Bluestone Placer Mine was created 15 miles to the south. In the 2010 (U.S. Census), Teller had 229 year-round, permanent residents (U.S. Census 2010). Brevig Mission is named after the Lutheran minister who established a reindeer herd at the current town site in 1900. During the most recent census, there were 388 year-round permanent residents of Brevig Mission (U.S. Census 2010).

Moose did not start migrating into the Seward Peninsula until the 1940s, and while caribou were hunted traditionally, their numbers declined in the region in the mid-1800s (Dau 2000). Introduced reindeer were the economic base for Brevig Mission until the 1970s, a source of food and income which has since

declined (Finstad 2007). Historically, people in the Seward Peninsula area hunted a variety of species, but as moose moved into the region in the mid-20th century, harvest of these animals grew.

Between May 2015 and May 2016, the most recent study period for which big game subsistence data is available for the area, 85% of Brevig Mission households and 55% of Teller households used moose (Mikow et al. 2018). The percentage of households using moose in each community in 2015-2016 was greater compared to a previous study period, 2011-2012, during which 43.3% of Brevig Mission and 30.5% of Teller households used moose (Mikow et al. 2014).

For the 2015-2016 study period, Brevig Mission households harvested 33 pounds of edible moose per capita, with 90% of the harvest occurring within unit 22D remainder. Teller households harvested 32 pounds of edible moose per capita, 27% of which were harvested from 22D remainder. For Teller, a higher percentage of households used moose than caribou, but that situation was reversed for Brevig Mission. The fall moose hunting season was most important for both communities. In Brevig mission, 85% of moose were taken in the fall, while in Teller 100% were taken in that season (Mikow et al. 2018).

Harvest History

Reported harvest remains well below levels seen in the 1980s, in part, due to more stringent hunting regulations in Unit 22D. According to the ADF&G harvest report website, 178 (133 male, 45 female) moose were harvested throughout Unit 22D in 1986, with 39.9% hunter success throughout the subunit (ADF&G 2018b). Conversely, 61 moose were harvested in Unit 22D in 2018, with 28% hunter success throughout the subunit (ADF&G 2018b, 2019). Average annual reported harvest from 2005 to 2018 was 66 moose (**Table 1**). The majority of moose taken over these years have been bulls. Residents of Unit 22 accounted for 73% of the total harvest between 2005 and 2018 (**Table 1**). In Unit 22D remainder, specifically, the average annual reported moose harvest by State residents between 2007 and 2017 was 17 moose (Dunker 2018, pers. comm.). Unit 22 residents, most of which were residents of Nome, accounted for 74% of the total reported harvest between 2013 and 2018 in Unit 22D remainder (**Table 2**).

Table 1. Reported moose harvest in Unit 22D for 2005–2018. Local resident harvest refers to harvest by residents of Unit 22 (ADF&G 2016b, 2017, 2018b, 2019).

Year	Species	Local Resident Harvest	Nonlocal Resident Harvest	Total Resident Harvest	Unknown Residency Harvest	Nonresident Harvest	Total Harvest	Male	Female	Unknown
2005	Moose	47	4	51	0	6	57	56	0	1
2006	Moose	47	11	58	0	8	66	65	1	0
2007	Moose	52	14	66	1	5	72	70	2	0
2008	Moose	42	10	52	1	7	60	57	1	2
2009	Moose	54	15	69	0	7	76	74	1	1
2010	Moose	39	12	51	3	4	58	55	2	1
2011	Moose	50	19	69	1	9	79	76	2	1
2012	Moose	50	12	62	1	6	69	66	2	1
2013	Moose	45	10	55	1	3	59	58	1	0
2014	Moose	43	11	54	2	8	64	61	2	1
2015	Moose	54	12	66	1	5	72	69	0	3
2016	Moose	52	8	60	0	3	63	63	0	0
2017	Moose	59	12	71	0	0	71	69	0	2
2018	Moose	47	14	61	0	0	61	61	0	0
Average:		**49**	**12**	**60**	**1**	**5**	**66**	**64**	**1**	**1**
Total:		**679**	**164**	**843**	**11**	**71**	**925**	**899**	**14**	**12**

Table 2. Unit 22D remainder moose harvest, 2013–2018, according to ADF&G Unit 22D GM000 harvest reports (ADF&G 2019). Local harvest refers to harvest by residents of Unit 22.

		Local harvest		Non-local harvest	
Year	Total Harvest	Number of moose	% of total	Number of moose	% of total
2013	12	7	58%	5	42%
2014	16	11	69%	5	31%
2015	22	17	77%	5	23%
2016	22	16	73%	6	27%
2017	35	28	80%	7	20%
2018	33	25	76%	8	24%

Effects of the Proposal

Only 8% of the Unit 22D remainder moose hunt area consists of Federal public lands. All of these Federal public lands are managed by BLM. The low amount of Federal lands located in the hunt area limits the impact that this proposal would have on non-Federally qualified users hunting in the area, but may help to provide extra protection for the moose population.

If this proposal is adopted, it would provide greater subsistence opportunity for Federally qualified subsistence users in Unit 22D remainder by limiting the users permitted to harvest on Federal public lands in this area. Limiting the number of moose harvested on BLM lands in this hunt area may also help to

ensure that users have the moose resource available for future generations. Due to low moose densities in the area and a declining population that is below State management goals, adoption of this proposal would provide additional protection for the moose population in the hunt area, which could provide benefits to the moose population in the overall unit.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-40.

Justification

The moose population in Unit 22D remainder is currently below State management goals and has been declining at a rate of 14% annually since 2011. In addition, the current estimated annual harvest is above sustainable levels. Due to this declining population, the State has removed antlerless hunts from their regulations in Unit 22 and eliminated non-resident harvest opportunity in the area. Closing Federal public lands, in Unit 22D remainder, to the harvest of moose except by Federally qualified subsistence users will provide additional help to ensure the long term viability of this moose population.

LITERATURE CITED

ADF&G. 2016a. State Closes Nonresident Moose Hunt in Remainder of Unit 22D. Emergency Order 05-05-16. Division of Wildlife Conservation. Nome, AK.

ADF&G. 2016b. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: October 26, 2016.

ADF&G. 2017. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: November 20, 2017.

ADF&G. 2018a. Wildlife Special Action WSA 18-03: Temporary Special Action Request. Letter of Comment to the Federal Subsistence Board. October 5, 2018.

ADF&G. 2018b. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: August 30, 2018.

ADF&G. 2019. General harvest reports. https://secure.wildlife.alaska.gov/index.cfm. Retrieved: March 1, 2019.

Braem, N.M., E.H. Mikow, and M.L. Kostick, eds. 2014. Chukchi Seas and Norton Sound observation network: harvest and use of wildlife resources in 9 communities in Arctic Alaska, 2012–2014. ADF&G Division of Subsistence Technical Paper No. 403. Fairbanks, AK. 797 pages.

Dau, J. 2000. Managing reindeer and wildlife on Alaska's Seward Peninsula. Polar Research 19(1), 57-62.

Dunker, W. 2016. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2017. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2018. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Dunker, W. 2019. Wildlife biologist/Area biologist. Personal communication: email. ADF&G. Nome, AK.

Finstad, G. L., Kielland, K. K., and W.S. Schneider, W. S. 2007. Reindeer herding in transition: historical and modern day challenges for Alaskan reindeer herders. Nomadic Peoples, 10(2): 31–49.

Gorn, T. 2012. Unit 22 moose management report. Pages 534–559 in P. Harper, editor. Moose management report of survey and inventory activities 1 July 2009–30 June 2011. ADF&G, Species Management Report, ADF&G/DWC/SMR-2012-5, Juneau, AK.

Gorn, T. and W. R. Dunker. 2014. Unit 22 moose management report. Pages 31-1 through 31-38 in P. Harper and Laura A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 2011–30 June 2013. ADF&G, Species Management Report ADF&G/DWC/SMR-2014-6, Juneau, AK.

Kawerak Inc. 2019. https://kawerak.org/our-region/nome/. Retrieved: May 28th, 2019.

Mikow, E. H., Gonzalez, D., and M.L. Kostick. 2018. Subsistence Wildlife Harvests in Brevig Mission, Teller, and White Mountain, Alaska , 2015 – 2016. ADF&G Division of Subsistence Special Publication No. 2018-03. Fairbanks, AK. 42 pages.

Mikow, E., Braem, N. M., and M. Kostick, M. 2014. Subsistence Wildlife Harvests in Brevig Mission, Deering, Noatak, and Teller, Alaska, 2011-2012. ADF&G Division of Subsistence Special Publication No. 2014-02. Fairbanks, AK. 47 pages.

Nelson, R.R. 1995. Unit 22 moose survey-inventory progress report. Pages 405-419 in M.V. Hicks, editor. Management report of survey-inventory activities 1 July 1993 – 30 June 1995. Federal aid in wildlife restoration progress report, Project W-24-2, W-24-3, Study 1.0. Juneau, AK.

OSM. 2002. Staff Analysis WP02-34. Pages 12-26 in Federal Subsistence Board Meeting Materials May 13-15, 2002. Office of Subsistence Management, USFWS. Anchorage, AK. 676 pp.

OSM. 2005. Staff Analysis WSA05-01. Office of Subsistence Management, USFWS. Anchorage, AK.

OSM. 2007. Staff Analysis WP07-37. Pages 467-475 in Federal Subsistence Board Meeting Materials April 30-May 2, 2007. Office of Subsistence Management, USFWS. Anchorage, AK. 643 pp.

Ray, D.J. 1984. Bering Strait Eskimo. Pages 285–302 *in* W.C Sturtevant, ed. The handbook of North American Indians, Volume 5: Arctic. Smithsonian Institution, Washington D.C.

Seppi, B. 2018. Wildlife biologist. Personal communication: phone. BLM. Nome, AK.

SPRAC. 2016. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings, March 09, 2016 in Anchorage, Alaska. Office of Subsistence Management, USFWS. Anchorage, AK.

Stern, O., E.L. Arobio, L.L. Naylor, and W.C. Thomas. 1980. Eskimos, Reindeer, and Land. University of Alaska Fairbanks – School of Agriculture and Land Resources Management Bulletin. 59: 93 pp.

U.S. Census Bureau. 2010. https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Retrieved: June 3, 2019.

WP20–41 Executive Summary	
General Description	Wildlife Proposal WP20-41 requests that the Federal public lands closure for moose in the portion of Unit 22 north of and including the Tagoomenik and Shaktoolik River drainages ("Unit 22A north") be rescinded Sep. 1 – Sep. 20, to coincide with the State's nonresident moose season. *Submitted by: Lance Kronberger.*
Proposed Regulation	**Unit 22A—Moose** *Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting* ***Sep. 21 – Aug. 31*** *except by federally qualified users hunting under these regulations* — *Aug. 1 – Sep. 30*
OSM Preliminary Conclusion	**Oppose**
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-41

ISSUES

Wildlife Proposal WP20-41, submitted by Lance Kronberger of Eagle River, requests that the Federal public lands closure for moose in the portion of Unit 22 north of and including the Tagoomenik and Shaktoolik River drainages ("Unit 22A north") be rescinded Sep. 1 – Sep. 20, to coincide with the State's nonresident moose season.

DISCUSSION

The proponent states that Federal public lands, which are remote and difficult to access, comprise a large portion of this hunt area, while the communities in the area are surrounded by State-managed land. He states that the Federal public lands closure serves to concentrate all moose hunting activities onto a small area of State-managed land, and that rescinding the closure would reduce the potential for conflicts in the field.

Existing Federal Regulation

Unit 22A—Moose

Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting except by federally qualified users hunting under these regulations	*Aug. 1 – Sep. 30*

Proposed Federal Regulation

Unit 22A—Moose

Unit 22A—that portion north of and including the Tagoomenik and Shaktoolik River drainages—1 bull. Federal public lands are closed to hunting ***Sep. 21 – Aug. 31*** *except by federally qualified users hunting under these regulations*	*Aug. 1 – Sep. 30*

Existing State Regulation

Unit 22A—Moose

Residents: One bull	*HT*	*Aug. 1 – Sep. 30*
Nonresidents: One bull with 50 inch antlers or antlers with 4 or more brow tines on at least one side	*HT*	*Sep. 1 – Sep. 20*

Extent of Federal Public Lands/Waters

The Unit 22A north hunt area is comprised of 78% Federal public lands, all of which are managed by the Bureau of Land Management (BLM) (**Figure 1**).

Customary and Traditional Use Determinations

Rural residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

Prior to 1995, Federal public lands in Unit 22A were open to moose harvest by all users. In 1995, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted Proposal P95-42, requesting that the fall moose season in Unit 22A be extended from Aug. 1 – Sep. 30 to Aug. 1 – Oct. 10. The Federal Subsistence Board (Board) adopted this proposal with modification to extend the season, as proposed, and to close Federal public lands for the Oct. 1 – Oct. 10 portion of the season to all users except residents of Unit 22A (FSB 1995a).

The Alaska Department of Fish and Game (ADF&G) subsequently submitted a Request for Reconsideration, R95-11, asserting that the Oct. 1 – Oct. 10 Federal public lands closure was not substantiated, and that the season extension violated established principles of wildlife management. The Board reversed their decision on P95-42, concurring that the season extension was not consistent with the maintenance of a healthy moose population. The Board recognized that residents of Unit 22A traditionally harvested moose in October, but were concerned that the October season extension overlapped the rut and could have led to an unsustainable harvest. As a result of the Board's decision, the fall moose season was open Aug. 1 – Sep. 30. The Board also took action to close Federal public lands in Unit 22A to the harvest of moose to all users except residents of Unit 22A during the Dec. 1 – Jan. 31 season (FSB 1995b). This pool of eligible users is smaller than the pool of Federally qualified subsistence users, defined as those who have a customary and traditional use determination and includes all residents of Unit 22.

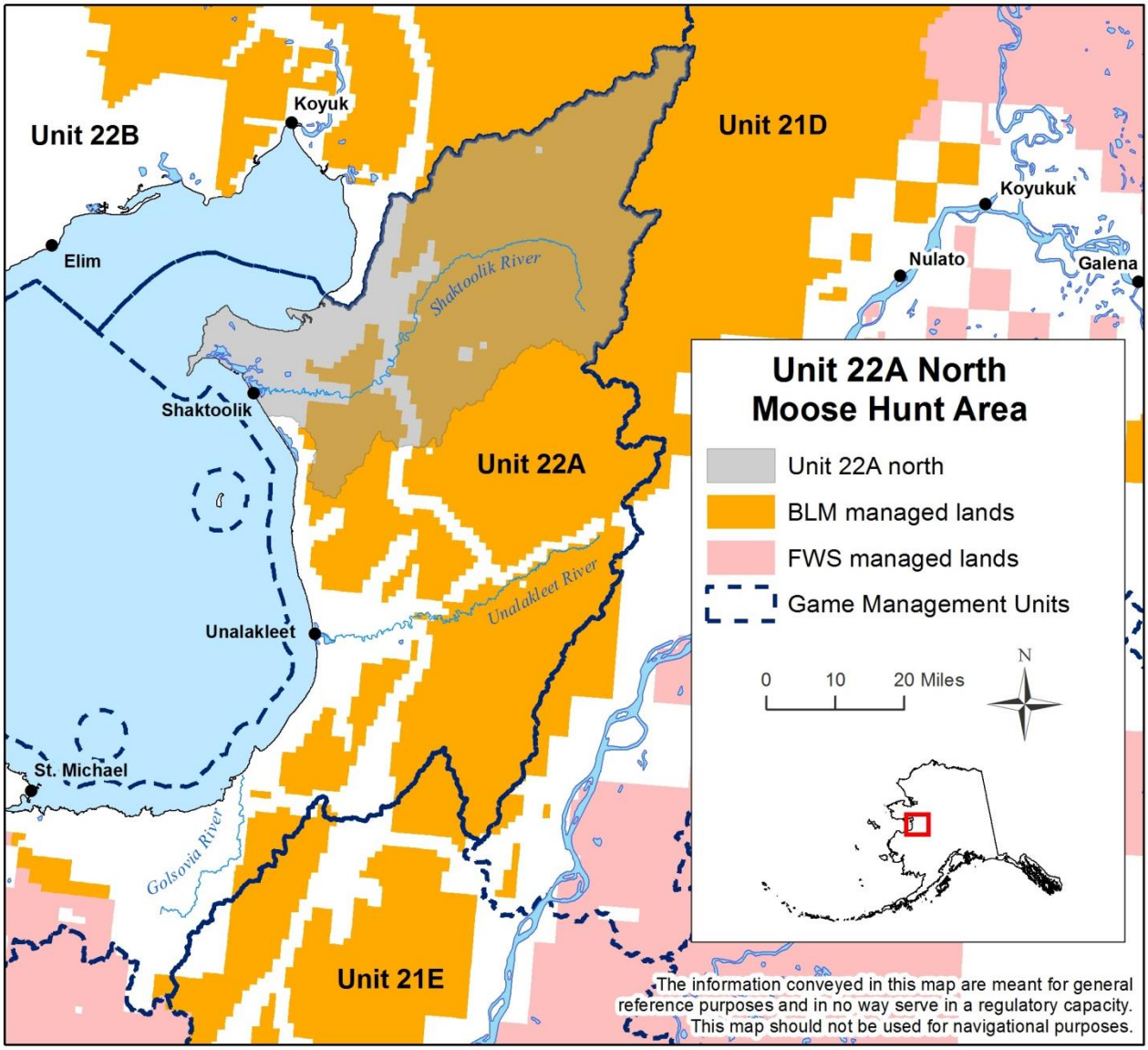


Figure 1. Unit 22A North moose hunt area.

Proposal 50 was submitted by the Council in 1996 to ensure continuation of the Aug. 1 – Sep. 30 season in Unit 22A, as well as to request closure of Federal public lands to the harvest of moose except by Federally qualified subsistence users during this season. The Board rejected this proposal (FSB 1996) but retained the Aug. 1 – Sep. 30 season.

Proposal P98-86, submitted by the Council, requested the harvest limit be changed from one antlered bull to one moose for the Aug. 1–Sep. 30 and Dec. 1–Jan. 31 seasons. The Board adopted this proposal with modification to change the harvest limit to one bull, which provided additional harvest opportunity, particularly during the winter season when many bulls are antlerless, while protecting cows (OSM 1998).

In 2003, the Alaska Board of Game (BOG) made a number of regulatory changes for moose in Unit 22. In Unit 22A, three distinct hunt areas were established, and seasons and harvest limits were adjusted to account for localized patterns of harvest. Prior to these changes, the State resident season was Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31, and the harvest limit was one bull throughout Unit 22A. The BOG's action 1) closed the winter season in North Unit 22A (north of and including the Tagoomenik and Shaktoolik River drainages), 2) shortened the fall season to Aug. 15 – Sep. 25, and closed the winter season in Central Unit 22A (Unalakleet River drainage area), 3) shortened the winter season to Dec 1 – Dec. 31, and changed the harvest limit for the winter season to one antlered bull in Unit 22A remainder (Persons 2004). These changes were scheduled to become effective in regulatory year 2004/05. However, data showing steep declines in the Unit 22A moose population prompted ADF&G to issue Emergency Order 05-05-03 in November 2003, which implemented the new regulations immediately. Due to the timing of the Emergency Order, only the winter seasons were affected. The same changes to the winter seasons were made in Federal regulation through Special Action WSA03-14, approved by the Board in December 2003 (Persons 2004).

In 2004, the Council submitted Proposal WP04-70, requesting, in part, retention of the temporary changes made through Special Action WSA03-14. Specifically, the proposal requested 1) changing the harvest limit from one bull to one antlered moose throughout Unit 22A; 2) eliminating the winter seasons in North and Central Unit 22A; 3) shortening the fall season from Aug. 1 – Sep. 30 to Aug. 15 – Sept. 30 in Central Unit 22A; and 4) closing Federal public lands throughout Unit 22A to the harvest of moose in all seasons, except by residents of Unit 22A (OSM 2004). The Board adopted Proposal WP04-70 with modification to set the harvest limit at one bull for the fall seasons and one antlered bull for the winter season in Unit 22 Remainder, and further reduce the Central Unit 22A season, to Aug. 15 – Sep. 25 (OSM 2016). These changes resulted in alignment of State and Federal moose seasons and harvest limits in Unit 22A. They also resulted in the Federal lands closure, as it currently exists.

Since 2004, there have been several regulatory changes and special action requests in the Central and Remainder hunt areas. However, Federal moose harvest regulations in Unit 22A North have remained unchanged, with an Aug. 1 – Sep.30 season, a harvest limit of one bull, and a Federal public lands closure.

The State nonresident season in the North hunt area was extended in 2017, from Sep. 1 – Sep. 14 to Sep. 1 – Sep. 20, when the BOG adopted Proposal 27 at their January 2017 meeting in Bethel. The BOG expressed concern about increasing nonresident harvest in an area where subsistence harvest is high, and deliberated the merits of requiring a registration permit, in order to closely monitor harvest. Ultimately, they concluded that the high bull:cow ratio in the area provided sufficient protection against overharvest and adopted the proposal without modification.

In 2018, Proposal WP18-38 was submitted by Lance Kronberger. He requested that the Federal public lands closure in Unit 22A North, which restricted the harvest of moose to residents of Unit 22A, be rescinded Sep. 1 – Sep. 20, to coincide with the State's nonresident season. The Board adopted WP18-38 with modification to open Federal public lands to the harvest of moose by all Federally qualified users, which includes all residents of Unit 22. The Board noted that, though growing, the

Unit 22 moose population was still at low densities, and opening Federal public lands to all users may be premature.

Biological Background

Prior to 1930, moose were scarce on the Seward Peninsula, but became a resident species by the late 1960s. Moose populations increased during the 1970s and peaked during the 1980s (Gorn 2012). There were several severe winters during the 1990s, which may have contributed to population declines during that time (Nelson 1995). Populations within Unit 22 have not recovered to peak levels of the 1980s, with brown bear predation on moose calves suspected to be a contributing factor (Gorn 2012). Current population objectives for Unit 22A, established by ADF&G, are to maintain a population of 600 – 800 moose and maintain a minimum bull:cow ratio of 30:100.

Unit 22A North is the northernmost of three moose hunt areas in Unit 22A, and is comprised of the portion of Unit 22A north of and including the Tagoomenik and Shaktoolik river drainages (**Figure 1**). In Unit 22, moose surveys are limited to select drainages (Gorn and Dunker 2014). Consequently, management decisions for moose throughout Unit 22A have typically been made based on surveys conducted in and around the Unalakleet River drainage. This survey area is located in the Central Unit 22A hunt area, adjacent to the southern Unit 22A North boundary, and contains similar habitat.

In this area, geospatial and composition surveys are used to assess moose population status. Spring geospatial surveys were conducted between 2003 and 2017 to estimate the size of the moose population in Central Unit 22A (**Table 1**). The population in this area has been increasing since 2003 and was estimated to be 840 moose (± 11%), or 0.35 moose/mi^2, in 2017. This estimate spans the upper bound of the Unit 22A management goal of 600 – 800 moose and represents a 9% annual growth rate between 2012 and 2017 (SPRAC 2017).

Table 1. Population and age class estimates for moose in Unit 22A during spring, 1989–2017 (Gorn and Dunker 2014, SPRAC 2017).

Survey area	Year	Population estimate (moose)	Density estimate (per mi^2)	% Short yearlings	Survey method
Unalakleet drainage	1989	325	0.29	16	Gassaway
	2003	75	0.04	15	Geospatial
	2005	123	0.15	8	Geospatial
	2008	339	0.14	18	Geospatial
	2012	545	0.24	19	Geospatial
	2017	840	0.35	12	Geospatial

In addition to estimates of population size, spring surveys generated age class estimates. The percent short yearlings, or ten month old calves, is an estimate of recruitment, and was 12% in 2017 (**Table 1**). This is lower than recruitment estimates in the past decade, but was characterized as adequate by the local biologists (SPRAC 2017).

Fall composition surveys were conducted between 2003 and 2016 in the Unalakleet drainage (**Table 2**). The bull:cow ratio has increased since the last survey and was 124 bulls:100 cows in 2016. This unusually high bull:cow ratio is well above the minimum population objective and raises questions about the influences of local harvest patterns and moose movements. Local biologists believe that this issue warrants further attention (BOG 2017, SPRAC 2017).

Table 2. Composition estimates for moose in the Central Unit 22A hunt area during fall, 2003 - 2016 (Gorn and Dunker 2014, SPRAC 2017).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Golsovia River	2003	50	67	26
Unalakleet River	2003	69	20	66
	2006	69	34	78
	2016	124	30	250

Cultural Knowledge and Traditional Practices

The Seward Peninsula has been inhabited by humans for at least 12,000 years. The Inupiaq and Central Yup'ik people of the region have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources. Until European contact in the early 19th century, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources (Ray 1984). During the winter months, people often lived in permanent villages along the coast where they harvested seals, belugas, other marine mammals, fish and small land mammals. During warmer months they established family fish camps near rivers and lakes to harvest fish and plant resources.

Large ungulates were not readily available on the Seward Peninsula in the 1800s. Moose did not start migrating into the area until the 1940s, and while caribou were hunted traditionally, their numbers declined in the mid-1800s (Dau 2000). Reindeer were introduced from Siberia in 1892 under a Federal program initiated by Sheldon Jackson to provide more meat for the Inupiat people in the area (Dau 2000), but as caribou moved into the area in the 1990s, the reindeer industry has declined (Finstad et al. 2007). Historically, people in the Seward Peninsula area hunted a variety of species opportunistically. As moose increased in the region during the second half of the 20th century, harvest of the animals grew.

The community of Shaktoolik is located on the eastern shore of Norton Sound, 125 miles east of Nome and 33 miles north of Unalakleet (Kawerak 2019). The Tagoomenik and Shaktoolik Rivers converge two miles northwest of the village. Shaktoolik has a mixed Unalit Yup'ik and Malimiut Inupiat heritage, but today identifies as primarily Inupiat. The community has resettled several times due to storms and flooding in recent times. The village first appears in the written records of an Imperial Russian Navy officer in 1842 (Strickling 2013). It was incorporated in 1969. In 2017, Shaktoolik had an estimated population of 278 (ADLWD 2018). Shaktoolik's economy is based on subsistence and supplemented by wage earnings (Strickling 2013).

ADF&G provides some information on the harvest of moose from their subsistence harvest surveys, but these surveys are not updated on a regular basis. Based on 2009, the most recent year for which data are available, most communities in the region, including Shaktoolik, harvested more caribou than moose, but moose were still an important part of the subsistence diet for many households (Braem 2012). In that year, Shaktoolik residents harvested 8 moose, or 18 pounds of moose per capita, and 27% of the community used moose through direct harvest or sharing (Braem 2012).

Harvest History

Most of the reported harvest within Unit 22A is attributable to local residents, defined here as Federally qualified subsistence users. On average, reported harvest was 27 moose annually for the 2003 – 2018 regulatory years. During this time period, 72% of the reported moose harvest was taken by local residents, while nonlocal residents of Alaska harvested 7%, and nonresidents harvested 18% of the total reported harvest (ADF&G 2019a). For the most recent five years, 2014 – 2018, reported harvest has been higher, averaging 39 moose annually. For those years, local residents took a smaller percentage of the reported harvest (66%) while non-residents took a larger percentage (24%) (ADF&G 2019a; OSM 2019).

Reported moose harvest in Unit 22A is not evenly distributed among the three hunt areas. This observation cannot be explained solely on the basis of human population size and expected harvest pressure. For instance, the Central Unit 22A hunt area is home to 36% of Unit 22A residents, but accounts for 58% of the total reported harvest. In contrast, the remaining two hunt areas (Unit 22A North and Unit 22A Remainder) contain 64% of the human population but account for only 40% of the total moose harvest (ADLWD 2018; ADF&G 2019a; OSM 2019). One likely explanation for this disparity is the difference among hunt areas in permit requirements and associated reporting rates. Specifically, Central Unit 22A requires a State or Federal registration permit, which includes penalties for non-reporting, while the remaining hunt areas require a harvest ticket that includes no such penalties.

This suggests that reported harvest (**Figure 2**) does not sufficiently represent actual harvest within Unit 22A North. This may be particularly true for harvest among local users, who have reported no harvest within the last three years. Additional insight can be gained by considering results from household surveys. These surveys show that moose harvest by residents of Shaktoolik, the only community within this hunt area, was 21, 14, and 10 moose in 1998, 1999, and 2003, respectively (ADF&G 2019b). This contrasts with the reported harvest of two moose in 2003 by local residents within Unit 22A North (ADF&G 2019a). Local biologists estimate total moose harvest within Unit 22A North to be 10 – 15 moose per year, which results in a 2 – 4% harvest rate. They indicate that harvest above 5 – 6% (conservatively, 20 moose) is not recommended without additional information about the moose population (BOG 2017).

Although reported harvest in Unit 22A North likely does not represent the magnitude of harvest, it may provide insight into hunting patterns among local users. Of local hunters who reported their harvest 2003 - 2018, 53% harvested moose in the month of August, while 41% harvest in September. This pattern does not hold in recent years, however, with all reported harvest since 2013 occurring in

September (ADF&G 2019a). Hunting occurs primarily along the Shaktoolik River corridor, which provides access well into the eastern portion of the hunt area (BOG 2017), and 71% percent of local harvest occurred in either the Shaktoolik or Tagoomenik drainages (ADF&G 2019a).

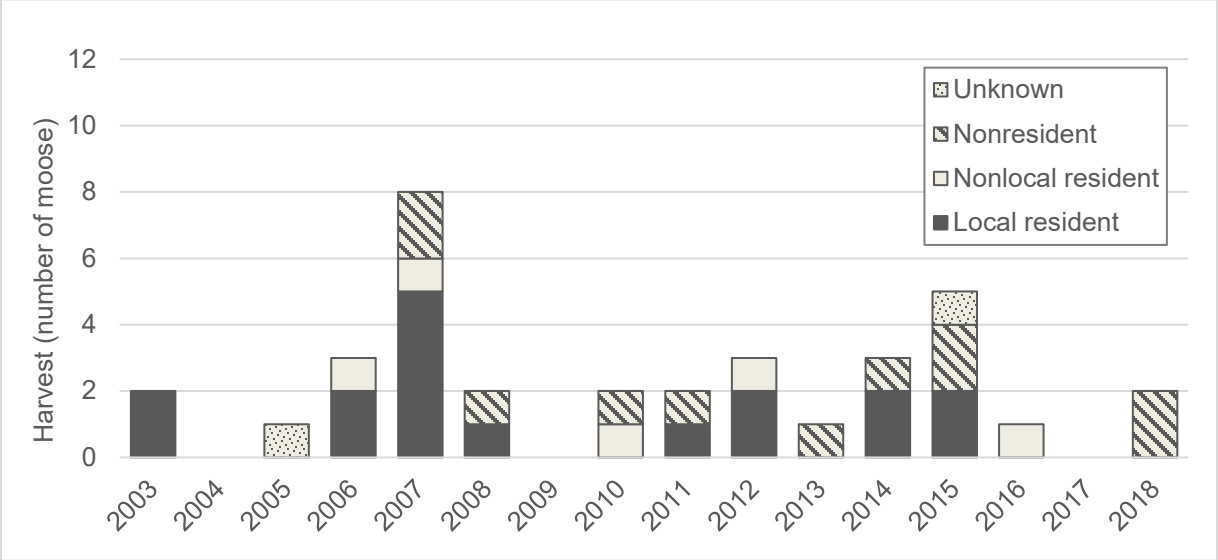


Figure 2. Reported moose harvest among local users in Unit 22A North, 2003 – 2018 (ADF&G 2019a; OSM 2019).

Reported harvest is also likely to be a relatively reliable accounting of harvest among non-resident hunters in Unit 22A North. Assuming so, non-resident harvest appears to have increased. In the most recent five year period, 5 moose were reported harvested by non-residents, while in each of the previous five year periods, 3 moose were harvested by non-residents (ADF&G 2019a). Non-resident harvest remains low, however (**Figure 2**).

Guide and Transporter Use

Guides are regulated by the Alaska Big Game Commercial Services Board. To operate within a specific guide use area, a guide must be registered in that guide use area and it must be within a game management unit in which they are licensed to conduct hunts. In addition, guides must be authorized to operate within a given area by the public or private land owner (ADCCE 2019). BLM, the only Federal land manager in Unit 22A North, requires that guides be permitted to operate on BLM managed lands. The BLM permit authorizes a guide to establish a hunting camp at a specific location (Seppi 2019, pers. comm.). Though transporters must also be licensed by the Alaska Big Game Commercial Services Board, they are not required to secure permits to operate on BLM lands. Consequently, there is no cap on the number of transporters operating on BLM lands (ADCCE 2019; Seppi 2019, pers. comm.).

In Guide Use Area 22-07, which encompasses Unit 22A North, there are five active guides, none of whom are currently permitted to operate moose hunts on Federal public lands on account of the Federal public lands closure (ADCCE 2019; Seppi 2019, pers. comm.). At its April 2019 meeting, the

Council expressed concern about the potential impacts of guided moose hunting on moose migration into Unit 22A.

Effects of the Proposal

If this proposal is adopted, Federal public lands within the Unit 22A North moose hunt area will be open to all users Sep. 1 – Sep. 20, a period that coincides with the State's nonresident season. Rescinding the Federal public lands closure will allow any of the five guides registered to operate within the hunt area to seek BLM permits to operate on Federal public land. It will also allow transporters to operate on these lands in support of non-Federally qualified users.

This action may result in additional harvest by nonlocal users. In particular, nonresident hunting pressure may increase, given the 2018 addition of 6 days to what was previously a 14 day nonresident State season, combined with the potential for increased guide use. Hunting pressure from nonlocal residents may increase as well, as moose hunting on Federal public lands will be allowable for 20 days of a 61 day resident State season. The Shaktoolik River provides access to Federal public lands, which increases the chances that rescinding the closure will result in additional nonlocal hunting pressure.

Given our limited understanding of the population status in the specific area, there is some uncertainty whether increased harvest will have a significant impact on the moose population. Recent surveys in Unit 22A indicate that the population has increased over the past decade, but it remains at a low density. High bull:cow ratios suggest that the population can sustain additional bull harvest, although these ratios also raise questions about local population dynamics and patterns of dispersal.

Federally qualified subsistence users in Unit 22 may be affected by rescission of the Federal lands closure. If additional harvest has detrimental effects on the moose population, there will be long-term negative effects for local users. In addition, an increase in nonlocal users may result in increased user conflict in the area, particularly along the Shaktoolik River. While the lower portion of the river is bounded by non-Federal lands and is currently open to all users, most of the upper portion of the river is bounded by Federal lands and is currently open only to residents of Unit 22. In addition, local harvest in recent years occurs primarily in September, which coincides with the State's nonresident season.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP20-41.

Justification

It is unknown what effect rescinding the closure in Unit 22A North will have on the moose population in the area, or on subsistence users. Moose densities in Unit 22A, while improving, remain low. Local biologists believe that the population can sustain a small amount of additional harvest. However, acknowledging uncertainties in estimates of population size and harvest, the most

conservative estimate suggests that a harvest increase of just five moose annually will result in maximum harvest levels recommended by ADF&G. The proponent's assertion that opening Federal public lands will reduce user conflict by decentralizing use may have merit as it relates to guided hunters who access the hunt area via aircraft. However, it can't be assumed that opening Federal public lands won't result in increased access to the hunt area via the Shaktoolik River, resulting in potential adverse effects to subsistence users.

When the Board considered this action in 2018, they declined to fully rescind the Federal public lands closure, noting that such a move may be premature. Rather, they opened Federal public lands to all Federally qualified subsistence users, which, along with the longer nonresident season implemented by the BOG in 2018, represented an incremental approach. To date, we have only one year's harvest data to assess the effect of these regulatory changes and there have been no updates on the moose population status since the Board's 2018 decision. Consequently, there is little additional evidence to inform a decision, beyond what was available in 2018. Maintaining the status quo until additional information is available is the most conservative approach and provides an assurance that subsistence use continues to be prioritized in an ambiguous circumstance.

LITERATURE CITED

ADF&G. 2019a. Winfonet. Retrieved May 22, 2019.

ADF&G. 2019b. Community Subsistence Information System. http://www.adfg.alaska.gov/sb/CSIS/. Retrieved: May 28, 2019.

ADCCE. 2019. Alaska Department of Commerce, Community, and Economic Development. https://www.commerce.alaska.gov/web/cbpl/ProfessionalLicensing/BigGameCommercialServicesBoard.aspx. Retrieved May 23, 2019.

ADLWD. 2018. Alaska Population Overview, 2017 Estimates. Alaska Department of Labor and Workforce Development, Research and Analysis Section, Juneau, AK.

BOG. 2017. Audio transcripts of the Alaska Board of Game proceedings. January 9, 2017. Bethel, AK. ADF&G. Juneau, AK.

Braem, N. M. 2012. Subsistence wildlife harvests in Ambler, Buckland, Kiana, Kobuk, Shaktoolik, and Shishmaref, Alaska 2009-2010. Special Publication No. SP2012-003. Fairbanks, AK.

Dau, J. 2000. Managing reindeer and wildlife on Alaska's Seward Peninsula. Polar Research 19(1): 57-62.

Finstad, G. L., Kielland, K. K., and W.S. Schneider, W. S. 2007. Reindeer herding in transition: historical and modern day challenges for Alaskan reindeer herders. Nomadic Peoples, 10(2): 31–49.

FSB. 1995a. Transcripts of Federal Subsistence Board proceedings. April 12, 1995. Office of Subsistence Management, FWS. Anchorage, AK.

FSB. 1995b. Transcripts of Federal Subsistence Board proceedings. September 26, 1995. Office of Subsistence Management, FWS. Anchorage, AK.

FSB. 1996. Transcripts of Federal Subsistence Board proceedings. May 1, 1996. Office of Subsistence Management, FWS. Anchorage, AK.

Gorn, T. 2012. Unit 22 moose management report. Pages 534–559 *in* P. Harper, editor. Moose management report of survey and inventory activities 1 July 2009–30 June 2011. ADF&G. Juneau, AK.

Gorn, T. and W.R. Dunker. 2014. Unit 22 management report. Pages 31-1 – 31-38 *in* P. Harper and L.A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 2011 – 30 June 2013. ADF&G. Juneau, AK.

Kawerak, Inc. 2019. Shaktoolik. https://kawerak.org/our-region/shaktoolik/. Retrieved: May 28th, 2019.

Nelson 1995, R. R. Unit 22 moose survey-inventory progress report. Pages 405–419 *in* M. V. Hicks, editor. Management report of survey-inventory activities 1 July 1993 – 30 June 1995. ADF&G. Juneau, AK.

OSM. 1998. Staff analysis WP98-86. Pages Seward Peninsula Region 33 – 42 *in* Federal Subsistence Board Meeting Materials. May 4 – 8, 1998. Office of Subsistence Management, USFWS. Anchorage, AK. 1449 pages.

OSM. 2004. Staff analysis WP04-70. Pages 660–677 in Federal Subsistence Board Meeting Materials. May 18-21, 2004. Office of Subsistence Management, USFWS. Anchorage, AK. 849 pages.

OSM. 2016. Federal subsistence permit system. Microcomputer database, accessed June 10, 2016. Anchorage, AK.

OSM. 2019. OSM proposal document library. Microcomputer database, accessed May 26, 2010. Anchorage, AK.

Persons, K. 2004. Unit 22 moose management report. Pages 496–522 in C. Brown, ed. Moose management report of survey and inventory activities 1 July 2001–30 June 2003. ADF&G. Juneau, AK.

Ray, D.J. 1984. Bering Strait Eskimo. Pages 285–302 *in* W.C Surtevand, ed. The handbook of North American Indians, Volume 5: Arctic. Smithsonian Institution, Washington D.C.

Seppi, B. 2019. Wildlife biologist. Personal communication: phone and email. Anchorage Field Office. BLM. Anchorage, AK.

SPRAC. 2017. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings. March 6 – 7, 2017. Nome, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

Strickling, S. E. 2013. Shaktoolik local economic development plan 2013-2018. Kawerak. Nome, AK.

WP20–42 Executive Summary	
General Description	Wildlife Proposal WP20-42 requests that the Federal public lands closure in the Unit 22A remainder moose hunt area be rescinded Sep. 1 – Sep. 30, to coincide with the State's nonresident moose season. *Submitted by: Lance Kronberger.*
Proposed Regulation	**Unit 22—Moose** *Unit 22A, remainder—1 bull. However, during the period Jan. 1 – Feb. 15, only an antlered bull may be taken. Federal public lands are closed to the taking of moose* ***Oct. 1 – Aug. 31*** *except by federally qualified subsistence users* *Aug. 1 – Sep. 30* *Jan. 1 – Feb. 15*
OSM Preliminary Conclusion	**Oppose**
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-42

ISSUES

Wildlife Proposal WP20-42, submitted by Lance Kronberger of Eagle River, requests that the Federal public lands closure in the Unit 22A remainder moose hunt area be rescinded Sep. 1 – Sep. 30, to coincide with the State's nonresident moose season.

DISCUSSION

The proponent notes that the Federal public lands in Unit 22A remainder, which are currently closed to non-Federally qualified users, are adjacent to Unit 18, which has very high moose densities.

Existing Federal Regulation

Unit 22—Moose

Unit 22A, remainder—1 bull. However, during the period Jan. 1 – Feb. 15, only an antlered bull may be taken. Federal public lands are closed to the taking of moose except by federally qualified subsistence users	*Aug. 1 – Sep. 30* *Jan. 1 – Feb. 15*

Proposed Federal Regulation

Unit 22—Moose

Unit 22A, remainder—1 bull. However, during the period Jan. 1 – Feb. 15, only an antlered bull may be taken. Federal public lands are closed to the taking of moose ***Oct. 1 – Aug. 31*** *except by federally qualified subsistence users*	*Aug. 1 – Sep. 30* *Jan. 1 – Feb. 15*

Existing State Regulation

Unit 22A—Moose

Residents: One bull	*HT*	*Aug. 1 – Sep. 30*

OR

Residents: On antlered bull	*HT*	*Jan. 1 – Jan. 31*
Nonresidents: One bull with 50 inch antlers or antlers with 4 or more brow tines on at least one side	*HT*	*Sep. 1 – Sep. 30*

Extent of Federal Public Lands

Unit 22A remainder is comprised of 50% Federal public lands and consists of 43% U.S. Fish and Wildlife Service (USFWS) managed lands and 7% Bureau of Land Management (BLM) managed lands (**Figure 1**).

Customary and Traditional Use Determinations

Residents of Unit 22 have a customary and traditional use determination for moose in Unit 22.

Regulatory History

Prior to 1995, Federal public lands in Unit 22A were open to moose harvest by all users. In 1995, the Seward Peninsula Subsistence Regional Advisory Council (Council) submitted Proposal P95-42, requesting that the 1995 fall moose season in Unit 22A be extended from Aug. 1 – Sep. 30 to Aug. 1 – Oct. 10. The Federal Subsistence Board (Board) adopted this proposal with modification to extend the season, as proposed, and to close Federal public lands for the Oct. 1 – Oct. 10 portion of the season to all users except residents of Unit 22A (FSB 1995a).

The Alaska Department of Fish and Game (ADF&G) subsequently submitted a Request for Reconsideration, R95-11, asserting that the Oct. 1 – Oct. 10 Federal public lands closure was not substantiated, and that the season extension violated established principles of wildlife management. The Board reversed their decision on P95-42, concurring that the season extension was not consistent with the maintenance of a healthy moose population. The Board recognized that residents of Unit 22A traditionally harvested moose in October, but were concerned that the October season extension overlapped the rut and could have led to an unsustainable harvest. As a result of the Board's decision, the fall moose season was open Aug. 1 – Sep. 30. The Board also took action to close Federal public lands in Unit 22A to the harvest of moose to all users except residents of Unit 22A during the Dec. 1 – Jan. 31 season (FSB 1995b).

Proposal 50 was submitted by the Council in 1996 to ensure continuation of the Aug. 1 – Sep. 30 season in Unit 22A, as well as to request closure of Federal public lands to the harvest of moose except by Federally qualified subsistence users during this season. The Board rejected this proposal (FSB 1996) but retained the Aug. 1 – Sep. 30 season.

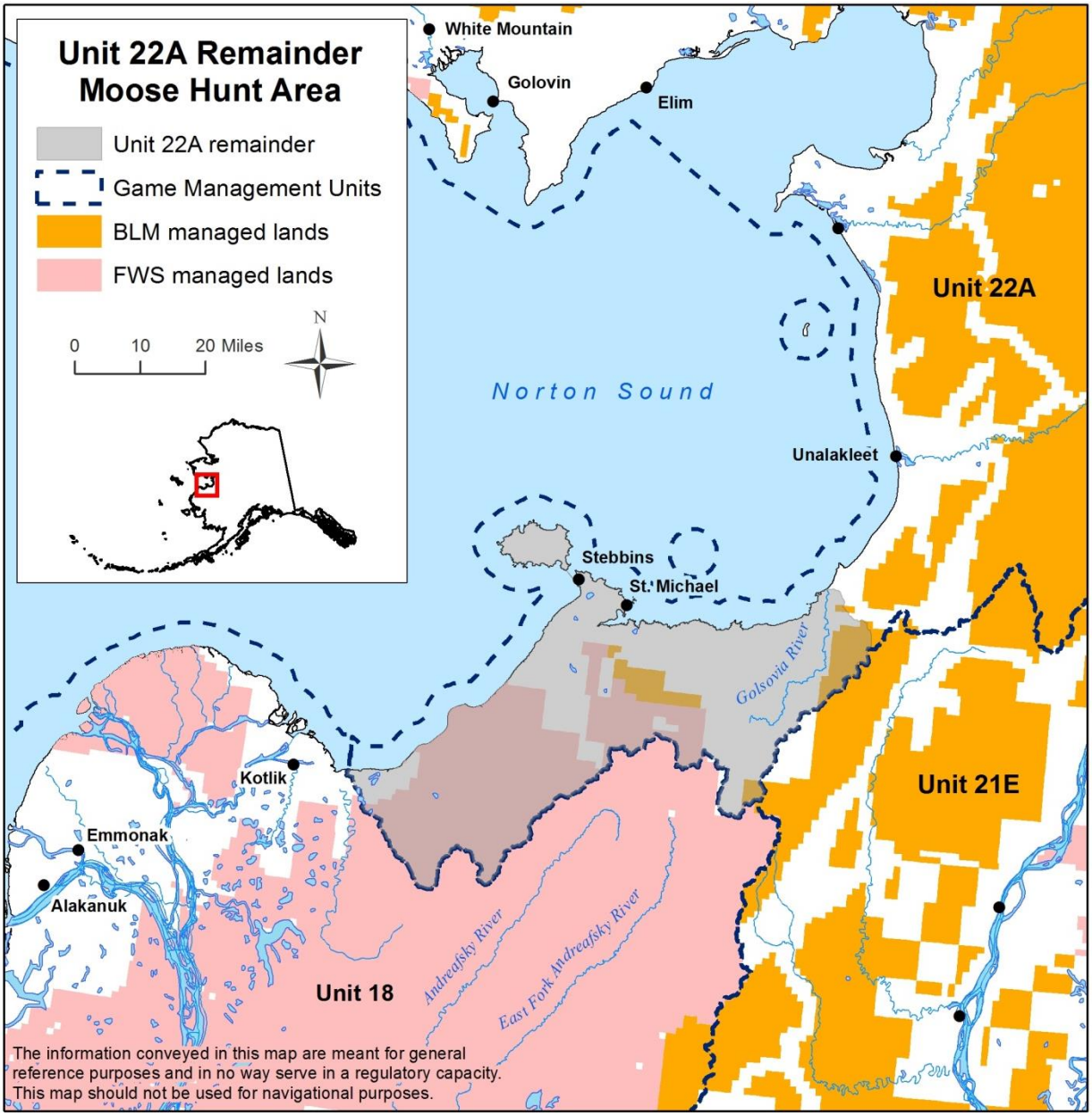


Figure 1. Unit 22A remainder moose hunt area.

Proposal P98-86, submitted by the Council, requested the harvest limit be changed from one antlered bull to one moose for the Aug. 1– Sep. 30 and Dec. 1 – Jan. 31 seasons. The Board adopted this proposal with modification to change the harvest limit to one bull, which provided additional harvest opportunity, particularly during the winter season when many bulls are antlerless, while protecting cows (OSM 1998).

In 2003, the Alaska Board of Game (BOG) made a number of regulatory changes for moose in Unit 22. In Unit 22A, three distinct hunt areas were established, and seasons and harvest limits were adjusted to account for localized patterns of harvest. Prior to these changes, the State resident season was Aug. 1 – Sep. 30 and Dec. 1 – Jan. 31, and the harvest limit was one bull throughout Unit 22A. The BOG's

action 1) closed the winter season in North Unit 22A (north of and including the Tagoomenik and Shaktoolik River drainages); 2) shortened the fall season to Aug. 15 – Sep. 25, and closed the winter season in Central Unit 22A (Unalakleet River drainage area); and 3) shortened the winter season to Dec. 1 – Dec. 31, and changed the harvest limit for the winter season to one antlered bull in Unit 22A remainder (Persons 2004). These changes were scheduled to become effective in regulatory year 2004/05. However, data showing steep declines in the Unit 22A moose population prompted ADF&G to issue Emergency Order 05-05-03 in November 2003, which implemented the new regulations immediately. Due to the timing of the Emergency Order, only the winter seasons were affected. The same changes to the winter seasons were made in Federal regulation through Special Action WSA03-14, approved by the Board in December 2003 (Persons 2004).

In 2004, the Council submitted Proposal WP04-70, requesting, in part, retention of the temporary changes made through Special Action WSA03-14. Specifically, the proposal requested 1) changing the harvest limit from one bull to one antlered moose throughout Unit 22A; 2) eliminating the winter seasons in North and Central Unit 22A; 3) shortening the fall season from Aug. 1 – Sep. 30 to Aug. 15 – Sept. 30 in Central Unit 22A; and 4) closing Federal public lands throughout Unit 22A to the harvest of moose in all seasons, except by residents of Unit 22A (OSM 2004). The Board adopted Proposal WP04-70 with modification to set the harvest limit at one bull for the fall seasons and one antlered bull for the winter season in Unit 22 remainder, and further reduce the Central Unit 22A season, to Aug. 15 – Sep. 25 (OSM 2016). These changes resulted in alignment of State and Federal moose seasons and harvest limits in Unit 22A. They also resulted in the Federal lands closure, as it currently exists.

Due in part to low population and recruitment estimates, portions of Unit 22A were affected by temporary regulatory changes in 2005 that were subsequently adopted into Federal regulation by Board action in 2006. In Unit 22A remainder, harvest seasons were shifted from Dec. 1 – Dec. 31 to Jan. 1 – Jan. 31 in 2005 with the Board's approval of Special Action WSA05-12/13 and in 2006 with the adoption of Proposal WP06-38 (OSM 2016). These changes provided communities more harvest opportunity, due to more favorable hunting conditions later in the winter, but were not expected to affect the moose population due to the scarcity of mature antlered bulls at this time of year. The modified season in Unit 22A mirrored State regulation changes associated with the adoption of State Proposal 6 and Emergency Order 05-08-05 in 2005, and resulted in reduced regulatory complexity.

Proposal WP10-80, submitted by the Stebbins Community Association, requested that the winter moose season in Unit 22A remainder be shifted from Jan. 1 – Jan. 31 to Jan. 15 – Feb. 15. The Board adopted the proposal with modification to extend the season to February 15, but keep the January 1 start date. The modification provided additional harvest opportunity to Federally qualified subsistence users (OSM 2016).

In the past decade, inclement weather has affected winter moose harvest in Unit 22A remainder and resulted in multiple special action requests to extend seasons. Special Action WSA07-08, submitted by the Stebbins Community Association, requested that a Feb. 1 – Mar. 1, 2008 bull season be added in Unit 22A remainder to provide additional harvest opportunity. The Board approved the special action, but modified the season to Feb. 27 – Mar. 5 because a decision could not be made in time to

accommodate the original request. Special Action WSA08-17 extended the winter bull moose season on Federal public lands within Unit 22A remainder an additional two weeks (Feb. 7 – Feb. 20) in 2009. The season extension was approved by the Board to provide additional harvest opportunities for Federally qualified subsistence users after a period of inclement weather and high gas prices prevented users from hunting moose (OSM 2016). The winter of 2011/2012 was unusually cold and prevented many Federally qualified subsistence users from harvesting moose during the Jan. 1 – Feb. 15 season in Unit 22A remainder. In February 2012, Special Action WSA11-09 was approved by the Board (OSM 2016) and Emergency Order 05-06-12 was issued by the State to provide a 14-day extension to the winter moose season to provide additional harvest opportunity.

In 2017, Temporary Special Action WSA17-01, submitted by Lance Kronberger of Eagle River, requested that the Federal public lands closure in Unit 22A remainder be rescinded Sep. 1 – Sep. 30, 2017. The proponent asserted that the moose population in this hunt area had grown considerably, due in part to the rapid growth of the Unit 18 moose population. The Board rejected this request on the grounds that conservative management of the Unit 22A remainder moose population was still warranted, but acknowledged that continued review of the issue was prudent to ensure that the closure remained justifiable.

The request to open Federal public lands in Unit 22A remainder during the State's nonresident season was resubmitted by Mr. Kronberger as WP18-37. The Board adopted the proposal with modification to open Federal public lands to all Federally qualified subsistence users. Previously, moose hunting was authorized only by residents of Unit 22A. In their deliberation, the Board expressed the difficulty of the decision, noting the absence of clear biological evidence in support of full rescission of the closure. They opted for the more conservative incremental liberalization, but again expressed an interest in additional population level information that might support rescission of the closure in the future.

Biological Background

Prior to 1930, moose were scarce on the Seward Peninsula, but became a resident species by the late 1960s. Moose populations increased during the 1970s and peaked during the 1980s (Gorn 2012). There were several severe winters during the 1990s, which may have contributed to population declines during that time (Nelson 1995). Populations within Unit 22 have not recovered to peak levels of the 1980s, with brown bear predation on moose calves suspected to be a contributing factor (Gorn 2012).

Unit 22A remainder is the southernmost of three moose hunt areas in Unit 22A, and is comprised of the portion of Unit 22A south of and including the Golsovia River drainage (**Figure 1**). In Unit 22, moose surveys are limited to select drainages. Population estimates do not exist for Unit 22A remainder, and composition data has not been updated since 2003 (Gorn and Dunker 2014). Consequently, this analysis will rely on more recent population estimates in adjacent areas, the Central Unit 22A hunt area to the northeast, Unit 21E to the southeast, and Unit 18 to the south.

Central Unit 22A

Spring surveys were conducted between 1989 and 2017 to estimate the size of the moose population in Central Unit 22A (**Table 1**). The population in this area has been increasing since 2003 and was estimated to be 840 moose (± 11%), or 0.35 moose/mi^2, in 2017. This estimate spans the upper bound of the Unit 22A management goal of 600 – 800 moose, and represents a 9% annual growth rate between 2012 and 2017. In addition to estimates of population size, spring surveys generated age class estimates. The percent short yearlings, or ten month old calves, is an estimate of recruitment, and was 12% in 2017 (**Table 1**). This was lower than recruitment estimates in the previous decade, but was characterized as adequate by the Unit 22 Area Biologist (SPRAC 2017).

Table 1. Population and age class estimates for moose in the Central Unit 22A hunt area during spring, 1989 – 2017 (Gorn and Dunker 2014, SPRAC 2017).

Survey area	Year	Population estimate (moose)	Density estimate (per mi^2)	% Short yearlings	Survey method
Unalakleet drainage	1989	325	0.29	16	Gassaway
	2003	75	0.04	15	Geospatial
	2005	123	0.15	8	Geospatial
	2008	339	0.14	18	Geospatial
	2012	545	0.24	19	Geospatial
	2017	840	0.35	12	Geospatial

Fall composition surveys were conducted between 2003 and 2016 in the Unalakleet drainage (**Table 2**). The bull:cow ratio has increased since the last survey and was 124 bulls:100 cows in 2016. This unusually high bull:cow ratio is well above the goal of at least 30 bulls:100 cows, and raises questions about the influences of local harvest patterns and moose movements. Local biologists believe that this issue warrants further attention (BOG 2017, SPRAC 2017).

Table 2. Composition estimates for moose in the Central Unit 22A hunt area during fall, 2003 – 2016 (Gorn and Dunker 2014, SPRAC 2017).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Golsovia River	2003	50	67	26
Unalakleet River	2003	69	20	66
	2006	69	34	78
	2016	124	30	250

Unit 21E

Moose are present throughout Unit 21E. Prior to 2000, population trends were difficult to assess due to changing survey areas and methodologies (Boudreau 2002). However, local residents reported declining populations beginning in the mid-1990s, and the BOG established an intensive management plan to reduce predators for Unit 21E in 2010 (ADF&G 2016).

Surveys conducted between 2000 and 2012 indicate that the population in this area was relatively stable during this period, varying between and 0.9 and 1.2 moose/mi^2 (**Table 3)**. The most recent survey was conducted in 2019, when the moose population was estimated to be 8,607 moose, or 2.1 moose/ mi^2, within the Wolf Control Focus Area (WCFA), which comprises ~80% of the historical survey area. The population is believed to be stable and exceeds the intensive management objective of 1.0 moose/mi^2 (Peirce 2014; Peirce 2017, pers. comm.; Burch 2019, pers. comm.). To date, wolf control has not been initiated in Unit 21E (ADF&G 2016).

Table 3. Population estimates for moose in Unit 21E, 2000 – 2019 (Peirce 2014, Peirce 2017, pers comm.; Burch 2019, pers. comm.).

Survey area	Year	Population estimate ± 90% Confidence Interval (moose)	Density estimate (per mi^2)	Survey method
Unit 21E	**2000**	5,151 ± 13%	1.0	Gassaway
	2005	4,673 ± 17%	0.9	Geospatial
	2009	6,218 ± 17%	1.2	Geospatial
	2012	5,710 ± 16%	1.1	Geospatial (w/ SCF[a])
	2012[b]	5,398 ± 19%	1.3	Geospatial (w/ SCF[a])
	2016[b]	8,372 ± 18%	2.0	Geospatial (w/ SCF[a])
	2019[b]	8,607 ± 27%	2.1	Geospatial (w/ SCF[a])

[a]Sightability Correction Factor

[b]Results reported for the WCFA, which is smaller than the historical survey area. The WCFA differed in slightly in size among survey years.

Bull:cow ratios in Unit 21E were high between 2008 and 2011 (**Table 4**), exceeding the management objective of 25 – 30 bulls:100 cows. In 2011, the last time composition surveys were conducted, the calf:cow ratio was 47 calves:100 cows, exceeding the management objective of 30 – 40 calves:100 cows.

It is unknown to what degree moose dispersal is influencing local moose densities in this area. Given the recent growth of the Unit 21E moose population, dispersal into Unit 22A could be occurring above historical levels and may be contributing to observations by locals and guides that there have been more moose in Unit 22A in recent years.

Table 4. Composition estimates for moose in Unit 21E during fall, 2008 – 2011 (Peirce 2014). Data from the 2009 survey, which was only partially completed, is not shown.

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows	Total moose observed
Unit 21E	2008	62	37	186
	2010	61	51	287
	2011	64	47	201

Unit 18

Moose began to immigrate into the Yukon-Kuskokwim Delta during the mid- to late-1940s and have become an important subsistence resource for locals. Most of the Yukon-Kuskokwim Delta is lowland treeless tundra and is not suitable as winter moose habitat. Consequently, much of the region supports only low to very low density moose populations. However, productive habitat does exist along river corridors. The Yukon River population currently occupies most of the available riparian habitat, is at moderate to high density, is growing, and has high calf production and yearling recruitment (Perry 2014). Several moose survey areas exist in Unit 18, with the Lowest Yukon and Andreafsky areas being the most relevant to this analysis.

Between 1988 and 2008, surveys to estimate population size were conducted in the Lowest Yukon survey area of Unit 18 (**Table 5**). At that time, the survey area encompassed the riparian corridor along the main stem of the Yukon River downstream of Mountain Village (Perry 2014). The population grew significantly during that time, coincident with a six year harvest moratorium in the area. In February 2017, a survey was conducted in an expanded survey area to accommodate the widening distribution of the moose. The results of that survey estimate the current population to be 8,226 moose in the expanded survey area, or 4.7 moose/mi^2. For comparison purposes, the moose density within the original survey area was calculated to be 4.8 moose/mi^2 in 2017, compared to 2.4 moose/mi^2 in 2008.

In addition to surveys aimed at estimating population size, composition surveys have been conducted periodically (**Table 6**). In 2013, the bull:cow ratio was 40 bulls:100 cows, exceeding the management objective of 30 bulls:100 cows. The 2013 survey indicated that the calf:cow ratio was 48 calves:100 cows, a notable decline since 2005, when there were 92 calves:100 cows (Perry 2006, 2008, 2014; Rearden 2015).

Table 5. Population estimates for moose in portions of Unit 18, 1988 – 2017 (Rearden 2015, 2017, pers. comm.).

Survey area	Year	Population estimate ± 95% Confidence Interval (moose)	Density estimate (per mi^2)	Survey method
Lowest Yukon	1988	0	NA	Minimum count
	1992	28	0.0	Minimum count
	1994	65	0.0	Minimum count
	2002	674 ± 21%	0.6	Geospatial
	2005	1,342 ± 21%	1.1	Geospatial
	2008	2,827 ± 11%	2.4	Geospatial
	2008	3,319 ± 16%	2.8	Geospatial (w/ SCF[a])
	2017	8,226 ± 11%	4.7	Geospatial
Andreafsky	1995	52 ± 74%	0.0	Gassaway
	1999	524 ± 29%	0.2	Geospatial
	2002	418 ± 22%	0.3	Geospatial
	2012	2,748 ± 19%	1.7	Geospatial
	2012	3,170 ± 24%	2.0	Geospatial (w/ SCF[a])

[a]Sightability Correction Factor

In the adjacent Andreafsky survey area, which includes the Yukon River from Pilot Village downstream to Mountain Village (Perry 2014), surveys were most recently conducted in 2012 (**Table 5**). At that time, the moose population in this area was estimated at 3,170 moose (2.0 moose/mi^2), when corrected for sightability. Like the moose population in the Lowest Yukon survey area, the population in the Andreafsky area has grown substantially since the early 2000s, but it remains at lower density compared to the Lowest Yukon population. Bull:cow ratios in the Andreafsky area were similar to those in the Lowest Yukon area, at 40 bulls:100 cows in 2011 (**Table 6**). Calf:cow ratios have increased since the early 2000s and were at 67 calves:100 cows in 2011 (Perry 2006, 2008, 2014; Rearden 2015).

It is unknown the degree to which moose dispersal from Unit 18 is influencing moose density in southern Unit 22. However, given the high moose density and continuing growth of the Yukon and Andreafsky populations, there is a likely effect. Local biologists report that, in Unit 18, moose can be found anywhere there are willows present (Rearden 2017, pers. comm.). This suggests that movement through the riparian corridors of the Andreafsky drainages into Unit 22A is likely.

Table 6. Composition estimates for moose in portions of Unit 18, 2004 – 2013 (Perry 2006, 2008, 2014; Rearden 2015).

Survey Area	Year	Bulls: 100 Cows	Calves: 100 Cows
Lowest Yukon	2004	-	64
	2005	37	92
	2010	30	69
	2013	40	48
Andreafsky[a]	2002	-	22
	2005	-	42
	2010	42	64
	2011	40	67

[a]Results include the Andreafsky and Paimiut survey areas. The Paimiut survey area is adjacent to the Andreafsky survey area, extending upstream from Pilot Village to Paimiut Village

Cultural Knowledge and Traditional Practices

The Seward Peninsula has been inhabited by humans for at least 12,000 years (Magdanz et al. 2007). The Inupiaq and Central Yup'ik people of Norton Sound have a deeply rooted practice of subsistence hunting, fishing, and gathering of wild resources. Until European contact in the early 19th century, many of these groups were semi-nomadic, moving with the seasons based on the availability of wild resources (Ray 1984).

There are two communities located within Unit 22A remainder, Stebbins and Saint Michael. Both are Central Yup'ik communities with strong family connections to the Yup'ik communities of the Yukon Delta and Lower Yukon River. Along with Elim, they are the only Central Yup'ik communities in the Seward Peninsula area (Magdanz et al. 2007). Stebbins and Saint Michael have a mixed economy of wage labor jobs, fishing, and subsistence.

Stebbins is located on the southern shore of Norton Sound, 120 miles southeast of Nome. The Yup'ik name for the village is *Tapraq*, while the name Stebbins first appeared in 1900 (ADCCED 2019a). The community is located in the Nome Census Area and encompasses 36 square miles of land and two square miles of water (ADCCED 2019a). Stebbins was incorporated in 1969 and had an estimated population of 645 people in 2017 (ADLWD 2018). The community is accessible by air or water, and there is a 10.5 mile road connecting Stebbins with Saint Michael (Magdanz et al. 2007).

Saint Michael is also located on the southern shore of Norton Sound, on the opposite side of Saint Michael Island from Stebbins, 123 miles southeast of Nome. In 2070, Saint Michael had an estimated population of 389 people (ADLWD 2018). A trading post called Redoubt St. Michael was built by the Russian-American Company in 1833 in the area that is now Saint Michael. A U.S. military post was established in 1897. At that time, Saint Michael was an important trading post for locals to trade and

barter for Western goods. This area also became an important area during the gold rush as a gateway to the Yukon River, with as many as 10,000 people living there during the gold rush (Kawerak 2019).

Large land mammals were not abundant in the Seward Peninsula area during the 1800s. Moose did not start immigrating into the area until the mid-1900s, and while caribou were hunted traditionally, their numbers declined in the mid-1800s (Dau 2000). Reindeer were introduced from Siberia in 1892 under a Federal program initiated by Sheldon Jackson, in part to provide more meat for the Inupiat people in the area (Dau 2000). Historically, people in the Seward Peninsula area hunted a variety of species. As moose moved into the region, opportunistic harvest of the animals grew.

In 2013, the most recent year for which comprehensive subsistence survey data is available for Stebbins, moose comprised 6% of per capita overall harvest. 18.4% of Stebbins households attempted to harvest moose, with 12.6% being successful. Through significant sharing, 65.5% of households used moose (Mikow 2017). For 2006, the last year in which comprehensive subsistence survey data is available for Saint Michael, 20% of households attempted to harvest moose, and 16% were successful. With sharing, 49% of households used moose (Ahmasuk and Trigg 2007).

There is more information available on moose hunting practices in Stebbins than Saint Michael. Of the moose harvested by Stebbins households 77% occurs in August and September (spread evenly over the two months). During this time Stebbins residents sometimes travel as far as the Yukon River seeking moose. A second period of moose hunting occurs in December and January and comprises 23% of the community's harvest of the species. However, lack of snow cover due to late freeze-up, low snowfall, and thinner ice on rivers, has made access to moose difficult and hazardous for hunters during recent winter hunting seasons (Mikow 2017; SPRAC 2017).

Of Stebbins households, 31% reported not harvesting enough land mammals in 2013, and of these, 26% reported needing more moose. Caribou are not widely enough available to mitigate challenges to accessing moose. Of those households reporting under-harvest of large mammals in 2013, 12% indicated that they need more caribou. At its closest winter range, the Western Arctic herd is still 50 miles away from Stebbins. This contrasts with 20 years ago, when caribou were closer to the community during winter months (Mikow 2017).

Harvest History

Most of the reported harvest within Unit 22A is attributable to local residents, defined here as Federally qualified subsistence users. On average, reported harvest was 27 moose annually for the 2003 – 2018 regulatory years. During this time period, 72% of the reported moose harvest was taken by local residents, while nonlocal residents of Alaska harvested 7%, and nonresidents harvested 18% of the total reported harvest (ADF&G 2019). For the most recent five years, 2014 – 2018, reported harvest has been higher, averaging 39 moose annually. For those years, local residents took a smaller percentage of the reported harvest (66%) while non-residents took a larger percentage (24%) (ADF&G 2019; OSM 2019).

Reported moose harvest in Unit 22A is not evenly distributed among the three hunt areas. This observation cannot be explained solely on the basis of human population size and expected harvest pressure. For instance, the Central Unit 22A hunt area is home to 36% of Unit 22A residents, but

accounts for 58% of the total reported harvest. In contrast, the remaining two hunt areas (Unit 22A North and Unit 22A remainder) contain 64% of the human population but account for only 40% of the total moose harvest (ADLWD 2018; ADF&G 2019; OSM 2019). One likely explanation for this disparity is the difference among hunt areas in permit requirements and associated reporting rates. Specifically, Central Unit 22A requires a State or Federal registration permit, which includes penalties for non-reporting, while the remaining hunt areas require a harvest ticket that includes no such penalties.

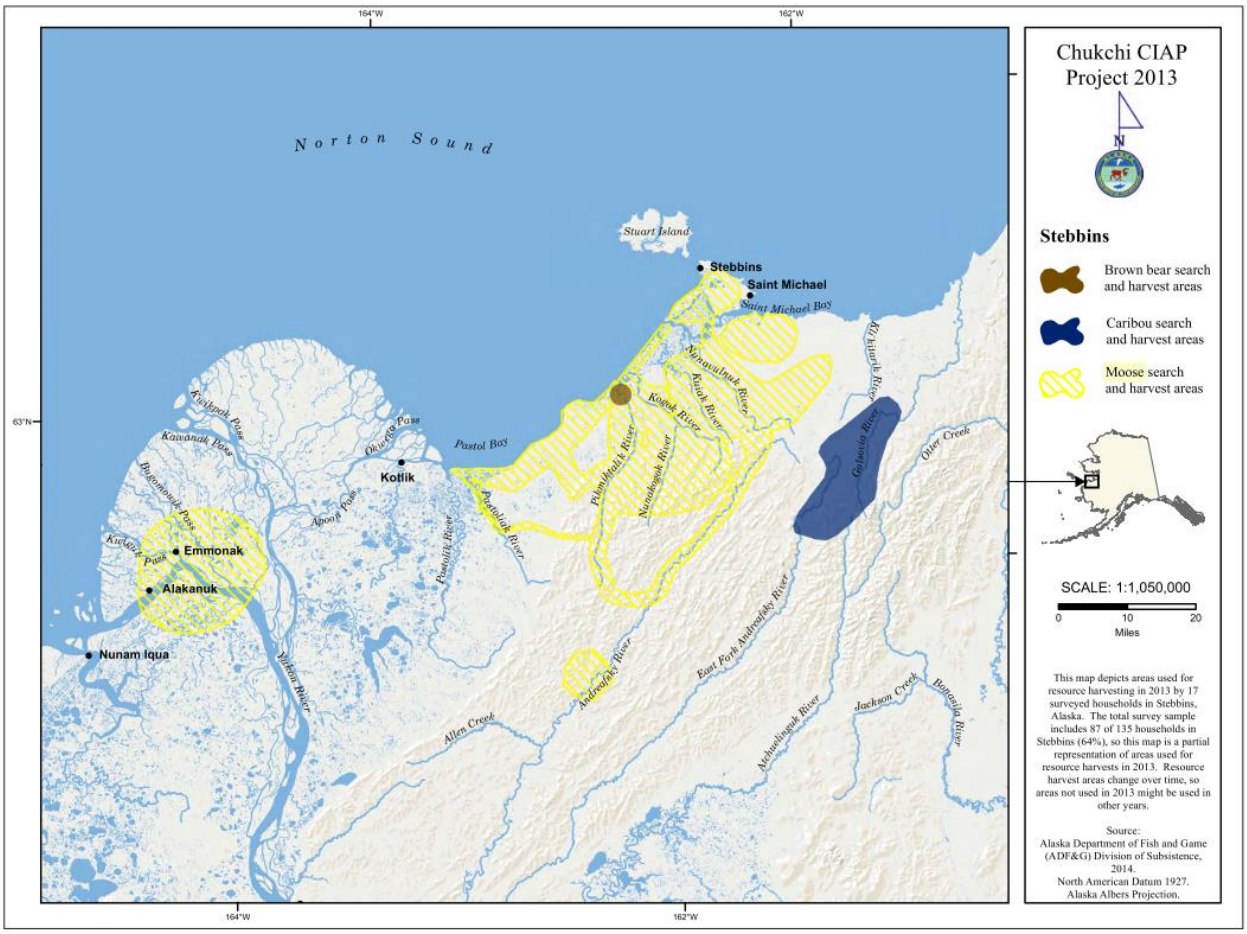


Figure 2. Large land mammal hunting areas, Stebbins, 2013. Moose search area for the year in yellow. (Credit: Mikow 2017.)

This suggests that reported harvest (**Figure 3**) does not sufficiently represent actual harvest within Unit 22A remainder. This is likely particularly true among local users. However, additional insight into local use can be gained by considering results from household surveys. For instance, in 2005 residents of Stebbins and St. Michael reported harvesting 5 and 2 moose, respectively (ADF&G 2019). However, harvest data obtained from community surveys conducted by Kawerak, the regional Native Association, indicate that 26 moose were harvested by residents of Stebbins and 17 moose were harvested by residents of St. Michael that year (Ahmasuk and Trigg 2007). More recently, in 2013, Stebbins residents reported no moose harvest but household surveys indicate that 20 moose were taken, primarily in August and September (Mikow 2017). Annual community harvest data is only

sporadically available for any given community, but typically exceeds reported harvest for the years it is available. Acknowledging that community harvest data is a snapshot and that trends over time may be more revealing, these community surveys are an important supplement to reported harvest when estimating total harvest among local users.

Reported harvest is likely to be a relatively reliable accounting of harvest among nonresident hunters. Assuming so, nonresident harvest is increasing. For the 2003 – 2008 time period, just 2 moose were taken annually by nonresidents, while for the 2012 – 2018 time period, 6 moose were taken annually. In 2018, nonresident harvest was 15 moose, more than double that of any other previous year (ADF&G 2019) (**Figure 3**).

Guide and Transporter Use

Guides are regulated by the Alaska Big Game Commercial Services Board. To operate within a specific guide use area, a guide must be registered in that guide use area and it must be within a game management unit in which they are licensed to conduct hunts. In addition, guides must be authorized to operate within a given area by the public or private land owner (ADCCED 2019b). In Guide Use Area 22-07, which encompasses Unit 22A remainder, there are five active guides (ADCCED 2019b) though the closure currently precludes commercial use of Federal public lands within this area.

The bulk of the Federal public lands within Unit 22A remainder are managed by the Yukon Delta National Wildlife Refuge (Refuge) (**Figure 1**). The Refuge maintains an exclusive guide concession for the Andreafsky portion of the Refuge, which includes southern Unit 22A and adjacent areas in Unit 18. This concession, which is awarded to a single competitor every ten years, is currently held by the proponent of this proposal. He currently guides clients on Federal and non-Federal lands adjacent to the closed area, and is limited to 8 moose annually. Transporters are also authorized to work in the Andreafsky area. There is no limit on the number of transporters that can operate in a given area, though there are limits on the number of people they may take in (Rearden 2019, pers. comm.).

BLM, which also manages lands within Unit 22A remainder, requires guides to secure permits to operate on Federal public lands. Unlike the Refuge guide use program, the BLM program does not limit the number of permits issued to guides. Currently, six guides are permitted on BLM lands in Unit 21E, where conditions are reported to be crowded. This has generated interest in operating out of Unit 22A (Seppi 2017, pers. comm., 2019, pers. comm.). Currently, none of the guides authorized by the Big Game Commercial Services Board to operate in Guide Use Area 21-01 (the area adjacent to Unit 22A remainder) are authorized to work in Guide Use Area 22-07, though all of the five guides already authorized to work in 22-07 could pursue a BLM permit. Under BLM rules, transporters are not required to secure permits prior to operating on public BLM lands (Seppi 2017, pers. comm., 2019, pers. comm.).

At its April 2019 meeting, the Council expressed concern about the potential impacts of guided moose hunting on moose migration into Unit 22A.

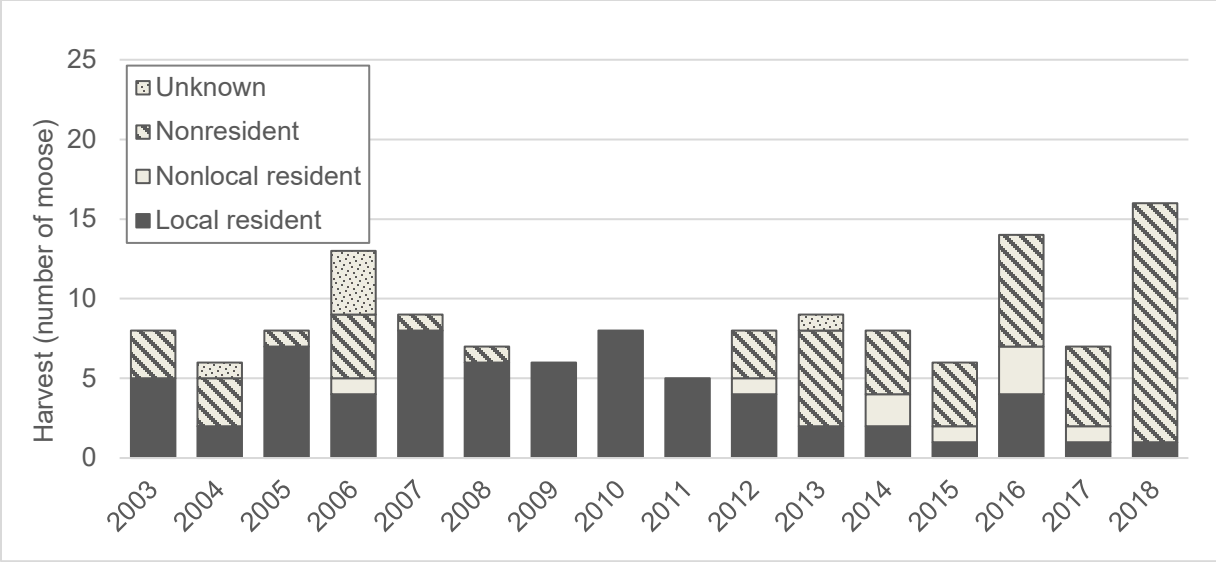


Figure 3. Reported moose harvest by user group in the Unit 22A remainder hunt area, 2003 – 2018 (ADF&G 2019).

Effects of the Proposal

If this proposal is adopted, Federal public lands in Unit 22A remainder will be open to all users Sep. 1 – Sep 30. This has the potential to increase harvest due to an increase in nonlocal use, including by guided hunters. On Refuge lands, this increase is expected to be limited since a single guide is authorized to use this area. On BLM lands, where all properly licensed and registered guides could secure permits, the increase might be more significant, though the smaller amount of BLM land may limit the influx of guides. More uncertain is the effect of unguided nonlocals. Many transporters could be authorized to operate on Federal public lands Unit 22A and it is not unlikely that rescission of the Federal lands closure will result in increased interest by nonlocal users seeking transport, or by those equipped to hunt without professional support.

Given our limited understanding of the population status in the specific area, there is some uncertainty whether additional harvest will have a significant impact on the moose population. However, it is expected that the population in this area is increasing, consistent with those in neighboring areas. Although unquantified, it is also likely that dispersal from neighboring high density populations is occurring. Collectively, this suggests that the population in Unit 22A can sustain at least some additional harvest, without jeopardizing the conservation status of the population.

If this proposal is adopted, it would primarily benefit nonlocal hunters and guides, who would have access to Federal public lands during the 30-day nonresident season. It is unclear whether this additional opportunity would come at the expense of Federally qualified subsistence users. Local users report that moose are an important resource, and that they are unable to harvest enough to meet their needs. These challenges appear to be at least partially related to access to moose. However, extensive search areas suggest that scarcity of moose may also be an issue. Opening Federal lands does increase the potential for user conflict between local and nonlocal users, particularly considering

temporal and spatial use patterns of Federally qualified subsistence users, and reports that they are experiencing difficulty harvesting moose.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP20-42.

Justification

Metrics from adjacent moose population suggest that the Unit 22A remainder moose population may be growing. In particular, Unit 18 and Unit 21E support higher moose densities, supporting the supposition that neighboring populations are influencing moose density in Unit 22A through dispersal. This suggests that the population can sustain at least some additional harvest.

However, as the Board noted when they considered this action in 2018, opening Federal public lands in a manner that primarily benefits non-resident hunters and guides may be premature, particularly given the uncertainty regarding the population status. There have been no significant changes to the population status of Unit 22A moose, or adjacent populations, since the Board's 2018 decision. In addition, fully rescinding the closure is likely to result in increased pressure from non-Federally qualified users, and may result in increased guide and transporter use of the area. Given the temporal and spatial use patterns of local moose hunters, increased commercial traffic may result in increased conflict in this area. This may be exacerbated by the challenges Federally qualified subsistence users face in gaining access to harvestable moose.

LITERATURE CITED

Ahmasuk, A. and E. Trigg. 2007. Bering Strait region local and traditional knowledge pilot project: A comprehensive subsistence use study of the Bering Strait region. North Pacific Research Board Project Final Report, July 2007.

ADCCED. 2019a. Community Histories Index. Alaska Department of Commerce, Community, and Economic Development. http://explorenorth.com/library/communities/alaska/bl-Stebbins.htm. Retrieved: May 28th, 2019.

ADCCED. 2019b. Alaska Department of Commerce, Community, and Economic Development. https://www.commerce.alaska.gov/web/cbpl/ProfessionalLicensing/BigGameCommercialServicesBoard.aspx. Retrieved May 23, 2019.

ADF&G. 2016. Operational plan for intensive management of moose in game management unit 21E during regulatory years 2017 – 2022. ADF&G, Division of Wildlife Conservation. Juneau, AK. 10 pp.

ADF&G. 2019. Winfonet. Retrieved May 22, 2019.

ADLWD. 2018. Alaska Population Overview, 2017 Estimates. Alaska Department of Labor and Workforce Development, Research and Analysis Section, Juneau, AK.

BOG. 2017. Audio transcripts of the Alaska Board of Game proceedings. January 9, 2017. Bethel, AK. ADF&G. Juneau, AK

Boudreau, T.A. 2002. Unit 19 and 21 moose management report. Pages 293 - 322 in C. Healy, editor. Moose management report of survey and inventory activities 1 July 1999–30 June 2001. ADF&G Project 1.0. Juneau, AK.

Burch, M. 2019. Wildlife biologist. Personal communication: email. ADF&G. Anchorage, AK.

Dau, J. 2000. Managing Reindeer and Wildlife on Alaska's Seward Peninsula. Polar Research 19(1): 57-62.

FSB. 1995a. Transcripts of Federal Subsistence Board proceedings. April 12, 1995. Office of Subsistence Management, FWS. Anchorage, AK.

FSB. 1995b. Transcripts of Federal Subsistence Board proceedings. September 26, 1995. Office of Subsistence Management, FWS. Anchorage, AK.

FSB. 1996. Transcripts of Federal Subsistence Board proceedings. May 1, 1996. Office of Subsistence Management, FWS. Anchorage, AK.

Gorn, T. 2012. Unit 22 moose management report. Pages 534–559 *in* P. Harper, editor. Moose management report of survey and inventory activities 1 July 2009–30 June 2011. ADF&G. Juneau, AK.

Gorn, T. and W.R. Dunker. 2014. Unit 22 management report. Pages 31-1 – 31-38 *in* P. Harper and L.A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 2011 – 30 June 2013. ADF&G. Juneau, AK.

Kawerak, Inc. 2019. http://kawerak.org. Retrieved: May 28th, 2019.

Magdanz, J., S. Tahbone, A. Ahmasuk, and D. Koster 2007. Customary Trade and Barter in Fish in the Seward Peninsula Area, Alaska. ADF&G.

Mikow, E.H. 2017. Stebbins. Pages 202 – 258 *in* Chukchi Sea and Norton Sound Observation Network: Harvest and use of wild resources in 9 communities in Arctic Alaska, 2012 – 2014. ADF&G Division of Subsistence, Technical Paper No. 403. ADF&G. Juneau, AK.

Nelson, R.R. 1995. Unit 22 moose survey-inventory progress report. Pages 405–419 *in* M. V. Hicks, editor. Management report of survey-inventory activities 1 July 1993 – 30 June 1995. ADF&G. Juneau, AK.

OSM. 1998. Staff analysis WP98-86. Pages Seward Peninsula Region 33 – 42 *in* Federal Subsistence Board Meeting Materials. May 4 – 8, 1998. Office of Subsistence Management, USFWS. Anchorage, AK. 1449 pages.

OSM. 2004. Staff analysis WP04-70. Pages 660–677 *in* Federal Subsistence Board Meeting Materials. May 18-21, 2004. Office of Subsistence Management, USFWS. Anchorage, AK. 849 pages.

OSM. 2016. OSM proposal document library. Microcomputer database, accessed 1 June 2016. Anchorage, AK.

OSM. 2019. Federal subsistence permit system. Microcomputer database, accessed May 26, 2019. Anchorage, AK.

Peirce, J.M. 2014. Units 21A and 21E moose management report. Chapter 27, pages 27-1 – 27-15 *in* P. Harper and L.A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 2011 – 30 June 2013. ADF&G. Juneau, AK.

Peirce, J.M. 2017. Wildlife biologist. Personal communication: email. ADF&G. McGrath, AK.

Perry, P. 2006. Unit 18 moose management report. Pages 262 – 280 *in* P. Harper, editor. Moose management report of survey and inventory activities 1 July 2003 – 30 June 2005. ADF&G. Juneau, AK.

Perry, P. 2008. Unit 18 moose management report. Pages 269 – 284 *in* P. Harper, editor. Moose management report of survey and inventory activities 1 July 2005 – 30 June 2007. ADF&G. Juneau, AK.

Perry, P. 2014. Unit 18 moose management report. Chapter 20,pages 20-1 – 20-17 *in* P. Harper and L.A. McCarthy, editors. Moose management report of survey and inventory activities 1 July 201 – 30 June 2013. ADF&G. Juneau, AK.

Persons, K. 2004. Unit 22 moose management report. Pages 496–522 *in* C. Brown, ed. Moose management report of survey and inventory activities 1 July 2001–30 June 2003. ADF&G. Juneau, AK.

Ray, D.J. 1984. Bering Strait Eskimo. Pages 285–302 *in* W.C Surtevand, ed. The handbook of North American Indians, Volume 5: Arctic. Smithsonian Institution, Washington D.C.

Rearden, S. 2015. Unpublished survey report. USFWS. Bethel, AK. 5 pp.

Rearden, S. 2017. Wildlife biologist. Personal communication: phone and email. Yukon Delta NWR, USFWS. Bethel, AK.

Rearden, S. 2019. Wildlife biologist. Personal communication: phone and email. Yukon Delta NWR, USFWS. Bethel, AK.

Seppi, B. 2017. Wildlife biologist. Personal communication: phone and email. Anchorage Field Office. BLM. Anchorage, AK.

SPRAC. 2017. Transcripts of the Seward Peninsula Subsistence Regional Advisory Council proceedings. March 6 – 7, 2017. Nome, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

WP20–43/44/45/46 Executive Summary	
General Description	Wildlife Proposal WP20-43 requests a year-round bull season for caribou in Unit 23. *Submitted by: Kotzebue Sound Fish and Game Advisory Committee.* Wildlife Proposal WP20-44, submitted by the Kotzebue Sound AC, requests that calf harvest be permitted for caribou in Unit 23. *Submitted by: Kotzebue Sound Fish and Game Advisory Committee.* Wildlife Proposal WP20-45 requests a year-round bull season for caribou in Unit 23. *Submitted by: Northwest Arctic Subsistence Regional Advisory Council.* Wildlife Proposal WP20-46 requests a year-round bull season and that calf harvest be permitted for caribou in Unit 23. *Submitted by: Western Arctic Caribou Herd Working Group.*
Proposed Regulation	WP20-43/45 **Unit 23—Caribou** *Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage* *5 caribou per day by State registration permit as follows:* *Calves may not be taken.* *Bulls may be harvested* — *July 1–~~Oct. 14~~* *~~Feb. 1~~ June 30* *Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.* — *July 15–Apr. 30* *Unit 23, remainder* *5 caribou per day by State registration permit as follows:* *Calves may not be taken.* *Bulls may be harvested* — *July 1–~~Oct. 31~~* *~~Feb.1~~ June 30*

WP20–43/44/45/46 Executive Summary		
	Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
	Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	
	WP20-44	
	Unit 23—Caribou	
	Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
	5 caribou per day by State registration permit as follows:	
	~~*Calves may not be taken.*~~	
	Bulls may be harvested	*July 1–Oct. 14* *Feb. 1–June 30*
	Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
	Unit 23, remainder	
	5 caribou per day by State registration permit as follows:	
	~~*Calves may not be taken*~~.	
	Bulls may be harvested	*July 1–Oct. 31* *Feb.1–June 30*

WP20–43/44/45/46 Executive Summary		
	Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
	Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	
	WP20-46	
	Unit 23—Caribou	
	Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
	5 caribou per day by State registration permit as follows: *~~Calves may not be taken~~.*	
	Bulls may be harvested	*July 1–~~Oct. 14~~ ~~Feb. 1~~ June 30*
	Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
	Unit 23, remainder	
	5 caribou per day by State registration permit as follows: *~~Calves may not be taken~~.*	
		July 1–~~Oct. 31~~

WP20–43/44/45/46 Executive Summary		
	Bulls may be harvested	*~~Feb.1~~ June 30*
	Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
	Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	
OSM Preliminary Conclusion	**Support** Proposal WP20-46 and **take no action** on Proposals WP20-43, WP20-44, and WP20-45.	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation		
Seward Peninsula Subsistence Regional Advisory Council Recommendation		
Northwest Arctic Subsistence Regional Advisory Council Recommendation		
North Slope Subsistence Regional Advisory Council Recommendation		
Interagency Staff Committee Comments		

WP20–43/44/45/46 Executive Summary	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-43/44/45/46

ISSUES

Wildlife Proposal WP20-43, submitted by the Kotzebue Sound Fish and Game Advisory Committee (Kotzebue Sound AC), requests a year-round bull season for caribou in Unit 23.

Wildlife Proposal WP20-44, submitted by the Kotzebue Sound AC, requests that calf harvest be permitted for caribou in Unit 23.

Wildlife Proposal WP20-45, submitted by the Northwest Arctic Subsistence Regional Advisory Council (Northwest Arctic Council), requests a year-round bull season for caribou in Unit 23.

Wildlife Proposal WP20-46, submitted by the Western Arctic Caribou Herd Working Group (WACH Working Group), requests a year-round bull season and that calf harvest be permitted for caribou in Unit 23.

DISCUSSION

The Kotzebue Sound AC, the proponent for WP20-43, noted that a variety of conservation measures were taken during the recent decline in the WACH population, including closing the bull season during the rut. As local people generally harvest bulls in September and avoid them during rut, little effect on traditional hunting practices was anticipated. However, in recent years, the timing of the Western Arctic Caribou Herd (WACH) migration has occurred later in the year, resulting in the bull season already being closed when caribou pass through accessible areas. This has shifted harvest pressure to cows, which could become a conservation concern. If the bull season remained open year-round, hunters could harvest young bulls that do not stink during rut like older bulls, and conserve cows to help grow the herd. Compliance issues associated with distinguishing between bulls and cows for harvest would also be alleviated.

The Kotzebue Sound AC, the proponent for WP20-44, states that removing the prohibition on calf harvest would allow harvest of orphaned calves that would otherwise succumb to predators. The proponent states that no one targets calves, but in rare circumstances, it makes sense to harvest an abandoned calf for human consumption rather than leaving it for other predators.

The Northwest Arctic Council, the proponent for WP20-45, states that eliminating the bull caribou closure would allow harvest of young bulls, reducing harvest pressure on cows. As the timing of fall caribou migration has shifted later in the year, only the cow season is open when caribou are accessible for harvest. The proponent also states that eliminating the bull closure takes pressure off of Federally qualified subsistence users, who can spend a lot of time and fuel accessing hunting areas, to harvest caribou during a certain timeframe.

The WACH Working Group, the proponent for WP20-46, provided the same rationale for the removal of the bull closure and prohibition on calf harvest as the Kotzebue AC, the proponent for WP20-43/44 (see above).

Existing Federal Regulations

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	 *July 1–Oct. 14* *Feb. 1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
Unit 23, remainder	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	 *July 1–Oct. 31* *Feb.1–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	

Proposed Federal Regulations

WP20-43/45

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	*July 1~~–Oct. 14~~* *~~Feb. 1~~–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14.	*July 15–Apr. 30*
Unit 23, remainder	
5 caribou per day by State registration permit as follows: *Calves may not be taken.* *Bulls may be harvested*	*July 1~~–Oct. 31~~* *~~Feb.1~~–June 30*
Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14.	*July 31–Mar. 31*
Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations	

WP20-44

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage

5 caribou per day by State registration permit as follows:
~~*Calves may not be taken.*~~
Bulls may be harvested — *July 1–Oct. 14*, *Feb. 1–June 30*

Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14. — *July 15–Apr. 30*

Unit 23, remainder

5 caribou per day by State registration permit as follows:
~~*Calves may not be taken*~~.
Bulls may be harvested — *July 1–Oct. 31*, *Feb.1–June 30*

Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14. — *July 31–Mar. 31*

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations

WP20-46

Unit 23—Caribou

Unit 23—that portion which includes all drainages north and west of, and including, the Singoalik River drainage

5 caribou per day by State registration permit as follows:
~~*Calves may not be taken*~~.
Bulls may be harvested — *July 1–* ~~*Oct. 14 Feb. 1*~~ *–June 30*

Cows may be harvested. However, cows accompanied by calves may not be taken July 15–Oct. 14. — *July 15–Apr. 30*

Unit 23, remainder

5 caribou per day by State registration permit as follows:
~~Calves may not be taken~~.
Bulls may be harvested *July 1–~~Oct. 31~~ ~~Feb.1~~–June 30*

Cows may be harvested. However, cows accompanied by calves may not be taken July 31–Oct. 14. *July 31–Mar. 31*

Federal public lands within a 10-mile-wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage are closed to caribou hunting except by federally qualified subsistence users hunting under these regulations

Existing State Regulations

Unit 23—Caribou

23, north of and including Singoalik River drainage	*Residents—Five caribou per day; however, calves may not be taken. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Barrow, and at license vendors in Unit 23 and 26A beginning June 20.*	*Bulls*	*RC907*	*July 1-Oct. 14 Feb. 1-June 30*
		Cows	*RC907*	*Jul. 15-Apr. 30*
	Nonresidents—One bull; however, calves may not be taken.		*HT*	*Aug. 1-Sept. 30*
23 remainder	*Residents—Five caribou per day; however, calves may not be taken. Permits available online at http://hunt.alaska.gov or in person in Kotzebue, Barrow, and at license vendors in Unit 23 and 26A beginning June 20.*	*Bulls*	*RC907*	*July 1-Oct. 14 Feb. 1-June 30*
		Cows	*RC907*	*Sept. 1-Mar. 31*
	Nonresidents—One bull; however, calves may not be taken.		*HT*	*Aug. 1-Sept. 30*

Extent of Federal Public Lands

Unit 23 is comprised of 71% Federal public lands and consist of 40% National Park Service (NPS) managed lands, 22% Bureau of Land Management (BLM) managed lands, and 9% U.S. Fish and Wildlife Service (USFWS) managed lands.

Customary and Traditional Use Determinations

Residents of Unit 21D west of the Koyukuk and Yukon Rivers, Galena, 22, 23, 24 including residents of Wiseman but not including other residents of the Dalton Highway Corridor Management Area, and 26A have a customary and traditional use determination for caribou in Unit 23 (**Map 1**).

Regulatory History

In 1990, the caribou hunting season in Unit 23 was open year round with a five caribou per day harvest limit and a restriction on the harvest of cows May 16-June 30.

In 1995, the Federal Subsistence Board (Board) adopted Proposal P95-51 to increase the caribou harvest limit from five to 15 caribou per day so that subsistence hunters could maximize their hunting efforts when caribou were available (FWS 1995a).

In 1997, the Board adopted Proposal P97-66 with modification to provide a customary and traditional use determination for caribou in Unit 23 for rural residents of Unit 21D west of the Koyukuk and Yukon rivers, Galena, Units 22, 23, 24 including residents of Wiseman, but not other residents of the Dalton Highway Corridor Management Area and Unit 26A (**Map 1**, FWS 1995b, 1997).

In 2000, the Board adopted Proposal WP00-53 with modification, allowing the use of snowmachines to position a hunter to select individual caribou for harvest in Units 22 and 23. This was done to recognize a customary and traditional practice in the region (FWS 2000a).

In 2013, an aerial photo census indicated significant declines in the Teshekpuk Caribou herd (TCH), WACH, and possibly the Central Arctic Caribou Herd (CACH) populations (Caribou Trails 2014). In response, the Alaska Board of Game (BOG) adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both Alaska residents and nonresidents within the range of the WACH and the TCH. These regulation changes – which included lowering bag limits for nonresidents from two caribou to one bull, reductions in bull and cow season lengths, the establishment of new hunt areas, and prohibiting calf harvest – were adopted to slow or reverse the population decline. The regulatory changes took effect on July 1, 2015.

In 2015, four special actions, WSA15-03/04/05/06, requesting changes to caribou regulations in Units 23, 24, and 26, were submitted by the North Slope Council and approved with modification by the Board, effective July 1, 2015. Temporary Special Action WSA15-03 requested designation of a new hunt area for caribou in the northwest corner of Unit 23 where the harvest limit would be reduced from 15 to five caribou per day, the harvest season would be shortened for bulls and cows, and the harvest of calves would be

prohibited. The Board did not establish a new hunt area, applying the restrictions to all of Unit 23 and also prohibited the harvest of cows with calves. These State and Federal regulatory changes were the first time that harvest restrictions had been implemented for the WACH in over 30 years.

Five proposals (WP16-37, WP16-48, WP16-49/52, and WP16-61) concerning caribou regulations in Unit 23 were submitted to the Board for the 2016-2018 wildlife regulatory cycle. The Board adopted WP16-48 with modification to allow the positioning of a caribou, wolf, or wolverine for harvest on BLM lands only. Proposal WP16-37 requested that Federal caribou regulations mirror the new State regulations across the ranges of the WACH and TCH (Units 21D, 22, 23, 24, 26A, and 26B). The Board adopted Proposal WP16-37 with modification to reduce the harvest limit to five caribou per day, restrict bull harvest during rut and cow harvest around calving, prohibit the harvest of calves and the harvest of cows with calves before weaning (mid-Oct.), and to create a new hunt area in the northwest corner of Unit 23. The Board took no action on the remaining proposals (WP16-49/52, and WP16-61) due to action taken on WP16-37.

In 2015, the Northwest Arctic Council submitted a temporary special action request (WSA16-01) to close caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (NFQU) for the 2016/17 regulatory year. The Council stated that their request was necessary for conservation purposes but also needed because nonlocal hunting activities were negatively affecting subsistence harvests. In April 2016, the Board approved WSA16-01, basing its decision on the strong support of the Northwest Arctic and North Slope Councils, public testimony in favor of the request, as well as concerns over conservation and continuation of subsistence uses (FSB 2016).

In June 2016, the State submitted a special action request (WSA16-03) to reopen caribou hunting on Federal public lands in Unit 23 to NFQU, providing new biological information (e.g. calf recruitment, weight, body condition) on the WACH. The State specified that there was no biological reason for the closure and that it could increase user conflicts. In January 2017, the Board rejected WSA16-03 due to the position of all four affected Councils (Northwest Arctic, North Slope, Seward Peninsula, and Western Interior) as well as public testimony and Tribal consultation comments opposing the request. Additionally, the Board found the new information provided by the State to be insufficient to rescind the closure.

In January 2017, the BOG adopted Proposal 2, requiring registration permits for residents hunting caribou within the range of the Western Arctic and Teshekpuk herds in Units 21, 23, 24, and 26 (a similar proposal was passed for Unit 22 in 2016). The Alaska Department of Fish and Game (ADF&G) submitted the proposal in order to better monitor harvest and improve management flexibility. Also in January 2017, the BOG rejected Proposal 45, which proposed requiring big game hunting camps to be spaced at least three miles apart along the Noatak, Agashashok, Eli, and Squirrel Rivers. The proposal failed as it would be difficult to enforce.

In March 2017, the Northwest Arctic Council submitted temporary special action request, WSA17-03 to close caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users for the 2017/18 regulatory year. The Council stated that the intent of the proposed closure was to ensure subsistence use in the 2017/18 regulatory year, to protect declining caribou populations, and to reduce user conflicts. The

Board voted to approve WSA17-03 with modification to close all Federal public lands within a 10 mile wide corridor (5 miles either side) along the Noatak River from the western boundary of Noatak National Preserve upstream to the confluence with the Cutler River; within the northern and southern boundaries of the Eli and Agashashok River drainages, respectively; and within the Squirrel River drainage, to caribou hunting except by Federally qualified subsistence users for the 2017/18 regulatory year. The Board considered the modification a reasonable compromise for all users, and that closure of the specified area was warranted in order to continue subsistence use.

In April 2018, the Board adopted Proposals WP18-46 with modification and WP18-48 (effective July 1, 2018). Proposal WP18-46 requested closing caribou hunting on Federal public lands in Unit 23 to non-Federally qualified users (similar to WSA16-01 and WSA17-03). The Board adopted WP18-46 with the same modification as WSA17-03 (see above) as the Northwest Arctic, Western Interior, and Seward Peninsula Councils as well as the village of Noatak supported this modification and viewed the targeted closure as effectively addressing user conflicts and the continuation of subsistence uses. The Board also adopted WP18-48 to require State registration permits for caribou hunting in Units 22, 23, and 26A to improve harvest reporting and herd management, and to align with State regulations.

Controlled Use Areas

In 1988, the Traditional Council of Noatak submitted a proposal to the BOG to create the Noatak Controlled Use Area (CUA) in order to restrict the use of aircraft in any manner for big game hunting Aug. 15 - Sept. 20 due to user conflicts (Fall 1990:86). The proposed CUA extended five miles on either side of the Noatak River, from the mouth of the Eli River upstream to the mouth of the Nimiuktuk River, including the north side of Kivivik Creek (ADF&G 1988:47). The BOG adopted the proposal with modification to close a much smaller area extending from the Kugururok River to Sapun Creek from Aug. 20-Sept. 20.

The CUA was expanded in 1994 and modified in 2017 (Betchkal 2015, Halas 2015, ADF&G 2017a). From 1994-2016, the Noatak CUA consisted of a 10-mile wide corridor (5 miles either side) along the Noatak River from its mouth to Sapun Creek with approximately 80 miles of the CUA within Noatak National Preserve (NP) (**Map 2**, Betchkal 2015). The closure dates from 1994-2009 were Aug. 25-Sept. 15. In 2009 (effective 2010), the BOG adopted Proposal 22 to expand the closure dates to Aug. 15-Sept. 30 in response to the timing of caribou migration becoming less predictable (ADF&G 2009). During the 2016/17 BOG regulatory cycle, the Noatak/Kivalina & Kotzebue AC proposed (Proposal 44) extending the upriver boundary of the Noatak CUA to the Cutler River, citing increased user conflicts as their rationale (ADF&G 2017b). In January 2017, the BOG approved amended Proposal 44 to shift the boundaries of the Noatak CUA to start at the mouth of the Agashashok River and end at the mouth of the Nimiuktuk River with approximately 105 miles within Noatak NP (**Map 2**, ADF&G 2017a).

In 1990, the Noatak CUA was adopted under Federal regulations. In 1995, the Board adopted Proposal P95-50 to expand the time period and area of the CUA to Aug. 25-Sept. 15 and the mouth of the Noatak River upstream to the mouth of Sapun Creek, respectively, which aligned with current State regulations. In 2008, Proposals WP08-50 and 51 requested modifications to the Noatak CUA dates. These proposals were submitted in response to caribou migration occurring later in the season, to improve caribou harvest

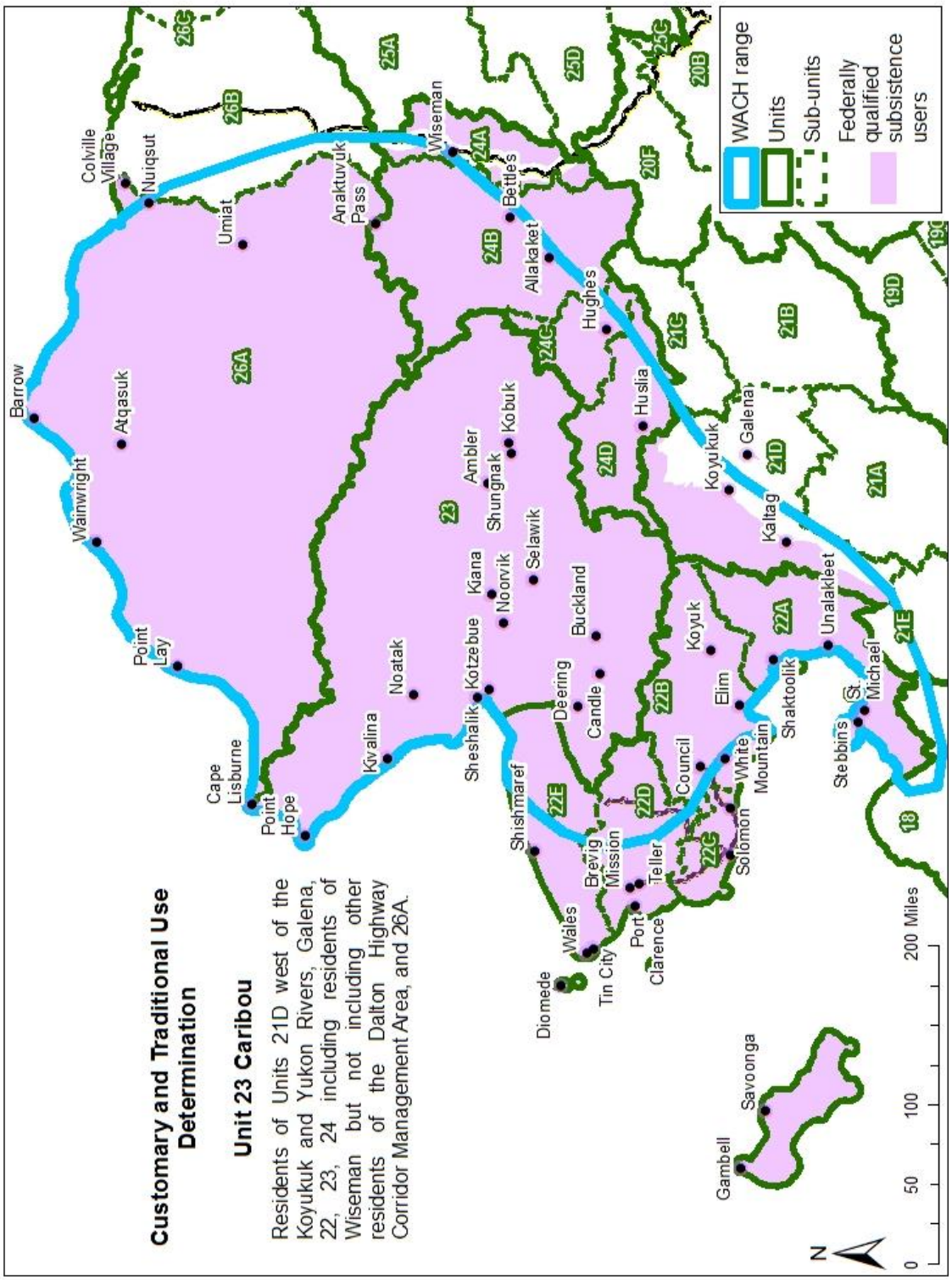
for subsistence users, and to decrease conflicts between local and nonlocal hunters. The Board deferred these proposals to the next regulatory cycle. In 2010, Proposals WP10-82, 83, and 85 requested similar date changes. The Board adopted WP10-85 to expand the time period during which aircraft are restricted in the Noatak CUA to Aug. 15-Sept. 30, which aligned with the current State regulations.

In 2011, Selawik National Wildlife Refuge (NWR) designated refuge lands in the northwest portion of the refuge as closed to big game hunting by commercial guides and transporters through their comprehensive conservation plan (FWS 2011, 2014). These refuge lands are intermingled with private lands near the villages of Noorvik and Selawik (**Map 2**). The purpose of this closure was to minimize trespass on private lands and to reduce user conflicts (FWS 2011).

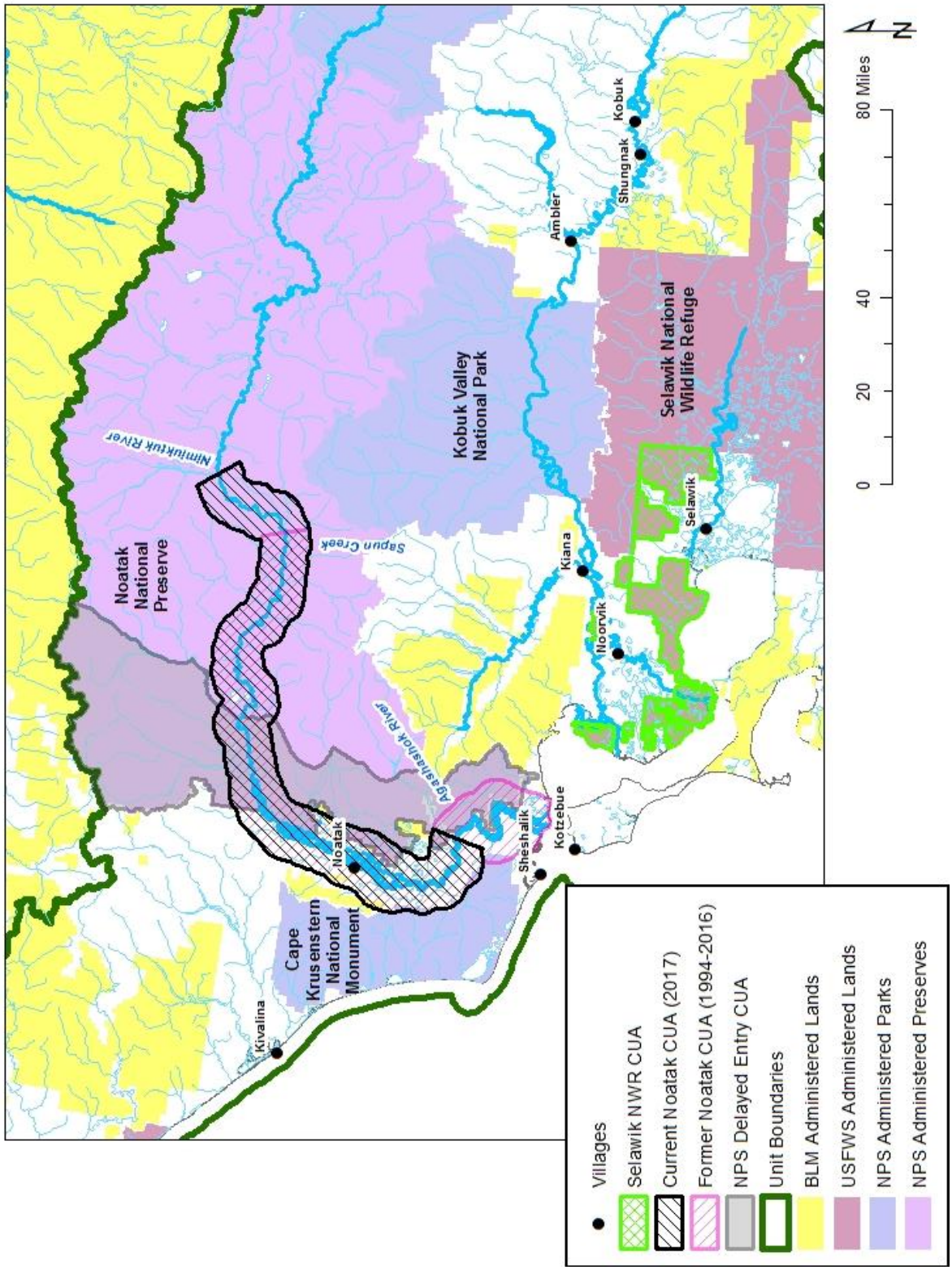
In 2012, the NPS established a Special Commercial Use Area or "delayed entry zone" in the western portion of the Noatak NP (Halas 2015, Fix and Ackerman Fix 2015). Within this zone, transporters can only transport nonlocal caribou hunters after September 15 unless otherwise specified by the Western Arctic Parklands (WEAR) superintendent in consultation with commercial operators, other agencies and local villages (Halas 2015). The purpose of this zone is to allow a sufficient number of caribou to cross the Noatak River and establish migration routes, to limit interactions between local and nonlocal hunters, and to allow local hunters the first opportunity to harvest caribou in that area (**Map 2**, FWS 2014, Halas 2015). To date, the Superintendent has not used his/her authority to alter the closure dates in response to changes in caribou herd migration or to meet the needs of local hunters (Halas 2015).

Current Events

The Kotzebue Sound AC and the WACH Working Group submitted proposals to the BOG that mirror Proposal WP20-43 (eliminate bull closure) and WP20-44 (eliminate prohibition on calves) to maintain alignment of State and Federal regulations and reduce user confusion. The BOG will act on these proposals at its Arctic/Western Region meeting in January 2020.



Map 1. Customary and Traditional (C&T) Use Determination for caribou in Unit 23. C&T Determinations indicate which Alaska rural residents are Federally qualified subsistence users. The range of the WACH is included for context.



Map 2. Federal and State Hunting Management Areas in Unit 23.

Biological Background

Caribou abundance naturally fluctuates over decades (Gunn 2001, WACH Working Group 2011). Gunn (2001) reports the mean doubling rate for Alaskan caribou as 10 ± 2.3 years. Although the underlying mechanisms causing these fluctuations are uncertain, climatic oscillations (i.e. Arctic and Pacific Decadal Oscillations) may play an important role (Gunn 2001, Joly et al. 2011). Climatic oscillations can influence factors such as snow depth, icing, forage quality and growth, wildfire occurrence, insect levels, and predation, which all contribute to caribou population dynamics (Joly et al. 2011). Density-dependent reduction in forage availability, resulting in poorer body condition may exacerbate caribou population fluctuations (Gunn 2001).

Caribou calving generally occurs from late May to mid-June (Dau 2013). Weaning generally occurs in late October and early November before the breeding season (Taillon et al. 2011). Calves stay with their mothers through their first winter, which improves calves' access to food and body condition (Holand et al. 2012). Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Fest-Bianchet 2014).

The TCH, WACH, and CACH have ranges that overlap in Unit 26A (**Map 3**), and there can be considerable mixing of herds during the fall and winter. During the 1970s, there was little overlap between these herds, but the degree of mixing seems to be increasing. Currently, the WACH, TCH, and CACH populations are all declining (Dau 2011, 2015a, Lenart 2011, Parrett 2011, 2015c, 2015d).

The WACH has historically been the largest caribou herd in Alaska and has a home range of approximately 157,000 square miles in northwestern Alaska. In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills (**Map 4**, Dau 2011, WACH Working Group 2011).

Dau (2013) determined the calving dates for the WACH to be June 9–13. This is based upon long-term movement and distribution data obtained from radio-collared caribou (these are the dates cows ceased movements). After the calving period, cows and calves move west toward the Lisburne Hills where they mix with the bulls and non-maternal cows. During the summer, the herd moves rapidly to the Brooks Range.

In the fall, the herd moves south toward wintering grounds in the northern portion of the Nulato Hills. Rut occurs during fall migration (Dau 2011, WACH Working Group 2011). Dau (2013) determined the WACH rut dates to be October 22–26 based on back-calculations from calving dates using a 230 day gestation period. Since about 2000, the timing of fall migration has been less predictable, often occurring later than in previous decades (Dau 2015a). From 2010-2015, the average date that GPS collared caribou crossed the Noatak River ranged from Sep. 30 – Oct. 23 (Joly and Cameron 2017). The proportion of caribou using certain migration paths varies each year (**Figure 1**, Joly and Cameron 2017). In recent years (2012-2014), the path of fall migration has shifted east (Dau 2015a).

The WACH Working Group developed a WACH Cooperative Management Plan in 2003, and revised it in 2011 (WACH Working Group 2011). The WACH Management Plan identifies seven plan elements:

cooperation, population management, habitat, regulations, reindeer, knowledge, and education as well as associated goals, strategies, and management actions. As part of the population management element, the WACH Working Group developed a guide to herd management determined by population size, population trend, and harvest rate. Population sizes guiding management level determinations were based on recent (since 1970) historical data for the WACH (WACH Working Group 2011). Revisions to recommended harvest levels under liberal and conservative management (+/- 100 - 2,850 caribou) were made in December 2015 (WACH Working Group 2015, **Table 1**). The State of Alaska manages the WACH to protect the population and its habitat, provide for subsistence and other hunting opportunities on a sustained yield basis, and provide for viewing and other uses of caribou (Dau 2011). State management objectives for the WACH are the same as the goals specified in the WACH Management Plan (Dau 2011, WACH Working Group 2011) and include:

- Encourage cooperative management of the WACH among State, Federal, local entities, and all users of the herd.
- Manage for healthy populations using management strategies adapted to fluctuating population levels and trends.
- Assess and protect important habitats.
- Promote consistent and effective State and Federal regulations for the conservation of the WACH.
- Seek to minimize conflict between reindeer herders and the WACH.
- Integrate scientific information, traditional ecological knowledge of Alaska Native users, and knowledge of all users into management of the herd.
- Increase understanding and appreciation of the WACH through the use of scientific information, traditional ecological knowledge of the Alaska Native users, and knowledge of all other users.

The WACH population declined rapidly in the early 1970s, bottoming out at about 75,000 animals in 1976. Aerial photo censuses have been used since 1986 to estimate population size. The WACH population increased throughout the 1980s and 1990s, peaking at 490,000 animals in 2003 (**Figure 2**). Since 2003, the herd has declined at an average annual rate of 7.1% from approximately 490,000 caribou to 200,928 caribou in 2016 (Caribou Trails 2014; Dau 2011, 2014, Parrett 2016a). In 2017, the herd increased to an estimated 259,000 caribou (Parrett 2017a).

Between 1982 and 2011, the WACH population was within the liberal management level prescribed by the WACH Working Group (**Figure 2, Table 1**). In 2013, the herd population estimate fell below the population threshold for liberal management of a decreasing population (265,000), slipping into the conservative management level. ADF&G conducted a successful photocensus of the WACH on July 1, 2016. This census resulted in a minimum count of 194,863 caribou with a point estimate of 200,928 (Standard Error = 4,295), suggesting the WACH was still within the conservative management level, although close to the threshold for preservative management (**Figure 2, Table 1**). Results of this census indicate an average annual decline of 5% per year since 2013, representing a much lower rate than the 15% annual decline between 2011 and 2013. The large cohorts of 2015 and 2016, which currently comprise a substantial proportion of the herd, contributed to the recent decreased rate of decline, but remain vulnerable to difficult winter conditions due to their young age (Parrett 2016a).

ADF&G conducted another photocensus in the summer of 2017 and also transitioned from film to digital cameras, which enhanced their ability to complete a successful and timely census (Parrett 2017a). The 2017 photocensus yielded a minimum count of 239,055 caribou with a point estimate of 259,000 caribou (Standard Error = 29,000) (Parrett 2017a). However, the use of new technology (digital cameras) may have influenced the counts, complicating comparisons between 2017 and past years. At their 2017 meeting, the WACH Working Group voted on the status of the herd, agreeing upon the conservative stable level (WACH WG 2017, **Table 1**). While population numbers alone indicate liberal management, the Working Group supported maintaining conservative management due to the use of new technology and because a large proportion of the herd is currently young caribou that are still vulnerable to harsh winters (WACH WG 2017).

ADF&G attempted another photocensus in 2018, but could not complete one due to weather and insufficient aggregation of the caribou (NWARAC 2019). At their 2018 meeting, the WACH Working Group voted to maintain the herd's status at the conservative stable level since updated population data was not available. ADF&G completed a photocensus in July 2019, and results are currently being analyzed (Hansen 2019, pers. comm.).

Between 1970 and 2017, the bull:cow ratio exceeded critical management levels in all years except 1975, 2001, and 2014 (**Figure 3**). Reduced sampling intensity in 2001 likely biased the 2001 bull:cow ratio low (Dau 2013). Since 1992, the bull:cow ratios has trended downward (Dau 2015a). The average annual number of bulls:100 cows was greater during the period of population growth (54:100 between 1976–2001) than during the recent period of decline (44:100 between 2004–2016). Additionally, Dau (2015a) states that while trends in bull:cow ratios are accurate, actual values should be interpreted with caution due to sexual segregation during sampling and the inability to sample the entire population, which likely account for more annual variability than actual changes in composition.

Although factors contributing to the decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011). Since the mid-1980s, adult mortality has slowly increased while recruitment has slowly decreased (Dau 2013, **Figure 4**). Prichard (2009) developed a population model specifically for the WACH using various demographic parameters. Prichard (2009) found adult survival to have the largest impact on population size, followed by calf survival and then parturition rates.

Calf production has likely had little influence on the population trajectory (Dau 2013, 2015a). Between 1990 and 2003, the June calf:cow ratio averaged 66 calves:100 cows/year. Between 2004 and 2016, the June calf:cow ratio averaged 71 calves:100 cows/year (**Figure 5**). In June 2016, 85 calves:100 cows were observed, which approximates the highest parturition level ever recorded for the herd (86 calves:100 cows in 1992) (Dau 2016a).

Decreased calf survival through summer and fall and recruitment into the herd are likely contributing to the current population decline (Dau 2013, 2015a). Fall calf:cow ratios indicate calf survival over summer. Between 1976 and 2017, the fall calf:cow ratio ranged from 35 to 59 calves:100 cows/year, averaging 47 calves:100 cows/year (**Figure 5**). Fall calf:cow ratios declined from an average of 46 calves:100

cows/year between 1990-2003 to an average of 42 calves:100 cows/year between 2004-2016 (Dau 2015a, **Figure 5**). Since 2008, ADF&G has recorded calf weights at Onion Portage as an index of herd nutritional status. In September 2015, calf weights averaged 100 lbs., the highest average ever recorded (Parrett 2015b).

Similarly, the ratio of short yearlings (SY, 10-11 months old caribou) to adults provides a measure of overwintering calf survival and recruitment. Between 1990 and 2003, SY:adult ratios averaged 20 SY:100 adults/year. Since the decline began in 2003 through 2016, SY:adult ratios have averaged 16 SY:100 adults/year (**Figure 5**). However, 23 SY:100 adults were observed during spring 2016 surveys, the highest ratio recorded since 2007 (Dau 2016b). 2017 and 2018 SY:adult ratios were also high at 22 SY:100 adults and 23 SY:100 adults, respectively (NWARAC 2019). The overwinter calf survival for the 2015 cohort (Oct. 2015-Jun. 2016) was 84% (Parrett 2016b). While 2016 indices suggest improvements in recruitment, the overall trend since the early 1980s has been downward (Dau 2015a, 2016b).

Cow mortality affects the trajectory of the herd (Dau 2011, 2013, NWARAC 2019). The annual mortality rate of radio-collared adult cows increased from an average of 15% between 1987 and 2003 to 23% from 2004–2014 (Dau 2011, 2013, 2014, 2015a, **Figure 4**). Mortality rates declined in 2015 and 2016, but then increased sharply in 2017. However, the increased mortality rate in 2017 may be due to a low and aging sample size as few caribou have been collared in the past two years (NWARAC 2019). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2015a) states that cow mortality estimates are conservative due to exclusion of unhealthy (i.e. diseased) and yearling cows. Dau (2013) attributed the high mortality rate for 2011–2012 (33%, **Figure 4**) to a winter with deep snows, which weakened caribou and enabled wolves to prey upon them more easily. Prior to 2004, estimated adult cow mortality only exceeded 20% twice, but has exceeded 20% in 7 out of 9 regulatory years between 2004 and 2012 (**Figure 4**). The annual mortality rate was 8% as of April 2016 (Dau 2016b). This may fluctuate substantially throughout the year based on changing local conditions and harvest levels. Dau (2015a) indicates that mortality rates may also change in subsequent management reports as the fate of collared animals is determined, and that these inconsistencies are most pronounced for the previous 1–3 years.

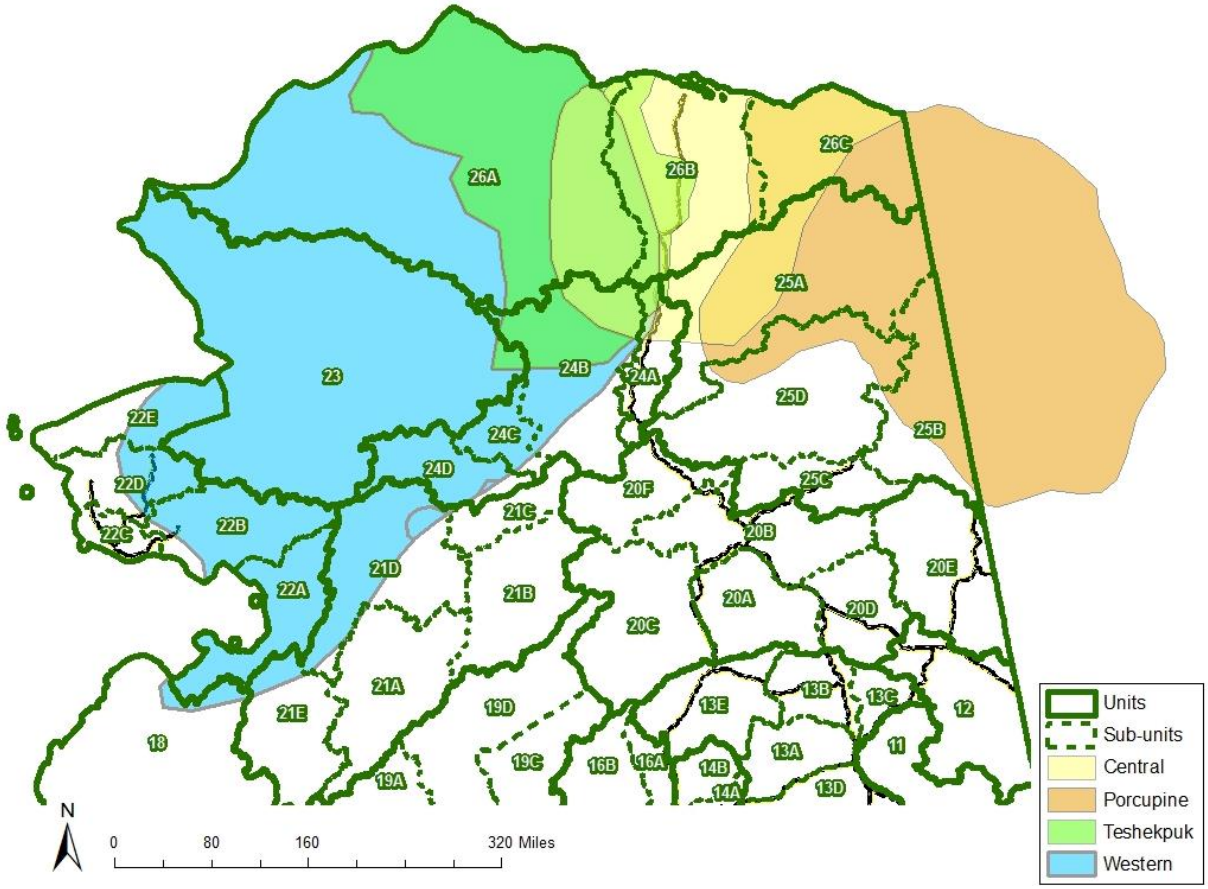
Far more caribou died from natural causes than from hunting between 1992 and 2012 (Dau 2013). Cow mortality remained constant throughout the year, but natural and harvest mortality for bulls spiked during the fall. Predation, particularly by wolves, accounted for the majority of natural mortality (Dau 2013). However as the WACH has declined and estimated harvest has remained relatively stable, the percentage of mortality due to hunting has increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (Dau 2014). In previous years (1983–2013), the estimated hunting mortality exceeded 30% only once in 1997-1998 (Dau 2013). Additionally, Prichard (2009) and Dau (2015a) suggest that harvest levels and rates of cows can greatly impact population trajectory. If bull:cow ratios continue to decline, harvest of cows may increase, exacerbating the current population decline.

Dau (2015a) cites fall and winter icing events as the primary factor initiating the population decline in 2003. Increased predation, hunting pressure, deteriorating range condition (including habitat loss and fragmentation), climate change, and disease may also be contributing factors (Dau 2015a, 2014). Joly et

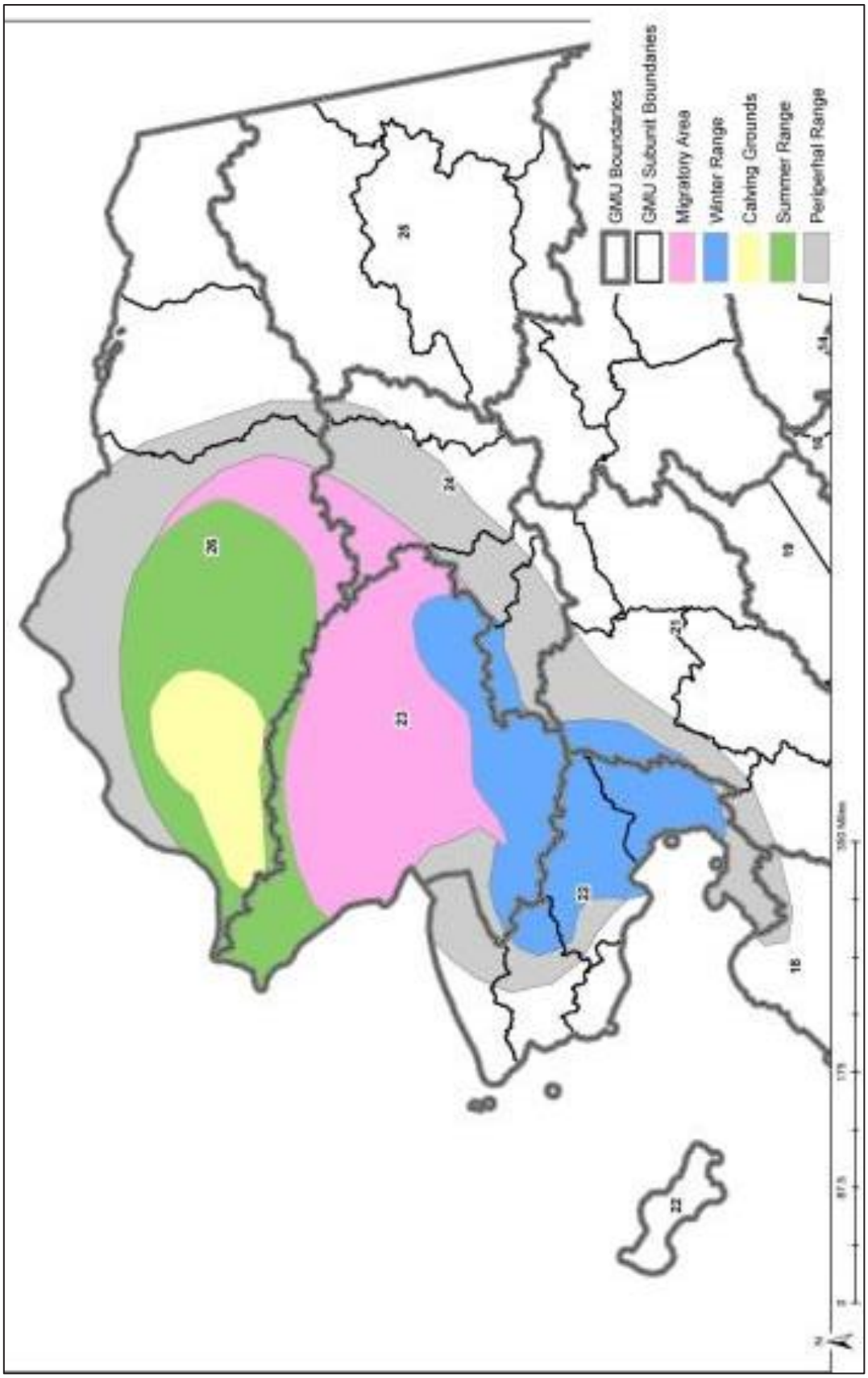
al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH. Dau (2011, 2014) reported that degradation in range condition is not thought to be a primary factor in the decline of the herd because animals have generally maintained good body condition since the decline began. Body condition is assessed on a subjective scale from 1-5. The fall body condition of adult females in 2015 was characterized as "fat" (mean= 3.9/5) with no caribou being rated as skinny or very skinny (Parrett 2015b). However, the body condition of the WACH in the spring may be a better indicator of the effects of range condition versus the fall when the body condition of the herd is routinely assessed and when caribou are in prime condition (Joly 2015, pers. comm.).

Habitat

Caribou feed on a wide variety of plants including lichens, fungi, sedges, grasses, forbs, and twigs of woody plants. Arctic caribou depend primarily on lichens during the fall and winter, but during summer they feed on leaves, grasses and sedges (Miller 2003).



Map 3. Herd overlap and ranges of the WACH, TCH, CACH, and PCH.



Map 4. Range of the WACH.

Table 1. Western Arctic Caribou Herd management levels using herd size, population trend, and harvest rate (WACH Working Group 2011, 2015).

Management and Harvest Level	Population Trend			Harvest Recommendations May Include:
	Declining Low: 6%	**Stable Med: 7%**	**Increasing High: 8%**	
Liberal	Pop: 265,000+	Pop: 230,000+	Pop: 200,000+	• Reduce harvest of bulls by nonresidents to maintain at least 40 bulls: 100 cows • No restriction of bull harvest by resident hunters unless bull:cow ratios fall below 40 bulls:100 cows
	Harvest: 16,000-22,000	Harvest: 16,000-22,000	Harvest: 16,000-22,000	
Conservative	Pop: 200,000-265,000	Pop: 170,000-230,000	Pop: 150,000-200,000	• No harvest of calves • No cow harvest by nonresidents • Restriction of bull harvest by nonresidents • Limit the subsistence harvest of bulls only when necessary to maintain a minimum 40:100 bull:cow ratio
	Harvest: 12,000-16,000	Harvest: 12,000-16,000	Harvest: 12,000-16,000	
Preservative	Pop: 130,000-200,000	Pop: 115,000-170,000	Pop: 100,000-150,000	• No harvest of calves • Limit harvest of cows by resident hunters through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 40 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to nonqualified users may be necessary
	Harvest: 8,000-12,000	Harvest: 8,000-12,000	Harvest: 8,000-12,000	
Critical Keep Bull:Cow ratio ≥ 40 Bulls:100 Cows	Pop: < 130,000	Pop: < 115,000	Pop: < 100,000	• No harvest of calves • Highly restrict the harvest of cows through permit hunts and/or village quotas • Limit the subsistence harvest of bulls to maintain at least 40 bulls:100 cows • Harvest restricted to residents only, according to state and federal law. Closure of some federal public lands to nonqualified users may be necessary
	Harvest: 6,000-8,000	Harvest: 6,000-8,000	Harvest: 6,000-8,000	

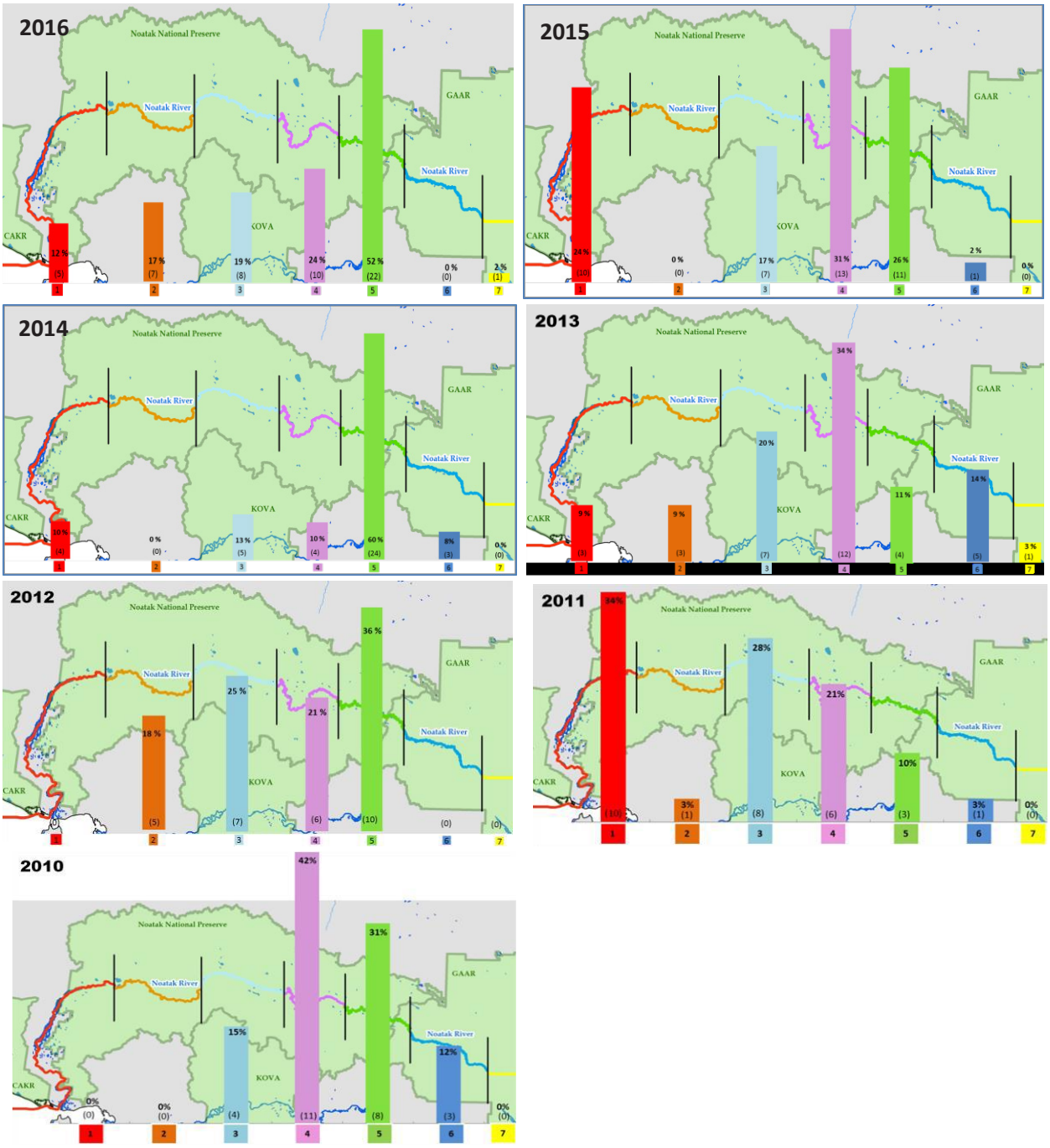


Figure 1. Distribution of caribou crossing the Noatak River during fall. Histograms depict where collared female caribou crossed the Noatak River, generally from north to south, on their fall migration. Relative percentages (top number) and the absolute number (middle number) of caribou are provided. The river is divided into seven (lowest number) color-coded segments which are displayed in the background. The middle five segments are 100 river kilometers long, while the westernmost segment (red) is 200 km (before extending into the Chukchi Sea) and the easternmost (yellow) runs as far east as WAH caribou are known to migrate. The number of caribou with GPS collars ranged from 39-79 caribou/year with later years having more collared caribou than earlier years (Joly and Cameron 2017).

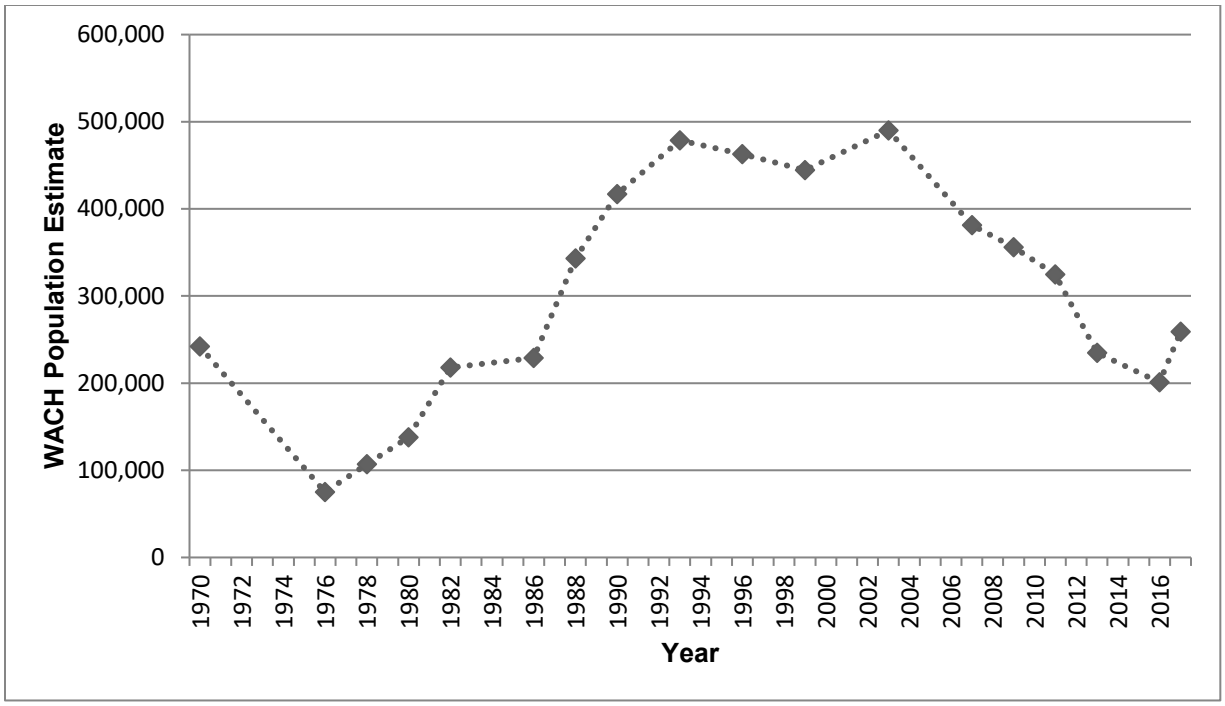


Figure 2. The WACH population estimates from 1970–2017. Population estimates from 1986–2017 are based on aerial photographs of groups of caribou that contained radio-collared animals (Dau 2011, 2013, 2014, Parrett 2016a, Parrett 2017a)**.**

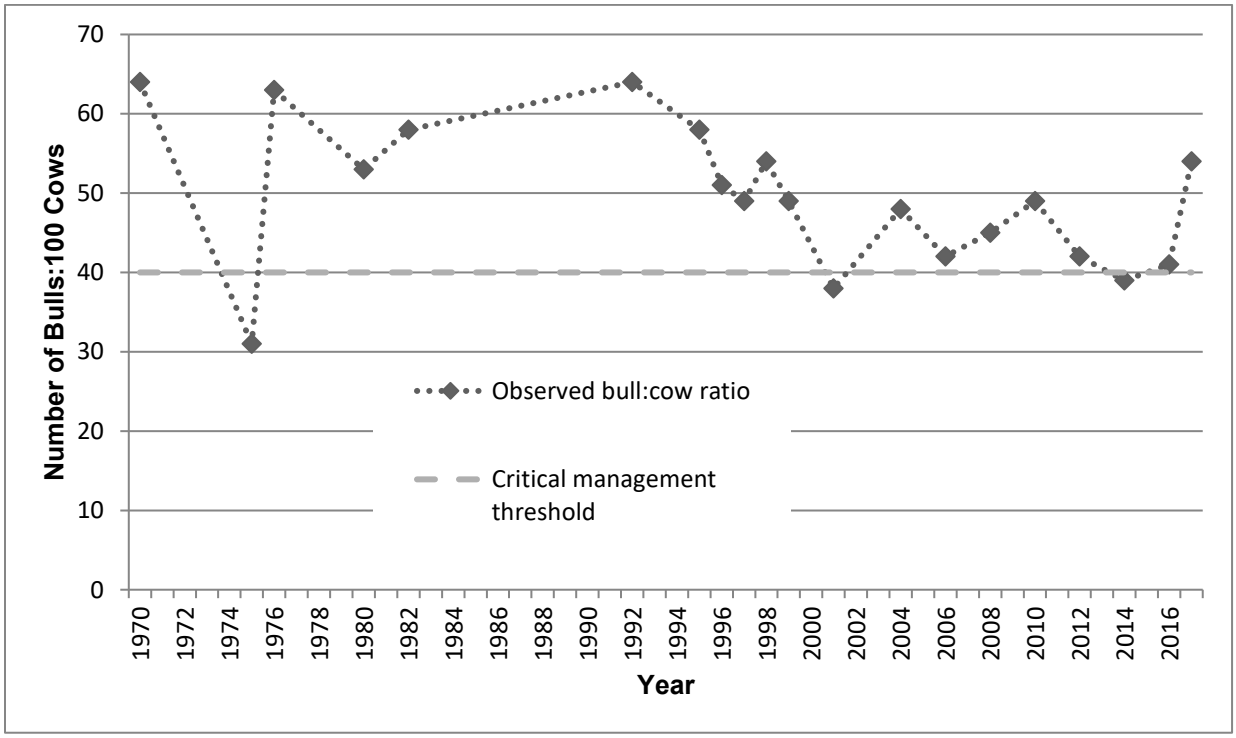


Figure 3. Bull:Cow ratios for the WACH (Dau 2015a, ADF&G 2017c, Parrett 2017a).

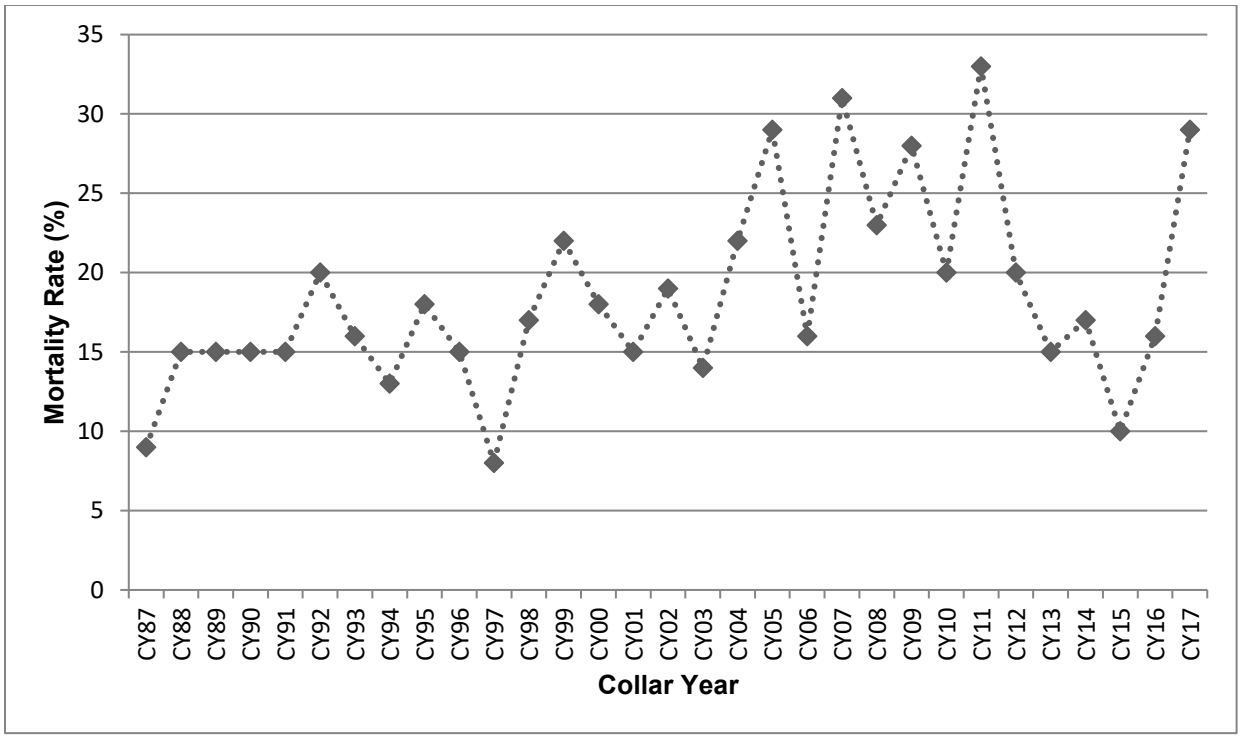


Figure 4. Mortality rate of radio-collared cow caribou in the Western Arctic caribou herd (Dau 2013, 2015a, 2016b, NWARAC 2019). Collar Year = 1 Oct-30 Sept.

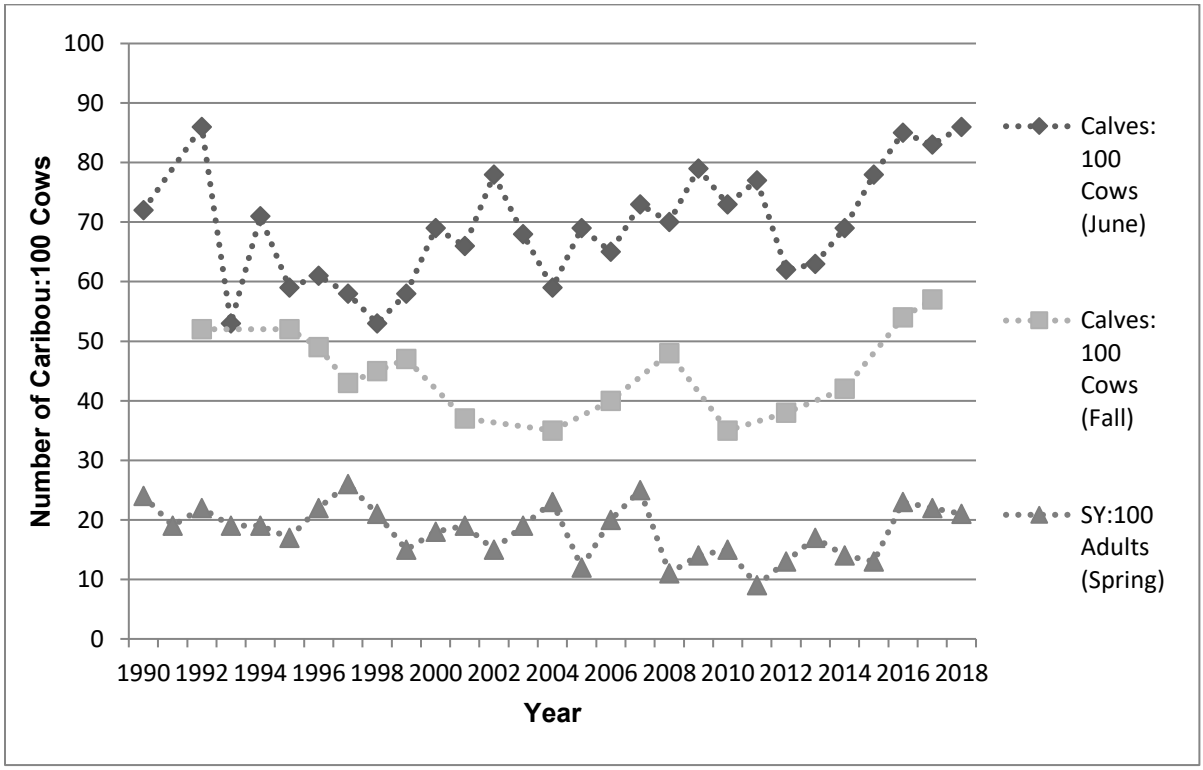


Figure 5. Calf:cow and short yearling (SY):adult ratios for the WACH (Dau 2013, 2015a, 2016a, ADF&G 2017c, Parrett 2017a, NWARAC 2019). Short yearlings are 10-11 months old caribou.

Cultural Knowledge and Traditional Practices

Meeting the nutritional and caloric needs of Arctic communities is vitally important and is the foundation of subsistence activities. However, the meaning of subsistence extends beyond human nutrition for Alaska's native peoples. Holthaus describes subsistence as the base on which Alaska Native cultures establish their identities through "philosophy, ethics, religious belief and practice, art, ritual, ceremony, and celebration" (2013: 70).

Earnest Burch describes the importance of caribou for the people of Northwest Alaska (Burch 1998). Caribou have been a primary resource for the Iñupiat of the Northwest Arctic Region for thousands of years. Caribou bones dating from 8,000 to 10,000 years ago have been excavated from archeological sites on the Kobuk River (ADF&G 1992). Historically, during fall and spring caribou migrations, people built "drive fences" out of cairns, bundles of shrubs, or upright logs. These fences were sometimes several miles long and two to three miles wide. Ideally, the closed end of the fence crossed a river, and caribou were harvested while crossing the river and retrieved later; or the fence would end in a corral where caribou were snared and killed with spears (Burch 2012). Burch notes: "The landscape of Northwest Arctic, especially in hills and mountains, is littered with the remains of drive fences that were in every stage of construction when they were abandoned" (2012:40).

Depending on where they were based, most Northwest Arctic Inupiaq Nations relied upon caribou as a primary food source and for their hides. Hides provided the best clothing material available to the Inupiat. Burch documents a preference for the late summer coats of caribou cows and calves, which were seen as providing both the softness and quality needed for high quality clothing, after the summer shedding and before acquiring a shaggy winter coat. While bulls were targeted for their fat stores and meat, cows and calves were targeted for their hides, which were considered prime during the early part of August (Burch 1998). The summer hunt's primary objective was the acquisition of hides. "It reportedly took two calf skins to make one parka, and every hunter tried to get at least twenty of them" (Burch 1998:163). Not only were the hides necessary to keep a family clothed during the winter; they also served as an important trade good.

The WACH population declined rapidly in the Northwest Arctic beginning in the late 1800s. At its low point, its range had shrunk to less than half its former size. Famine ensued, primarily due to the absence of caribou. In the early 1900s, reindeer were introduced to fill the need for food and hides. The WACH began to rebound in the 1940s. Caribou continue to be the most important land animal consumed in this region (Burch 1998, ADF&G 1992). Foote wrote about caribou hunting in the Noatak region sixty years ago, noting that life would not be possible in Noatak without this source of meat (1959, 1961).

Caribou were traditionally harvested any month of the year they were available in the Northwest Arctic Region. The objective of the summer hunt was to obtain the hides of adult caribou with their new summer coats. The fall hunt was to acquire large quantities of meat to freeze for winter (Burch 1994). Hunt timing changed—and continues to change— from year to year according to the availability of caribou and their migration paths (ADF&G 1991). Ideally, caribou harvesting occurs when the weather is cool enough to prevent spoilage of meat. If not, meat is frozen for later use. Caribou can be harvested in large

numbers, when available, and can be transported back to villages by boat before freeze-up. Hunters search for caribou and attempt to intercept them at known river crossings.

Prior to freeze-up, bulls have traditionally been preferred because they are fatter than cows (Braem et al. 2015, Georgette and Loon 1993). After freeze-up, small groups of caribou that have over-wintered may be harvested by hunters in areas that are accessible by snowmachine. Braem et al. explain, "Hunters harvest cows during the winter because they are fatter than bulls" (2015:141). Today, communities in the southern portion of Unit 23 (Buckland, Deering) harvest caribou in the winter and spring, while the other communities in Unit 23 harvest caribou in the fall, winter, and spring. Kivalina also harvests caribou in July (ADF&G 1992).

The present-day human population in Unit 23 includes 11 regional Inupiaq groups (Burch 1998). Kotzebue is the regional hub of transportation and commerce and is the home to the majority of non-Natives in the region. The population of Unit 23 was approximately 7,500 in 2010, according to the U.S. Census (ADOLWD 2016). Caribou continue to dominate the subsistence harvest of the region. In household harvest surveys conducted between 1964 and 2012, caribou were often the most harvested species, more than any other wild resource, in lbs. of edible weight (**Appendix 1**) (ADF&G 2016a). Based on these surveys, in a typical study year, the harvest of caribou was between 100 and 200 lbs. per person in northwest Alaska (**Appendix 1**) (ADF&G 2016a).

Present-day use of caribou calves appears to be limited, but does occur opportunistically. When calves are harvested, they can provide a special food for elders. At the winter 2019 Northwest Arctic Council meeting, one member from Kotzebue characterized local use of caribou calves: "We do use calves for baby garments, little mukluks and outfits and the meat is good for elders. They don't like tough food…these are desired food for elderly that is soft and tender, especially those in the long-term care" (NWARAC 2019:185). This member indicated that in cases in which calves are orphaned, they could go to good use by the community.

At the fall 2015 Northwest Arctic Council meeting, in the context of discussing cow closures due to heightened conservation concerns at that time, two members stated that local hunters do not take calves or want to take calves (NWARAC 2015). Elders in the region have participated in efforts to educate hunters to avoid orphaning caribou calves: at the fall 2018 Northwest Arctic meeting, Kotzebue community member Cyrus Harris read guidelines from the Caribou Hunter Safety Group into the record, which included advice to hunters about how to avoid accidentally taking cows with calves:

"Take your time. Observe caribou groups before you approach. Pick out the animals you want to harvest. Look for animals that are fat and in good shape before you shoot…When mature bulls are in the rut, younger bulls and barren cows can still provide good meat. Don't shoot cows with calves. If you want to take a cow, wait to see if it has a calf with it" (NWARAC 2018: 83).

There was discussion at the winter 2019 Northwest Arctic Council meeting regarding whether or not to submit a proposal mirroring WP20-44, which would rescind the ban on calf harvest. Council members explored the value of being able to take calves that have been orphaned, but had concerns about the feasibility of distinguishing between orphaned and merely temporarily separated calves in practice. There was also testimony regarding the possibility that orphaned calves may survive on their own or be adopted by

other cows in the herd, as has been observed by reindeer herders in the region. The member who had initially made a motion to submit a proposal to allow calf harvest withdrew her motion after hearing testimony from other Council members. The motion was still voted upon and failed unanimously.

Harvest History

The State manages the WACH on a sustained yield basis (i.e. managing current harvests to ensure future harvests). The harvestable surplus when the WACH population is stable is calculated as 7% of the estimated population (WACH working group 2011, Parrett 2017b, pers. comm.). In 2017, the WACH harvestable surplus was 18,130 caribou (7% of 259,000 caribou). Assuming the herd remained stable in 2018 and 2019, the harvestable surplus remains 18,130 caribou. This is a substantial increase from the 2016 harvestable surplus of 12,056 caribou when harvest likely exceeded sustainable levels. However, there is substantial uncertainty in harvestable surplus estimates (Parrett 2015a, Dau 2015a). Of particular concern is the overharvest of cows, which has probably occurred since 2010/11 (Dau 2015a). Dau (2015a:14-29) states, "even modest increases in the cow harvest above sustainable levels could have a significant effect on the population trajectory of the WACH."

Caribou harvest by local hunters is estimated from community harvest surveys, if available, and from models developed by A. Craig with ADF&G's Division of Wildlife Conservation Region V. These models incorporate factors such as community size, availability of caribou, and per capita harvests for each community, which are based on mean values from multiple community harvest surveys (Dau 2015a). In 2015, Craig's models replaced models developed by Sutherland (2005), resulting in changes to local caribou harvest estimates from past years. While Craig's models accurately reflect harvest trends, they do not accurately reflect actual harvest numbers (Dau 2015a). (Note: no model accurately reflects harvest numbers). This analysis only considers the updated harvest estimates using Craig's new model as cited in Dau (2015a). Caribou harvest by nonlocal residents and nonresidents are based on harvest ticket reports (Dau 2015a). Hunters considered local by ADF&G are functionally identical to Federally qualified subsistence users (e.g. Residents of St. Lawrence Island are technically Federally qualified subsistence users, but do not frequently harvest Western Arctic caribou) (**Map 1**).

From 2000–2014, the average estimated total harvest from the WACH was 11,984 caribou/year, ranging from 10,666-13,537 caribou/year (Dau 2015a, **Figure 6**). These harvest levels are within or below the conservative harvest level specified in the WACH Management Plan (**Table 1**). In 2015 and 2016, total local harvest estimates increased to 14,360 caribou and 14,971 caribou, respectively (Hansen 2019, pers. comm.). While these harvest estimates are below the 2017-2019 harvestable surpluses, they exceed the 2016 harvestable surplus. These are the most recent estimates available for local harvest. Of note, harvest estimates do not include wounding loss, which may be hundreds of caribou (Dau 2015a).

Local hunters account for approximately 95% of the total WACH harvest and residents of Unit 23 account for approximately 58% of the total harvest on average (**Figure 7**, ADF&G 2017c). Comparison of caribou harvest by community from household survey data (**Appendix A)** with **Figure 1** demonstrates that local community harvests parallel WACH availability rather than population trends. For example, Ambler only harvested 325 caribou when the WACH population peaked in 2003, but harvested 685 caribou in 2012

when most of the WACH migrated through eastern Unit 23. Similarly, Noatak only harvested 66 caribou in 2010 when no GPS-collared caribou migrated through western Unit 23. Harvest increased substantially (360 caribou) the following year when 37% of the GPS-collared caribou (and thus, a greater proportion of the WACH) migrated through western Unit 23.

Between 1998 and 2018, annual reported caribou harvest in Unit 23 ranged from 168-676 caribou (**Figure 8**). Over the same time period, reported harvest by non-Federally qualified users ranged from 131-657 caribou. The lowest reported harvest occurred in 2016 when all Federal public lands in Unit 23 were closed to non-Federally qualified users, but before registration permits were required for Federally qualified subsistence users. In 2017, the BOG began requiring registration permits, which is reflected in the greater number of reported caribou harvest by Federally qualified subsistence users (**Figure 8**). On average, 76% of WACH caribou harvested by nonlocals are harvested in Unit 23 (Dau 2015a).

From 1999-2013, 72% of nonlocal hunters on average accessed the WACH by plane. Most nonlocal harvest (85-90%) occurs between Aug. 25 and Oct. 7. In contrast, most local, subsistence hunters harvest WACH caribou whenever they are available using boats, 4-wheelers, and snowmachines (Dau 2015a, Fix and Ackerman 2015). In Unit 23, caribou are generally available during fall migration. In recent years, caribou migration has occurred later in fall, resulting in subsistence harvest also occurring later.

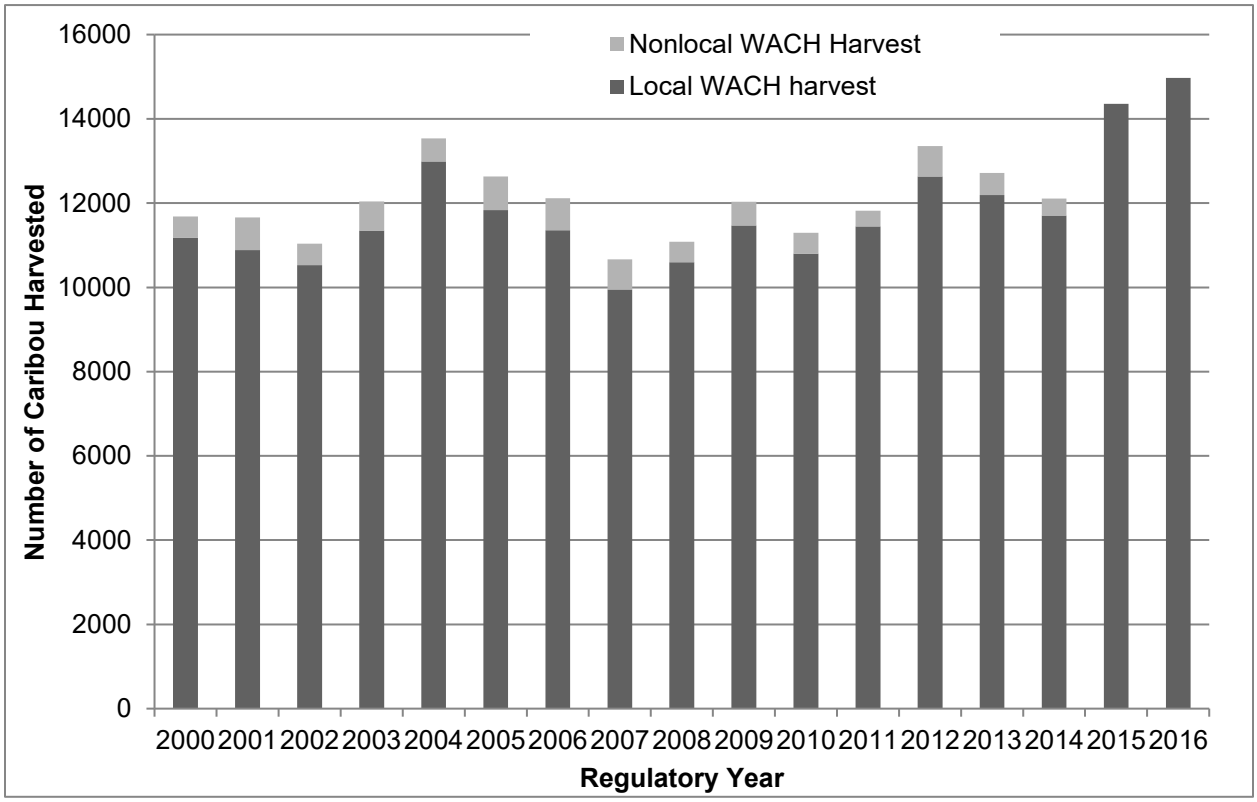


Figure 6. Estimated number of caribou harvested from the WACH by residency (Dau 2015a, Hansen 2019, pers. comm.).

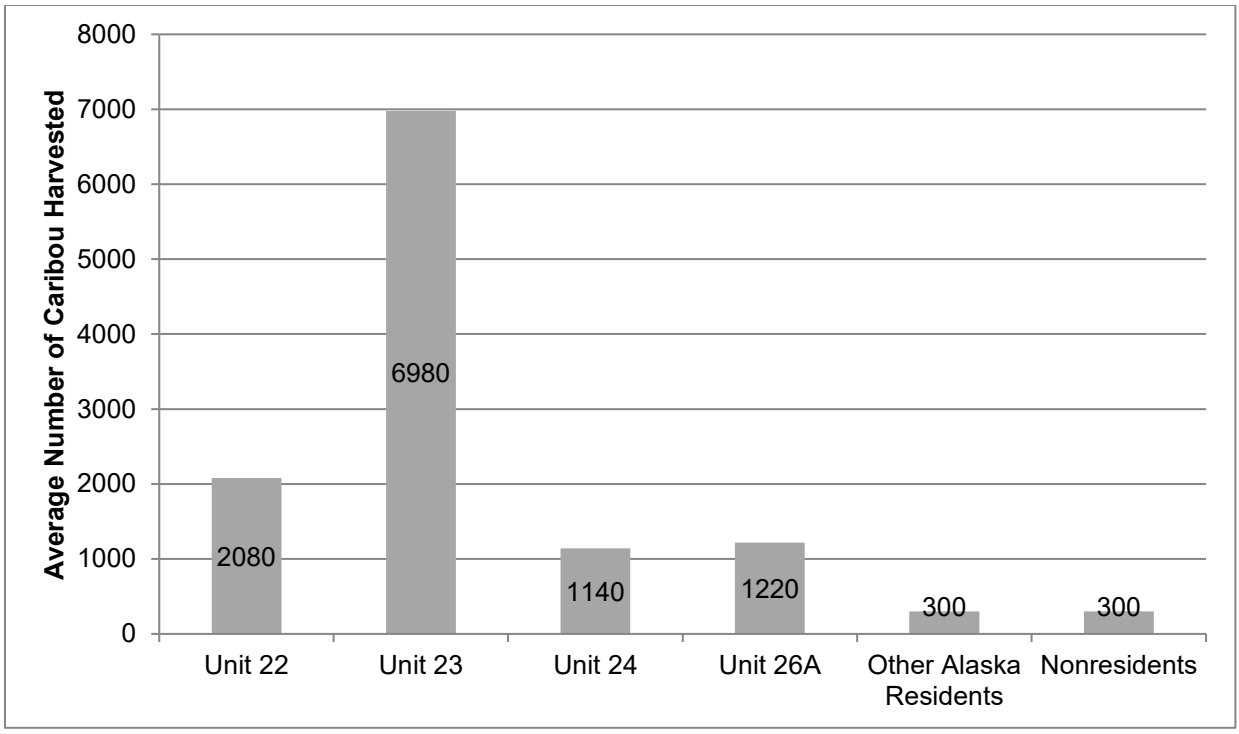


Figure 7. Average number of caribou harvested by unit and residency from 1998-2015 (ADF&G 2017c).

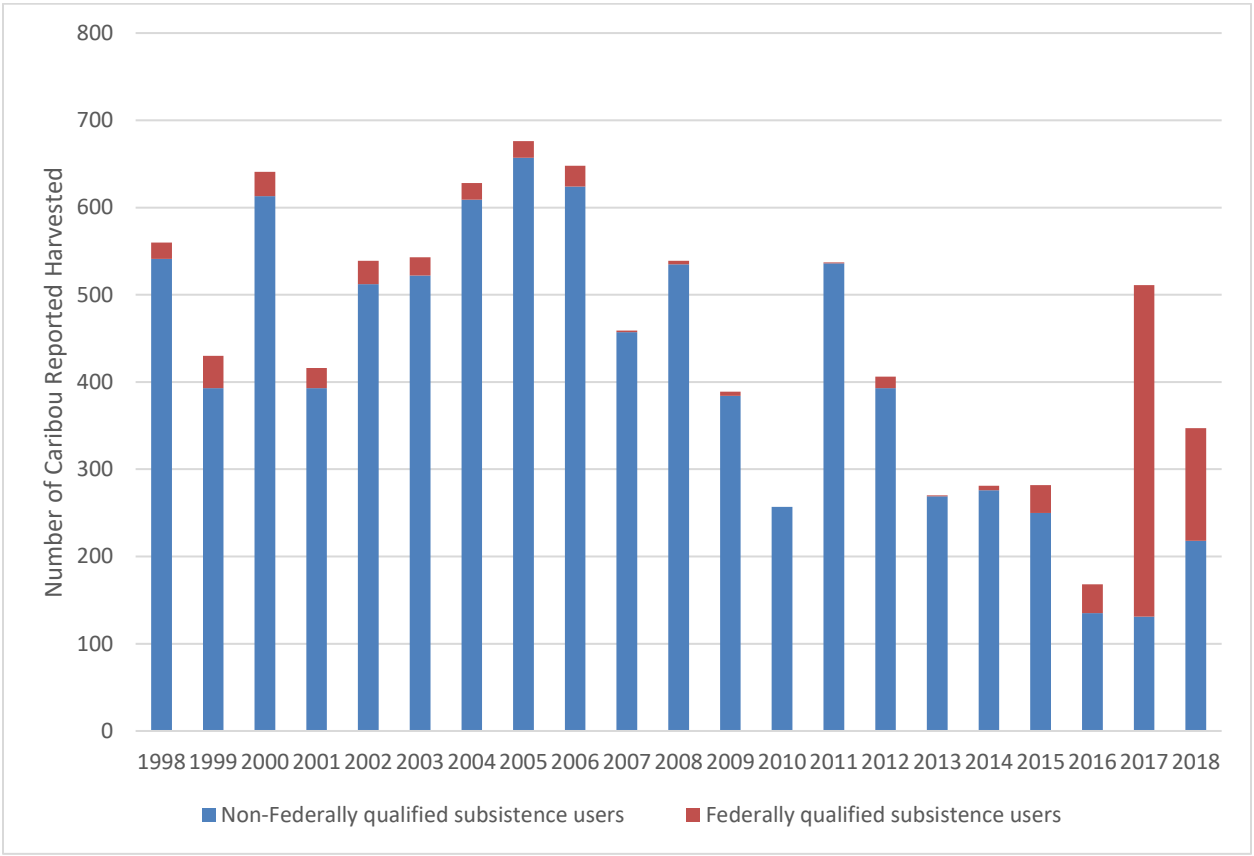


Figure 8. Reported caribou harvest in Unit 23 (WinfoNet 2018, 2019).

Other Alternatives Considered

One alternative considered was to maintain the prohibition on calf harvest. As described in the Cultural Knowledge and Traditional Practices of this analysis, some members and constituents of the Northwest Arctic Council have voiced opposition to the practice of harvesting caribou calves (NWARAC 2015; NWARAC 2018). Supporting calf harvest has the potential to undermine efforts by Kotzebue elders to educate hunters about respectful practices of selecting and hunting caribou that minimize the number of orphaned calves. Those Council members and constituents who have opposed calf harvest on record have indicated that not taking calves is a rule which informs their hunting and which contributes to the core identity of some subsistence hunters in the Northwest Arctic Region.

Under this alternative, the Office of Subsistence Management (OSM) recommends a year-round bull season for caribou but opposes permitting calf harvest in Unit 23. One of the purposes of the Alaska National Interests Land Conservation Act (ANILCA) is "to provide the opportunity for rural residents engaged in a subsistence way of life to do so" (§802(1)). Thus, increased harvest opportunity is supported, but so is practicing subsistence as a way of life, as defined locally. However, it is for the Councils, rather than OSM, to define what constitutes subsistence as a way of life for local constituents. Therefore, OSM considered and rejected this alternative. Traditions of taking or not taking calves may not be generalizable for all residents of the Northwest Arctic region as evidenced by differing opinions between members of the Northwest Arctic Council and the Kotzebue AC and WACH working group. The Northwest Arctic Council will have the opportunity to consider and discuss these proposals at their Fall 2019 meeting, and can choose to oppose or support these proposals on the record at that time.

Effects of the Proposal

If the Board adopts Proposal WP20-43/44/45/46, the bull caribou season would be open year-round and the harvest of calves would be permitted in Unit 23. This would increase harvest opportunity for Federally qualified subsistence users. No conservation concerns exist for allowing bull harvest during rut while calf harvest presents minimal conservation concerns.

Eliminating the bull closure would allow harvest of young bulls, which would reduce harvest pressure on cows, helping to grow the herd. As the timing of fall caribou migration has changed in recent years, it would also provide more harvest flexibility, alleviating pressure on Federally qualified subsistence users to harvest caribou during a particular timeframe (NWARAC 2019). While the risk of harvesting an unpalatable bull in rut exists, Federally qualified subsistence users had been selectively harvesting bulls before the closure was adopted in 2016. Furthermore, targeting younger bulls during rut is a recommended practice. The Native Village of Kotzebue (2018) produced an education flyer about winter caribou hunting, which included a recommendation to harvest younger bulls when mature bulls are in rut. The NANA regional corporation submitted comments to the BOG in 2015 in opposition to the bull closure to allow shareholders to harvest younger caribou for food security (Kramer 2015).

Eliminating the prohibition on calf harvest would allow the harvest of orphaned calves that may otherwise succumb to predation. However, it can be difficult to identify orphaned calves as caribou are scattered

across the landscape, and calves and cows can be separated by substantial distances. Additionally, orphaned calves may survive, especially if they remain with the herd. Russell et al. (1991) found survival rates of orphaned and non-orphaned calves were 63% and 78%, respectively, indicating orphaned calves still have a good chance of survival, although the sample size for orphaned calves was very small. The timing of abandonment also influences survival. Calves orphaned after weaning (October) have greater chances of survival than calves orphaned before weaning (Holand et al. 2012, Joly 2000, Russell et al. 1991, Rughetti and Fest-Bianchet 2014). As caribou migration has been occurring later in the fall, subsistence users are harvesting caribou in November rather than September, which could improve the chances of orphaned calves surviving. Additionally, educational initiatives by Unit 23 Caribou Hunter Success Working Group may help reduce the number of orphaned calves. This group is working to educate hunters on better hunting practices, including taking the time to identify cows with calves (Atkinson 2019, pers. comm.). Finally, a member of the public also testified that other cow caribou will adopt orphaned calves (NWARAC 2019).

Allowing calf harvest may also reduce wanton waste. A Northwest Arctic Council member noted that he has seen dead calves in the field, presumably mistakenly shot and then left since they are illegal to harvest (NWARAC 2019). The ADF&G caribou biologist stated many orphan calves have ended up around Kotzebue during the hunting season, but have been unavailable to harvest. He collared a few of these orphaned calves, all of which died shortly thereafter. He also stated that he receives many reports from hunters of orphaned and wounded calves out in the field that are not legally available for harvest (NWARAC 2019). In regards to the prohibition on the take of cows accompanied by calves, an NPS staff biologist voiced concern that unethical hunters could harvest calves and then harvest its mother, who would no longer be accompanied by a calf (NWARAC 2019).

The Western Arctic and Teshekpuk caribou herds are the only caribou herds in Alaska where calf harvest is prohibited. These restrictions were adopted by the BOG in 2015 and the Board in 2016 as conservation measures when both herds were declining. The WACH management plan also recommends prohibiting calf harvest when the herd is within the conservative management level. However, calves comprise a very small portion of the harvest. In his population model, Prichard (2009) assumed calves comprised only 2% of the total annual WACH harvest, which would not affect the population trajectory of the WACH. As most calves die within their first year and few hunters target calves, calf harvest may be compensatory mortality, although Prichard (2009) assumed all harvest mortality to be additive. While calf recruitment influences herd abundance and population trajectory, Prichard (2009) found adult survival to have the largest impact on WACH population size. Prohibiting cow harvest would have a greater impact on herd conservation than prohibiting calf harvest.

While calves were traditionally harvested for specific purposes, people no longer target calves in the Northwest Arctic region (NWARAC 2015, 2019). The Northwest Arctic Council discussed submitting a proposal to allow calf harvest at their winter 2019 meeting. One member mentioned that calves were traditionally used for garments and as food for elders. However, most members strongly opposed calf harvest due to conservation concerns and personal values, and the Council voted unanimously not to submit a proposal (NWARAC 2019).

§802(1) of ANILCA states, "consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands." While increasing harvest opportunity by liberalizing harvest limits and season lengths can certainly lessen adverse impacts on rural residents, OSM recognizes social and cultural concerns also affect the satisfaction of subsistence needs. While allowing calf harvest should not affect the conservation of the WACH and would increase harvest opportunities, maintaining the prohibition on calf harvest may be warranted due to socio-cultural concerns. Northwest Arctic Council members have stated on several occasions that no one hunts calves in the Northwest Arctic region and that hunting calves is wrong and unethical because calves are the future of the herd (NWARAC 2015, 2019). While the Northwest Arctic Council represents interests and concerns of Federally qualified subsistence users to the Board, subsistence users on the Kotzebue AC and the WACH Working Group support allowing calf harvest in the Northwest Arctic to utilize orphaned calves. The Northwest Arctic Council will have another opportunity to comment and vote on this issue at its 2019 fall meeting after considering the full analysis as well as any public and tribal comments.

The BOG will consider similar proposals at its Arctic/Western Region meeting in January 2020. If both the BOG and the Board adopt proposals to eliminate the bull closure and the prohibition on calf harvest, State and Federal regulations would maintain alignment, reducing user confusion. If only the BOG adopts these changes, Federal regulations would be more restrictive than State regulations, contrary to the rural subsistence priority mandated by ANILCA. However, Federally qualified subsistence users would still be able to harvest bulls year-round as well as calves under State regulations, except in National Parks and Monuments and the area closed to non-Federally qualified users around Noatak (see Federal regulation). Alternatively, if only the Board adopts these changes, Federal regulations would provide for a rural subsistence priority on Federal public lands only. Given that gravel bars below the mean high water mark are under State jurisdiction and that caribou are commonly harvested along rivers, lifting these restrictions under Federal regulations only could result in substantial user confusion and law enforcement concerns. Therefore, the BOG's decision on the bull closure and prohibition on calf harvest could affect the outcome of Proposals WP20-43/44/45/46.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-46 and **take no action** on Proposals WP20-43, WP20-44, and WP20-45.

Justification

Adopting Proposal WP20-46 increases harvest opportunity for Federally qualified subsistence users. Eliminating the bull closure may help grow the WACH by reducing harvest pressure on cows. As most people do not target calves, calf harvest is expected to be very low and should not affect the conservation of the herd. Additionally, allowing calf harvest may reduce wanton waste by allowing mistakenly shot calves to be legally salvaged, and would permit harvest of orphaned calves.

LITERATURE CITED

ADF&G. 1988. Regulatory Proposals Submitted to the Alaska Board of Game, March 1988. Division of Boards, Juneau.

ADF&G. 1991. Customary and Traditional Worksheets. Arctic Region: North Slope Area: GMU's 23, 24, 26. Division of Subsistence, Juneau, Alaska.

ADF&G. 1992. Customary and Traditional Worksheets. Northwest Alaska GMU's 22 and 23, Black Bear, Brown Bear, Caribou, Dall Sheep, Moose, Muskoxen. Division of Subsistence, Kotzebue, Alaska.

ADF&G. 2009. Alaska Board of Game meeting information. Summary. Arctic Region Nov. 13-16, 2009. Nome. Alaska Department of Fish and Game. http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=11-13-2009&meeting=arctic. Accessed April 5, 2017.

ADF&G. 2015. RC069. Estimated total caribou harvest by community, per capita caribou harvest by community, and data sources, GMUs 21, 22, 23, 24 and 26: Western Arctic caribou herd and Teshekpuk caribou herd. Alaska Board of Game Meeting Information. Southcentral Region, March 13-18, 2015. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2014-2015/Southcentral_03_13_15/rcs/rc069_ADFG_Caribou_harvest_data.pdf. Accessed: February 22, 2016.

ADF&G. 2016a. GMU 23 Working Group. http://www.adfg.alaska.gov/index.cfm?adfg=plans.unit23. Retrieved August 3rd, 2016.

ADF&G. 2016b. Community subsistence information system. http://www.adfg.alaska.gov/sb/CSIS/, accessed February 1. ADF&G. Division of Subsistence. Anchorage, AK.

ADF&G. 2016c. Harvest report online database. ADF&G, Anchorage, AK.

ADF&G. 2017a. Preliminary Actions Taken. Alaska Board of Game. Arctic and Western Region. Jan. 6-9, 2017. Bethel, AK. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2016-2017/aw/soa_prelim.pdf. Accessed January 20, 2017.

ADF&G 2017b.. Proposal book, 2016/2017 cycle. Alaska Board of Game. Arctic and Western Region. Jan. 6-9, 2017. Bethel, AK. http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=01-06-2017&meeting=bethel. Accessed March 13, 2017.

ADF&G 2017c. Region V Caribou Overview. Alaska Board of Game. Arctic and Western Region. Jan. 6-9, 2017. Bethel, AK. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/2016-2017/aw/Tab_1.3_RegionV_Caribou_Overview.pdf. Accessed January 20, 2017.

ADOLWD. 2016. Cities and Census Designated Places, 2010 to 2015. http://laborstats.alaska.gov/pop/popest.htm, accessed February 1, 2016. Labor Market Information (Research and Analysis). Juneau, AK.

Atkinson, Hannah. 2019. Cultural anthropologist. Personal communication: email. National Park Service. Kotzebue, AK.

BHA Alaska. 2017. WSA16-01 Federal public lands closed to caribou hunting; Navigate the rules, GO HUNT! Backcountry Hunters and Anglers Alaska. http://forums.outdoorsdirectory.com/showthread.php/156247-Unit-23-NW-Arctic-RAC-at-it-again-now-they-want-to-close-moose?p=1590300#post1590300 Accessed April 18, 2017.

Betcher, S. 2016. "Counting on Caribou: Inupiaq Way of Life in Northwest Alaska". Documentary video; duration 17:05. Farthest North Films. Available at http://www.farthestnorthfilms.com/. Accessed: August 26th, 2016.

Betchkal, D. 2015. Acoustic monitoring report, Noatak National Preserve – 2013 and 2014. National Park Service. https://science.nature.nps.gov/im/units/cakn/vitalsign.cfm?vsid=71. Accessed: February 1, 2017.

Bradshaw, C.J., S. Boutin, and D.M. Hebert.1997. Effects of petroleum exploration on woodland caribou in northeastern Alberta. *The Journal of wildlife management*.1127-1133.

Braem, N.M., E.H. Mikow, S.J. Wilson, M.L. Kostick. 2015. Wild food harvests in three upper Kobuk River communities: Ambler, Shungnak, and Kobuk, 2012-2013. ADF&G Division of Subsistence, Technical Paper No. 402. Fairbanks, AK.

Burch, Jr., E. S. 1984. The Kotzebue Sound Eskimo. In Handbook of North American Indians--Arctic. Volume 5. Edited by David Damas. Smithsonian Institution, Washington, D.C.

Burch, Jr., E. S. 1994. The Cultural and Natural Heritage of Northwest Alaska. Volume V. Nana Museum of the Arctic, Kotzebue, Alaska and U.S. National Park Service, Alaska Region. Anchorage, Alaska.

Burch, E.S. 1998. The Inupiaq Eskimo nations of Northwest Alaska. University of Alaska Press. Fairbanks, AK.

Burch, E.S. 2012. Caribou herds of Northwest Alaska. University of Alaska Press. Fairbanks, AK.

Caribou Trails 2014. News from the Western Arctic Caribou Herd Working Group. Western Arctic Caribou Herd Working Group, Nome, AK. Issue 14. http://westernarcticcaribou.org/wp-content/uploads/2014/07/CT2014_FINAL_lowres.pdf. Retrieved: June 23, 2015.

Cohen, M.J. and Pinstrup-Andersen, P., 1999. Food security and conflict. *Social Research*, pp.375-416.

Dau, J. 2011. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24, and 26A caribou management report. Pages 187-250 *in* P. Harper, editor. Caribou management report of survey and inventory activities July 1, 2008–30 June 30, 2010. ADF&G. Juneau, AK.

Dau, J. 2013. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24, and 26A caribou management report. Pages 201-280 *in* P. Harper, editor. Caribou management report of survey and inventory activities July 1, 2010–30 June 30, 2012. ADF&G. Juneau, AK.

Dau, J. 2014. Wildlife Biologist. Western Arctic Caribou herd presentation. Western Arctic Caribou Herd (WACH) Working Group Meeting, December 17-18, 2014. Anchorage, Alaska. ADF&G. Nome, AK.

Dau, J. 2015a. Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24 and 26A. Chapter 14, pages 14-1 through 14-89. *In* P. Harper, and Laura A. McCarthy, editors. Caribou management report of survey and inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-4, Juneau.

Dau, J. 2015b. Wildlife Biologist. Letter to the WACH Working Group members. Western Arctic Caribou Herd Working Group meeting. Dec. 16-17. Anchorage, AK.

Dau, J. 2016a. Memorandum to S. Machida dated June 21, 2016. 2016 Western arctic caribou herd calving survey: 4-12 June. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Dau, J. 2016b. Memorandum to S. Machida dated April 26, 2016. 2016 Western Arctic caribou herd recruitment survey: 31 March and 5, 19, and 21 April. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Fall, J.A. 1990. The Division of Subsistence of the Alaska Department of Fish and Game: An Overview of its Research Program and Findings: 1980-1990. *Arctic Anthropology* 27(2): 68-92.

Fienup-Riordan, A., 1990. *Eskimo essays: Yup'ik lives and how we see them*. Rutgers University Press.

Fix, P.J. and A. Ackerman. 2015. Noatak National Preserve sport hunter survey. Caribou hunters from 2010-2013. Natural resources report. National Park Service.

Foote, D. C. 1959. The Economic Base and Seasonal Activities of Some Northwest Alaskan Villages: A Preliminary Study. U.S. Atomic Energy Commission.

Foote, D. C. 1961. A Human Geographical Study in Northwest Alaska. Final Report of the Human Geographic Studies Program, U.S. Atomic Energy Commission.

Fullman, T.J., K. Joly, A. Ackerman. 2017. Effects of environmental features and sport hunting on caribou migration in northwestern Alaska. Movement Ecology. 5:4

FSB. 2016. Transcripts of Federal Subsistence Board proceedings. April 13, 2016. Office of Subsistence Management, USFWS. Anchorage, AK.

FWS. 1995a. Staff analysis P97–051. Pages 334-339 *in* Federal Subsistence Board Meeting materials April 10-14, 1995. Office of Subsistence Management, USFWS. Anchorage, AK. 398pp.

FWS. 1995b. Staff analysis P95–062. Pages 399-404 *in* Federal Subsistence Board Meeting materials April 10-14, 1995. Office of Subsistence Management, USFWS. Anchorage, AK. 488pp.

FWS. 1997. Staff analysis P97–066. Pages 879-895 *in* Federal Subsistence Board Meeting materials April 7-11, 1997. Office of Subsistence Management, USFWS. Anchorage, AK. 1034pp.

FWS. 2000a. Staff analysis P00–053. Pages 563-573 *in* Federal Subsistence Board Meeting materials May 2-4, 2000. Office of Subsistence Management, USFWS. Anchorage, AK. 661pp.

FWS. 2011. Selawik National Wildlife Refuge. Revised Comprehensive Conservation Plan. National Wildlife Refuge System. Alaska Region of the U.S. Fish and Wildlife Service. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Selawik/PDF/CCP_Full_Final_Document.pdf. Accessed March 28, 2017.

FWS. 2014. FY2014 Annual report reply to the Norwest Arctic Subsistence Regional Advisory Council. Office of Subsistence Management, USFWS. Anchorage, AK.

FWS. 2016. OSM database. Office of Subsistence Management. U.S. Fish and Wildlife Service. Anchorage, AK.

Georgette, S. and H. Loon. 1988. The Noatak River: Fall caribou hunting and airplane use. Technical Paper No. 162. ADF&G, Division of Subsistence. Kotzebue, AK.

Georgette, S., and H. Loon. 1993. Subsistence use of fish and wildlife in Kotzebue, a Northwest Alaska regional center. ADF&G, Division of Subsistence, Technical Paper No. 167. Fairbanks, AK.

Georgette, S. 2016. Refuge manager. Personal communication: e-mail. Selawik National Wildlife Refuge. Kotzebue, AK.

Gunn, A. 2001. Voles, lemmings and caribou – population cycles revisited? Rangifer, Special Issue. 14: 105-111.

Hansen, D.A. 2019. Wildlife Biologist. Personal communication: e-mail. Alaska Department of Fish and Game. Kotzebue, AK.

Halas, G. 2015. Caribou migration, subsistence hunting, and user group conflicts in Northwest Alaska: A traditional knowledge perspective. University of Fairbanks-Alaska. Fairbanks, AK.

Harrington, A.M. and P.J. Fix. 2009. Benefits based management study for the Squirrel River area. Project report for USDI Bureau of Land Management. Department of Resources management. University of Alaska-Fairbanks. Fairbanks, AK.

Holand, O., R.B. Weladji, A. Mysterud, K. Roed, E. Reimers, M. Nieminen. 2012. Induced orphaning reveals post-weaning maternal care in reindeer. European Journal of Wildlife Research. 58: 589-596.

Holthaus, G., 2012. Learning Native wisdom: What traditional cultures teach us about subsistence, sustainability, and spirituality. University Press of Kentucky.

Homer-Dixon, T.F. 1994. Environmental scarcities and violent conflict: evidence from cases. *International security*, *19*(1), pp.5-40.

Jacobson, C. 2008. Fall hunting in game management unit 23: assessment of issues and proposals for a planning process. ADF&G. Unpublished report. Juneau, AK.

Joly, K. 2000. Orphan Caribou, *Rangifer tarandus*, Calves: A re-evaluation of overwinter survival data. The Canadian Field Naturalist. 114: 322-323.

Joly, K., R.R. Jandt, C.R. Meyers, and J.M. Cole. 2007. Changes in vegetative cover on the Western Arctic herd winter range from 1981–2005: potential effects of grazing and climate change. Rangifer Special Issue 17:199-207.

Joly, K., D.R. Klein, D.L. Verbyla, T.S. Rupp, and F.S. Chapin, III. 2011. Linkages between large-scale climate patterns and the dynamics of Arctic caribou populations. Ecography 34:345-352.

Joly, K. 2015. Wildlife Biologist, Gates of the Arctic National Park and Preserve. Personal communication. email NPS. Fairbanks, AK.

Joly, K., M.D. Cameron. 2017. Caribou Vital Sign Annual Report for the Arctic Network Inventory and Monitoring Program September 2015-August 2016. Natural Resource Report. National Park Service.

Kramer, L. 2015. Comment to Alaska Board of Game on behalf of the NANA Regional Corporation. Alaska Board of Game Meeting Information. Southcentral Region. March 13-18, 2015. RC027. Lance Kramer Prop 202. http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=03-13-2015&meeting=anchorage. Accessed July 1, 2019.

Lenart, E. A. 2011. Units 26B and 26C caribou. Pages 315-345 *in* P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G. Project 3.0. Juneau, AK.

Loon, H. 2007. *Uqausriptigun* in our own words: Selawik elders speak about caribou, reindeer and life as they knew it. USFWS, Selawik National Wildlife Refuge. Kotzebue, AK.

Miller, F.L. 2003. Caribou (*Rangifer tarandus*). Pages 965-997 *in* Feldhamer, B.C. Thompson, and J.A. Chapman, *eds.* Wild Mammals of North America- Biology, Management, and Conservation. John Hopkins University Press. Baltimore, Maryland.

Native Village of Kotzebue. 2018. Inupiat Initqusiat Guidelines on Winter Caribou Hunting. Information Flyer. Kotzebue, AK.

NSRAC. 2015. Transcripts of the North Slope Subsistence Regional Advisory Council proceedings, November 4, 2015 in Anaktuvuk Pass, Alaska. Office of Subsistence Management, FWS. Anchorage, AK.

NWARAC. 2015. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, October 7, 2015 in Buckland, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

NWARAC. 2019. Transcripts of the Northwest Arctic Subsistence Regional Advisory Council proceedings, April 9-10, 2019 in Kotzebue, AK. Office of Subsistence Management, USFWS. Anchorage, AK.

OSM. 1995. Staff analysis. WP95-62. OSM database. Office of Subsistence Management. Anchorage, AK.

OSM. 2017. Staff analysis. WSA17-03. Office of Subsistence Management. Anchorage, AK.

Parrett, L.S. 2011. Units 26A, Teshekpuk caribou herd. Pages 283-314 *in* P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. ADF&G.. Project 3.0. Juneau, AK.

Parrett, L.S. 2013. Unit 26A, Teshekpuk caribou herd. Pages 314-355 in P. Harper, editor. Caribou management report of survey and inventory activities 1July 2006–30 June 2008. ADF&G species management report. ADF&G/DWC/SMR-2013-3, Juneau, AK.

Parrett, L.S. 2015a. Western Arctic Caribou Herd Overview presentation. Presented at the Western Arctic Caribou Herd Working Group meeting. Dec. 16-17. Anchorage, AK.

Parrett, L.S. 2015b. Memorandum to P. Bente, Management Coordinator, dated October 29, 2015. 2015 Western Arctic Herd (WAH) captured conducted September 15-17, 2015. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 1 page.

Parrett, L.S., 2015c. Unit 26A, Teshekpuk caribou herd. Chapter 17, pages 17-1 through 17-28 *in* P. Harper and L.A. McCarthy, editors. Caribou management report of survey and inventory activities 1 July 2012-30 June 2014. ADF&G, Species Management Report ADF&G /DWC?SMR-2015-4, Juneau, AK.

Parrett, L.S. 2015d. Memorandum to P. Bente, Management Coordinator, dated December 31, 2015. Summary of Teshekpuk Caribou Herd photocensus conducted July 6, 2015. ADF&G Division of Wildlife Conservation. Fairbanks, AK.

Parrett, L.S. 2016a. Memorandum for distribution, dated August 25, 2016. Summary of Western Arctic Caribou Herd photocensus conducted July 1, 2016. ADF&G Division of Wildlife Conservation, Fairbanks, AK. 6 pages.

Parrett, L.S. 2016b. WAH Caribou Overview. Western Arctic Caribou Herd Working Group Meeting. December 2016. https://westernarcticcaribounet.files.wordpress.com/2016/11/wg-binder-complete-w-toc-1.pdf. Accessed January 31, 2017.

Parrett, L.S. 2017a. WAH Caribou Overview. Western Arctic Caribou Herd Working Group Meeting. December 2017. https://westernarcticcaribounet.files.wordpress.com/2017/12/2017-complete-wg-meeting-binder-dec-13-14-2017-for-webpost.pdf. Accessed December 20, 2017.

Parrett, L.S. 2017b. Wildlife Biologist IV. Personal communication: phone and e-mail. Alaska Department of Fish and Game. Fairbanks, AK.

Pomeroy, R., Parks, J., Mrakovcich, K.L. and LaMonica, C., 2016. Drivers and impacts of fisheries scarcity, competition, and conflict on maritime security. *Marine Policy*, *67*, pp.94-104.

Prichard, A.K. 2009. Development of a Preliminary Model for the Western Arctic Caribou Herd. ABR, Inc. – Environmental Research and Services. Fairbanks, AK.

Russell, D.E., S.G. Fancy, K.R. Whitten, R.G. White. 1991. Overwinter survival of orphan caribou, *Rangifer tarandus*, calves. Canadian Field Naturalist. 105: 103-105.

Rughetti, M., M. Festa-Bianchet. 2014. Effects of selective harvest of non-lactating females on chamois population dynamics. Journal of Applied Ecology. 51: 1075-1084.

Sharp, Henry S. and Karyn Sharp. 2015. Hunting Caribou: Subsistence Hunting along the Northern Edge of the Boreal Forest. University of Nebraska Press. Lincoln, NE.

Sutherland, R. 2005. Harvest estimates of the Western Arctic caribou herd, Alaska. Proceedings of the 10th North American Caribou Workshop. Girdwood, AK. 4-6 May 2004. Rangifer Special Issue No. 16: 177-184.

Taillon, J., V. Brodeur, M. Festa-Bianchet, S.D. Cote. 2011. Variation in body condition of migratory caribou at calving and weaning: which measures should we use? Ecoscience. 18(3): 295-303.

Uhl, W. R. and C. K. Uhl. 1979. The Noatak National Preserve: Nuatalanitt, A Study of Subsistence Use of Renewable Resources in the Noatak River Valley. Cooperative Park Studies Unit, University of Alaska, Fairbanks, Occasional Paper No. 19.

Unit 23 Working Group. 2016. Meeting Summary of Unit 23 Working Group Meeting held in Kotzebue, Alaska on May 4-5, 2016.

Western Arctic Caribou Herd Working Group. 2011. Western Arctic Caribou Herd Cooperative Management Plan – Revised December 2011. Nome, AK 47 pp.

Western Arctic Caribou Herd Working Group. 2015. https://westernarcticcaribou.net/herd-management/. Accessed July 26, 2017.

Western Arctic Caribou Herd Working Group. 2017. Western Arctic Caribou Herd Working Group Meeting. December 13-14, 2017. Anchorage, AK.

WINFONET. 2017. Wildlife Information Network. Alaska Department of Fish and Game. Anchorage, AK. https://winfonet.alaska.gov/. Accessed May-June 2017.

WINFONET. 2018. Wildlife Information Network. Alaska Department of Fish and Game. Anchorage, AK. https://winfonet.alaska.gov/. Accessed November 2018.

WINFONET. 2019. Wildlife Information Network. Alaska Department of Fish and Game. Anchorage, AK. https://winfonet.alaska.gov/. Accessed July 2019.

WIRAC. 2015. Transcripts of the Western Interior Subsistence Regional Advisory Council proceedings, November 3, 2015 in Galena, Alaska. Office of Subsistence Management, FWS. Anchorage, AK.

Appendix 1

Estimated total caribou harvest by community, per capita caribou harvest by community, and data sources for Unit 23: Western Arctic caribou herd (ADF&G 2015).

Unit 23

Community	Year/Period	Est Caribou Harv.	# caribou per capita	Source
Ambler	2003	325	1.12	Georgette et al. 2005, unpublished data
	2009	456	1.75	Braem 2012
	2012	685	2.54	Braem et al. 2015
Buckland	2003	637	1.56	Magdanz et al. 2011
	2009	561	1.30	Braem 2012
Deering	1994	142	0.96	Magdanz et al. 2002
	2007-2008	182	1.37	Braem 2011
	2011-2012	237	1.91	Braem 2011
	2013	393	2.85	ADF&G unpublished data
Kiana	1999	488	1.23	ADF&G unpublished data
	2006	306	0.77	Magdanz et al. 2011
	2009	440	1.18	Braem 2012
Kivalina	1982	346	0.48	CSIS
	1983	564	0.78	CSIS
	1992	351	0.49	CSIS
	2007	268	0.67	Magdanz et al. 2010
	2010-2011	86	0.23	Braem et al. 2014
Kobuk	2004-2005	134	1.06	ADF&G unpublished data
	2009	210	1.72	Braem 2012
	2012	119	0.84	Braem et al. 2015
Kotzebue	1986	1917	0.71	Georgette and Loon 1993
	1991	3782	1.04	CSIS
	2001	2376	0.77	Whiting 2003
	2002	1719	0.56	Whiting 2003
	2003	1915	0.61	Whiting 2003
	2012-2013	1804	0.56	CSIS
	2013-2014	1629	0.51	ADF&G unpublished data
Noatak	1994	615	1.62	Magdanz et al. 2002
	1999	683	1.61	Georgette et al 2000., unpubd data
	2002	410	0.90	Georgette et al. 2004, unpubd data
	2007	441	0.90	Magdanz et al. 2010
	2010	66	0.13	Braem et al. 2014
	2011	360	0.66	Mikow et al. 2014
Noorvik	2002	988	1.46	Georgette et al. 2004, unpubd data
	2008	767	1.19	Braem et al. 2012
	2012	851	1.36	CSIS

-continued-

Unit 23, continued

Community	Year/Period	Est Caribou Harv.	# caribou per capita	Source
Point Hope	1994-1995	355	0.49	Bacon et al. 2009, rev. 2011
	2000-2001	219	0.31	Bacon et al. 2009, rev. 2011
Selawik	1999	1289	1.68	CSIS
	2006	934	1.11	CSIS
	2011	683	0.79	Braem et al. 2013
Shungnak	1998	561	2.17	Georgette 1999, unpubd data
	2002	403	1.62	Magdanz et al. 2004
	2008	416	1.53	Braem 2012
	2012	396	1.47	Braem et al. 2015

WP20–08 Executive Summary	
General Description	Proposal WP20–08 requests implementing a statewide requirement that traps and snares be marked with either the trapper's name or State identification number. *Submitted by: East Prince of Wales Advisory Committee.*
Proposed Regulation	**Statewide— Trapping (General Provisions)** ***Traps or snares must be marked with trapper's name or state identification number (Alaska driver's license number or State identification card number).***
OSM Preliminary Conclusion	**Oppose**
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	

WP20–08 Executive Summary	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**1 Support, 1 Oppose**

DRAFT STAFF ANALYSIS
WP20-08

ISSUES

Wildlife Proposal WP20-08, submitted by the East Prince of Wales Fish and Game Advisory Committee, requests implementing a statewide requirement that traps and snares be marked with either the trapper's name or State identification number.

DISCUSSION

The proponent believes that current regulations do not allow for accountability if a trapper leaves their traps out and set after the close of the season, or chooses to use illegal baits (i.e., whole chunks of deer meat or whole migratory birds). The proponent believes requiring trap identification (Alaska issued driver's license number or personal identification number) would make enforcement easier and may prevent these issues. Clarification with the proponent indicated that the proposed marking requirement is to apply Statewide.

Existing Federal Regulation

There are no statewide trap marking requirements under Federal regulations.

Proposed Federal Regulation

Statewide— Trapping (General Provisions)

Traps or snares must be marked with trapper's name or state identification number (Alaska driver's license number or State identification card number).

Existing State Regulation

There are no statewide trap marking requirements under State regulations.

Extent of Federal Public Lands/Waters

Alaska is comprised of 65% Federal public lands and consist of 23% Bureau of Land Management (BLM) managed lands, 21% U.S. Fish and Wildlife Service (USFWS) managed lands, 15% National Park Service (NPS) managed lands, and 6% U.S. Forest Service (USFS) managed lands.

Customary and Traditional Use Determinations

Customary and traditional use determinations for specific areas and species are found in subpart C of 50 CFR 100, §___.24(a)(1) and 36 CFR 242 §___.24(a)(1).

Regulatory History

The Alaska Board of Game (BOG) adopted a marking requirement for traps and snares in Units 1–5 in 2006. Federal regulations were aligned with the State requirements in Units 1–5 when the Federal Subsistence Board (Board) adopted Proposal WP12-14 in 2012. The rationale of the Board was that the BOG adopted trap marking requirements for Units 1-5 in 2006 in response to concerns by Alaska Wildlife Troopers, the Alaska Department of Fish and Game (ADF&G), and members of the public, that trapping as a whole would benefit from having some way of identifying ownership of traps and snares. This was prompted by incidences of traps being placed in areas where trapping was not allowed, pets being caught in traps, and unattended snares still capable of capturing a passing deer, bear, or wolf, being found following the close of season (FSB 2012).

The Southeast Alaska Subsistence Regional Advisory Council (Council) expressed concern that there was a lack of evidence why traps should be marked in either State or Federal regulations, and stated that regulations should be adopted for a good reason and not because of "*one bear caught in a snare, set by an unknown person for an unknown reason*". However, the Council supported the proposal, stating the benefit of aligning Federal and State regulations, and reducing the uncertainty about whether current regulations required traps to be marked (SEASRAC 2011).

In 2014, the Board considered Proposal WP14-01, requesting new statewide Federal provisions requiring trapper identification tags on all traps and snares, the establishment of a maximum allowable time limit for checking traps, and establishment of a harvest/trapping report form to collect data on non-target species captured in traps and snares. The proposal analysis indicated statewide application would be unmanageable, would require substantial law enforcement and public education efforts, and could cause subsistence users to avoid the regulation by trapping under State regulations. The proposal was unanimously opposed by all ten Federal Subsistence Regional Advisory Councils, ADF&G, and the public as reflected in written public comments. The Board rejected the proposal as part of its consensus agenda (FSB 2014).

In March 2016, the BOG removed trap marking requirements in response to Proposal 78. The BOG determined that trappers are generally responsible and that the 2006 regulation was not addressing the reasons why it was implemented, noting that marking traps does not prevent illegal trapping activity or prevent dogs from getting trapped.

In 2018, the Board considered Proposal WP18-13, requesting removal of the trap marking requirement in Units 1-5. The proposal was submitted to remove an unnecessary and burdensome requirement on Federally qualified subsistence users and to realign State and Federal regulations. While ADF&G was neutral on the proposal, it was unanimously supported by the Council (SEASRAC 2017). The proposal was adopted by the Board as part of its consensus agenda (FSB 2018).

Current Events Involving the Species

Wildlife proposal WP20-20 has been submitted requesting that trap sites be marked with brightly colored surveyor's tape in plain view on a nearby tree or overhanging branch in Unit 7.

Effects of the Proposal

The proposal will not result in any positive or negative effects to furbearer or other non-furbearer wildlife populations.

If the proposal is adopted, Federally qualified subsistence users trapping under Federal regulations throughout the State will be required to mark traps and snares with identification tags. The proposed requirement could potentially benefit law enforcement by allowing easier identification of traps and snares set in the field. However, differences in land ownership, population concentrations, terrain, and habitats would limit the effectiveness of the proposed statewide regulation. Individual traplines can span across Federal and State managed lands and, therefore, could have different regulatory requirements along the line. Alternatively, Federally qualified subsistence users could simply choose to trap under State regulations and avoid the proposed requirement, as both Federal and State trapping regulations are applicable on most Federal public lands, as long as the State regulations are not inconsistent with or superseded by Federal regulations, or unless Federal lands are closed to non-Federally qualified users.

Within portions of Unit 15, over 60 percent which lies within Kenai National Wildlife Refuge, and those portions of Unit 7 that are contained within Kenai NWR, a trapping permit is required and a stipulation of Kenai NWR's permit includes the marking of traps and snares. Also, under State regulations, all snares within a quarter mile of a public road in Units 12 and 20E are required to be marked. Federally qualified subsistence users trapping on Federal public lands outside of these specific areas would be required to mark traps and snares with identification tags that include the trapper's name and license number. However, Federally qualified subsistence users trapping on Federal public lands would not be required to mark traps and snares under State regulations.

The requirement to mark traps and snares would also result in additional burden and cost for Federally qualified subsistence users trapping under Federal subsistence regulations. Copper tags stamped with a trapper's identification information, including fasteners, cost approximately $26 per 100 tags (including shipping) or less (approximately $15–$20) for "write-your own" tags (FWS 2012). In addition, trappers often trade or borrow equipment from family members or friends, and changes of identification tags on large numbers of traps or snares would require significant effort (FWS 2014).

Re-implementation of a mandatory requirement to mark traps under Federal regulations creates unnecessary divergence of State and Federal regulations, which may create confusion for Federally qualified subsistence users. Although adoption of the proposal could allow law enforcement to more easily identify trappers that have traps deployed outside the open season or have otherwise violated regulations, mandatory trap marking does not necessarily prevent illegal trapping activity or prevent dogs from getting trapped. Also, adoption of this proposal will not affect State regulations, which would allow Federally qualified subsistence users to operate traps under State regulations to avoid this requirement.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP20-08.

Justification

Requiring Federally qualified subsistence users to mark traps is an unnecessary burden, as mandatory marking does not prevent illegal trapping activity. With State regulations being less restrictive, Federally qualified subsistence users could avoid the requirement by trapping under those regulations, essentially rendering a Federal marking requirement unenforceable. There is no anticipated conservation concern to furbearers with opposing this proposal, as there is no established correlation between furbearer harvest levels and trap marking requirements. Adoption of this proposal also creates unnecessary divergence between State and Federal regulations.

LITERATURE CITED

FSB. 2012. Transcripts of Federal Subsistence Board proceedings, January 17-20, 2012. Office of Subsistence Management, USFWS. Anchorage, AK.

FSB. 2014. Transcripts of Federal Subsistence Board proceedings, April 15-17, 2014. Office of Subsistence Management, USFWS. Anchorage, AK.

FSB. 2018. Transcripts of Federal Subsistence Board proceedings, April 11-13, 2018. Office of Subsistence Management, USFWS. Anchorage, AK.

FWS. 2012. Staff Analysis WP12-14. Pages 969-976 in Federal Subsistence Board Meeting Materials January 17–2012. Office of Subsistence Management, USFWS. Anchorage, AK. 1,020 pages.

FWS. 2014. Staff Analysis WP14-01. Pages 352-367 in Federal Subsistence Board Meeting Materials April 15-17, 2014. Office of Subsistence Management, USFWS. Anchorage, AK. 628 pages.

SEASRAC. 2011. Transcripts of the Southeast Alaska Subsistence Regional Advisory Council, September 27-29, 2011 in Wrangell, Alaska. Office of Subsistence Management, USFWS. Anchorage, AK.

SEASRAC. 2017. Transcripts of the Southeast Alaska Subsistence Regional Advisory Council, October 31-November 2, 2017 in Juneau, Alaska. Office of Subsistence Management, USFWS. Anchorage, AK.

WRITTEN PUBLIC COMMENTS

Ketchikan Advisory Committee
June 6th, 2019
ADF&G Conference Room

I. **Call to Order**: 5:40pm by Matt Allen, Secretary

II. **Roll Call:** 8 voting members present, 1 via phone
Members Present: Allen, Crittenden, Dale, James, Westlund, Roth, Shaw, Bezneck, Fox, Scoblic (Phone)
Members Absent (Excused): Doherty, McQuarrie, Skan, Franulovich, Miller
Members Absent (Unexcused):
Number Needed for Quorum on AC: 8
List of User Groups and Public Present: Public, Sportfish Charter, ADFG (Sport Fish, Wildlife)
Motion: Bezneck, motion to make Allen meeting Chair, Roth, second. 9-0 in favor. Allen sits as meeting Chair

III. **Approval of Agenda:**
Allen, motion to amend agenda to include discussion of Federal Subsistence Proposals 10, 11, 13,14. Westlund seconded. Motion passed unanimously (9-0). Westlund, moved to approve agenda, Dale seconded. Motion passed unanimously (9-0)

IV. **Approval of Previous Meeting Minutes:**
Previous meeting minutes incomplete at this time

V. **Fish and Game Staff Present:**
Kelly Reppert, Ross Dorendorf, Tessa Hasbrouck

VI. **Guests Present: Jim Moody, Nick Hashagan, Martin Caplan, Tony Azure**

VII. **Chairman Report: Allen** read co-chair letter from Scoblic/Doherty

VIII. **ADF&G Sportfish Report: Reppert**, report regarding catch and release chinook fishing. Discussion and comment followed report.

IX. **Old Business:**
Federal Subsistence Proposals 2020-2022, WP20-01-08, WP20-10-15

X. **New Business:**
Catch and Release of chinook by Charter fishermen
Set next meeting date, September 12th, 2019, 5:30pm ADFG Conference Room

Federal Subsistence Management Program 2020-2022 Wildlife Proposal Comments			
Proposal Number	**Proposal Description**		
Support, Support as Amended, Oppose, No Action	**Number Support**	**Number Oppose /Abstain**	**Comments, Discussion (list Pros and Cons), Amendments to Proposal, Voting Notes**
WP20-01	Southeast, Moose, Unit 1C, Eliminate Unit 1C – Berners Bay moose hunt		
Support	8	0/1 abstain	A biological concern does not currently exist necessitating a subsistence priority. Majority of traditional use comes from Juneau area. A fair system is currently in place to provide for opportunity
WP20-02	Southeast, Deer, Unit 2, Remove harvest limits to non-federally qualified users		
Support	9	0	We support State managers in their assessment of the deer population and the opportunity it can support.
WP20-03	Southeast, Deer, Unit 2, Eliminate doe harvest		
Oppose	1	8	Though the AC does not agree with doe harvest, we do not support this proposal because it would have minimal impact.
WP20-04	Southeast, Deer, Unit 2, Revise harvest limit		
Oppose	3	6	Some AC members support cessation of doe harvest if only for a short period of time.
WP20-05	Southeast, Deer, Unit 2, Establish a registration permit for does		
Support	7	1/1	AC supports the proposal as it may lead to better data for management.
WP20-06	Southeast, Deer, Unit 2, Revise season		
Support	9	0	AC supports removal of January hunt due to small amount of harvest, reduced quality of meat and difficulty in distinguishing bucks and does.
WP20-07	Southeast, Deer, Unit 2, Revise harvest limit		
Support	9	0	
WP20-08	Statewide, All Trapping Species, Require traps or snares to be marked with name or State Identification number		
Oppose	1	8	Though some type of compromise should be reached in regards to labelling of traps/snares a one size fits all regulation could be overly burdensome in some areas
WP20-09	Southeast, Beaver, Units 1-4, Revise trapping season		
No Action			
WP20-10	Statewide, Black Bear, Units 1-5, Revise Customary and Traditional Use Determination		

Oppose	2	6	Hunting of Black Bear is not customary and traditional in all units residing in Southeast
WP20-11	Statewide, Brown Bear, Units 1-5, Revise Customary and Traditional Use Determination		
	3	4	Hunting of Brown Bear is not customary and traditional in all units residing in Southeast.
WP20-12	Southeast, Deer, Unit 3, Revise hunt areas, season dates, and harvest limits		
WP20-13	Statewide, Elk, Unit 3, Establish Customary and Traditional Use Determination		
	0	9	This is a population introduced by the State in 1986, due to this fact we do not believe this population is traditional and customary for any Unit in Southeast Alaska. The authors of this proposal do not demonstrate how this particular species in this area has been used to meet the definition as customary and traditional.
WP20-14	Statewide, Goat, Unit 1-5, Revise Customary and Traditional Use Determination		
	4	4	Hunting of Mountain Goat is not Customary and Traditional in all Units residing in Southeast.
WP20-15	Statewide, Moose, Unit 1-5, Revise Customary and Traditional Use Determination		
	0	8	Hunting of Moose is not customary and traditional in all units residing in Southeast.
WP20-16	Statewide, Wolf, Unit 2, Eliminate harvest limit/quota and revise sealing requirement		
No Action			
WP20-17	Statewide, Wolf, Unit 2, Eliminate harvest limit/quota and revise sealing requirement		
No Action			

Adjournment:

Minutes Recorded By: _____
Minutes Approved By: _____
Date: _____

June 25, 2019
TO: Federal Board of Subsisence Management, (Att: Theo Mutskowitz)
FROM: Alaskans FOR Wildlife and any Cooperating Entities
RE: Comments on Subsistence Proposals

Please consider these comments on numbered proposals. Comments are offered from a public perspective that reflects several major considerations which we earnestly wish you and the board to keep clearly in mind as you make decisions on these and all proposals offered, namely,

1) The lands in question are publically owned lands belonging to all US citizens who in theory and in law all have interest in how wildlife on these lands are managed, and
2) Article 8 of our Alaska Constitution clearly sets forth that ALL (emphasis) Alaskans are stakeholders, all essentially owners, with respect to its natural resources and how they are managed .

WP-20 Wolf Trapping lifting harvest restrictions and extending sealing time.
OPPOSE

-2-

This proposal leads to spreading unrestricted wolf take everywhere. Given especially the substantial science on the value of apex predators plus the high interest in sustaining wolf populations on American public lands including here in Alaska as essential to maintenance of ecosystem biodiversity, we maintain that enactment of this proposal would result in another chapter in the unscientific overall continued war on wolves. This proposal to lift harvest limits and to extend sealing limits also already excessive in length are not scientifically justified nor justified as a pubic matter given the overall value of wolves to maintenance of biodiversity. It must not pass.

WP20-17 – Removing harvest quotas and sealing requirements for hunting wolves, OPPOSE.
We oppose this proposal for the same reasons offered to oppose the previous proposal, WP20-16.
The values of wolves as apex predator and its place in American culture must have bearing upon this consideration. No science and no national or even Alaskan public cultural norms can possibly support this permissively reckless proposal to expand wolf take without bounds. It must not pass.

-3-

WP20-26 Permitting the use of snowmachines to "position" wildlife for harvest. OPPOSE

This proposal would expand this practice apparently from other land management units. In essence "positioning" is another term for what in reality will result in chasing, and harassing wildlife to exhaustion, prohibitions in the regulation notwithstanding, due to impossible enforcement limitations. As an example, when asked to explain existing regulations for snowmachine use in trapping and hunting, an Alaska wildlife trooper explained he does not even understand the regulation.

Expanded snowmachine use, "positioning," will amount to a continued enforcement challenge. Widespread abuse will surely result and will continue to give subsistence the reputation of abuse when it really needs public support: we feel that as we now face mass extinctions of wildlife species; there is new public and growing focus on the crisis. This is an extremely unwise plunge to the bottom and we caution a futuristic consideration.

WP20-08 Proposal to require traps and snares to be marked with name and state identification number.

SUPPORT This proposal is topical, even in urban municipalities of Alaska as conflicts in public use areas resulting in injuries to hikers, pets and other outdoor public land users rise .

Keeping in mind even the use of more remote public lands grows as outdoor users of their lands increase, the potential for conflicts including serious injuries resulting from hidden owner-unidentified traps will increase.

Organized trappers have strongly opposed such requirements as proposed here in past requests for change considered by the Alaska Board of Game. We witness the public land users (including of federal lands) would most certainly strongly favor this accountability. We strongly favor this proposal.

In closing, please carefully consider these comments as you go forward with the process over the next year or so. WE thank you for your consideration of these comments.

Sincerely,

Jim Kowalsky,
Chair, Alaskans FOR Wildlife
PO Box 81957
Fairbanks, Alaska 99708
907-488-2434

WP20–34 Executive Summary	
General Description	Wildlife proposal WP20-34 requests that the mink and weasel trapping season in Unit 18 be extended from Nov. 10 – Jan. 31 to Nov. 10 – Mar. 31. *Submitted by: Yukon Delta National Wildlife Refuge.*
Proposed Regulation	**Unit 18—Mink and Weasel** *No limit* *Nov. 10 – ~~Jan. 31~~* ***Mar. 31***
OSM Preliminary Conclusion	**Support**
Southeast Alaska Subsistence Regional Advisory Council Recommendation	
Southcentral Alaska Subsistence Regional Advisory Council Recommendation	
Kodiak/Aleutians Subsistence Regional Advisory Council Recommendation	
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional	

WP20–34 Executive Summary	
Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Eastern Interior Alaska Subsistence Regional Advisory Council Recommendation	
North Slope Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP20-34

ISSUES

Wildlife proposal WP20-34, submitted by the Yukon Delta National Wildlife Refuge, requests that the mink and weasel trapping season in Unit 18 be extended from Nov. 10 – Jan. 31 to Nov. 10 – Mar. 31.

DISCUSSION

The proponent notes that the Federal trapping season for mink and weasel ends two months earlier than the State season. The proponent say that extending the Federal season to match the State season will allow for continuation of subsistence uses and practices, and does not pose a conservation threat to furbearer populations.

Existing Federal Regulation

Unit 18—Mink and Weasel

No limit	*Nov. 10 – Jan. 31*

Proposed Federal Regulation

Unit 18—Mink and Weasel

No limit	*Nov. 10 – ~~Jan. 31~~* ***Mar. 31***

Existing State Regulation

Unit 18—Mink and Weasel (least and short-tailed)

No limit	*Nov. 10 – Mar. 31*

Extent of Federal Public Lands/Waters

Unit 18 is comprised of approximately 67% Federal public lands and consists of 64% U.S. Fish and Wildlife Service managed lands and 3% Bureau of Land Management managed lands.

Customary and Traditional Use Determinations

The Federal Subsistence Board (Board) has not made a customary and traditional use determination for mink and weasel in Unit 18. Therefore, all Federally qualified subsistence users may harvest these species in this unit.

Regulatory History

In 1990, at the inception of the Federal Subsistence Management Program, State and Federal trapping seasons for mink and weasel were Nov. 10 – Jan 31. In 2006, the closing date for the State season was changed to March 31. The Federal season has not changed.

Biological Background

Mink

Mink occur throughout mainland Alaska, occupying a variety of habitats including boreal forests, freshwater and saltwater coastal areas, and tundra. Presence of mink is dependent upon the availability of water/wetlands and prey, which may include fish, amphibians, crustaceans, small mammals, and eggs (Larivière 2003).

Unit 18 contains extensive habitat suitable for mink. The Alaska Department of Fish and Game (ADF&G) characterizes mink as plentiful in Unit 18 but notes that they are inconspicuous and not often perceived by trappers as being abundant (Jones 2013). For the ten year period of 2008 – 2017, trappers across Units 18, 22, 23, and 26 reported that mink were common. The exception was 2016 when they were reported to be scarce. During that ten year period, trappers reported that mink abundance was neither increasing nor decreasing (Schumacher 2010, 2012, 2013a, 2013b; Parr 2016, 2017, 2018; Spivey 2019).

Across the North American range of mink, few harvest regulations are imposed, yet harvest remains relatively stable. This suggests that overexploitation is rare (Larivière 2003). Rather, it has been suggested that survival of young-of-the-year, born in June, is the primary factor affecting mink abundance during a given trapping season (Burns 1964). Overall, deterioration of wetland habitat is the primary conservation threat to mink (Larivière 2003).

Mink harvest is regulated primarily by season length, which is dictated by pelt quality (Larivière 2003). Historically on the YK Delta, pelts attain prime condition by approximately November 20 and then begin to deteriorate.

Weasel

Weasels in Alaska include ermine (short-tailed weasel) and least weasel. Both are distributed throughout Alaska, inhabiting a variety of habitats including marshes, meadows, brushy areas, woodlands, and montane environments (Svendsen 2003). ADF&G characterizes ermine as ubiquitous in Unit 18, noting that they can be a nuisance at fish camps, cabins and homes. For the ten year period of 2008 – 2017, trappers across Units 18, 22, 23, and 26 reported that ermine were common. The exception was 2016 when they were reported to be scarce. During that ten year period, trappers reported that ermine abundance was neither increasing nor decreasing, except in 2008, when they reported an increasing trend (Schumacher 2010, 2012, 2013a, 2013b; Parr 2016, 2017, 2018; Spivey 2019).

Cultural Knowledge and Traditional Practices

In Alaska, furs have been traded for money and other goods for over two centuries. In rural Alaska, trapping is generally profitable when attached to a larger complex of traditional fishing, hunting, and gathering activities with incremental use of equipment and land used for other subsistence activities. Harvesting furbearers is part of the annual cycle of subsistence activities (Wolfe 1991).

Customary trade and the sale of handicraft articles of fur are recognized as subsistence uses under Federal and State regulations, and, in both, trapping is a single regulatory category. Trapping is defined as the taking of mammals declared as furbearers.

The purchase of trapping permits throughout Alaska peaked in 1987 at almost 28,000 licenses and began a steep decline until 1992 when less than 19,000 licenses were purchased by Alaska residents (ADF&G 2019a). This decline in trapping license sales was probably associated with decreases in fur prices, which makes trapping less profitable (Wolfe 1991). Alaska furs were considered by industry to be among the highest quality wild furs available, but the market was depressed by factors including an oversupply of ranched furs, increasing anti-trapping/animal rights sentiments, and changes in lifestyle and fashion characterized by more casual dress (Andersen 1993). Since 1992, trapping license purchases have gradually increased, peaking in 2016 when over 32,000 licenses were purchased. Low income license purchases have gradually grown from 30% of trapping license purchases in 1976 to almost 70% in 2018 (ADF&G 2019a). This trend could be an effect of more licenses vendors available in remote communities making it easier for people to purchase trapping licenses. Key respondents in Emmonak linked their reduced furbearer harvest primarily to relatively low fur prices in 2009 for most species (Fall et al. 2012:155).

In Unit 18, people harvest furbearers for food and also to sell their pelts or to use them domestically, for example to create handicrafts. Communities have reported their harvests of furbearers on household surveys conducted by the ADF&G Division of Subsistence. In Unit 18, these surveys have included questions about the harvest of beaver, fox, hare, land otter, marten, mink, muskrat, weasel, wolf, and wolverine, but not all species are found in the entire unit. Additionally, weasels were included on surveys in only some communities.

The general trend in participation in the harvest of furbearers is downward, based on percentages of households reporting harvest on surveys and the estimated harvests of mink and weasel (**Tables 1, 2 and 3**). We have multiple years of data for only Kwethluk, Quinhagak, Emmonak, and Mountain Village.

Table 1. Percentages of households that reported harvesting furbearers based on household harvest surveys conducted in Unit 18 communities 1980–2013 (Source: ADF&G 2019b).

Community	Study Year	% of Households Harvesting Furbearers
Alakanuk	1980	85.7
Emmonak	1980	83.3
Kotlik	1980	100.0
Mountain Village	1980	87.5
Nunam Iqua	1980	85.7
Quinhagak	1982	58.3
Nunapitchuk	1983	94.1
Kwethluk	1986	67.5
Tununak	1986	51.5
Akiachak	1998	77.8
Emmonak	2008	33.0
Akiak	2010	46.0
Kwethluk	2010	40.9
Marshall	2010	34.8
Mountain Village	2010	26.1
Oscarville	2010	8.3
Tuluksak	2010	58.8
Bethel	2011	5.9
Napakiak	2011	37.5
Napaskiak	2011	19.6
Russian Mission	2011	50.0
Bethel	2012	14.4
Eek	2013	20.3
Pilot Station	2013	29.8
Quinhagak	2013	23.9
Scammon Bay	2013	23.3
Tuntutuliak	2013	29.9

Table 2. Estimated harvests of mink based on household harvest surveys conducted in Unit 18 communities 1980–2013 (CI 95%, lower harvest estimate is the lower bound of the estimate or the reported harvest, whichever is larger) (Source: ADF&G 2019b).

Community	Study Year	% of Households Harvesting Mink	Estimated Harvest (Number of Mink)	Lower Harvest Estimate (Number of Mink)	Upper Harvest Estimate (Number of Mink)
Alakanuk	1980	66.7	939	939	939
Emmonak	1980	22.2	189	189	189
Kotlik	1980	35.7	848	848	848
Mountain Village	1980	37.5	210	210	210
Nunam Iqua	1980	42.9	266	266	266
Quinhagak	1982	25.0	253	31	655
Nunapitchuk	1983	47.1	1,091	494	1,688
Kwethluk	1986	8.7	117	117	117
Tununak	1986	9.1	33	17	65
Akiachak	1998	6.2	23	16	36
Emmonak	2008	2.8	5	5	5
Akiak	2010	0.0	0	0	0
Kwethluk	2010	1.1	2	0	4
Marshall	2010	0.0	0	0	0
Mountain Village	2010	0.9	3	2	7
Oscarville	2010	0.0	0	0	0
Tuluksak	2010	1.5	4	0	7
Bethel	2011	0.8	84	21	189
Napakiak	2011	0.0	0	0	0
Napaskiak	2011	0.0	0	0	0
Russian Mission	2011	6.5	21	20	21
Bethel	2012	1.9	60	17	106
Eek	2013	1.6	4	4	4
Pilot Station	2013	1.1	10	9	10
Quinhagak	2013	3.7	12	12	12
Scammon Bay	2013	5.8	32	31	32
Tuntutuliak	2013	3.0	8	8	8

Table 3. Estimated harvests of weasel based on household harvest surveys conducted in Unit 18 communities 1980–2013 (CI 95%, lower harvest estimate is the lower bound of the estimate or the reported harvest, whichever is larger) (Source: ADF&G 2019b).

Community	Study Year	% of Households Harvesting Weasel	Estimated Harvest (Number of Weasels)	Lower Harvest Estimate (Number of Weasels)	Upper Harvest Estimate (Number of Weasels)
Tununak	1986	3.0	6	1	14
Akiachak	1998	3.7	13	4	22
Emmonak	2008	0.0	0	0	0
Akiak	2010	0.0	0	0	0
Kwethluk	2010	0.0	0	0	0
Marshall	2010	0.0	0	0	0
Mountain Village	2010	0.9	2	1	3
Oscarville	2010	0.0	0	0	0
Tuluksak	2010	1.5	1	0	2
Napakiak	2011	1.8	2	2	2
Napaskiak	2011	0.0	0	0	0
Russian Mission	2011	0.0	0	0	0
Bethel	2012	1.3	64	18	116
Pilot Station	2013	0.0	0	0	0
Quinhagak	2013	0.9	15	15	15

Harvest History

Historically, about one third of fur sealed in Alaska came from Unit 18. However, current harvest of furbearers is well below historic levels and remains below desired levels. Trapper effort is influenced by environmental factors such as travel conditions and furbearer abundance, and by economic and social factors such as fur prices and the presence or absence of a local fur buyer. In addition to trapping, hunters harvest furbearers opportunistically using firearms (Jones 2013).

Harvest reporting is not required for mink or weasel in Unit 18 (Jones 2013). Consequently, harvest information is anecdotal and summarized in ADF&G's annual Alaska Trapper Report. The most recent reports for mink and weasel are summarized below. Additional insights into participation and harvest patterns over time can be gleaned from household survey data, presented in the Cultural Knowledge and Traditional Practices section.

Mink

In Unit 18, one method of harvest for mink and otters is the *taluyaq* (or *taluyak*), a funnel-type trap derived from traditional blackfish traps (Burns 1964; Jones 2013). The early part of the season offers the best opportunity to deploy this type of trap. Regardless of method, trapping typically begins as soon as travel conditions allow, and most mink are harvested within the first few weeks of the season (Jones 2013). This coincides with prime pelt conditions and is consistent with historical patterns, when Christmas typically marked the end of the trapping season (Burns 1964).

For the ten year period of 2008 – 2017, trappers across Units 18, 22, 23, and 26 reported an average harvest of 23 mink annually, according to the Alaska Trapper Report. However, participation is voluntary, and only a subset of all trappers are represented in the report. Assuming that the proportion of total mink harvest reflected in the report is the same as the proportion for species that are required to be sealed, and comparing these anecdotal reports to sealing records, 23% of all mink harvests are reflected in the Alaska Trapper Report for 2008 – 2017. Extrapolated, harvest averages 156 mink annually for these four units (Schumacher 2010, 2012, 2013a, 2013b; Parr 2016, 2017, 2018; Spivey 2019). This is assumed to be a very rough estimate, however, and is likely biased low. Of the harvest reported in the Alaska Trapper Report, 90% of mink were trapped and 10% were shot (Schumacher 2010, 2012, 2013a, 2013b; Parr 2016, 2017, 2018; Spivey 2019).

Weasel

Except when they are targeted as a nuisance, ermine are generally harvested secondarily to other target species. Consequently, harvest tends to be low (Jones 2013). No harvest records for least weasel are available.

For the ten year period of 2008 – 2017, trappers across Units 18, 22, 23, and 26 reported harvesting an average of 18 ermine annually. Assuming that the proportion of total ermine harvest reflected in the report is the same as the proportion for species that are required to be sealed, and comparing these anecdotal reports to sealing records, 23% of all ermine harvests are reflected in the Alaska Trapper Report for 2008 – 2012. Extrapolated, harvest averages 91 ermine annually for these four units (Schumacher 2010, 2012, 2013a, 2013b; Parr 2016, 2017, 2018; Spivey 2019). Again, this is assumed to be a very rough estimate, and likely underestimates harvest. Of ermine harvest reported in the Alaska Trapper Report, 98% were trapped and the remainder were shot (Schumacher 2010, 2012, 2013a, 2013b; Parr 2016, 2017, 2018; Spivey 2019).

Effects of the Proposal

If this proposal is adopted, Federally qualified subsistence users will have additional opportunity to trap mink and weasel under Federal subsistence regulations. This is not likely to result in additional harvest, since the State season doesn't end until March 31. For mink, extending the season is of little concern because most mink harvest occurs during the early part of the season, when furs are in prime condition. This proposal does not pose a conservation concern for either mink or weasel. Adoption of this proposal

will also reduce regulatory complexity by aligning State and Federal trapping seasons for mink and weasel within Unit 18.

OSM PRELIMINARY CONCLUSION

Support Proposal WP20-34.

Justification

Adoption of this proposal is not likely to have any effect on the harvest of furbearers, for several reasons. First, the State season already extends to March 31 and all Federal public lands are open for trapping. Although Federally qualified subsistence users will have additional opportunity to trap under Federal regulation, there will be no realized additional opportunity, in terms of a longer season or expanded trapping areas, beyond what is currently available in State regulation. In addition, for mink in particular, most trapping occurs early in the season when pelts are in prime condition. Any additional harvest in the extended season is likely to be small and inconsequential to overall harvest. There is unlikely to be a change in the conservation status of mink or weasel as a result of adopting this request, because harvest is well below historical averages and is not expected to change.

The main effect of this proposal will be to reduce regulatory complexity. On the whole, a simpler regulatory landscape benefits Federally qualified subsistence users, who are burdened with a dual management system and complex land status. Given that there is expected to be no realized effect on subsistence use or furbearer populations, there is little reason to oppose this proposal.

LITERATURE CITED

ADF&G. 2019a. License statistics. https://www.adfg.alaska.gov/index.cfm?adfg=licensevendors.statistics, accessed June 6, 2019. Alaska Department of Fish and Game. Juneau, AK.

ADF&G. 2019b. Community Subsistence Information System. Alaska Department of Fish and Game Division of Subsistence online database. Anchorage, AK.

Andersen, D.B. 1993. Trapping in Alaska and the European economic community import ban on furs taken with leghold traps. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 223. Anchorage, AK.

Burns, J.J. 1964. The ecology, economics and management of mink in the Yukon-Kuskokwim Delta, Alaska. M.S. Thesis, University of Alaska Fairbanks. Fairbanks, AK. 114 pp.

Fall, J.Al, C.L. Brown, N. Braem, L. Hutchinson-Scarbrough, D. S. Koster, T.M. Krieg, and A.R. Brenner. 2012. Subsistence harvests and uses in three Bering Sea communities, 2008: Akutan, Emmonak, and Togiak. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 371. Anchorage, AK.

Jones, P. 2013. Unit 18 furbearer. Pages 243 – 252 *in* P. Harper and L.A. McCarthy, eds. Furbearer management report of survey and inventory activities 1 July 2009 – 30 June 2012. ADF&G. Juneau, AK.

Larivière, S. 2003. Mink. Pages 662 – 671 *in* G.A Feldhamer, B.C. Thompson and J.A. Chapman, eds. Wild mammals of North America: Biology Management and Conservation. The Johns Hopkins University Press. Baltimore, MD. 1216 pp.

Parr, B. L. 2016. 2015 Alaska trapper report: 1 July 2015 – 30 June 2016. ADF&G. Juneau, AK.

Parr, B. L. 2017. 2016 Alaska trapper report: 1 July 2016 – 30 June 2017. ADF&G. Juneau, AK.

Parr, B. L. 2018. 2013 Alaska trapper report: 1 July 2013 – 30 June 2014. ADF&G. Juneau, AK.

Schumaker, T. 2010. Trapper questionnaire statewide annual report, 1 July 2008 – 30 June 2009. ADF&G. Juneau, AK.

Schumaker, T. 2012. Trapper questionnaire statewide annual report, 1 July 2010 – 30 June 2011. ADF&G. Juneau, AK.

Schumaker, T. 2013a. Trapper questionnaire statewide annual report, 1 July 2012 – 30 June 2013. ADF&G. Juneau, AK.

Schumaker, T. 2013b. Trapper questionnaire statewide annual report, 1 July 2011 – 30 June 2012. ADF&G. Juneau, AK.

Spivey, T. J. 2019. 2017 Alaska trapper report: 1 July 2017 – 30 June 2018. ADF&G. Juneau, AK.

Svendsen, G.E. 2003. Weasels and black-footed ferret. Pages 650 – 661 *in* G.A Feldhamer, B.C. Thompson and J.A. Chapman, eds. Wild mammals of North America: Biology Management and Conservation. The Johns Hopkins University Press. Baltimore, MD. 1216 pp.

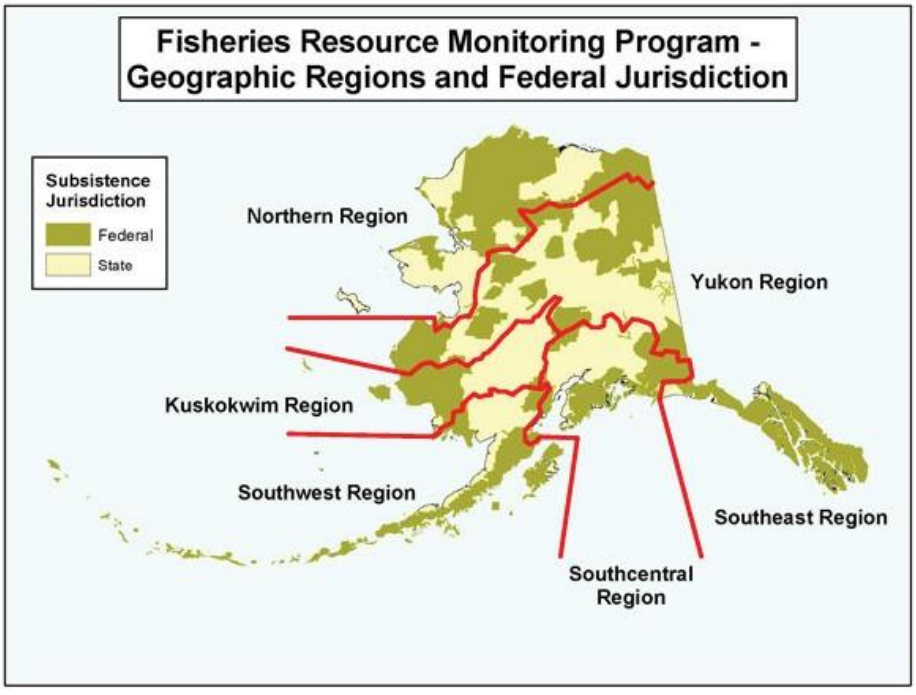
Wolfe, R.J. 1991. Trapping in Alaska communities with mixed, subsistence-cash eocnomies. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 217. Anchorage, AK.

FISHERIES RESOURCE MONITORING PROGRAM

BACKGROUND

Section 812 of the Alaska National Interest Lands Conservation Act (ANILCA) directs the Departments of the Interior and Agriculture, cooperating with other Federal agencies, the State of Alaska, and Alaska Native and other rural organizations, to research fish and wildlife subsistence uses on Federal public lands; and to seek data from, consult with, and make use of the knowledge of local residents engaged in subsistence. When the Federal government assumed responsibility for management of subsistence fisheries on Federal public lands and waters in Alaska in 1999, the Secretaries of the Interior and Agriculture made a commitment to increase the quantity and quality of information available to manage subsistence fisheries, to increase quality and quantity of meaningful involvement by Alaska Native and other rural organizations, and to increase collaboration among Federal, State, Alaska Native, and rural organizations. The Fisheries Resource Monitoring Program (Monitoring Program) is a collaborative, interagency, interdisciplinary approach to enhance fisheries research and data in Alaska and effectively communicate information needed for subsistence fisheries management on Federal public lands and waters.

Every two years, the Office of Subsistence Management announces a funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The 2020 Notice of Funding Opportunity focused on priority information needs developed by the Subsistence Regional Advisory Councils with input from strategic plans and subject matter specialists. The Monitoring Program is administered through regions to align with stock, harvest, and community issues common to a geographic area. The six Monitoring Program regions are shown below.



Strategic plans sponsored by the Monitoring Program have been developed by workgroups of fisheries managers, researchers, Subsistence Regional Advisory Councils, and by other stakeholders for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska, and for Yukon and Kuskokwim drainages whitefish (available for viewing at the Monitoring Program webpage at https://www.doi.gov/subsistence/frmp/plans). These plans identify prioritized information needs for each major subsistence fishery. Individual copies of plans are available from the Office of Subsistence Management by calling (907) 786-3888 or toll Free: (800) 478-1456 or by email subsistence@fws.gov. An independent strategic plan was completed for the Kuskokwim Region for salmon in 2006 and can be viewed at the Alaska-Yukon-Kuskokwim Sustainable Salmon Initiative website at https://www.aykssi.org/salmon-research-plans/.

Investigation plans are reviewed and evaluated by Office of Subsistence Management and U.S. Forest Service staff, and then scored by the Technical Review Committee. The Technical Review Committee's function is to provide evaluation, technical oversight, and strategic direction to the Monitoring Program. Each investigation plan is scored on the following five criteria: strategic priority, technical and scientific merit, investigator ability and resources, partnership and capacity building, and cost/benefit.

Project executive summaries are assembled into a draft 2020 Fisheries Resources Monitoring Plan. The draft plan is distributed for public review and comment through Subsistence Regional Advisory Council meetings, beginning in September 2019. The Federal Subsistence Board will review the draft plan and will accept written and oral comments at its January 2020 meeting. The Federal Subsistence Board forwards its comments to the Assistant Regional Director of the Office of Subsistence Management. Final funding approval lies with the Assistant Regional Director of the Office of Subsistence Management. Investigators are subsequently notified in writing of the status of their proposals.

HISTORICAL OVERVIEW

The Monitoring Program was first implemented in 2000 with an initial allocation of $5 million. Since 2000, a total of $117 million has been allocated for the Monitoring Program to fund a total of 452 projects (**Figure 1** and **Figure 2**).

During each two-year funding cycle, the Monitoring Program budget funds ongoing multi-year projects (2, 3, or 4 years) as well as new projects. Budget guidelines are established by geographic region (**Table 1**). The regional guidelines were developed using six criteria that included level of risk to species, level of threat to conservation units, amount of subsistence needs not being met, amount of information available to support subsistence management, importance of a species to subsistence harvest, and level of user concerns regarding subsistence harvest. Budget guidelines provide an initial target for planning; however, they are not final allocations and are adjusted annually as needed (**Figure 3)**.

Figure 1. Monitoring Program Funds Distributed, by Organization Type, Since 2000

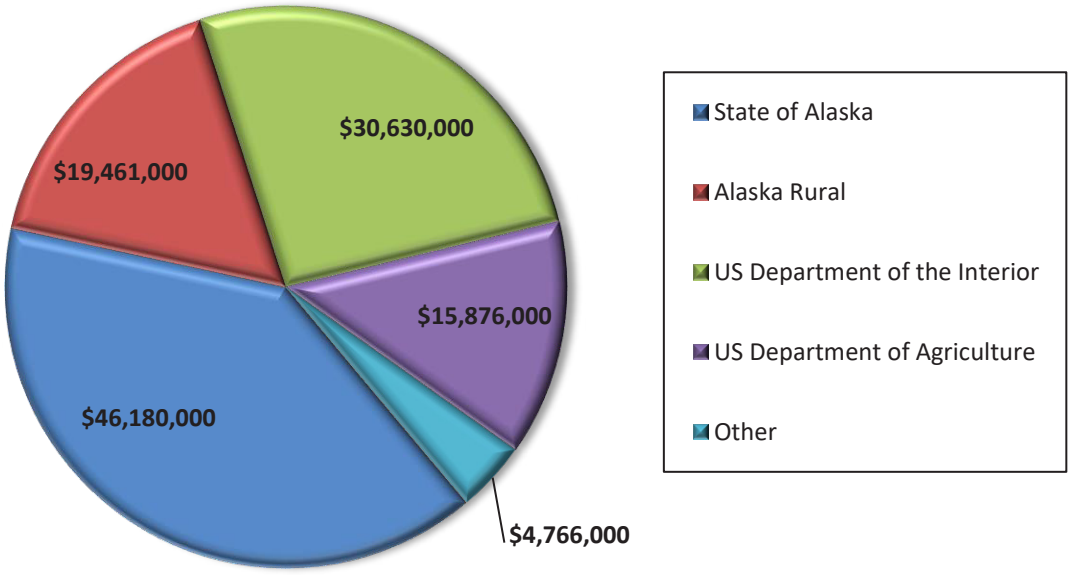


Figure 2. Number of Monitoring Program Projects Funded, by Organization Type, since 2000

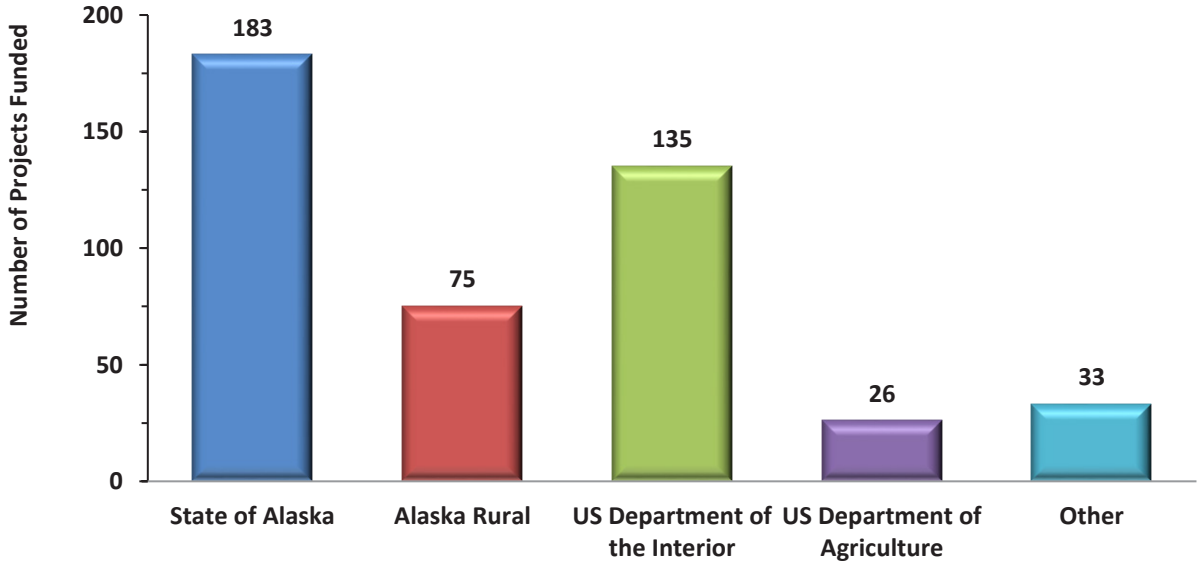
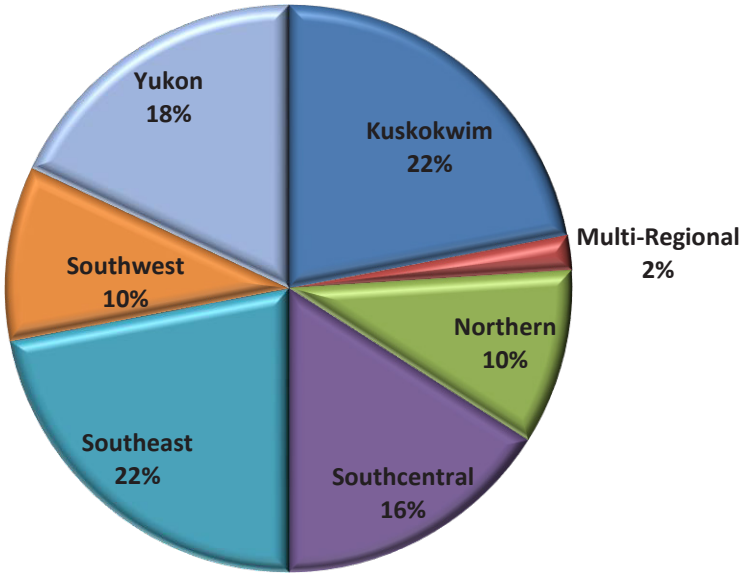


Table 1. Regional allocation guideline for Fisheries Resource Monitoring Program Funds.

Region	U.S. Department of the Interior Funds	U.S. Department of Agriculture Funds
Northern Alaska	17%	0%
Yukon Drainage	29%	0%
Kuskokwim Drainage	29%	0%
Southwest Alaska	15%	0%
Southcentral Alaska	5%	33%
Southeast Alaska	0%	67%
Multi-Regional	5%	0%

Figure 3. Percentages of Monitoring Program Funding Distributed to Each Region since 2000



The following three broad categories of information that are solicited for the Monitoring Program: (1) harvest monitoring, (2) traditional ecological knowledge, and (3) stock status and trends. Projects that combine these approaches are encouraged. Definitions of these three categories of information are listed below.

Harvest monitoring studies provide information on numbers and species of fish harvested, locations of harvests, and gear types used. Methods used to gather information on subsistence harvest patterns may

include harvest calendars, mail-in questionnaires, household interviews, subsistence permit reports, and telephone interviews.

Traditional ecological knowledge studies are investigations of local knowledge directed at collecting and analyzing information on a variety of topics, including: the sociocultural aspects of subsistence, fish ecology, species identification, local names, life history, taxonomy, seasonal movements, harvests, spawning and rearing areas, population trends, environmental observations, and traditional management systems. Methods used to document traditional ecological knowledge include ethnographic fieldwork, key respondent interviews with local experts, place name mapping, and open-ended surveys.

Stock status and trends studies provide information on abundance and run timing; age, size, and sex composition; migration and geographic distribution; survival of juveniles or adults; stock production; genetic stock identification; and mixed stock analyses. Methods used to gather information on stock status and trends include aerial and ground surveys, test fishing, towers, weirs, sonar, video, genetics, mark-recapture, and telemetry.

PROJECT EVALUATION PROCESS

In the current climate of increasing conservation concerns and subsistence needs, it is imperative that the Monitoring Program prioritizes high quality projects that address critical subsistence questions. Projects are selected for funding through an evaluation and review process that is designed to advance projects that are strategically important for the Federal Subsistence Management Program, are technically sound, administratively competent, promote partnerships and capacity building, and are cost effective. Projects are evaluated by a panel called the Technical Review Committee. This committee is a standing interagency committee of senior technical experts that is foundational to the credibility and scientific integrity of the evaluation process for projects funded by the Monitoring Program. The Technical Review Committee reviews, evaluates, and makes recommendations about proposed projects, consistent with the mission of the Monitoring Program. Fisheries and Anthropology staff from the Office of Subsistence Management provide support for the Technical Review Committee. Recommendations from the Technical Review Committee provide the basis for further comments from Subsistence Regional Advisory Councils, the public, the Interagency Staff Committee, and the Federal Subsistence Board, with final approval of the Monitoring Plan by the Assistant Regional Director of the Office of Subsistence Management.

To be considered for funding under the Monitoring Program, a proposed project must have a nexus to Federal subsistence fishery management. Proposed projects must have a direct association to a Federal subsistence fishery, and the subsistence fishery or fish stocks in question must occur in or pass through waters within or adjacent to Federal public lands in Alaska (National Wildlife Refuges, National Forests, National Parks and Preserves, National Conservation Areas, National Wild and Scenic River Systems, National Petroleum Reserves, and National Recreation Areas). A complete project package must be submitted on time and must address the following five specific criteria to be considered a high quality project.

1. ***Strategic Priorities***—Studies should be responsive to information needs identified in the 2020 Priority Information Needs available at the Monitoring Program webpage at https://www.doi.gov/subsistence/frmp/funding. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must summarize project findings in their investigation plans. This summary should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management. Projects should address the following topics to demonstrate links to strategic priorities:

    - Federal jurisdiction—The extent of Federal public waters in or nearby the project area
    - Direct subsistence fisheries management implications
    - Conservation mandate—Threat or risk to conservation of species and populations that support subsistence fisheries
    - Potential impacts on the subsistence priority—Risk that subsistence harvest users' goals will not be met
    - Data gaps—Amount of information available to support subsistence management and how a project answers specific questions related to these gaps
    - Role of the resource—Contribution of a species to a subsistence harvest (number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (cultural value, unique seasonal role)
    - Local concern—Level of user concerns over subsistence harvests (upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics)

2. ***Technical-Scientific Merit***—Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. To demonstrate technical and scientific merit, applicants should describe how projects will:

    - Advance science
    - Answer immediate subsistence management or conservation concerns
    - Have rigorous sampling and/or research designs
    - Have specific, measurable, realistic, clearly stated, and achievable (attainable within the proposed project period) objectives
    - Incorporate traditional knowledge and methods

    Data collection, compilation, analysis, and reporting procedures should be clearly stated. Analytical procedures should be understandable to the non-scientific community. To assist in evaluation of submittals for continuing projects previously funded under the Monitoring

Program, summarize project findings and justify continuation of the project, placing the proposed work in context with the ongoing work being accomplished.

3. ***Investigator Ability and Resources***—Investigators must show they are capable of successfully completing the proposed project by providing information on the ability (training, education, experience, and letters of support) and resources (technical and administrative) they possess to conduct the work. Investigators that have received funding in the past, via the Monitoring Program or other sources, are evaluated and scored on their past performance, including fulfillment of meeting deliverable and financial accountability deadlines. A record of failure to submit reports or delinquent submittal of reports will be taken into account when rating investigator ability and resources.

4. ***Partnership and Capacity Building***—Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development and, ideally, include a strategy to develop capacity building to higher levels, recognizing, however, that in some situations higher level involvement may not be desired or feasible by local organizations.

   Investigators are requested to include a strategy for integrating local capacity development in their study plans or research designs. Investigators should inform communities and regional organizations in the area where work is to be conducted about their project plans, and should also consult and communicate with local communities to ensure that local knowledge is utilized and concerns are addressed. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building. This includes a plan to facilitate and develop partnerships so that investigators, communities, and regional organizations can pursue and achieve the most meaningful level of involvement. Proposals demonstrating multiple, highly collaborative efforts with rural community members or Alaska Native Organizations are encouraged.

   Successful capacity building requires developing trust and dialogue among investigators, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building is a reciprocal process in which all participants share and gain valuable knowledge. The reciprocal nature of the capacity building component(s) should be clearly demonstrated in proposals. Investigators are encouraged to develop the highest level of community and regional collaboration that is practical including joining as co-investigators.

   Capacity can be built by increasing the technical capabilities of rural communities and Alaska Native organizations. This can be accomplished via several methods, including increased technical experience for individuals and the acquisition of necessary gear and equipment. Increased technical experience would include all areas of project management including logistics, financial accountability, implementation, and administration. Other examples may include internships or providing opportunities within the project for outreach, modeling, sampling design,

or project specific training. Another would be the acquisition of equipment that could be transferred to rural communities and tribal organizations upon the conclusion of the project.

A "meaningful partner" is a partner that is actively engaged in one or more aspects of project design, logistics, implementation and reporting requirements. Someone who simply agrees with the concept or provides a cursory look at the proposal is not a meaningful partner.

5. ***Cost/Benefit—***This criterion evaluates the reasonableness (what a prudent person would pay) of the funding requested to provide benefits to the Federal Subsistence Management Program. Benefits could be tangible or intangible. Examples of tangible outcomes include data sets that directly inform management decisions or fill knowledge gaps and opportunities for youth or local resident involvement in monitoring, research and/or resource management efforts. Examples of possible intangible goals and objectives include enhanced relationships and communications between managers and communities, partnerships and collaborations on critical resource issues, and potential for increased capacity within both communities and agencies.

   Applicants should be aware that the Government shall perform a "best value analysis" and the selection for award shall be made to the applicant whose proposal is most advantageous to the Government. The Office of Subsistence Management strives to maximize program efficiency by encouraging cost sharing, partnerships, and collaboration.

POLICY AND FUNDING GUIDELINES

Several policies have been developed to aid in implementing funding. These policies include:

- Projects of up to four years in duration may be considered
- Proposals requesting Monitoring Program funding that exceeds $215,000.00 in any one year are not eligible for funding
- Studies must not duplicate existing projects
- Long term projects will be considered on a case by case basis

Activities that are not eligible for funding include:

- Habitat protection, mitigation, restoration, and enhancement
- Hatchery propagation, restoration, enhancement, and supplementation
- Contaminant assessment, evaluation, and monitoring
- Projects where the primary or only objective is outreach and education (for example, science camps, technician training, and intern programs), rather than information collection

The rationale behind these policy and funding guidelines is to ensure that existing responsibilities and efforts by government agencies are not duplicated under the Monitoring Program. Land management or regulatory agencies already have direct responsibility, as well as specific programs, to address these activities. However, the Monitoring Program may fund research to determine how these activities affect Federal subsistence fisheries or fishery resources.

The Monitoring Program may fund assessments of key Federal subsistence fishery stocks in decline or that may decline due to climatological, environmental, habitat displacement, or other drivers; however, applicants must show how this knowledge would contribute to Federal subsistence fisheries management. Similarly, the Monitoring Program may legitimately fund projects that assess whether migratory barriers (e.g., falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes, remove beaver dams, or otherwise alter or enhance habitat.

2020 FISHERIES RESOURCE MONITORING PLAN

For 2020, a total of 28 investigation plans were received and all are considered eligible for funding. For 2020, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.5 million in funding statewide for new projects. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided some funding. The amount of U.S. Department of Agriculture funding available for 2020 projects is uncertain.

FISHERIES RESOURCE MONITORING PROGRAM
NORTHERN ALASKA REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, a total of 49 projects have been undertaken in the Northern Alaska Region costing $11.8 million (**Figure 1**). Of these, the State of Alaska received funds to conduct 26 projects, the Department of the Interior conducted 15 projects, Alaska Rural Organizations conducted 5 projects, and other organizations conducted three projects (**Figure 2**). See **Appendix 1** for more information on Northern Alaska Region projects completed since 2000.

Figure 1. Monitoring Program Funds Distributed, by Orginization Type, in the Northern Alaska Region since 2000

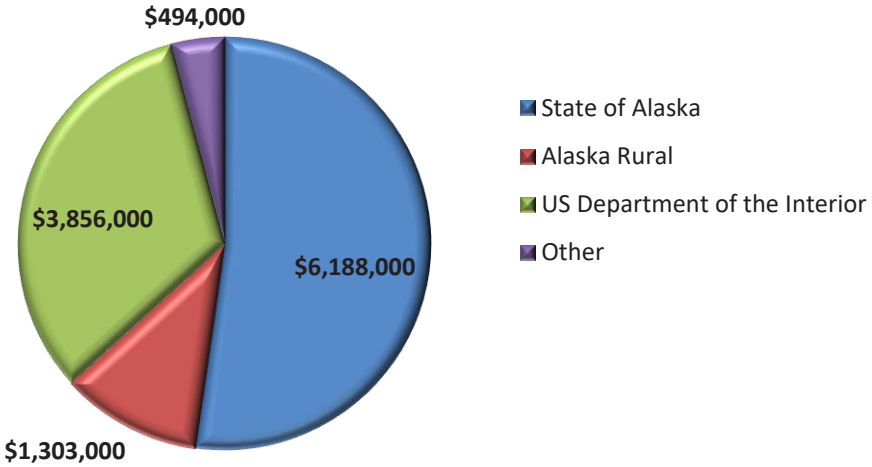
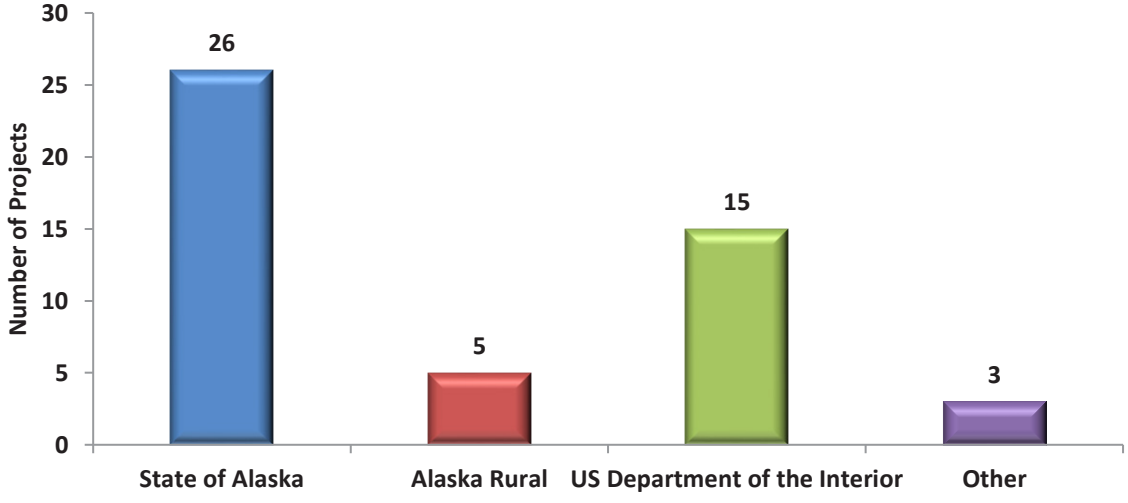


Figure 2. The Number of Monitoring Program Projects Funded, by Organization Type, in the Northern Alaska Region Since 2000



PRIORITY INFORMATION NEEDS

The 2020 Notice of Funding Opportunity for the Northern Alaska Region identified six priority information needs:

- Inventory and baseline data of fish assemblages in major rivers of northern Seward Peninsula tied to subsistence use, including Shishmaref, with the intent to add to the anadromous fish catalog.
- Agiapuk River Chum Salmon abundance estimates for both summer/fall runs.
- Coho Salmon abundance estimates for Pargon, Boston, and Wagon Wheel Rivers.
- Changes in species compositions, abundance, and migration timing, especially of Dolly Varden and whitefish species in the Northwest Arctic, to address changing availability of subsistence fishery resources. When possible, applicants are encouraged to include fisheries proximal to the communities of Kotzebue, Deering, and Noatak.
- The effects of expanding beaver populations and range on subsistence fisheries in the Northwest Arctic. Includes the effects of dams on fish migration and the effects of changes to water quality on fish health.
- Document temporal changes in harvest patterns, resource availability and abundance of Broad Whitefish in the tributaries of Smith Bay and Lake Tusikvoak. Including application to Federal subsistence management, such as identifying critical habitat, refining range maps and understanding ecological relationships. Identify spawning locations of Broad Whitefish in central and western North Slope.

AVAILABLE FUNDS

Federal Subsistence Board guidelines direct initial distribution of funds among regions. Regional budget guidelines provide an initial target for planning. For 2020, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.5 million in funding statewide for new projects in 2020. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided some funding. The amount of U.S. Department of Agriculture funding available for 2020 projects is uncertain.

ROLE OF THE TECHNICAL REVIEW COMMITTEE

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2020 Monitoring Program, four proposals were submitted for the Northern Alaska Region. The Technical Review Committee evaluated and scored each proposal on Strategic Priority, Technical and

Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1**). These scores remain confidential. An executive summary for each proposal submitted to the 2020 Monitoring Program for the Northern Alaska Region is in **Appendix 2**.

Table 1. Projects submitted for the Northern Alaska Region, 2020 Monitoring Program, including total funds requested and average annual funding requests.

Project Number	Title	Total Project Request	Average Annual Request
20-100	Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve	$316,800	$79,200
20-101	Life-history Variability and Mixed-stock Analysis of Dolly Varden in the Noatak River	$246,177	$82,059
20-150	Traditional Ecological Knowledge of Dolly Varden and Whitefish Species in Northwest Alaska	$172,684	$86,342
20-151	Increasing Beaver Activity in Northwest Alaska: Traditional Ecological Knowledge and Geospatial Analysis of Impacts to Subsistence Fish Resources	$486,070	$162,063
	Total	$1,221,731	$409,664

TECHNICAL REVIEW COMMITTEE JUSTIFICATIONS FOR PROJECT SCORES

Project Number: 20-100
Project Title: Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve

Technical Review Committee Justification: This project seeks to document the presence and distribution of important subsistence fish species that utilize Federal public lands/waters in Bering Land Bridge National Preserve (BELA). Information on stock status, species distribution, and population age structure are lacking for this area with many of the major rivers surveyed sporadically, or not at all. This project contains a linkage to Federal public lands/waters for subsistence use as it focuses on the fisheries of BELA. It involves several species of fish harvested by Federally qualified subsistence users and directly addresses a 2020 Priority Information Need: Inventory and baseline data of fish assemblages in major rivers of northern Seward Peninsula tied to subsistence use, including Shishmaref, with the intent to add to the anadromous fish catalog. The proposer intends to identify fish species and habitats within the BELA. The project would then use biological methods to survey for these species. These research objectives would support effective management for several subsistence resources with a focus on salmon. This project proposes to build / increase capacity by using local hire to help with the field sampling, but it does not describe any training that would build capacity. The proposal involves a partnership between State and Federal agencies. The principal investigator provided a letter of support from Native Village of Shishmaref IRA council.

Project Number: 20-101
Project Title: Life-history Variability and Mixed-stock Analysis of Dolly Varden in the Noatak River

TRC Justification: This project seeks to directly address a Northern Alaska Region 2020 Priority Information Need to address the changing availability of Dolly Varden subsistence fishery resources by using otolith microchemistry. Specifically, to determine life-history variability throughout the drainage and compare life-histories of present-day spawners and harvests to fish sampled in the early 1980s. Additionally, genetic analysis will be used to identify the genetic makeup of the harvests of spawning populations of mixed-stocks. The investigative plan draws a clear connection between the importance of the research and management implications for subsistence. Given the backgrounds of the principal investigators and co-investigators, it is likely the project goals and objectives will be achieved and project deliverables submitted in a timely manner. The investigator proposes to hire two locals each year to assist with the in-season collection of fish samples, and an Alaska Science and Engineering student to work in the field and laboratory alongside professional mentors to provide a meaningful internship. Additionally, this project will support a Master of Science thesis student's research at University of Alaska Fairbanks. The investigators have a proven track record and are employed in agencies that have the necessary administrative and technical support, and resources for the successful completion of the project. Each of the investigators is considered an expert in their field including, genetics, stable isotope microchemistry, and research of Arctic fishes. All four of the Principal Investigators have completed Monitoring Program projects in the past and have submitted deliverables on time. The project goals will likely improve our understanding of this complex fish species. Although Dolly Varden are not currently considered to be a species of conservation concern, the changing climate of the Arctic may produce new environmental stressors leaving this species at risk.

Project Number: 20-150
Project Title: Traditional Ecological Knowledge of Dolly Varden and Whitefish Species in Northwest Alaska

Technical Review Committee Justification: This project seeks to address a 2020 Priority Information Need for the Northern Alaska Region, "Changes in species compositions, abundance and migration timing, especially of Dolly Varden and whitefish species in the Northwest Arctic, to address changing availability of subsistence fishery resources." Ms. Mikow has the ability and experience to conduct this project. She would have substantial resources available through her position with the Alaska Department of Fish and Game. Her plan for engaging with communities is well-conceived. However, the proposal does not adequately demonstrate how the planned research activities would address the relevant priority information need; management application is not clearly demonstrated. One letter of support from the National Park Service was provided. There were no letters of support from the communities where the proposed research would be undertaken.

Project Number: 20-151
Project Title: Increasing Beaver Activity in Northwest Alaska: Traditional Ecological Knowledge and Geospatial Analysis of Impacts to Subsistence Fish Resources

Technical Review Committee Justification: This project seeks to document beaver activity over time in the Northwest Arctic for the purpose of evaluating landscape level effects of expanding beaver populations on subsistence fisheries. While the methods proposed appear adequate to document knowledge and concerns regarding beavers, as well as visible landscape effects of beaver dams, the project does not adequately link the resultant data to the effects on subsistence fisheries and only marginally addresses a priority information need. The proposed methods are scientifically sound and proven in achieving the intended results though it is unclear why individual methods were chosen over others. The partnership and capacity components of this proposal are limited. The budget for this project appears reasonable for meeting stated objectives but may be high given the limited applicability to Federal subsistence fishery management outcomes. There is also limited money allocated to local hires. The project leverages resources from a concurrent project and expands the scope of that project significantly. Both project investigators and their associated organizations appear to have substantial experience and resources to make this project successful.

APPENDIX 1
PROJECTS FUNDED IN THE NORTHERN ALASKA REGION SINCE 2000

Project Number	Project Title	Investigators
	North Slope	
00-002	Eastern NS Dolly Varden Spawning and Over-wintering Assessment	ADF&G, USFWS
01-113	Eastern NS Dolly Varden Genetic Stock ID Stock Assessment	ADF&G, USFWS
01-101	Eastern NS (Kaktovik) Subsistence Fish Harvest Assessment	AD&FG, KIC
02-050	NS (Anaktuvuk Pass) Subsistence Fish Harvest Assessment	ADF&G, NSB, AKP
03-012	SST of Arctic Cisco and Dolly Varden in Kaktovik Lagoons	USFWS
04-103	North Slope Dolly Varden Sonar Feasibility	USFWS
06-108	North Slope Dolly Varden Aerial Monitoring	ADF&G
07-105	North Slope Dolly Varden Genetic Baseline Completion	USFWS
07-107	Hulahula River Dolly Varden Sonar Enumeration	USFWS
12-154	North Slope Salmon Fishery HM/TEK	ADF&G
14-103	Beaufort Sea Dolly Varden Dispersal Patterns	UAF
16-101	Arctic Dolly Varden Telemetry	USFWS
16-106	Aerial Monitoring of Dolly Varden Overwintering Abundance	ADF&G, USFWS
16-107[a]	Chandler Lake Trout Abundance Estimation	ADF&G
16-152[b]	Meade River Changes in Subsistence Fisheries	ADF&G
18-100[b]	Colville River Grayling Habitat and Migration	ADF&G

Project Number	Project Title	Investigators
	Northwest Arctic	
00-001	Northwestern Dolly Varden and Arctic Char Stock Identification	ADF&G, USFWS
00-020	Hotham Inlet Kotzebue Winter Subsistence Sheefish Harvest	ADF&G
01-136	Northwestern Alaska Dolly Varden Genetic Diversity	ADF&G, USFWS
01-137	Northwestern Alaska Dolly Varden Spawning Stock Assessment	ADF&G
02-023	Qaluich Nigingnaqtuat: Fish That We Eat	AJ
02-040	Kotzebue Sound Whitefish Traditional Knowledge	ADF&G, MQ
03-016	Selawik River Harvest ID, Spring and Fall Subsistence Fisheries	USFWS
04-101	Selawik River Inconnu Spawning Abundance	USFWS
04-102	Selawik Refuge Whitefish Migration and Habitat Use	USFWS
04-109	Wulik River Dolly Varden Wintering Stocks	USFWS, ADF&G
04-157	Exploring Approaches to Sustainable Fisheries Harvest Assessment	ADF&G, MQ
07-151	Northwest Alaska Subsistence Fish Harvest Patterns and Trends	ADF&G, MQ
08-103	Kobuk River Sheefish Spawning and Run Timing	ADF&G, USFWS
10-100	Selawik Drainage Sheefish Winter Movement Patterns	UAF, USGS, USFWS, NVK
10-104	Hotham Inlet Kotzebue Winter Subsistence Sheefish Harvest	USFWS
10-152	Climate Change and Subsistence Fisheries in Northwest Alaska	UAF
12-100	Selawik River Sheefish Spawning Abundance and Age Structure	USFWS
12-103	Kobuk River Sheefish Spawning Frequency, Location, and Run Timing	ADF&G, USFWS
12-104	Noatak River Dolly Varden Evaluation of Overwintering Populations	ADF&G, NPS
12-153	NW AK Key Subsistence Fisheries Harvest Monitoring Program	ADF&G, MQ
14-104	Selawik R Inconnu Spawning Population Abundance	USFWS
16-103	Kobuk River Dolly Varden Genetics	ADF&G, USFWS
16-104[a]	Selawik Sheefish Age Structure and Spawning Population	USFWS
16-105[b]	Kobuk River Sheefish Abundance	ADF&G
18-101[b]	Kobuk River Dolly Varden Genetic Diversity	ADF&G, USFWS
	Seward Peninsula	
01-224	Nome Sub-district Subsistence Salmon Survey	ADF&G, KI
02-020	Pikmiktalik River Salmon Site Surveys and Enumeration	USFWS, NPS, STB, KI
04-105	Pikmiktalik River Chum and Coho Salmon Enumeration	KI
04-151	Customary Trade of Fish in the Seward Peninsula Area	ADF&G, KI
05-101	Unalakleet River Coho Salmon Distribution and Abundance	ADF&G, NVU
06-101	Pikmiktalik River Chum and Coho Salmon Enumeration	KI
10-102	Unalakleet River Chinook Salmon Abundance Estimate	ADF&G, BLM, NSEDC
10-151	Local Ecological Knowledge of Non-Salmon Fish in the Bering Strait	KI
14-101	Unalakleet River Chinook Salmon Abundance Estimate	NSEDC,NVU
18-103[b]	Unalakleet River Chinook Salmon Escapement Assessment	ADF&G, BLM NSEDC,NVU ADF&G, BLM

Project Number	Project Title	Investigators

a = Final Report in Preparation.
b = On-going projects during 2020.
Abbreviations used for investigators are: **ADF&G** = Alaska Department of Fish and Game, **AJ** = Anore Jones, **AKP** = City of Anaktuvuk Pass, **BLM** = Bureau of Land Management, **KI** = Kawarek Inc., **KIC** = Kaktovik Inupiat Corp., **MQ** = Maniilaq, **NSEDC** = Norton Sound Economic Development Corporation, **NVU** = Native Village of Unalakleet, **NSB** = North Slope Borough, **STB** = Stebbins IRA, **SWCA** = SWCA Environmental Consultants, **UAF** = University Alaska Fairbanks, **USFWS** = U.S. Fish and Wildlife Service, and **USGS** = U.S. Geological Survey.

APPENDIX 2
EXECUTIVE SUMMARIES

The following executive summaries were written by principal investigators and were submitted to the Office of Subsistence Management as part of proposal packages. They may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. Executive summaries may have been altered for length.

Project Number:	20-100
Title:	Fish Assemblages and Genetic Stock Determination of Salmon in Bering Land Bridge National Preserve
Geographic Region:	Northern Alaska Region
Data Type:	Stock Status and Trends
Principal Investigator:	Letty Hughes, National Park Service, Bering Land Bridge National Preserve
Co-investigator:	Nicole Braem M.A., National Park Service, Bering Land Bridge National Preserve Dr. Carol Ann Woody, National Park Service Jenefer Bell M.S., Alaska Department of Fish and Game Tyler Dann M.S., Alaska Department of Fish and Game
Project Cost:	**2020:** $101,700 **2021:** $129,400 **2022: $**82,200 **2023:** $3,500
Total Cost:	$316,800

Issue: We propose to examine fish assemblages within major rivers systems of the Bering Land Bridge National Preserve (BELA) with an emphasis on Pacific salmon (Oncorhynchus spp). Salmon and nonsalmon species are essential subsistence resources to residents living in proximity to BELA. At this time essential baseline information is missing on fish in BELA such as species presence and essential habitat locations, and characteristics critical for salmon success (e.g., spawning, rearing, and feeding areas). No northern Seward Peninsula populations have been included in any genetic population structure analyses, to date, that include this region1,2, leaving a large gap in knowledge. The Federal Office of Subsistence Management identified inventory and baseline data of fish assemblages in major rivers of the

northern Seward Peninsula tied to subsistence use as a priority information need for the 2020 FRMP. This area encompasses most of the Bering Land Bridge National Preserve and includes the past and current subsistence hunting and fishing areas of several federally recognized tribes. Wales, Shishmaref, and Deering are most closely affiliated with the preserve, but residents of other Seward Peninsula communities also make use of fish and wildlife resources within the preserve.

Bering Land Bridge National Preserve's enabling legislation directs the preserve to protect the viability of subsistence resources as well as "manage to protect habitat for, and populations of, fish and wildlife including, but not limited to marine mammals." There is an ethic of stewardship of cultural and natural resources for future generations. None of these management goals can be achieved without adequate data.

Adding to the urgency of this data need are ongoing rapid environmental changes occurring across the Arctic. Ecosystems are changing, noted authors of the 2017 Snow, Water, Ice and Permafrost in Arctic report, and arctic ecosystems will face significant stresses and disruptions3. The science reflects what residents of northern Alaska communities have described for more than a decade: earlier spring breakups and later fall freeze-up, thawing permafrost, reduced thickness of sea ice, increasingly brushy vegetation, drying tundra lakes and erratic weather patterns4. These changes will affect the abundance and distribution of fish and wildlife species that support and sustain subsistence lifeways.

Objectives: The long-term overarching goal is to create a baseline inventory of subsistence fish assemblages, and salmon genetic stock structure in major rivers flowing through BELA. The Project Executive Summary For Bering Land Bridge National Preserve measurable and achievable objectives for this 3-year collaborative field study project will investigate the Serpentine, Nuluk, Arctic, and Nugnugaluktuk rivers to 1) document fish species assemblages, with emphasis on Pacific salmon, 2) evaluate genetic variation within salmon species and potential for mixed stock analysis, and 3) collect age sex, and length (ASL) on salmon species identified and sampled for genetics.

Methods: Three methods of data collection will be used in order to meet the objectives of this study: fish presence baseline, genetic sampling, and age-sex-length (ASL).

Fish Inventory: We will survey primary subsistence rivers and streams to document subsistence fish species presence, distribution and habitats in and near within BELA. For wadeable streams a crew transported by a Robinson R-44 helicopter will visit approximately 30 headwater target sites throughout the study area for a total of 10 field days in July and August over the course of 1 year. Over the course of two years crew will visit approximately 7 unwadeable and main stream sites. Unwadeable streams requires one cataraft crew to be transported by a Bell 206BIII helicopter to visit headwater streams throughout the study area for a total of 10 field days. In rivers and streams fish sampling will be conducted using a backpack electrofishing unit. The unit will be operated by biologists and aided by one technician. Size of sampling reach will be dependent on channel size (small wadeable <12.5 m, medium wadeable 12.5 to 25 m, or large wadeable 25 + m), and fishing will focus on all habitat types in a reach. Stunned fish will be captured in nets and placed in a bucket. Fish stress and mortality will be minimized whenever possible by minimizing handling of fish. GPS coordinates of all survey reaches will be logged,

and characteristics recorded. Beach seins will be deployed from shore when feasible (no large obstructions, shoreline is accessible).

Genetics: Genetic baseline samples will be collected from spawning populations of salmon ranging from each of the four proposed rivers. One hundred genetic samples will be targeted from each species of salmon per proposed river. We will genotype chum salmon for genetic markers common to a regional baseline and assess the population genetic structure of chum salmon in the region. We will evaluate that structure for the potential to use mixed stock analysis to determine local area contributions to mixed stock fisheries.

ASL: Nonsalmon species fork lengths [measured from tip of snout to fork of tail (or to tip of tail, if no fork)] will be measured to the nearest millimeter on all collected & identified fish in wadeable and unwadeable streams. Salmon length will be measured mideye to tail fork (METF), to the nearest 1 mm. Scales will be cleaned of slime and debris, mounted on gummed cards and returned to the ADF&G office in Nome. One scale per fish will be collected on chum salmon; for all other species 3 scales will be collected per salmon. Each year, age and gender of salmon will be summarized by species and river location. The data will be reviewed for patterns of similarity between rivers.

Partnership/Capacity Building: Consultation with Shishmaref IRA Council, residents of Shishmaref, and ADF&G was initiated in August 2018. Residents of Shishmaref have been instrumental in developing the proposed project, providing target areas of study, a willingness to assist with logistics, and the desire to provide a local hire to work on the project. The principal investigator will work with Shishmaref to bring on a local hire for 3-year field season. This project will help develop a broader understanding of northern Seward Peninsula subsistence fisheries and water resources through collaborative partnerships between Shishmaref, BELA, state and federal subsistence management agencies. Building these relationships will provide a timely response to potential changes to current salmon and nonsalmon species in addition to potential new species entering that enter the region as the environment undergoes changes.

Project Number:	20-101
Title:	Life-history Variability and Mixed-stock Analysis of Dolly Varden in the Noatak River
Geographic Region:	Northern Alaska Region
Data Type:	Stock Status and Trends
Principal Investigator:	Philip Joy, Alaska Department of Fish and Game- Sport Fish Division, Fairbanks
Co-investigators:	Andrew Seitz, University of Alaska Fairbanks, College of Fisheries and Ocean Sciences Randy Brown, United States Fish and Wildlife Service, Fairbanks Penny Crane, United States Fish and Wildlife Service, Anchorage
Project Cost:	**2020:** $85,572 **2021:** $80,225 **2022: $**80,380 **2023**: $0
Total Cost:	$246,177

Issue: Dolly Varden (*Salvalinus malma*) in northwest Alaska constitute one of the most important subsistence resources for residents of Noatak, Kivalina, and Kotzebue and Dolly Varden that spawn in the

Noatak River contribute to fishery harvests occurring in Noatak, Kotzebue, and Kivalina. While current harvests appear to be sustainable, managers have little to no information to decide whether or not a subsistence and/or sport fishery should be restricted or liberalized if fisheries change due to changing climate, increased oil and gas exploration, or shifting resource use by locals. The complex life histories of this species coupled with many spawning populations located throughout the Noatak River watershed make management of this species problematic and challenging. There is also limited information on the abundance of Dolly Varden in the Noatak River, but the spawning population is thought to be relatively small at 12-20,000 fish (Scanlon 2011). There is data on life-history traits from the 1980s (DeCicco 1985) and identifying changes in life-history patterns would allow managers to identify shifts in the population structure that may portend problems in the future. For these reasons, gaining a better understanding of basic life-history patterns is critical to understanding the population dynamics of this species and the harvest levels the population can sustain.

The stock composition of the subsistence harvests is also relatively undocumented and understanding which stocks are most critical to subsistence users would allow managers to design cost-effective abundance estimates focusing on a subset of the most important stocks. Given the uncertainty of a rapidly changing climate as well as increased human activities such as transpolar shipping and hydrocarbon exploration and extraction (Reist et al. 2006a; Reist et al. 2006b) it is critical that we gain a better understanding of life-history traits within the drainage and a thorough understanding of the relative importance of the different spawning stocks to the harvest.

This proposal directly speaks to a 2020 priority information need to address the changing availability of Dolly Varden subsistence fishery resources for the Northern Region by, 1) using otolith microchemistry to elucidate life-history variability throughout the drainage and compare the life-history of harvested fish , fish spawning in the lower, middle, and upper Noatak River tributaries, and fish sampled in the early 1980's (DeCicco 1985); and, 2) using mixed-stock analysis (MSA) to identify the genetic make-up of the harvests as it relates to spawning populations.

Objectives: The objectives for this project will be to:

1. Collect life history information for Dolly Varden sampled from the Noatak and Kivalina subsistence harvests and the Kotzebue commercial fishery bycatch harvest, and stock-specific life history information from 9 tributaries from the Noatak River (N=50 per fishery sample and per tributary sample). Life history characteristics to be estimate are:

    a. Age
    b. Age-at-length
    c. Age at first seaward migration
    d. Frequency of seaward migration

2. Estimate the stock proportions of Dolly Varden sampled from the Noatak and Kivalina subsistence harvests and the Kotzebue commercial fishery bycatch harvest in 2020, 2021, and 2022 using mixed-stock analysis with genetic characters (N=200 per fishery sample).

Methods: This project will use otolith microchemistry to examine life-history variability in the drainage and fisheries and compare it to historical data from the 80s to determine if there have been changes in population structure. We will also use genetic samples to determine the stock-of-origin of fish being harvested in subsistence fisheries.

We propose to determine the life-history traits of Dolly Varden sampled from the Noatak and Kivalina subsistence harvests and the Kotzebue commercial fishery in 2020, 2021, and 2022 using otolith chemistry methods similar to Gallagher et al. (2018). We also propose to determine stock specific traits from 9 different tributaries of the Noatak River. Otolith analysis will provide data to estimate the age-of-smolting for fish that survived to maturity, frequency of seaward migration, and age-at-length. Otoliths will be collected from 50 fish from the three fisheries and from the various tributaries.

Mixed-stock analysis will be used to estimate the stock proportions of Dolly Varden sampled from subsistence harvests and as bycatch in the Kotzebue commercial fishery in 2020, 2021, and 2022. Fin clips will be collected from N=200 Dolly Varden from subsistence fisheries in Noatak and Kivalina, and from Dolly Varden bycatch in the Kotzebue commercial fishery in 2020, 2021, and 2022.

Three tributaries per year will be accessed between mid-July and mid-August by a combination of jet boat, raft, and fixed-wing aircraft. In year one, two teams of biologists will sample the Kelly, Kugururok, and Nimiuktuk rivers, in year two biologists will sample the Nakolik and Kaluktavik rivers and the most upper Noatak River Dolly Varden populations in Kavachurak, Lower Kugrak, and Kugrak creeks, and in year three biologists will sample the Eli and Anisak rivers and Evaingiknuk Creek Crews will travel from Kotzebue up the Noatak River in a large inboard-powered jet boat and use small jet-powered rafts to ascend tributaries. A fixed-wing aircraft from Kotzebue will be used to transport crews to more remote locations.

Partnerships and Capacity Development: An ANSEP internship, up to four weeks in duration in August 202-2022, will be available in the CGL. The principal investigator will work closely with local communities to learn about the rivers to be sampled and gain any insight from their knowledge of fish in those areas. Local hires will be employed to sample fish in the Noatak and Kivalina subsistence fisheries with assistance from ADF&G and USFWS biologists and results from this study will be shared with the cooperating communities and the Northwest Alaska RAC.

Project Number:	20-150			
Title:	Traditional Ecological Knowledge of Dolly Varden and Whitefish Species in Northwest Alaska			
Geographic Region:	Northern Alaska Region			
Data Type:	Harvest Monitoring/Traditional Ecological Knowledge			
Principal Investigator:	Elizabeth Mikow, Division of Subsistence, Alaska Department of Fish and Game			
Project Cost:	**2020:** $88,001	**2021:** $84,683	**2022:** $0	**2023:** $0
Total Cost:	$172,684			

Issue: This proposed project addresses a priority information need identified for the Arctic region regarding changes in species composition, abundance, and migration timing of Dolly Varden (scientific name) and whitefish species to address changing availability of subsistence fishery resources (USFWS 2019). Dolly Varden, multiple whitefish species, and sheefish are critical subsistence resources for communities in the Kotzebue District, and the relative importance of these resources is higher in this region compared to many other areas of the state. Based on recent Division of Subsistence harvest assessment projects in 6 Kotzebue District communities, subsistence harvests of whitefish in the region average 74,000 fish annually and harvests of sheefish average well over 10,000 fish. In some Kotzebue area communities, Dolly Varden account for a larger component of total subsistence harvests than salmon and whitefish; since 1991, subsistence harvests in the community of Noatak have ranged from 3,000 to over 11,000 Dolly Varden. Very few biological assessment projects exist for Dolly Varden and sheefish, and there are currently no assessment projects for whitefish in the Kotzebue District (Braem et al. 2017; 2018; Menard et al. 2018). Recent ethnographic information collected by the Division of Subsistence as a part of harvest assessment projects has documented concerns by residents of the Kotzebue District regarding changes to whitefish and Dolly Varden abundance. Building on recently collected harvest assessment and ethnographic information, this project will document Traditional Ecological Knowledge (TEK) information from residents of Deering, Kotzebue, and Noatak. Due to the amount of recent harvest data in the region, this study will focus solely on TEK of Dolly Varden and whitefish species. Key respondent interviews will document observations of fish behavior, health, and abundance. Additionally, interviews will assess the amounts, areas, and means of harvest of key species along with the social and cultural importance of fish resources.

Objectives: There are three objectives for this project:

1. In the communities of Deering, Kotzebue, and Noatak, conduct indepth ethnographic interviews about the TEK of sheefish, whitefish species, and Dolly Varden ecology. Interviews will include questions about a) nonsalmon fish species utilized for subsistence; b) life history/biological information including habitat preferences, spawning & rearing areas, seasonal movements of fish; c) traditional/contemporary harvest methods, including timing of harvest, and gear used; d) observations of fish behavior including seasonal movements, migration timing, spawning and rearing areas, and fish health; e) relative abundance and population trends for key fish species; and f) general observations of environmental change.

2. Map historical and contemporary subsistence harvest locations, observed fish migrations, and other important habitats (spawning, juvenile rearing, etc).

3. Contribute to local capacity building by utilizing a framework of community involvement in research.

Methods: The research will employ standard anthropological data gathering methods of key respondent interviews, participant observation, and mapping to document the TEK of Dolly Varden and whitefish species in northwest Alaska. ADF&G staff will work closely with participating communities to assure effective local participation. As such, tribal governments will serve as project collaborators, supporting the research through tribal resolutions and assisting investigators in local logistics. In each of the study communities local research assistants will be hired to assist with data collection.

Semi-structured interview protocols provide a format for systematically documenting comparable information about the same or an overlapping set of topics in each community while providing flexibility for each key respondent's level of expertise, experience, and focus. Investigators will use a general semi-structured interview guide framed around the topics listed in Objective 2 and developed in consultation with the tribal councils and other knowledgeable community members. The guide may be modified to reflect regional differences along each river, such as variations in resource use or ceremonial life. Davis and Ruddle (2010:891) stress the importance of a systematic methodology for gathering local knowledge, primarily through peer recommendations. In each community, individuals knowledgeable about Dolly Varden and whitefish will be identified using a snowball method to learn about other experts with the assistance of tribal council and other community members (Usher 2000). Researchers will attempt to interview 10 individuals in Deering and Noatak, and, due to the size of the community, 15 individuals in Kotzebue. These sample sizes are based on researchers' previous research experience with the proposed communities and residents' collective subsistence use practices. Because this type of knowledge is likely to be highly specialized, researchers will strive to include all experts with this knowledge without attempting to represent a variety of demographics, including age, gender, and profession.

During interview sessions, key respondents will be asked to map historical and contemporary subsistence harvest areas, as well as historical and contemporary areas of observed fish migration. The temporal focus of these two mapping topics will allow for the documentation of changes to productive areas of harvest as well as any changes to fish abundance and movement in key waterways utilized for subsistence.

Partnerships and Capacity Building: The principal investigator will work with tribal councils in the study communities to hire local project assistants to assist with key respondent interviews and facilitate community meetings. The local research assistants will be trained in ethnographic interview methods. Local research assistants are well positioned to aide in interview data collection due their understanding of the key species harvested by their community as well their knowledge of local geography for mapping sessions. The PI will work with local research assistants to develop a presentation on study results for community review. Working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

Project Number:	20-151			
Title:	Increasing Beaver Activity in Northwest Alaska: Traditional Ecological Knowledge and Geospatial Analysis of Impacts to Subsistence Fish Resources			
Geographic Region:	Northern Alaska Region			
Data Type:	Traditional Ecological Knowledge			
Principal Investigator:	Elizabeth Mikow, Division of Subsistence, Alaska Department of Fish and Game			
Project Cost:	**2020:** $183,892	**2021:** $179,981	**2022: $**122,197	**2023:** $0
Total Cost:	$486,070			

Issue: Local observations and recent research analyzing satellite imagery has shown that beavers (*Castor canadensis*) have begun to colonize the arctic tundra of northwest Alaska. Residents in communities throughout the northwest Alaska region have expressed concerns about the impacts that beaver dams may have on water quality, fish migration, and fish health. While some ethnographic data exist for this topic in the region (Braem et al. 2015, Braem et al. 2017, Braem at al. 2017b, Brubaker et al. 2011), very little traditional ecological knowledge (TEK) has been documented on on the relationship between fish and beavers in Northwest Alaska to date. Thus, the effects of beaver colonization on the Arctic environment are not understood, but substantial research from the boreal forest and temperate ecosystems indicate likely impacts to fish populations (Kemp et al. 2012; Lokteff et al. 2013; Pollock et al. 2004). This project seeks to 1) document TEK regarding the relationship between expanding beaver populations and subsistence fisheries in Northwest Arctic communities; and 2) collect and analyze quantitative spatial data to characterize beaver range expansion and interaction with the environment.

Objectives:

1) Document TEK related on beaver ecology and impacts to whitefish and salmon migration, habitat, and health will be collected from local experts in Noatak, Kotzebue, Shungnak, and Kobuk. Data collection will include two phases.

During the first phase researchers will 1.) Collect a baseline body of valuable local information and observations of beaver activity on the landscape and impacts to fish behavior, health, and movements, 2.) Generate maps depicting harvest areas for whitefish and salmon species, as well as the presence of beaver activity in the study area, and 3.) Use information collected in interviews to help inform and guide the process of collecting drone imagery and determining placement of game cameras.

During the second phase of data collection, key respondents will be interviewed a second time following spatial imagery analysis. During this phase researchers will 1.) Share satellite imagery and drone/game camera footage with key respondents, as well as maps of harvest areas and known areas of beaver activity gathered during the first phase of data collection and 2.) Conduct semi-structured interviews with key respondents with questions developed during data analysis of both ethnographic and spatial imagery data.

2) Spatial Imagery Analysis:

a) Map regional beaver activity during recent decades in the Upper Kobuk and Lower Noatak (Figure 1), including categorizing dams according to setting (oxbow, stream, spring, etc.) and year of formation.
b) Collect high-resolution satellite and drone imagery to assess visible impacts of beaver activity on the landscape, and to aide discussion of TEK with key local respondents.

Methods: For the TEK component, researchers will identify key respondents by working closely with tribal governments and other knowledgeable individuals in Noatak, Kotzebue, Shungnak, and Kobuk through systematic peer recommendations, a sampling method in which community residents recommend respondents who are then rank-ordered and approached to be interviewed (Davis and Ruddle 2010). Researchers will attempt to interview 10 individuals in Noatak, Shungnak, and Kobuk. Due to the size of Kotzebue, researchers will attempt to interview 15 individuals. These sample sizes are based on researchers' previous research experience with the proposed communities and residents' collective subsistence use practices. Key respondent interviews will be in-depth, semi-structured, and open-ended to enable the researchers to more fully explore some of the key concepts that emerge during the interview process. The first phase will include the collection of baseline TEK of beaver ecology and impacts to fish species, including ethnographic mapping. In the second phase, the same key respondents will be interviewed and researchers will share spatial imagery and ask questions prompted by both spatial and ethnographic data analysis.

For the spatial imagery analysis, researchers will implement a semi-automated workflow that analyzes Landsat imagery time series to identify the formation and disappearance of beaver ponds in Noatak National Preserve, Cape Krusenstern National Monument, and the upper Kobuk River region.). Beaver dam sites will be classified according to their setting on a stream, oxbow, spring, lake outlet, or other feature. Very high resolution imagery of select beaver dam sites (n=3 per community) will be collected in the field using a drone. Imaging will be completed in two communities per year during July/August of each project year, allowing each community to be visited twice during the project. Sites will be accessed by boat by hiring local residents, some who have already been identified, others who will be approached in the initial community meetings. Game cameras will be deployed and downloaded concurrent with the drone imaging. Drone imaging will be analyzed for landscape impacts and aide with TEK discussions; game cameras will illuminate beaver behavior and seasonal events, and will also aide with TEK discussions.

Partnerships and Capacity Building: The principal investigator will work with tribal councils in the study communities to hire local project assistants to assist with key respondent interviews and facilitate community meetings. The local research assistants will be trained in ethnographic interview methods. Local research assistants are well positioned to aide in interview data collection due their understanding of the key species harvested by their community as well their knowledge of local geography for mapping sessions. The PI will work with local research assistants to develop a presentation on study results for community review. Co-PI Tape will also contract local residents of the study area to take staff out in boats to access field sites for drone imaging and game camera deployment. This collaborative effort will allow for valuable knowledge exchanges between local residents and researchers. Working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

ANNUAL REPORTS

Background

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

Report Content

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

Report Clarity

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

Report Format

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

Federal Subsistence Board

1011 East Tudor Road, MS 121
Anchorage, Alaska 99503 - 6199

FISH and WILDLIFE SERVICE
BUREAU of LAND MANAGEMENT
NATIONAL PARK SERVICE
BUREAU of INDIAN AFFAIRS

FOREST SERVICE

SEP 09 2019

OSM 19060.KW

Louis Green, Chair
Seward Peninsula Subsistence
Regional Advisory Council
c/o Office of Subsistence Management
1101 East Tudor Road, MS 121
Anchorage, Alaska 99503

Dear Chairman Green:

This letter responds to the Seward Peninsula Subsistence Regional Advisory Council's (Council) fiscal year 2018 Annual Report. The Secretaries of the Interior and Agriculture have delegated to the Federal Subsistence Board (Board) the responsibility to respond to these reports. The Board appreciates your effort in developing the Annual Report. Annual Reports allow the Board to become aware of the issues outside of the regulatory process that affect subsistence users in your region. We value this opportunity to review the issues concerning your region.

1. Chinook and Chum Salmon Bycatch on the Bering Sea

The Council continues to be concerned about the bycatch of Chinook and Chum Salmon in the Bering Sea and its impacts on subsistence resources in the Seward Peninsula. The Chinook Salmon stocks have been depressed for years, yet little seems to be done to alleviate the burden on subsistence users. The Chum Salmon are also suffering, likely due to bycatch. In contrast, the Pink Salmon are extremely abundant and may also be impacting Chinook and Chum populations. Pink Salmon need to be managed so that subsistence needs for Chinook and Chum Salmon can be met.

Recommendation: The Alaska Department of Fish and Game (ADF&G), and where applicable, Federal agencies, need to manage salmon populations on the high seas so that subsistence needs for Chinook and Chum Salmon are met.

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Response:

The North Pacific Fisheries Management Council (NPFMC) is responsible for managing the commercial fisheries off the coast of Alaska including the bycatch of Chinook and Chum Salmon in the Bering Sea. In 2016, the NPFMC took action to reduce salmon bycatch in the Bering Sea by implementing a new management strategy. Since that time the bycatch of Chinook Salmon has decreased from a high of 121,770 in 2007 to 17,379 in 2018. In addition, the bycatch of Chum Salmon has decreased from a high of 505,974 in 2005 to 343,001 in 2016. It is important to note that the most recent genetic work estimated less than half of the salmon bycatch was bound for coastal western Alaska. Based on genetic work completed in 2016, approximately 34 percent of Chinook Salmon and 19 percent of Chum Salmon caught were from coastal western Alaska. Information on the NPFMC is available here: https://www.npfmc.org/salmon-bycatch/.

The Board's authority is limited to providing a subsistence priority for the use of fish and wildlife taken from the Federal public lands under Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA). However, the Board does encourage Council members to attend the NPFMC meetings to voice their concerns directly to that Council. In addition, if members of the Council are interested in serving on the NPFMC, the information to apply can be forwarded once the application process is open again. Membership information can be found here: https://www.npfmc.org/council-members/.

The NPFMC meets five times each year with three of the meetings held in Anchorage, one in a fishing community in Alaska, and another in Seattle or Portland. The meetings typically last seven days, and are open to the public except for the occasional closed session. There are 11 voting members and 4 non-voting members. The voting members include seven private citizens who are familiar with the fishing industry and/or marine conservation. These members are appointed by the Secretary of Commerce from lists submitted by the Governors of Alaska and Washington. An overview of the full NPFMC process is available through their website: https://www.npfmc.org/wp-content/PDFdocuments/help/Navigating_NPFMC.pdf

2. <u>Moose Management in Unit 22</u>

The Council has had lengthy discussions and has taken different actions in the past on moose issues in Unit 22. The Council is especially concerned about low moose densities in Units 22D remainder and 22E, as well as the potential impacts of guided moose hunting on moose migration into Unit 22A.

In Unit 22D remainder, cow moose hunts have been temporarily eliminated via special actions and non-resident hunting on Federal Public lands is prohibited. While the moose population does not appear to be decreasing, it has not improved in response to these changes. Moose in this region have largely been managed via subunit. In 2016, Tony Gorn, former area biologist from ADF&G, reported that moose were likely migrating between subunits 22D remainder and 22E, making it difficult to ascertain what was happening with the individual subunit populations.

Chairman Green 3

Management, however, has not responded with appropriate hunting regulations. For example, in Unit 22E, State hunting regulations are still liberal with non-residents taking between 14 and 16 moose annually.

In Unit 22A, guided moose hunting could be impacting migration of moose from Units 21E and 18 into Unit 22A. Management needs to find a way to allow these moose to migrate unimpeded into areas where moose are not abundant and where moose are needed for subsistence.

Recommendation: The Council would like ADF&G and Bureau of Land Management (BLM) to study moose migration dynamics between Units 22E and 22D remainder, and to consider managing moose in these sub-units as one population. The potential for migration has been observed and articulated, yet managers have failed to respond, and harvest by non-residents in Unit 22E is high despite low moose densities. The Council intends to submit a proposal to permanently eliminate the cow moose hunt in Unit 22D remainder and limit hunting in this unit to Federally qualified subsistence users only. The Council will also continue to propose to the Board of Game that non-resident hunting in Unit 22E be eliminated until moose densities in the area have increased.

The Council is also requesting that ADF&G and the BLM consider the impacts of guided moose hunting on moose in Unit 22A.

Response:

There are consistent reports of movement by moose between Units 22E and 22D remainder. However, the timing and magnitude of these migrations have not been quantified through telemetry studies and aerial surveys. Recent trend counts and surveys in the Unit have been constrained by poor weather and visibility. For management purposes, these moose are considered a single population and, as such, special actions to eliminate cow harvest opportunities have been supported by the Board in response to the population's stable status. Harvest management using sub-units can be used to disperse effort to reduce user conflict, target specific segments of a population, and to regulate the pace of harvesting. Because of the mixture of Federal and State managed lands in the sub-units, moose conservation actions taken by the Board are potentially diminished because harvest by non-Federally qualified users can easily shift to State managed lands. As a result, closure of additional Federal lands to non-Federally qualified moose hunters may slightly improve rural hunter's success, but may not result in a conservation benefit for the moose population. The Board agrees that a better understanding of moose movement between the sub-units would benefit management options aimed at both conservation efforts and improved harvest by rural Alaskans.

Moose immigration into Unit 22A, from adjacent Unit 21E and Unit 18 where moose densities are significantly higher, has been inferred from direct observations by locals and guides. While these observations are positive indicators for future improvement in Unit 22A, there is no direct evidence that guided hunting activities in adjacent units are hindering moose movements into

Unit 22A. While BLM does permit commercial guided hunts on their lands in Unit 21E, habitat conditions, availability of forage, and reproduction are the primary drivers that result in moose movements from high density areas to adjacent areas with fewer moose.

3. Predator Management

The Council is concerned about the lack of bear population abundance data and possible impacts from increased bear harvests throughout the region. Harvests could be insufficient to reduce populations, or detrimental to the conservation of the resource. It is difficult to manage bear populations in Unit 22 without surveys to estimate density. The Council is also very concerned about the status of wolf populations in Unit 22, as there are increasing reports from villages of wolves coming into the area. There needs to be a proper assessment of wolf populations and a management strategy to deal with predation on important game species.

Recommendation: The Council would like to see bear surveys conducted so that the resource can soundly managed. The Council recognizes that wolf control is outside the jurisdiction of the Board and is largely needed on State lands. As a result, the Council will be discussing the possibility of submitting a proposal to the State of Alaska Board of Game.

Response:

Thank you for bringing the Council's concern about bear population and surveys to the attention of the Board. The Board acknowledges that the Council would like to see more research on bear abundance and density in order to inform local management and harvest levels. The Alaska Department of Fish and Game (ADF&G) and Federal land management agencies (USFWS, BLM, NPS, and USFS) are responsible for both brown bear and wolf population research and management in Alaska.

The last time brown/grizzly bear population surveys were conducted for your region was 2015. That research was a joint effort between the National Park Service and the State of Alaska. Results indicated the bear density at 36.5 bears/1000 km^2 for Unit 22 (ADF&G 2017) and did not indicate a change in density compared to previous research in the early 1990s (Miller et al. 1993). The National Park Service is planning future brown bear surveys for 2020 in collaboration with ADF&G.

In addition to field studies by biologists, bear harvest data from resource users are vital for informing ADF&G's population estimates over time. Between 1991 and 2015, reported brown bear harvests almost doubled for Unit 22. The submission of accurate and timely harvest data is a very important role the Council can encourage from all users as this data is key to informing bear management.

The Council can write a letter to ADF&G expressing its desire to have additional and ongoing bear survey work given priority in the future. The Council could also request that ADF&G and

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Federal land management agencies within the region to give a presentation at the next Council meeting about how bear harvest data are used to inform population and density estimates for Unit 22.

Literature Cited:

Alaska Department of Fish and Game. 2017. The Status of Brown Bears and Factors Influencing Their Populations. Division of Wildlife Conservation, Annual Performance Report 1 July 2016-30 June 2017, Federal Aid in Wildlife Restoration Project 4.0, Juneau.

Miller, S., & Nelson, R. R. 1993. Brown Bear: A Brown Bear Density and Population Estimate for a Portion of the Seward Peninsula, Alaska. Alaska Department of Fish and Game, Division of Wildlife Conservation.

In closing, I want to thank you and your Council for your continued involvement and diligence in matters regarding the Federal Subsistence Management Program. I speak for the entire Board in expressing our appreciation for your efforts and am confident that the subsistence users of the Seward Peninsula Region are well represented through your work.

Sincerely,

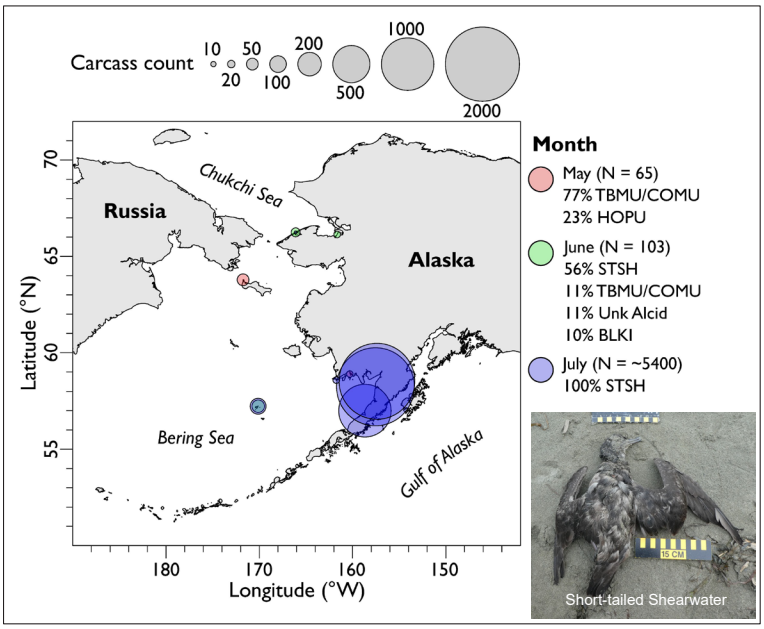
Anthony Christianson
Chair

cc: Federal Subsistence Board
Thomas Doolittle, Acting Assistant Regional Director, Office of Subsistence Management
Thomas Whitford, Acting Deputy Assistant Regional Director
Office of Subsistence Management
Jennifer Hardin, PhD, Subsistence Policy Coordinator, Office of Subsistence Management
Steven Fadden, Acting Council Coordination Division Supervisor,
Office of Subsistence Management
Chris McKee, Wildlife Division Supervisor, Office of Subsistence Management
Greg Risdahl, Fisheries Division Supervisor, Office of Subsistence Management
George Pappas, State Subsistence Liaison, Office of Subsistence Management
Karen Deatherage, Council Coordinator, Office of Subsistence Management
Seward Peninsula Subsistence Regional Advisory Council
Benjamin Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Project Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

USFWS Alaska Region, Migratory Bird Management
1011 East Tudor Road, Anchorage AK 99503
Phone: 1-866-527-3358 Email: AK_MBM@fws.gov

U.S. Fish & Wildlife Service

2019 Alaska Seabird Die-off



August 2019

What's Happening?

- Historically, seabird die-offs have occurred occasionally; however, large die-off events have occurred annually in Alaska since 2015, and birds examined were determined to have died due to starvation.
- Beginning in May 2019, reports of dead murres and puffins were received from the northern Bering and Chukchi seas.
- Since late June 2019, we continue to receive reports of an on-going die-off of shearwaters from the Bristol Bay region, including Togiak, Naknek, Egegik, Pilot Point and Port Heiden.

What's Being Done?

- The USFWS is coordinating with federal, state, tribal partners, as well as community members to collect reports and document these mortality events. With help from Alaska Sea Grant, Local Environmental Observation (LEO) Network, Aleut Community of St. Paul Island, and the Coastal Observation and Seabird Survey Team (COASST), we are tracking the number of birds involved, geographic area affected, and duration of the die-off event.
- Seabird carcasses from Shishmaref, Naknek, Pilot Point and Port Heiden were collected and sent to the USGS National Wildlife Health Center for examination and testing. Initial results indicate starvation as the cause of death. Tissues sampled during examination will be analyzed for harmful algal bloom toxins and those results will be shared as they become available.

What Can I Do?

Report observations of sick or dead birds to regional partners:

- **North Slope**: Taqulik Hepa **(907) 852-0350**
- **Northwest Arctic**: Cyrus Harris **(907) 442-7914**
- **Bering Strait Region**: Brandon Ahmasuk **(907) 443-4265**
  Gay Sheffield **(907) 434-1149**
- **Yukon-Kuskokwim Delta**: Jennifer Hooper **(907) 543-7470**
- **Bristol Bay**: Gayla Hoseth **(907) 842-6252**
- **Pribilof Islands**: Lauren Divine **(907) 257-891-3031**
- **Unalaska**: Melissa Good **(907) 581-1876**
- **Aleutians**: Karen Pletnikoff **(907) 222-4286**

Or report by phone or email to the USFWS:
1-866-527-3358 or AK_MBM@FWS.GOV

Information to report includes:

- Location, Time & Date observed
- Size of area observed (e.g. length of beach)
- Type & number of birds (count or estimate)
- Photos of sick/dead birds
- Video of unusual behavior (approachable, drooping wings)

Participate in monitoring efforts on your local beaches:
COASST provides training. Visit www.coasst.org.

Contributing Partners:

Applying for an Alaska Real ID License, Permit or ID Card?

U.S. Citizens, Permanent Residents, Temporary Resident with Lawful Status in the U.S. need the following documents:

DMV Division of MOTOR VEHICLES

To ensure your application process is as smooth as possible, please complete all elements below:

Use the checklist below to ensure that you have the correct documentation before visiting a Driver License office. If you have any questions about what is required, please visit our website at *www.Alaska.gov/DMV*

To be issued an Alaska **Real ID** driver license, permit or ID card, you must prove the following elements: your full legal name, identity, date of birth, lawful status in the United States, social security number, and proof of residential address. Multiple documents may be required to show all name changes.

All documents presented must be unaltered certified originals, certified amended originals, or true copies certified by the issuing agency. Documents **must** be valid and unexpired and may not be laminated. Foreign documents must have certified English translation (DMV Form COFAT.PDF).

If you cannot prove each of the required elements with the documents set forth below, you may be eligible to apply for a standard card. These guidelines may not cover every situation. Knowledge, vision, and/or other eligibility criteria may apply to your individual situation.

Proof of your Name, Identity, Date of Birth, Lawful Status, and Primary Residency:

You can provide any combination of documents that prove the elements (some documents may be used to prove more than one element)

Identity
Name / Date of Birth

- ☐ Valid, unexpired U.S. passport or passport card
- ☐ Certified copy of U.S birth certificate (issued by a city, county, or state vital statistics office)
- ☐ Certified copy of birth certificate from a U.S. Territory. Puerto Rico birth certificates issued on or after July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Unexpired foreign passport with valid U.S. Visa and approved I-94 form
- ☐ Certificate of Naturalization or Certificate of U.S. Citizenship
- ☐ Valid, unexpired I-551 Resident Alien / Permanent Resident Card
- ☐ Valid, unexpired I-766 Employment Authorization Document Card
- ☐ Valid REAL ID license or ID card from a compliant state (Documentation of U.S. citizenship or lawful status is required)

Lawful Status

- ☐ Valid, unexpired U.S. passport or passport card
- ☐ Certified copy of U.S birth certificate (issued by a city, county, or state vital statistics office)
- ☐ Certified copy of birth certificate from a U.S. Territory. Puerto Rico birth certificates issued on or after July 1, 2010
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- ☐ Certificate of Citizenship / Certificate of Naturalization
- ☐ Unexpired foreign passport with valid U.S. Visa and approved I-94 form
- ☐ Refugee/Asylee I-94
- ☐ I-551 Resident Alien / Permanent Resident Card
- ☐ I-766 Employment Authorization Document Card

Name Change

- ☐ Adoption documents that contain the legal name as a result of the adoption
- ☐ Court Certificate of document that contains the legal name both before and after the name change
- ☐ Marriage certificate
- ☐ A certificate, declaration, or registration document verifying the formation of a civil union or domestic partnership
- ☐ Certified Divorce Decree, Dissolution of marriage/civil union/domestic partnership document that contains the legal name as a result of the court action
- ☐ Amended Birth Certificate
- ☐ Certificate of Naturalization/ Certificate of Name Change
- ☐ Certified Court Order That Contains all previous and current Names, and Date of Birth.

SSN
Complete SSN

- ☐ Social security card (not metal)
- ☐ W-2 form
- ☐ Social Security Administration (SSA) 1099 form
- ☐ Non-SSA-1099 form
- ☐ Pay stub
- ☐ I am ineligible for a social security number, a letter from SSA will issued within 90 days be required

Principal Residency
Two documents must be presented and cannot be handwritten.
One document must have been issued within 90 days
Resident documents may have account numbers and balances redacted.

- ☐ Rental or Lease Agreement with The Signature of The Owner/Landlord and The Tenant/Resident
- ☐ Deed or Title to Residential Real Property
- ☐ Mortgage Document
- ☐ Home Utility Bills (Including Cellular Phone)
- ☐ Employment Documents
- ☐ Insurance Documents, Including Medical, Dental, Vision, Life, Home, Rental and Vehicle
- ☐ Government Issued Tax Document
- ☐ Statement from A Financial Institution/Bank
- ☐ Voter Registration Confirmation Letter or Postcard Issued by The Alaska Division of Elections
- ☐ Proof of Payment of Resident Tuition at A Public Institution of Higher Education in Alaska
- ☐ A Letter on Letterhead from A Homeless Shelter, Shelter for Abused Women, Nonprofit Entity, Faith-Based Organization, Employer or Government Agency Within the United States Attesting That the Applicant Resides in Alaska
- ☐ Alaska Certificate of Vehicle Titles or Registration (Issued At Least 30 Days Prior To The Date of Application)
- ☐ Change of Address Confirmation by The U.S.P.S.
- ☐ 1st Class Mail with Postmark (Mail May Be Handwritten)
- ☐ Alaska Tribal Card (For Non-Standard Remote Alaska Addresses Only, Within the Tribal Area Indicated on The Card)
- ☐ At DMV's Discretion Other Documents May Be Accepted. Please Contact 907-269-5551 For Assistance

The Alaska DMV must electronically verify documents to determine validity and status before Issuance of an ID / Driver License

For Renewals, you may be able to skip the office completely – Go to *ALASKA.GOV/DMV* to see if you are eligible!

(06/19/2019)

Applying for an Alaska Standard License, Permit or ID Card?

U.S. Citizens, Permanent Residents, Temporary Resident with Lawful Status in the U.S. need the following documents:

DMV Division of MOTOR VEHICLES

To ensure your application process is as smooth as possible, please complete all elements below:

Use the checklist below to ensure that you have the correct documentation before visiting a Driver License office. If you have any questions about what is required, please visit our website at *www.Alaska.gov/DMV*.

To be issued a Standard Alaska driver license, permit or ID card, you must prove the following elements: your full legal name, identity, date of birth, lawful status in the United States, social security number, and proof of residential address. Multiple documents may be required to show all name changes.

All documents presented must be unaltered certified originals, certified amended originals, or true copies certified by the issuing agency. Documents must be valid and unexpired and may not be laminated. Foreign documents must have certified English translation (DMV Form COFAT.PDF).

FEDERAL LIMITS APPLY

Proof of your Name, Identity, Date of Birth, Lawful Status and Primary Residency:

You can provide any combination of documents that prove the elements (some docs may be used to prove more than one element)

Identity
Name / Date of Birth

- ☐ Valid, Unexpired U.S. Passport or Passport Card
- ☐ Certified Copy Of U.S Birth Certificate (Issued by A City, County, Or State Vital Statistics Office)
- ☐ Certified Copy of Birth Certificate from A U.S. Territory. Puerto Rico Birth Certificates Issued on Or After July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Unexpired Foreign Passport with Valid U.S. Visa And Approved I-94 Form
- ☐ Certificate of Naturalization or Certificate of U.S. Citizenship
- ☐ Valid, unexpired I-551 Resident Alien / Permanent Resident Card
- ☐ Valid, unexpired I-766 Employment Authorization Document Card
- ☐ Valid REAL ID License or ID Card from A Compliant State, Additional Documentation of U.S. Citizenship or Lawful Status Is Required
- ☐ US Adoption Order W/Birth Information
- ☐ Active or Retired Military ID / Common Access Card

Secondary Identity

- ☐ Any Document in The Previous Column
- ☐ Social Security Card
- ☐ Canadian Tribal Card
- ☐ State Issued Driver License or ID Card That Has NOT Been Expired Over A Year
- ☐ Court Order That Contains the Applicant's Date of Birth
- ☐ Foreign Birth Certificate
- ☐ Health Insurance Card
- ☐ Marriage License or Certificate
- ☐ Individual's Medical Records from A Doctor or A Hospital
- ☐ Military Dependent Identification
- ☐ Military Discharge or Separation Papers (DD214)
- ☐ Gun Permit
- ☐ Pilot's License
- ☐ Certified School Record or Transcript
- ☐ Photographic Government / Employer / School Identification Card
- ☐ Vehicle Title (Must Be Issued 30 Days Prior To Application)
- ☐ Welfare Card
- ☐ Prison Release Document or Photographic Prison Identification Card
- ☐ TWIC Card (Transportation Worker Identification Credential)

Lawful Status

- ☐ U.S. Passport or Passport Card
- ☐ Certified Copy Of U.S Birth Certificate (Issued by A City, County, Or State Vital Statistics Office)
- ☐ Certified Copy of Birth Certificate from A U.S. Territory. Puerto Rico Birth Certificates Issued on Or After July 1, 2010
- ☐ Consular Report of Birth Abroad of U.S. Citizen
- ☐ Certificate of Citizenship / Certificate of Naturalization
- ☐ Unexpired Foreign Passport with Valid U.S. Visa And Approved I-94 Form
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- ☐ I-766 Employment Authorization Document Card

Name Change.

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- ☐ Court Certificate of Name Change Document That Contains the Legal Name Both Before and After the Name Change
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- ☐ A Certificate, Declaration, Or Registration Document Verifying the Formation of a Civil Union or Domestic Partnership
- ☐ Certified Divorce Decree, Dissolution of Marriage/Civil Union/Domestic Partnership Document That Contains the Legal Name as A Result of The Court Action
- ☐ Amended Birth Certificate
- ☐ Certificate of Naturalization/ Certificate of Name Change
- ☐ Certified Court Order That Contains All Previous and Current Names, And Date of Birth.

SSN
Complete SSN

- ☐ SSN On Application Verified By SSA
- ☐ Social Security Card (Not Metal)
- ☐ W-2 Form
- ☐ SSA-1099 Form
- ☐ Non-SSA-1099 Form
- ☐ Pay Stub
- ☐ I Am Ineligible for A Social Security Number, A Letter from SSA Issued Within 90 Days Will Be Required

Principal Residency
(Cannot Be Handwritten)

- ☐ Rental or Lease Agreement with The Signature of The Owner/Landlord and The Tenant/Resident
- ☐ Deed or Title to Residential Real Property
- ☐ Mortgage Document
- ☐ Home Utility Bills (Including Cellular Phone)
- ☐ Employment Documents
- ☐ Insurance Documents, Including Medical, Dental, Vision, Life, Home, Rental and Vehicle
- ☐ Government Issued Tax Document
- ☐ Statement from A Financial Institution/Bank
- ☐ Voter Registration Confirmation Letter or Postcard Issued by The Alaska Division of Elections
- ☐ Proof of Payment of Resident Tuition at A Public Institution of Higher Education in Alaska
- ☐ A Letter on Letterhead from A Homeless Shelter, Shelter for Abused Women, Nonprofit Entity, Faith-Based Organization, Employer or Government Agency Within the United States Attesting That the Applicant Resides in Alaska
- ☐ Alaska Certificate of Vehicle Titles or Registration (Issued At Least 30 Days Prior To The Date of Application)
- ☐ Change of Address Confirmation by The U.S.P.S.
- ☐ 1st Class Mail with Postmark (Mail May Be Handwritten)
- ☐ Alaska Tribal Card (For Non-Standard Remote Alaska Addresses Only, Within the Tribal Area Indicated on The Card)
- ☐ At DMV's Discretion Other Documents May Be Accepted. Please Contact 907-269-5551 For Assistance

The Alaska DMV must electronically verify documents to determine validity and status before Issuance of an ID / Driver License

For Renewals, you may be able to skip the office completely – Go to *ALASKA.GOV/DMV* to see if you are eligible!

(06/19/2019)

Winter 2020 Regional Advisory Council Meeting Calendar

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Feb. 2	*Feb. 3* *Window Opens*	*Feb. 4* **BB — Naknek**	*Feb. 5*	*Feb. 6*	*Feb. 7*	*Feb. 8*
Feb. 9	*Feb. 10*	*Feb. 11* **YKD — Bethel** **WI — Fairbanks**	*Feb. 12*	*Feb. 13*	*Feb. 14*	*Feb. 15*
Feb. 16	*Feb. 17* ***PRESIDENT'S DAY*** ***HOLIDAY***	*Feb. 18*	*Feb. 19* **NS — Utqiaġvik**	*Feb. 20* **NWA — Kotzebue**	*Feb. 21*	*Feb. 22*
Feb. 23	*Feb. 24*	*Feb. 25* **SE — Petersburg**	*Feb. 26*	*Feb. 27* **KA — Kodiak**	*Feb. 28*	*Feb. 29*
Mar. 1	*Mar. 2*	*Mar. 3* **EI — Fairbanks**	*Mar. 4* **SC — Anchorage**	*Mar. 5*	*Mar. 6*	*Mar. 7*
Mar. 8	*Mar. 9*	*Mar. 10*	*Mar. 11* **SP — Nome**	*Mar. 12*	*Mar. 13* *Window Closes*	*Mar. 14*

Fall 2020 Regional Advisory Council Meeting Calendar

Due to travel budget limitations placed by Department of the Interior on the U.S. Fish and Wildlife Service and the Office of Subsistence Management, the dates and locations of these meetings will be subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 16	*Aug. 17 Window opens*	*Aug. 18*	*Aug. 19*	*Aug. 20*	*Aug. 21*	*Aug. 22*
Aug. 23	*Aug. 24*	*Aug. 25*	*Aug. 26*	*Aug. 27*	*Aug. 28*	*Aug. 29*
Aug. 30	*Aug. 31*	*Sep. 1*	*Sep. 2*	*Sep. 3*	*Sep. 4*	*Sep. 5*
Sep. 6	*Sep. 7* **LABOR DAY HOLIDAY**	*Sep. 8*	*Sep. 9*	*Sep. 10*	*Sep. 11*	*Sep. 12*
Sep. 13	*Sep. 14*	*Sep. 15*	*Sep. 16*	*Sep. 17*	*Sep. 18*	*Sep. 19*
Sep. 20	*Sep. 21*	*Sep. 22*	*Sep. 23*	*Sep. 24*	*Sep. 25*	*Sep. 26*
Sep. 27	*Sep. 28*	*Sep. 29*	*Sep. 30*	*Oct. 1*	*Oct. 2*	*Oct. 3*
Oct. 4	*Oct. 5*	*Oct. 6*	*Oct. 7*	*Oct. 8*	*Oct. 9*	*Oct. 10*
Oct. 11	*Oct. 12* **COLUMBUS DAY HOLIDAY**	*Oct. 13*	*Oct. 14*	*Oct. 15*	*Oct. 16*	*Oct. 17*
Oct. 18	*Oct. 19*	*Oct. 20*	*Oct. 21*	*Oct. 22*	*Oct. 23*	*Oct. 24*
Oct. 25	*Oct. 26*	*Oct. 27*	*Oct. 28*	*Oct. 29*	*Oct. 30*	*Oct. 31*
Nov. 1	*Nov. 2*	*Nov. 3*	*Nov. 4*	*Nov. 5*	*Nov. 6 Window closes*	*Nov. 7*

Subsistence Regional Advisory Council Correspondence Policy

The Federal Subsistence Board (Board) recognizes the value of the Regional Advisory Councils' role in the Federal Subsistence Management Program. The Board realizes that the Councils must interact with fish and wildlife resource agencies, organizations, and the public as part of their official duties, and that this interaction may include correspondence. Since the beginning of the Federal Subsistence Program, Regional Advisory Councils have prepared correspondence to entities other than the Board. Informally, Councils were asked to provide drafts of correspondence to the Office of Subsistence Management (OSM) for review prior to mailing. Recently, the Board was asked to clarify its position regarding Council correspondence. This policy is intended to formalize guidance from the Board to the Regional Advisory Councils in preparing correspondence.

The Board is mindful of its obligation to provide the Regional Advisory Councils with clear operating guidelines and policies, and has approved the correspondence policy set out below. The intent of the Regional Advisory Council correspondence policy is to ensure that Councils are able to correspond appropriately with other entities. In addition, the correspondence policy will assist Councils in directing their concerns to others most effectively and forestall any breach of department policy.

The Alaska National Interest Lands Conservation Act, Title VIII required the creation of Alaska's Subsistence Regional Advisory Councils to serve as advisors to the Secretary of the Interior and the Secretary of Agriculture and to provide meaningful local participation in the management of fish and wildlife resources on Federal public lands. Within the framework of Title VIII and the Federal Advisory Committee Act, Congress assigned specific powers and duties to the Regional Advisory Councils. These are also reflected in the Councils' charters. *(Reference: ANILCA Title VIII §805, §808, and §810; Implementing regulations for Title VIII, 50 CFR 100 _.11 and 36 CFR 242 _.11; Implementing regulations for FACA, 41 CFR Part 102-3.70 and 3.75)*

The Secretaries of Interior and Agriculture created the Federal Subsistence Board and delegated to it the responsibility for managing fish and wildlife resources on Federal public lands. The Board was also given the duty of establishing rules and procedures for the operation of the Regional Advisory Councils. The Office of Subsistence Management was established within the Federal Subsistence Management Program's lead agency, the U.S. Fish and Wildlife Service, to administer the Program. *(Reference: 36 CFR Part 242 and 50 CFR Part 100 Subparts C and D)*

Policy

1. The subject matter of Council correspondence shall be limited to matters over which the Council has authority under §805(a)(3), §808, §810 of Title VIII, Subpart B §___.11(c) of regulation, and as described in the Council charters.

2. Councils may, and are encouraged to, correspond directly with the Board. The Councils are advisors to the Board.

3. Councils are urged to also make use of the annual report process to bring matters to the Board’s attention.

4. As a general rule, Councils discuss and agree upon proposed correspondence during a public meeting. Occasionally, a Council chair may be requested to write a letter when it is not feasible to wait until a public Council meeting. In such cases, the content of the letter shall be limited to the known position of the Council as discussed in previous Council meetings.

5. Except as noted in Items 6, 7, and 8 of this policy, Councils will transmit all correspondence to the Assistant Regional Director (ARD) of OSM for review prior to mailing. This includes, but is not limited to, letters of support, resolutions, letters offering comment or recommendations, and any other correspondence to any government agency or any tribal or private organization or individual.
    a. Recognizing that such correspondence is the result of an official Council action and may be urgent, the ARD will respond in a timely manner.
    b. Modifications identified as necessary by the ARD will be discussed with the Council chair. Councils will make the modifications before sending out the correspondence.

6. Councils may submit written comments requested by Federal land management agencies under ANILCA §810 or requested by regional Subsistence Resource Commissions (SRC) under §808 directly to the requesting agency. Section 808 correspondence includes comments and information solicited by the SRCs and notification of appointment by the Council to an SRC.

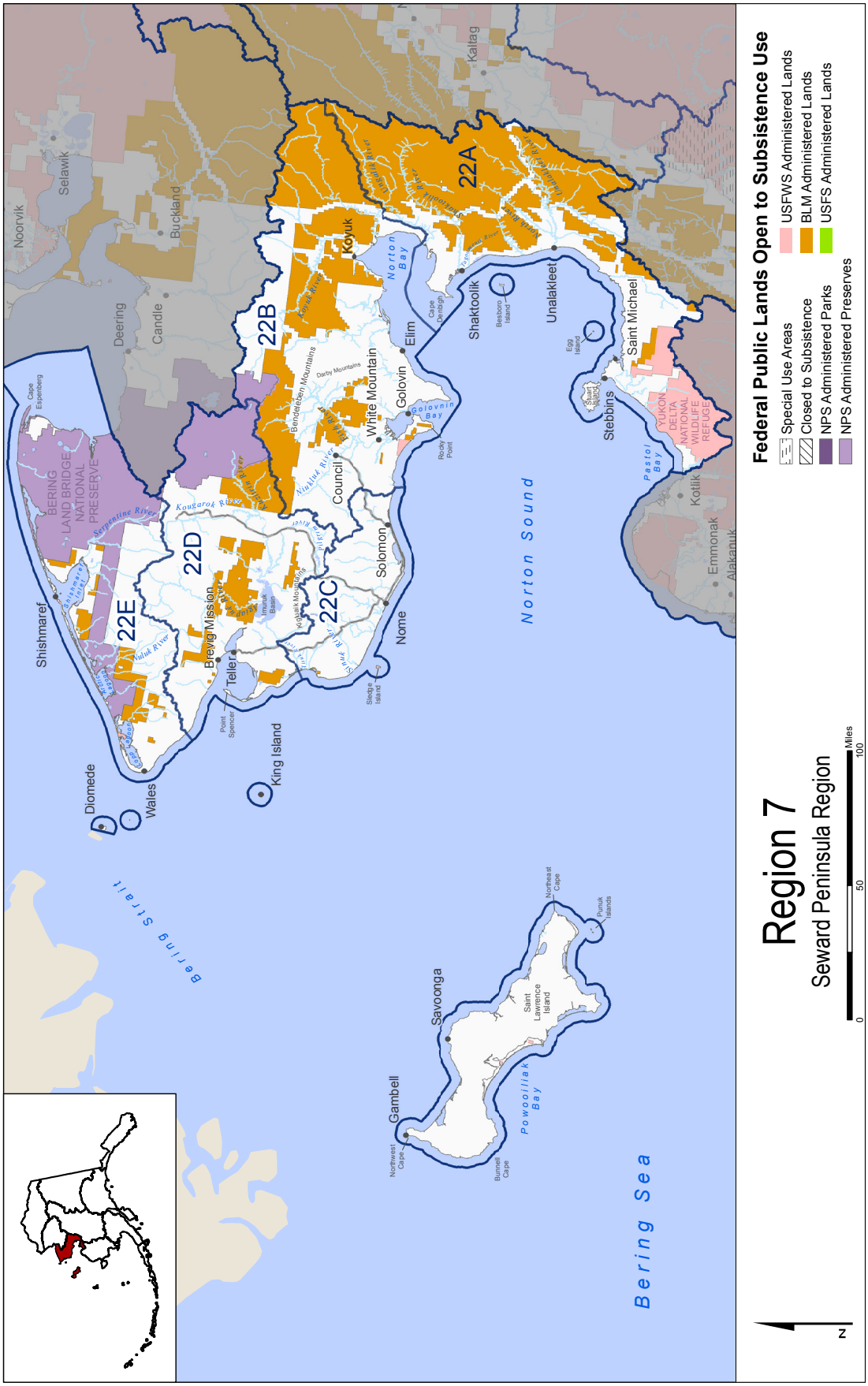
7. Councils may submit proposed regulatory changes or written comments regarding proposed regulatory changes affecting subsistence uses within their regions to the Alaska Board of Fisheries or the Alaska Board of Game directly. A copy of any comments or proposals will be forwarded to the ARD when the original is submitted.

8. Administrative correspondence such as letters of appreciation, requests for agency reports at Council meetings, and cover letters for meeting agendas will go through the Council's regional coordinator to the appropriate OSM division chief for review.

9. Councils will submit copies of all correspondence generated by and received by them to OSM to be filed in the administrative record system.

10. Except as noted in Items 6, 7, and 8, Councils or individual Council members acting on behalf of or as representative of the Council may not, through correspondence or any other means of communication, attempt to persuade any elected or appointed political officials, any government agency, or any tribal or private organization or individual to take a particular action on an issue. This does not prohibit Council members from acting in their capacity as private citizens or through other organizations with which they are affiliated.

Approved by the Federal Subsistence Board on June 15, 2004.


Federal Public Lands Open to Subsistence Use
Special Use Areas
Closed to Subsistence
NPS Administered Parks
NPS Administered Preserves
USFWS Administered Lands
BLM Administered Lands
USFS Administered Lands
Region 7
Seward Peninsula Region
Miles
0
50
100
N
22A
22B
22C
22D
22E
Bering Strait
Bering Sea
Norton Sound
Norton Bay
Golovnin Bay
Pastol Bay
Powooliak Bay
Kotzebue
Noorvik
Selawik
Buckland
Deering
Candle
Kiana
Kobuk
Shungnak
Ambler
Kiana
Kotzebue
Noatak
Kivalina
Kaltag
Koyuk
Elim
Golovin
White Mountain
Shaktoolik
Unalakleet
Saint Michael
Stebbins
Emmonak
Alakanuk
Kotlik
Nome
Solomon
Council
Teller
Brevig Mission
Shishmaref
Wales
Diomede
King Island
Savoonga
Gambell
Saint Lawrence Island
Northwest Cape
Northeast Cape
Punuk Islands
Bennett Cape
Cape Espenberg
Cape Denbigh
Besboro Island
Egg Island
Sledge Island
Rocky Point
Point Spencer
Darby Mountains
Bendeleben Mountains
Kougarok River
Serpentine River
Nukluk River
Niukluk River
Pilgrim River
Imuruk Basin
Koyuk River
Fish River
Unalakleet River
Shaktoolik River
Tubutulik River
Inglutalik River
Kaltag Portage
BERING LAND BRIDGE NATIONAL PRESERVE
YUKON DELTA NATIONAL WILDLIFE REFUGE

Department of the Interior
U. S. Fish and Wildlife Service

Seward Peninsula Subsistence Regional Advisory Council

Charter

1. **Committee's Official Designation.** The Council's official designation is the Seward Peninsula Subsistence Regional Advisory Council (Council).

2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3115 (1988)), and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is regulated by the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. Appendix 2.

3. **Objectives and Scope of Activities.** The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.

4. **Description of Duties.** Council duties and responsibilities, where applicable, are as follows:

    a. Recommend the initiation of, review, and evaluate proposals for regulations, policies, management plans, and other matters relating to subsistence uses of fish and wildlife on public lands within the Region.

    b. Provide a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife on public lands within the Region.

    c. Encourage local and regional participation in the decision-making process affecting the taking of fish and wildlife on the public lands within the Region for subsistence uses.

    d. Prepare an annual report to the Secretary containing the following:

        (1) An identification of current and anticipated subsistence uses of fish and wildlife populations within the Region.

        (2) An evaluation of current and anticipated subsistence needs for fish and wildlife populations within the Region.

        (3) A recommended strategy for the management of fish and wildlife populations within the Region to accommodate such subsistence uses and needs.

(4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

e. Make recommendations on determinations of customary and traditional use of subsistence resources.

f. Make recommendations on determinations of rural status.

g. Provide recommendations on the establishment and membership of Federal local advisory committees.

h. Provide recommendations for implementation of Secretary's Order 3347: Conservation Stewardship and Outdoor Recreation, and Secretary's Order 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories. Recommendations shall include, but are not limited to:

(1) Assessing and quantifying implementation of the Secretary's Orders, and recommendations to enhance and expand their implementation as identified;

(2) Policies and programs that:

(a) increase outdoor recreation opportunities for all Americans, with a focus on engaging youth, veterans, minorities, and other communities that traditionally have low participation in outdoor recreation;

(b) expand access for hunting and fishing on Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service lands in a manner that respects the rights and privacy of the owners of non-public lands;

(c) increase energy, transmission, infrastructure, or other relevant projects while avoiding or minimizing potential negative impacts on wildlife; and

(d) create greater collaboration with states, tribes, and/or territories.

i. Provide recommendations for implementation of the regulatory reform initiatives and policies specified in section 2 of Executive Order 13777: Reducing Regulation and Controlling Regulatory Costs; Executive Order 12866: Regulatory Planning and Review, as amended; and section 6 of Executive Order 13563: Improving Regulation and Regulatory Review. Recommendations shall include, but are not limited to:

(1) eliminate jobs, or inhibit job creation;

(2) are outdated, unnecessary, or ineffective;

(3) impose costs that exceed benefits;

(4) create a serious inconsistency or otherwise interfere with regulatory reform initiative and policies;

(5) rely, in part or in whole, on data or methods that are not publicly available or insufficiently transparent to meet the standard for reproducibility; or

(6) derive from or implement Executive Orders or other Presidential and Secretarial directives that have been subsequently rescinded or substantially modified.

At the conclusion of each meeting or shortly thereafter, provide a detailed recommendation meeting report, including meeting minutes, to the Designated Federal Officer (DFO).

5. **Agency or Official to Whom the Council Reports.** The Council reports to the Federal Subsistence Board Chair, who is appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture.

6. **Support.** The U.S. Fish and Wildlife Service will provide administrative support for the activities of the Council through the Office of Subsistence Management.

7. **Estimated Annual Operating Costs and Staff Years**. The annual operating costs associated with supporting the Council's functions are estimated to be $155,000, including all direct and indirect expenses and 1.0 staff years.

8. **Designated Federal Officer**. The DFO is the Subsistence Council Coordinator for the Region or such other Federal employee as may be designated by the Assistant Regional Director – Subsistence, Region 7, U.S. Fish and Wildlife Service. The DFO is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will:

(a) Approve or call all of the advisory committee's and subcommittees' meetings;

(b) Prepare and approve all meeting agendas;

(c) Attend all committee and subcommittee meetings;

(d) Adjourn any meeting when the DFO determines adjournment to be in the public interest; and

(e) Chair meetings when directed to do so by the official to whom the advisory committee reports.

9. **Estimated Number and Frequency of Meetings.** The Council will meet 1-2 times per year, and at such times as designated by the Federal Subsistence Board Chair or the DFO.

10. **Duration.** Continuing.

11. **Termination.** The Council will be inactive 2 years from the date the Charter is filed, unless, prior to that date, it is renewed in accordance with the provisions of section 14 of the FACA. The Council will not meet or take any action without a valid current charter.

12. **Membership and Designation.** The Council's membership is composed of representative members as follows:

Ten members who are knowledgeable and experienced in matters relating to subsistence uses of fish and wildlife and who are residents of the Region represented by the Council. To ensure that each Council represents a diversity of interests, the Federal Subsistence Board in their nomination recommendations to the Secretary will strive to ensure that seven of the members (70 percent) represent subsistence interests within the Region and three of the members (30 percent) represent commercial and sport interests within the Region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

Members will be appointed for 3-year terms. A vacancy on the Council will be filled in the same manner in which the original appointment was made. Members serve at the discretion of the Secretary.

Council members will elect a Chair, Vice-Chair, and Secretary for a 1-year term.

Members of the Council will serve without compensation. However, while away from their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under section 5703 of title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any Council or subcommittee deliberations or votes relating to a specific party matter before the Department or its bureaus and offices including a lease, license, permit, contract, grant, claim, agreement, or litigation in which the member or the entity the member represents has a direct financial interest.

14. **Subcommittees.** Subject to the DFOs approval, subcommittees may be formed for the purpose of compiling information and conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full Council for consideration. Subcommittees must not provide advice or work products directly to the Agency. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.

15. **Recordkeeping.** Records of the Council, and formally and informally established subcommittees or other subgroups of the Council, shall be handled in accordance with General Records Schedule 6.2, and other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

Secretary of the Interior

DEC 01 2017

Date Signed

DEC 04 2017

Date Filed

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