

SEWARD PENINSULA Federal Subsistence Regional Advisory Council



Jerry Hout, USFWS

Meeting Materials

March 9–10, 2010

Nome

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**SEWARD PENINSULA SUBSISTENCE REGIONAL ADVISORY COUNCIL
AURORA INN CONFERENCE ROOM
NOME, ALASKA
March 9–10, 2010**

DRAFT AGENDA

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 may be called by the chair.

8:30 a.m. – 5:00 p.m. each day or until meeting is concluded.

- 1. Call to Order (Chair)**
- 2. Roll Call and Establishment of Quorum (Council Secretary) 4**
- 3. Welcome and Introductions (Chair)**
- 4. Review and Adoption of Draft Agenda (Council) 1**
- 5. Review and Adoption of Minutes from October 1, 2009 (Council) 5**
- 6. Review and Make Recommendations on Fisheries and Wildlife Proposals (Council)**

Presentation Procedure

- 1. Introduction of Proposals and Analysis
- 2. Alaska Department of Fish and Game comments
- 3. Federal, State, and Tribal agency comments
- 4. Interagency Staff Committee comments
- 5. Fish and Game Local Advisory Committee comments
- 6. Summary of written public comments
- 7. Public testimony
- 8. Regional Advisory Council deliberations, recommendations and justifications

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b. Establish Winter 2011 Meeting Date and Place	
11. Closing comments	
12. Adjourn	

For more information, contact Alex Nick, Regional Council Coordinator at (907) 543-1037, 1-800-621-5804 ext. 257, by fax at 907-543-4413, or by e-mail at alex_nick@fws.gov.

Special accommodation requests for people with disabilities: Contact the Regional Council Coordinator at least 72 hours prior to the meeting.

Teleconferencing: Contact the Office of Subsistence Management at 1-800-478-1456, 907-786-3888, or 907-786-367 at least 72 hours prior to the meeting to receive this service. Please notify the Regional Council Coordinator which agenda topic interest you and whether you wish to testify.

Thank you for participating in this meeting of the Seward Peninsula Subsistence Regional Advisory Council.

REGION 7—SEWARD PENINSULA REGIONAL ADVISORY COUNCIL

Seat	Yr Apptd Term Expires	Member Name and Community
1	2007 2010	Anthony M. Keyes, Jr. Wales
2	1995 2010	Peter G. Buck White Mountain
3	2010	Vacant
4	2010	Vacant
5	2008 2011	R. Weaver Ivanoff Unalakleet
6	2005 2011	Peter P. Martin Sr. Stebbins
7	2008 2011	Fred D. Eningowuk Shishmaref
8	1994 2012	Elmer K. Seetot Jr. Brevig Mission
9	2005 2012	Michael H. Quinn Vice-Chair Nome
10	2012	Vacant

Draft Minutes

Seward Peninsula Subsistence Regional Advisory Council
October 1, 2009
Aurora Inn
Nome, Alaska

Meeting called to order by Mr. Thomas Gray, Chair at 8:55 a.m.

Roll by Alex Nick and quorum was established.

Members present:

Tom Gray, Nome
Mike Quinn, Nome
R. Weaver Ivanoff, Unalakleet
Peter G. Buck, White Mountain
Elmer Seetot, Jr., Brevig Mission
Fred D. Eningowuk, Shishmaref
Anthony M. Keyes, Wales

Welcome Remarks and Introduction

Welcome remarks by Tom Mr. Gray and after brief welcome remarks he asked everyone to introduce themselves.

Meeting Participants:

Pete Probasco, OSM; Ann Wilkinson, OSM; Helen Armstrong, OSM; Karen Hyer, OSM; Cole Brown, OSM; Alex Nick, OSM; Fred Tocktoo, NPS; George Pappas, ADF&G; Rose Fosdick, Kawerak; Susan Bucknell, ADF&G Boards Division; Geoff Beyersdorf, BLM; Larry Van Daele, ADF&G; Ken Adkisson, NPS; Julie Raymond-Yakoubian, Kawerak; Jack Omelak, Nome Eskimo Community; Scott Kent, ADF&G Commfish; Brent Scanlon, North West/North Slope Sport Fish; Letty Hughes, ADF&G wildlife; Tony Gorn, ADF&G Div. of Wildlife; Jim Long, NPS; Art Ivanoff, Native Village of Unalakleet; Sandy Rabinowitz, FSB/NPS; Loren McNicholas;

Draft Agenda

Council reviewed its draft agenda briefly and staff added additional topics under 8.A. three wildlife proposals from last winter meeting including action items from winter meeting and agenda was approved.

Draft Minutes

Council reviewed February 11, 2009 meeting draft minutes and Mr. Fred D. Eningowuk's name was added on the list of members present. Council approved its corrected minutes from February 11, 2009.

Election of Officers

Thomas Gray, Chair turned the floor over to Alex Nick, Designated Federal Officer for election of a Chair. Alex Nick opened floor for nominations of a Chair.

Weaver Ivanoff was nominated. Elmer Seetot, Jr. was nominated but he declined stating that he is comfortable with a position of authority at the meeting. Motion was made and seconded to close the nominations for a Chair. Mr. Ivanoff was unanimously elected as a Chair.

Thomas Gray nominated Michael Quinn for a Vice-chair. Motion was made and seconded the nominations for a Vice Chair cease. Mr. Quinn was unanimously elected as a Vice-chair.

Mr. Peter G. Buck was nominated for secretary. There was a motion to cease nominations. Mr. Buck was unanimously elected as a Secretary.

2010 Seward Peninsula Subsistence Regional Advisory Council Officers

Chair: Ralph Weaver Ivanoff of Unalakleet
Vice-chair: Michael Quinn of Nome
Secretary: Peter G. Buck of White Mountain

Fisheries Resource Monitoring Program

Ms. Helen Armstrong and Ms. Karen Hyer presented the FRMP project background information, evaluation criteria, strategic priority, technical and scientific merit, investigator's ability and capacity. The northern region is made up of three areas, North Slope, the Northwest Arctic, and the Seward Peninsula. Five projects recommended for funding are listed in prioritized order from technical review. The projects recommended for funding are Unalakleet River Chinook salmon assessment project which is to construct floating weir, Selawik River and Hotham Inlet sheefish analysis, and Selawik Drainage sheefish winter movement patterns project.

Recommended for funding for projects are:

- 10-102 Unalakleet River Chinook Salmon Assessment
- 10-151 Bering Strait Non-Salmon Fish Local Ecological Knowledge
- 10-152 Northwest Alaska Climate Change and Subsistence Fisheries
- 10-104 Selawik Lake and Hotham Inlet Inconnu Genetic Analysis
- 10-100 Selawik Drainage Inconnu Winter Movement Patterns

After much discussions, questions, and answers on the presentations of the proposed projects, Council took action as follows:

Motion

Michael Quinn moved, seconded by Thomas Gray to support five projects as presented by staff.

Motion passed unanimously.

Wildlife proposals

Michael Quinn moved, seconded by Thomas Gray to submit a proposal to amend existing customary and traditional use determination for musk ox in Unit 22D to include all rural residents of Units 22B west, 22C, and 22E, excluding St. Lawrence Island.

Motion passed unanimously.

Justification

All residents of these villages in Unit 22 travels long distances to harvest musk ox outside of their respective Units because they are subsistence oriented people. Local people want to conserve wildlife populations for the future harvest opportunities.

***Update on 2011 – 2012 Federal Subsistence Wildlife Regulatory Change Proposals
Call for Wildlife Proposals***

Ms. Helen Armstrong presented call for proposals and reminded Council this to change regulations for 2010 to 2012. Every other year these regulations has to be changed based on regulatory change proposals submitted and will be in effect for two years if adopted. The proposal period is open until November 5, 2009. The proposals Council wanted to submit last spring needs to be validated now to make certain these regulatory changes Council wants. Ms. Cole Brown, new wildlife biologist will be assisting OSM staff on these proposals.

Review and Confirm Council's Wildlife Proposals

Mr. Cole Brown informed the Council due to complications with publishing the wildlife proposed rule in Federal register, Council's proposals have to be reaffirmed.

Closure Reviews

First closure proposal, WCR08-17 is what Council recommended last spring. Council wanted Federal closure removed but not establish the season and this would allow individuals hunt under State regulations. Next meeting, Council will review analysis then Council will make its recommendations to the Federal Subsistence Board and the Board will take its actions in May 2010. The Council wanted to take action on closure proposals and they were told that they may do that except for the customary and traditional use determination (C&T) proposal that has to be separately acted on. Following proposals that needed to be confirmed by the Council are:

WCR08-09 a, b, and c moose in 22A- maintain current closure
WCR08-17 Unit 22 Coyote- Remove closure
WCR08-28 Unit 22D Tisuk muskox- Remove closure
WCR08-29 Unit 22D Remainder muskox- Closure
WCR08-30 Unit 22E Remove Federal closure

Motion

Elmer Seetot, Jr. moved, seconded by Michael Quinn to reaffirm submissions of WCR08-09; WCR08-17; WCR08-28; WCR08-29; and WCR08-30 as presented by staff.

Motion passed unanimously

Justification

Council submitted and discussed these proposals during its February 11, 2009 meeting.

WSA08-13

The Council heard the analysis of WSA08-13 and decided this proposal does not have effect on Seward Peninsula region. Council deferred WSA08-13 to home region.

Future Meeting Dates and Locations

Winter 2010 Meeting Date

Alex Nick informed Council members the OSM staff has suggested meeting dates for winter 2010 meeting. Open dates are between February 15-19 and March 1-10.

Motion

Tom Gray moved, seconded by Peter Marten to hold winter 2010 meeting on March 2-3, 2010.

Motion carried.

Fall 2010 Meeting Date

Fall 2010 meeting was discussed by Council members. Council has considered having its winter meeting for quite some time. In part of Unit 22, moose hunting just opened on October 1, 2009. Some members indicated that they were reluctant to attend fall meeting due to subsistence activities.

After Council discussions, Thomas Gray made a motion to hold the fall 2010 meeting October 14-15, 2010 which was seconded by Peter Buck.

Motion carried.

Agency Reports

Office of Subsistence Management

Revised Schedule/calendar for the program

Ann Wilkinson reported that the Federal Subsistence board is going to meeting on January 12-14, 2010 and will deliberate the special action requests to change regulations and the Fisheries Resource Monitoring Plan. The Board will also vote on the wildlife closures at that time. On April 13-14, 2010, the Board will meet again and act on the deferred Yukon fisheries proposals.

Bear Claws Working Group Summary

Mr. Cole Brown informed Council that in 2008 the Federal Subsistence Board addressed a proposal from ADF&G regarding brown bear claw handicrafts. Based on the recommendations by ADF&G, the board deferred this proposal pending formation of a working group. The Board directed ADF&G to include regional advisory council members on bear claw working group. The Council and OSM and ADF&G staff had lengthy discussions about this issue. Council had a lengthy discussion about bear claws that included CITES and other laws that apply. One thing that worried members is that now there are concerns about bear claws. Will there next be concerns about moose hooves, moose tail, or something else?

Section 19 Revisions

Ann Wilkinson said this is not an action item. Based on public comments and comments from the Council and agency staff, and also in part because of some litigation, the Board asked its staff to look at the regulations regarding special action requests and make them clearer if necessary. That language that's included is intended to clarify the Council's position in special action requests, to accommodate the new biannual schedule that OSM has, to update the public notice requirements, and to clarify the Board's process. The changes are in section 19(c) which describes the reasons why the Board may reject a special action request for an emergency or temporary special action. Under current regulations, regional advisory councils are not necessarily consulted by the Board on special action requests to change regulations. If this change is adopted, the Board will make certain the regional advisory councils' recommendations are considered before they act on the proposal.

Climate Change Update

Ms. Ann Wilkinson updated Council that OSM will consider climate change in proposal analyses for proposed regulatory changes. From now on, climate change will be considered as part of the resource management tool. Pete Probasco added that it's become obvious as various agencies, all agencies have started to deal with climate change in the last couple of years. For every resource issue such as fisheries issues, wildlife issues, projects, and management issues, local knowledge,

effect or no effect climate change needs to be addressed in any proposal. Climate change will be an important factor as OSM deals with subsistence management.

Deferred Yukon Fisheries Proposals

The Yukon River Chinook salmon proposals that were deferred by the Board in 2008 will be taken up in April 2010. These proposals will be deliberated by the councils and councils will make their recommendations in their winter 2010 meetings. The Interagency Staff Committee will review these proposals and the Board will make its decision on these proposals in April 2010.

North Pacific Fishery Management Council Update

Ann Wilkinson pointed out a copy of North Pacific Fishery Management Council (NPFMC) letter in the meeting book. NPFMC provided a brief update about Chinook salmon bycatch in the Bering Sea. NPFMC plans to implement bycatch measures in its January 2010 meeting. NPFMC is starting to work on chum bycatch issue. At its June 2009 meeting, NPFMC reviewed alternatives for chum salmon bycatch in the Bering Sea Pollock fishery and they looked at suggested hard cap alternatives. NPFMC is going through the same process as that of Chinook salmon bycatch and there will be public comment period. In December 2009, NPFMC will decide whether or not to have an environmental assessment or an environmental impact statement.

Public comment: Mr. Art Ivanoff from Unalakleet shared correspondence the Southern Norton Sound Fish and Game advisory committee submitted to Senator Murkowski and others. Mr. Ivanoff has provided written and oral testimony to the North Pacific Fishery Management Council since June 2008. Mr. Ivanoff stated that in this whole process there is something missing and that is the Council's voice. The Southern Norton Sound Fish and Game Advisory Committee drafted a letter asking Senator Murkowski to amend the Magnuson-Stevens Act. The advisory committee proposed an additional four seats on the NPFMC to be filled by Federally recognized tribal members from Alaska. They realized Mr. Eric Olson from Bristol Bay region serves on the North Pacific Fishery Management Council but he is also employed by the CDQ group. Mr. Ivanoff shared the outcome of their request to Senator Murkowski. In a nutshell, Mr. Ivanoff thinks that additional voting seats are needed to represent tribes in Alaska. The Council discussed this issue in length and decided to write a letter endorsing the concept of NPFMC membership adding tribal representative on its Council as a voting member. Ms. Ann Wilkinson reminded Council members that there is Council correspondence policy in consideration of the Hatch Act and she read part of the policy from Council Operating Manual.

Mr. Pete Probasco informed the Council that OSM could draft a letter to NPFMC if Council's views subsistence representation on the NPFMC is not adequate, respectfully requesting NPFMC consideration to deal with this issue because it's within Council's bounds to do so. The Federal Subsistence Board and the Special Assistant to the Secretary could be copied when the letter is sent.

Motion

Tom Gray moved, seconded by Mike Quinn to draft a letter to North Pacific Fishery Management Council.

Motion carried.

Pete Probasco brought up the NPFMC meeting to be held probably in December 2009. He

Chinook issue. The Office of Subsistence Management will provide travel and per diem. Probasco suggested Council should identify its representative to that meeting. Chair Ivanoff asked for Council's approval to discuss issues if he attends the upcoming NPFMC meeting.

National Park Service

Sandy Rabinowitch with National Park Service (NPS) spoke about the NPS subsistence resource commissions (SRC). The seven SRCs are like the Regional Advisory Councils (RAC). The SRC for Gates of the Arctic National Park requested the NPS to look at subsistence use of horns, antlers, bones, and plants. He stressed that this has nothing to do with the Federal Subsistence Board as it will go forward to the NPS Regional Director. The National Park Service regulations prohibit collections of horns, antlers, bones, and plants by anyone on the NPS lands. Plants could be collected for subsistence use only. Since 1981, NPS regulations say that plants cannot be made into handicrafts or sold. In 1981, residents of Kobuk River area brought up that they had a long history of collecting and making birch bark baskets so NPS allows them to gather materials to make birch bark baskets from two Parks. The National Park Service is writing an environmental assessment in compliance with the National Environmental Protection Act (NEPA) and it is near the end of the scoping stage. He said that there will be an ample time for public comments on this topic.

Mr. Ken Adkisson with NPS updated Council on muskox activities on the Seward Peninsula and NPS continue to participate in spring 2010 interagency census for the muskoxen. NPS is engaged in a three-year research project comparing in the northern part of the Seward Peninsula with muskoxen in Cape Krusenstern National Monument near Kotzebue which is largest Cape Thompson population. A subject of interest is that of the animals weighed, there is consistent pattern of lower body weight in the Krusenstern animals compared to the Seward Peninsula animals. Animals down here are doing lot better nutritionally than the animals in up there. Another interesting thing about Cape Krusenstern is that the muskoxen population up there has never grown at the same rate as down here and people are beginning to express their concerns about that. Based on the population count, the population is decreasing. Nine Federal permits were issued in Unit 22D for harvest of muskox. The Federal muskoxen harvest permit numbers were restricted due to cooperators that wanted to shift more of the permits into the state system. There are some other advantages of Federal permits, such as the designated hunter permit provision. Eighteen permits were issued in Unit 22E to date. This is a dual management hunt.

Bureau of Land Management

Mr. Geoff Beyersdorf with the Bureau of Land Management (BLM) gave an update on wildlife subsistence and other use activities on BLM lands. There were no new recreation permits issued this year. One recreation permit was issued to Bering Straits Native Corporation. The permit was issued for snow ski adventure activities on State managed lands, not on BLM lands. A meeting was held with Alaska Department of Fish and Game staff regarding surveys in Unit 22C and potential surveys in Unit 22D especially in the Kuzitrin River drainage. In Unalakleet there was a request to update on surveys in Unit 22A and that will be done this fall. As Ken mentioned earlier, ADF&G, NPS, and BLM will be working together on the Seward Peninsula 2010 next spring. BLM will be working with ADF&G to do the spring moose estimates in Unit 22B and Unit 22C.

The Anchorage field office issued six 10-year reindeer grazing permits, and there were also range

For the invasive plants program, there was inventory assessment at four cabin sites along the Iditarod Trail and 100 miles of the trail was surveyed. There will be a project next year in Salmon Lake and Unalakleet Wild and Scenic River to identify and assess whether there is invasive plants in those areas.

In regards to the BLM fisheries programs, NSEDC, BLM, UFWS, and ADF&G inventoried the drainages between Shaktoolik and Golsovia and from those inventories and the aquatic habitat work they did there, they will submit 80 nominations to the anadromous waters catalog.

Tom Sparks with BLM updated the Council on conveyance of the land to the Native Corporations. A meeting is going to be held with the Bering Straits Corporation to discuss land conveyances. Approximately 98% has been conveyed to the land owners. The meeting with the Bering Straits Corporation is important because BLM patents affect landowners. When BLM issues a final patent to the Corporation, remaining over selected lands are rejected by BLM and those lands are no longer under State purview.

Alaska Department of fish and Game

Tony Gorn with the ADF&G Division of Wildlife Conservation gave an update on wildlife and let his assistant Ms. Letty Hughes take over. Ms. Hughes started with moose management. The fall registration moose hunt just finished in Unit 22A. Unit 22A is combined Federal and State land management area. There was quota of 14 moose and 17 moose were harvested. Six of those moose harvested were on Federal land and 11 moose were harvested on State managed land. Sixty-four Federal permits and 95 State permits were issued in the 22A Unalakleet area. Of the 64 Federal permits issued, 34 permits are outstanding. Of the 95 State issued permits, 51 permits are outstanding. And with the RM840 permits which include units 22B, 22C, 22D, all agencies had to issue an emergency order to close Unit 22B area. Ms. Hughes updated the Council on other information relating to the management of wildlife resources such as muskoxen and bear management.

Mr. Brendon Scanlon with ADF&G Division of Commercial Fisheries updated the Council on the Unalakleet River salmon run. There was early subsistence harvest closure for the fifth consecutive year. There was a proactive mesh-size restriction in the lower river in late June to protect large female Chinook salmon. There was a late run this year that ended up being enough to provide subsistence needs and the escapement goal was easily met. North River escapement was 2,358 Chinook. Drainage-wide escapement, based on radio telemetry, brought the total to about 5,360. This was the largest escapement since 1996. Approximately 2,000 Chinook salmon were harvested for subsistence use; this figure shows an increase by about 500 salmon from the previous two seasons. In summer of 2009, the first year of a two-year radio telemetry project to tag king salmon started in the lower river to find out what proportion spawn in the North River. This project is similar to 1997-1998 projects which found that 40% of fish coming into Unalakleet River went up the North River. Consequently, a management plan was adopted in 2007 using the tower count information on the North River. Mr. Scanlon went on and updated Council members on other related projects including commercial fisheries management in Unit 22. There were other fisheries discussions between Council members and ADF&G staff on fish and shellfish issues within the region.

Ms. Susan Bucknell updated Council members on the State Boards' local fish and game advisory committees and distributed a packet which contained information about Board of Game meeting in November 2009 in Nome. There are two advisory committees in northern and southern region in Unit 22. There 12 proposals in the packet and in the packet there are lists of advisory committee members.

Organizations

Kawerak

Ms. Rose Fosdick with the Kawerak updated the Council on Kawerak's subsistence program. Their staff is very busy as they try to meet two goals. One goal is that Kawerak tribal members make an effort to participate on subsistence regulatory changes within its region that has impact on subsistence lifestyle and users. The other is tribal members are provided the best information available to effectively advocate for the protection of their subsistence life in the region. In an effort to obtain its goals, Kawerak has a number of projects in the region such as allibiltloom, traditional knowledge and habitat studies, harvest and traditional knowledge. She acknowledged Mr. Jack Omelak who moved to another program with Kawerak and Ms. Julie Raymond-Yakoubian, social scientist at Kawerak. Their program is also doing Avian Flu sampling to determine through lab tests whether birds have the flu. Kawerak intend to submit a wildlife proposal to revise defense of life and property from bears because of the onerous requirements for skinning animals. Kawerak also plans to submit a proposal to the Board of Fisheries despite glowing reports of high silvers returning to other subdistricts. In the Nome Subdistrict, return of silver salmon was dismal. Kawerak submitted to the Alaska Federation of Natives a resolution regards to four seats for tribal representatives on the North Pacific Fishery Management Council.

Nome Eskimo Community

Jack Omelak with Nome Eskimo Community gave an update on key position staff turnover; he was asked by the leadership of his organization to represent the organization at this meeting. People in Nome value subsistence activities and they are going to advocate for subsistence resources and practices. Dual management of the subsistence resources has made it difficult for the Federally qualified users because freshwater management is done by the State. It was mentioned that in Salmon Lake, red salmon harvest was not good and those fish weren't any good. He was raised by a lot of old ladies who prized and valued that type of fish. He hopes that the regional advisory council continues to be an effective avenue for differing world views or ideologies to be presented. He wanted to speak about some of the escapement goals and some of the high returns that Nome area kind of experienced in the last few years. A study about fish behavior after they encounter a fish weir. This is because local people noticed fish behavior changes after fish experiences encountering manmade structure such as fish weir. Local people noticed some of those fish become hook shy and fish became harder to harvest upstream of weirs. In closing, he would like to add that he appreciates the Chair and Council members and critical analysis of some projects. Mr. Omelak is an anthropologist and has conducted some work in the area.

Bering Straits Native Corporation

No update

Council comments

- *Quinn:* Nome area experienced poor fish returns all the way around. Moose hunting was not good for residents in Unit 22C. He did not have an opportunity to talk to ADF&G staff but they will hear about it during the State Boards' local fish and game advisory committee meeting about the possibility to propose winter moose season for the remaining animals in Unit 22C. He knows that in Unit 22D, there is a winter moose season. Several people speculated that there is going to be more interest on harvesting muskox this winter and this was part of his desire to see the Federal permits to be issued. He enjoyed this meeting and he hopes to see some of the people present at the Board of Game meeting.

- *Buck:* People started spring season with seal hunting in his area but the ice moved into the area and prevented harvest of oogruks. The ice suddenly moved away and took all seals in the area with it. That contributed toward hardship in terms of seal harvest. In the White Mountain area, subsistence fishing was satisfactory for all of the fish runs. He congratulated Weaver Ivanoff for being elected as a Chair for Seward Peninsula Regional Advisory council. He also wants to show appreciation to Ms. Barb Armstrong all of the years she has coordinated the Seward Peninsula Subsistence Regional Advisory Council.
- *Gray:* Subsistence is his lifestyle. A lot of people's lives are subsistence lifestyle and over the years they've feasted or experienced famine in their lifetime. Subsistence resources came and went in the past. There have been high and low numbers of subsistence resources in the past. Peter Buck just talked about poor seal hunting experiences in his area. Mr. Gray saw a record number of seals when he went out last spring and he estimated what he saw to be between 500 – 1,000 seals in just one of his trips. That shows there are abundant and declining cycles of the resources. He thanked all agency staff for being in attendance at this meeting and they are present here because of subsistence issues. And agency folks are here because they want subsistence users to continue their lifestyle in this region. Local people has lived subsistence way of life and they want to see subsistence way of life continue into the future.
- *Seetot:* Sea Lions were spotted at King Island this past summer and that was something new that is happening elsewhere in the marine waters. Sheefish was harvested also by some of the fisherman around the north shore near Grantly Harbor or around north shore of Port Clarence Bay. This is never heard of in the past. Northern pike were also harvested in saltwater, especially in spring run-off. The northern portion of Imuruk Basin is the staging area for the Canadian geese and migratory birds will remain there until freeze up this fall. Numerous fall oogruks were spotted feeding in Port Clarence and in Grantly Harbor about a week or so ago and they are fattening up before migration down south. Imuruk Basin and Kuzitrin River is a huge area. This area has been used by all user groups and has been kept clean. This is an important hunt area and it should have some restrictions in terms of keeping environment clean, but this is not his point. This area is open for all user groups.
- *Keyes:* He heard new information during this meeting through other Council member's comments. There were also new species that were not heard of in the past that were washed up on the beaches, such as small fish with razor sharp teeth. He never saw these species before in this region until this past summer after all of the ice went out. After rough waters in the coast, he ran across some odd looking fish that were beached. It seems those fish originated from Japan, Korea, or Russia. He hopes there will not be new proposed regulations to regulate new species in the area. It is good in a way how subsistence resources are being regulated. Subsistence users do not have an idea about population levels of all subsistence resources available in the field and what is their limit for harvesting of resources for household food. But having to feed their families, it takes a lot of resources to fill up their freezers. It takes a lot of harvested

resources to share with their neighbors nowadays but rules have to be complied with nowadays at all times.

- *Eningowuk:* He enjoyed this meeting and he said that they had a pretty good numbers of oogruks past spring and he never saw so many oogruks before in his life. People in his area had a decent summer season.
- *Martin:* He would like to begin by saying welcome to the Council and to congratulate Chair for being elected. This past spring, there were good waterfowl subsistence hunting. He had some questions about a fishing opener in his area. People in his area had some good luck with moose hunting. He brought up a possible commercial fish opener in his area last winter. But after talking to the late Leonard Kobuk and meeting with his community, he opted out of that idea. One of the reasons why he decided not to pursue commercial fishing idea is because in his area, people felt that it is better not commercially fish and to deal with subsistence closures before and after commercial fish openers.
- *Ivanoff:* This meeting has been very enlightening to him and he really enjoyed Council members' participation. He also appreciates strong support and coordination OSM staff provided along with ADF&G agency staff in reference to the issues. While dual management brings a real problem, agency staff has set the stage on what's happening and developing on partnership program and partnership efforts making working relationships a lot easier. He is a little bit concerned and at the same time confident about the agency staff support from different agency staff including Council members. He tried to find an avenue how this Council could support Mr. Gray's last minute Council membership application because he understands how the Secretary of the Interior make his appointments for Council memberships. Before the next meeting he would like to coordinate more with Alex Nick, Council Coordinator because he would like to see more public participation on the Council meetings. He would like to make certain the general public is well aware of what is going to be discussed and how they could comment on issues. He realizes that regulatory processes are going to be time consuming and would, therefore, like to streamline as much as possible and at the same time have input from the general public. He thanked Council members and he appreciated senior members' assistance.

Adjournment

The meeting adjourned.

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

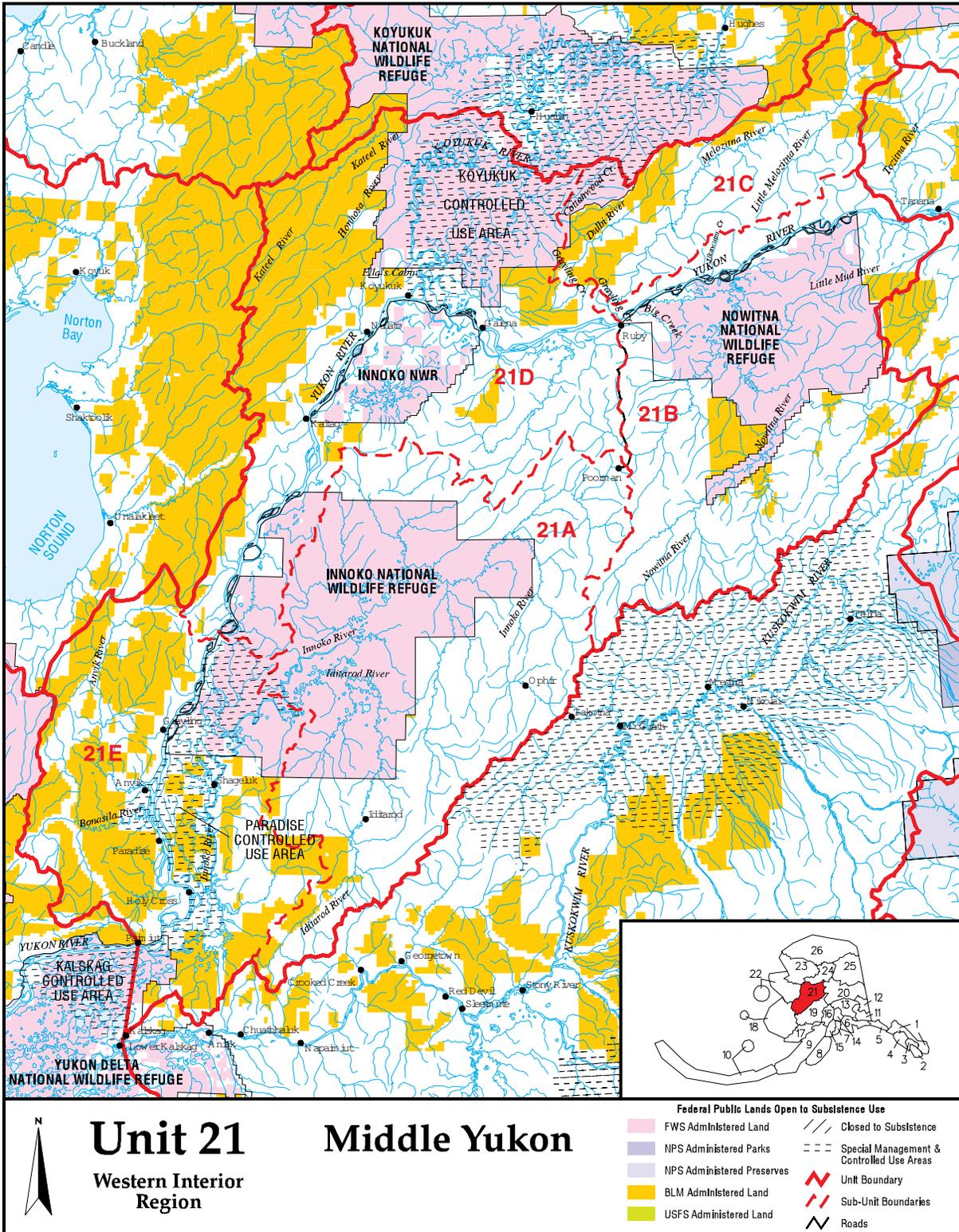
//signed//

Alex Nick, Council Coordinator
USFWS Office of Subsistence Management

//signed//

December 20, 2009

R. Weaver Ivanoff, Chair
Seward Peninsula Subsistence Regional Advisory Council



FP09-12 Executive Summary	
General Description	<p>Proposal FP09-12 requests that the maximum gillnet mesh size be restricted to 7.5-inch stretch mesh for subsistence and commercial salmon fishing in Federal public waters of the Yukon River drainage. Most of the commercial fishing and over half of the subsistence harvest takes place in Federal public waters in the Yukon River drainage. Proposal FP09-12 is similar to Proposal FP08-14 that the Federal Subsistence Board considered but did not adopt during its December 2007 meeting. The Council requests that the Board reconsider this proposal in light of new information that is now available. <i>Submitted by the Eastern Interior Alaska Subsistence Regional Advisory Council</i></p>
Proposed Regulation	<p>Yukon-Northern Area—Salmon</p> <p>§ __.27(i)(3)(xiii) <i>You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.</i></p> <p>(A) <i>In the Yukon River drainage, the maximum gillnet size is 7.5 inch stretch mesh for subsistence and commercial salmon fishing in Federal public waters, with a three-years phase-in period for subsistence fishers, and a one-year phase-in period for commercial fishers.</i></p>
OSM Preliminary Conclusion	<p>Support Proposal FP09-12 with modification to limit the application of the proposed mesh size restriction to Federally qualified subsistence users only, and to provide only a one year phase-in period (not necessary to specify in regulatory language) by making the regulation effective beginning with the 2011 fishing season. This action would match the phase-in period adopted by the Alaska Board of Fisheries.</p> <p>The modified proposal should read:</p> <p>(A) <i>In the Yukon River drainage, the maximum gillnet size is 7.5 inch stretch mesh for subsistence salmon fishing in Federal public waters.</i></p>
Yukon-Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	

continued on next page

FP09-12 Executive Summary (continued)	
Eastern Interior Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Support with modification to become effective in 2011 for federal subsistence fisheries. The Federal Subsistence Board deferred taking action on this proposal in 2008 until the Alaska Board of Fisheries reviewed the results of the three-year comparative mesh size study. The Alaska Board of Fisheries did adopt a maximum mesh size of 7.5 inches for subsistence and commercial gillnets effective in 2011 in the Yukon Area at its meeting in January 26-31, 2011.
Written Public Comments	

DRAFT STAFF ANALYSIS FP09-12

ISSUES

Proposal FP09-12, submitted by the Eastern Interior Alaska Subsistence Regional Advisory Council (Council), requests that the maximum gillnet mesh size be restricted to 7.5-inch stretch mesh for subsistence and commercial salmon fishing in Federal public waters of the Yukon River drainage. Most of the commercial fishing and over half of the subsistence harvest takes place in Federal public waters in the Yukon River drainage. Proposal FP09-12 is similar to Proposal FP08-14 that the Federal Subsistence Board (Board) considered but did not adopt during its December 2007 meeting. The Council requests that the Board reconsider this proposal in light of new information that is now available.

In this proposal, the Council reiterates that recent studies and discussions with researchers show that 7.5-inch stretch mesh may be the most efficient net size to harvest Chinook salmon, while still allowing passage of large female Chinook salmon. The reduction in mesh size would be phased in over a three-year period to reduce the economic burden for subsistence users and match the useful life of most nets, which the Council estimates to be three to four years. One year would be provided as a phase-in for commercial fisheries.

DISCUSSION

Since 2004, the proponent has submitted proposals to the Board that would limit mesh size to address its continuing concern with a declining average size of returning adult Yukon River Chinook salmon (EIRAC 2004, EIRAC 2005, EIRAC 2006, EIRAC 2007). The proponent expressed interest in “amending” the proposal to reduce mesh size to a maximum of 6.0-inch stretch mesh. However, consistent with established procedures, the Board will consider the current proposal as submitted. A new proposal to reduce mesh size to a maximum of 6.0-inch stretch mesh will need to be submitted during any open Federal fisheries regulatory proposal period. The proponent submitted a proposal to reduce mesh size to 6.0-inch stretch mesh to Alaska Board of Fisheries (BOF) during its 2009/2010 cycle.

Existing Federal Regulations

Yukon-Northern Area—Salmon

§ __.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.

Proposed Federal Regulations

Yukon-Northern Area—Salmon

§ __.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.

(A) In the Yukon River drainage, the maximum gillnet size is 7.5 inch stretch mesh for subsistence and commercial salmon fishing in Federal public waters, with a three-years phase-in period for subsistence fishers, and a one-year phase-in period for commercial fishers.

Existing State Regulations

With the exception of subsistence gear in a few tributaries, there have been no maximum mesh size imposed on a river-wide basis. However, in January 2010 the BOF established a maximum mesh size restriction of 7.5 inch stretch mesh for all fisheries of the Yukon River. This new regulation will be implemented prior to the 2011 fishing season. The Alaska Department of Fish and Game (ADF&G) has the authority to close and immediately reopen the State subsistence fishery with mesh size restrictions based on the need to conserve Chinook or chum salmon. The ADF&G also has the authority to direct the commercial harvest toward chum salmon by restricting mesh size to 6-inch, or smaller, and to conserve chum salmon by restricting mesh size to 8-inch, or larger, by Emergency Order [5 AAC 01.220 (n)(1) (A)].

Extent of Federal Public Waters

For purposes of this discussion, the phrase “Federal public waters” is defined as those waters described under 50 CFR 100.3. Federal public waters in the Yukon River watershed includes all navigable and non-navigable waters located within and adjacent to the exterior boundaries of the Innoko, Kanuti, Koyukuk, Nowitna, Tetlin, and Yukon Flats National Wildlife Refuges (NWR); Yukon-Charley Rivers National Preserve; the Steese National Conservation Area; the White Mountains National Recreation Area; and those segments of the National Wild and Scenic River system, of the Yukon River drainage, located outside the boundaries of these Federal conservation units (i.e., portions of Beaver and Birch creeks and the Delta and Fortymile rivers). Additionally, those navigable and non-navigable waters of the Yukon River drainage, within and adjacent to the exterior boundaries of the Arctic NWR, the Denali National Preserve, the 1980 additions to the Denali National Park, the Gates of the Arctic National Park and Preserve, the Wrangell-St. Elias National Park and Preserve, and the Yukon Delta NWR are within Federal jurisdiction for purposes of Federal subsistence fisheries management. Federal public waters include commercial fishing in the Yukon River for all of District Y-1 (except marine waters), all of Y-2, part of Y-3, parts of Subdistricts 4-A, 4-B and 4-C; most of Subdistrict 5-D; and part of Subdistrict 6-C (Map 1).

Customary and Traditional Use Determinations

For salmon other than fall chum salmon, residents of the Yukon River drainage, including the community of Stebbins have a positive customary and traditional use determination. For fall chum salmon, residents of the Yukon River drainage, including the communities of Stebbins, Scammon Bay, Hooper Bay, and Chevak have a positive customary and traditional use determination.

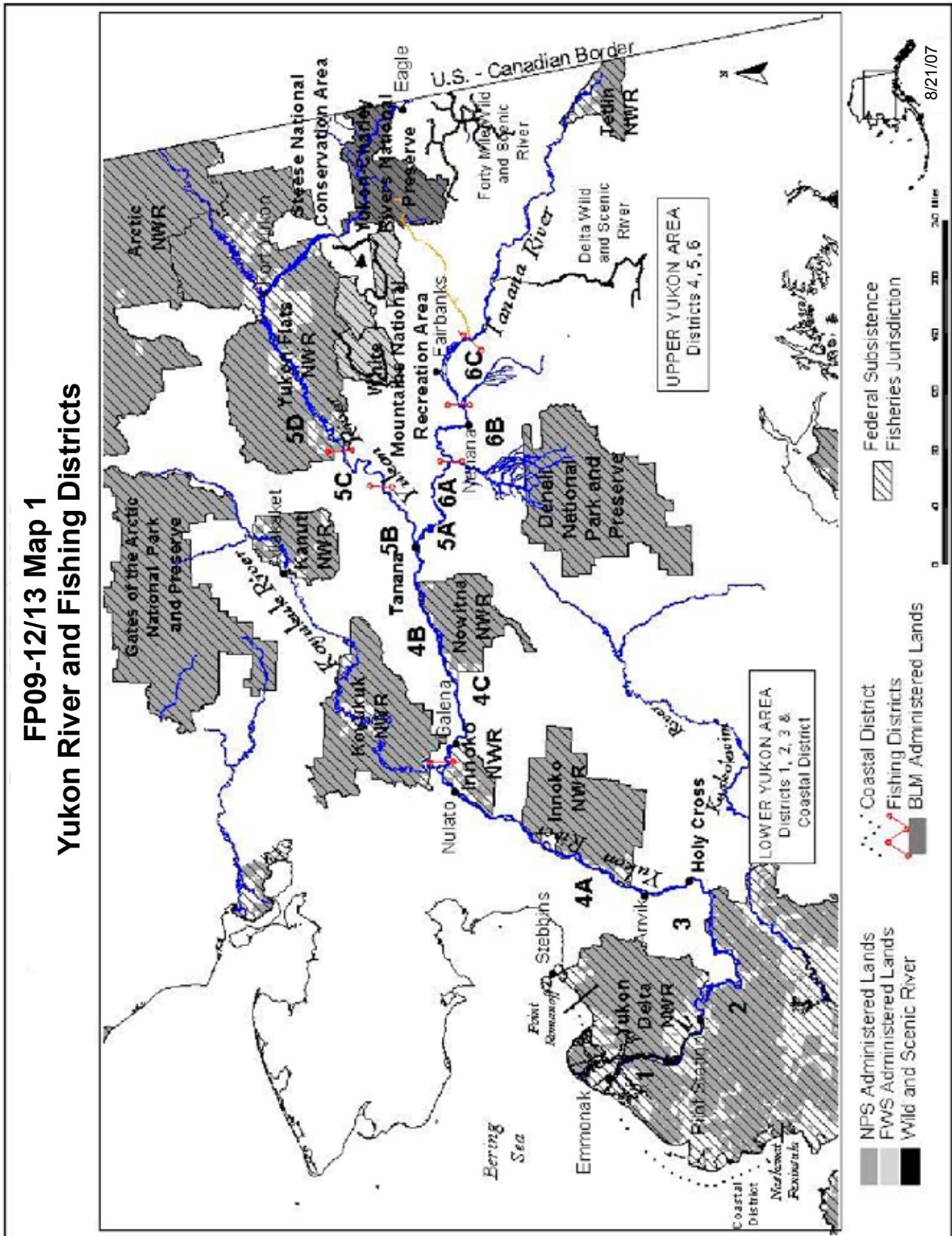
Regulatory History

State Fisheries

The Alaska Board of Fisheries (BOF) meets every three years to consider and take action on Arctic-Yukon-Kuskokwim fisheries proposals.

In January 2001, the BOF considered Proposal 272, which requested the elimination of gillnets greater than six inch stretch mesh in the commercial and subsistence Yukon River salmon fisheries. It rejected the proposal because of potential impacts to summer chum salmon, which had been designated as a stock of concern that same year (ADF&G 2001).

FP09-12/13 Map 1 Yukon River and Fishing Districts



In January 2004, the BOF addressed Proposal 161, which requested the use of drift gillnets in Yukon River Subdistricts 4-B and 4-C. It considered a possible amendment to this proposal of restricting mesh size to 7 inches to reduce potential impacts to female salmon, which may have improved the size and age class of escaping salmon. The BOF rejected this proposal and recommended that additional gillnet selectivity studies be performed (ADF&G 2004a).

In February 2007, the BOF considered and rejected Proposal 163 submitted by the Council, that would prohibit subsistence and commercial gillnets over 6.0-inch stretch mesh. The ADF&G staff comments opposed the proposal. The BOF, Committee C, which assessed the Yukon Area proposals did not reach consensus about the merits of the proposal (ADF&G 2007a).

In March 2007, the Fairbanks Fish and Game Advisory Committee submitted an agenda change request to the BOF requesting that it take emergency action to restrict the maximum mesh size of subsistence and commercial gillnets to 7.5-inch mesh in the Yukon River. During its October 9–11, 2007 work session, the BOF stated that this issue was thoroughly discussed at its January/February 2007 Arctic-Yukon-Kuskokwim (AYK) meeting and did not adopt the ACR (ADF&G 2007b).

The ADF&G staff analysis stated that while it is likely that Chinook salmon harvest has had effect on size and age over time, changes in the marine environment may also be an important factor. Although it is difficult to determine whether observed changes in Chinook salmon population structure were environmentally- or fishery-induced, ADF&G expressed its commitment to continue monitoring size and age trends and to take management actions needed to conserve and sustain Yukon River Chinook salmon (ADF&G 2007b).

The ADF&G staff also informed the BOF about a three year mesh size study in the lower Yukon River that had been initiated during the 2007 fishing season. In addition, ADF&G reported on U.S./Canada Yukon River Joint Technical Committee Salmon Size Subcommittee (JTC SSS) efforts to evaluate gear selectivity impacts on the size and age structure of Yukon River Chinook salmon. Efforts included updating time series analyses of trends in weights of Chinook salmon harvested in the lower river commercial fishery and average length-at-age in the District 1 commercial and test fisheries. In addition, increased sampling at the Eagle sonar site would be used to provide more accurate estimates of the age-class composition of escapements into Canada and exploitation rates for each age class (ADF&G 2007b).

The BOF met again in January 2010 to consider regulatory changes to Yukon River Chinook salmon management. ADF&G staff reports addressed current stock status and results of a mesh size study that compared catch compositions of various gillnet mesh sizes (Howard et al. 2009). Regulatory proposals to reduce exploitation, gillnet mesh size and depth as well as other actions were considered by the BOF to address long standing conservation concerns about decreasing trends in size and productivity of Yukon River Chinook salmon. Proposal 90 submitted by the Council requested a prohibition of gillnets with greater than 6.0-inch stretch mesh for the Yukon River commercial and subsistence fisheries. Based on the available scientific information, the BOF amended the Proposal 90 and adopted regulations that limit the maximum gillnet mesh size for Yukon River commercial and subsistence fisheries to 7.5-inch stretch mesh. This action affects both commercial and subsistence fishermen, and will become effective in 2011 allowing a one year phase-in period for fishermen (ADG&G 2010). In addition, the BOF amended Proposal 94 that addressed window closure schedules and adopted a regulation that gives ADF&G managers emergency order authority to sequentially close fisheries to allow pulses (large numbers of migrating fish) to migrate with little or no exploitation (not fished) through all fisheries to their spawning grounds. Fishermen and ADF&G managers reported that this strategy had worked well during 2009 to increase the numbers and quality (larger, older female fish) reaching spawning streams (ADF&G 2010).

Federal Subsistence Fisheries

In March 2003, the Western Interior Alaska Regional Advisory Council submitted Proposal FP04-05 (OSM 2003), which requested the expansion of the drift gillnet fishery to Yukon River Subdistricts 4-B and 4-C. During deliberation at its Fall 2003 meeting, the Western Interior Alaska Regional Advisory Council supported its proposal, with modification, to include the conservation measure of limiting nets used for subsistence salmon fishing to a maximum of 7-inch stretch mesh, no deeper than 35 meshes. The Eastern Interior Alaska and Yukon-Kuskokwim Delta Regional Advisory Councils opposed the original proposal to expand the use of drift gillnets. The proposal and the Western Interior Alaska Regional Advisory Council's recommendation were considered, but rejected, by the Board in December 2003.

In March 2004, two fisheries proposals were submitted to the Board. Proposal FP05-03, submitted by the Eastern Interior Regional Advisory Council, requested that within the Yukon River drainage, all gillnets greater than 6-inch mesh may not be more than 35 meshes in depth. Proposal FP05-04, submitted by the Western Interior Regional Advisory Council, again requested expansion of the subsistence drift gillnet fishery on the Yukon River to include Subdistricts 4-B and 4-C, as well as District 5 (OSM 2005a and b). At its Fall 2004 meeting, the Western Interior Regional Advisory Council recommended that the proposal only apply to Subdistricts 4-B and 4-C; that it be limited to the harvest of Chinook salmon from June 10 through July 14; the harvest of chum salmon after August 2; and that drift gillnets could only be used during the final 18 hours of the Federal subsistence fishing periods. The Western Interior Regional Advisory Council reduced what it initially sought in their proposal to alleviate some of the concerns of Federal and State fisheries managers and the Eastern Interior Regional Advisory Council.

In January 2005, the Board rejected Proposal FP05-03(OSM 2005a). It adopted Proposal FP05-04, with modification, to allow the harvest of only Chinook salmon (and not chum salmon) by drift gillnet in the Federal public waters of Subdistricts 4-B and 4-C during the final 18 hours of the weekly regulatory openings under a Federal subsistence fishing permit (OSM 2005b).

In March 2005, the Eastern Interior Alaska Regional Advisory Council submitted Proposal FP06-04 (OSM 2006a), which requested that all gillnets with greater than 6-inch mesh not be more than 35 meshes in depth. The Council previously submitted a similar proposal to the Alaska Board of Fisheries in November 2004 as an emergency petition, which was rejected. During its January 2006 meeting, the Federal Subsistence Board listened to substantial public testimony, and thoroughly discussed the proposal. In particular, the Board discussed the need for a coordinated effort to address the issues raised by the proposal. While the Board rejected the proposal, members noted conflicting recommendations from the three affected Councils and that the information and evidence presented was not definitive or conclusive. However, the Board made a commitment to keep the Yukon River Chinook salmon size issue on the forefront and to look for processes and solutions to ultimately bring the issue to resolution (OSM 2006b).

In March 2006, the Eastern Interior Alaska Regional Advisory Council submitted four proposals, Proposals FP07-01 to -04, to address the declining Chinook salmon size issue. These proposals were deferred by the Board early in the regulatory process, before analyses had been conducted. The Board also addressed the issue outside of the regulatory process, by recommending and endorsing the formation of, and providing support for the Yukon River Drainage Fisheries Association (YRDFA)-led Salmon Size Working Group. The group held four meetings in late 2006 and early 2007, during which participants heard presentations by fisheries managers and researchers, shared observations, discussed possible causes of the size decline and brainstormed possible solutions and strategies to address the issue. However, no consensus was attained regarding whether there really is a declining size, possible cause(s) if size is declining, and the possible changes to management strategies and/or regulatory actions to address the

issue. Views, perceptions and opinions differed mainly between geographic areas (Districts 1–3) and (Districts 4–6) fishermen (OSM 2007).

In March 2007, the Eastern Interior Alaska Regional Advisory Council submitted Proposals FP08-13 and -14 and requested that the Board withdraw its four proposals submitted in 2006. The Board granted the request and considered Proposal FP08-14 in December 2007. Proposal FP08-14 restricting gillnet mesh size was not adopted due to a tie vote. The Board rejected a motion that would have adopted the Council's recommendation to allow a three year phase-in period for both commercial and subsistence fishermen to purchase new nets. The Board rejected Proposal FP08-13. Some Board members stated that no substantial evidence was presented to support a change in net depth and were concerned that adoption of the proposal would not provide for subsistence uses (OSM 2007).

The Board received Proposal FP09-12 from the Council during the 2009 regulatory cycle. Although the normal schedule would have had the affected Regional Advisory Councils considering this proposal in Fall 2008, and the Board in January 2009, the Board decided to defer consideration until Spring 2009, to allow time for results from a relevant study to be incorporated into the staff analysis and presented to the Councils prior to Board consideration. At its January 2009 meeting, the Board decided, as requested by the State, to further defer consideration of the proposal to Spring 2010, after the BOF addresses Yukon regulatory proposals at its meeting in January 2010 (OSM 2009).

Current Events Involving Species

Prior to the 2009 fishing season, YRDFA organized a series of regional teleconferences and an in-person meeting to give managers and stakeholders the opportunity to share information, provide input and discuss management options. This cooperative effort was intended to identify options and practical management strategies that would result in meeting escapement goals if the 2009 run was similar to the low runs experienced in 2007 and 2008. This input was used to develop a joint State/Federal preseason management strategy (ADF&G 2009).

Although high water and debris loads early during the 2009 season were thought to negatively bias passage estimates at the Pilot Station sonar site, managers implemented planned conservation actions throughout the drainage. This resulted in an estimated 69,000 Chinook salmon entering the Canadian Yukon which exceeded the (interim) minimum escapement goal of 45,000 and harvest share for Canadian fisheries. Conservation actions (ADF&G 2009) included:

- Reducing the subsistence fishing schedule by 50%
- Not allowing subsistence fishing on the first pulse which is assumed to be predominately Canadian-origin salmon
- Dividing Subdistrict Y-5D in half to allow more flexibility for timely openings
- Restricting maximum mesh size of gillnets to 6.0-inch mesh in the Coastal District to allow harvest of chum salmon
- Allowing subsistence fishermen in the Koyukuk, Innoko and Tanana River drainages to fish normal schedules since Canadian-origin fish are not harvested in these areas
- Implementing a Special Action by the Federal subsistence manager that limited the harvest of Chinook salmon in Federal public waters to Federally qualified rural subsistence users.

The BOF adopted an emergency regulation that allowed commercial fishermen to retain but not sell Chinook salmon harvested during summer chum directed commercial openings. Less than 3,500 Chinook salmon were reported harvested in commercial openings; these were utilized for subsistence. Escapements in Alaska generally met or exceeded established escapement goal ranges. Some Alaskan subsistence fishermen along the main stem Yukon River reported insufficient harvests (ADF&G 2009).

In January 2010, the U.S. Commerce Secretary declared a commercial fishery disaster for Yukon River Chinook salmon following two years of poor runs, fishing restrictions and closures. Poor returns led managers to restrict commercial fishing in 2008, with the harvest 89% below the five-year average, according to the Commerce Department. In 2009, there was no Chinook salmon commercial season and limited subsistence fishing. This action came in response to a request from the State of Alaska and now provides the opportunity for Congress to appropriate federal emergency relief funds (Village 2010).

Biological Background

An understanding of historic Yukon River Chinook salmon fisheries provides the context for evaluating potential benefits and limitations of implementing proposed changes in gillnet mesh size.

Commercial and Subsistence Harvests

Alaska Natives living in the Yukon River drainage have depended upon fishery resources, including Chinook salmon for subsistence uses for thousands of years. This reliance was reflected in the subsistence way of life and annual patterns of movement, which brought people together where fish were abundant. In the mid-1880s, Alaska Natives increased their harvest for sale or trade to prospectors in the Canadian Yukon. The first recorded commercial harvest of salmon in the U.S. portion of the Yukon River drainage occurred in 1903; however, commercially harvested salmon were not exported from the lower river until 1918 (Pennoyer et al. 1965).

Figure 1 illustrates trends in reported Chinook salmon total harvests from the early 1900's through 2006 (JTC SSS 2006b). Larger commercial harvests of Chinook salmon (up to 105,000 fish) in Alaska occurred from 1919 to 1921 using drift gillnets, set gillnets, and fish wheels. Commercial fishing for export was prohibited in the Yukon River in 1921, and from 1924–1931 the commercial fishery was closed in the entire Yukon Area, including coastal waters. Commercial fishing was allowed again in 1931 and was managed by the Federal government using various harvest quotas until statehood (Pennoyer et al. 1965).

In 1960, the State of Alaska assumed management responsibility for the fisheries, and ADF&G initiated regulation of the commercial and subsistence harvest by imposing restrictions on gear, fishing areas, and fishing time, but did not restrict the allowable harvest for subsistence. Harvests reported prior to 1960 in **Figure 1** are incomplete and likely underestimate actual harvest levels. Reported harvests increased significantly in the 1980s through the mid 1990s (**Figure 2**) as commercial fisheries in Alaska expanded in response to larger runs and greater demand in international markets (JTC SSS 2006a).

Commercial harvests of Yukon River Chinook salmon have declined in recent years due to poor runs and subsequent conservative management, and directed commercial fisheries did not occur in 2001, 2008 and 2009 (**Figure 2**). The 2007 commercial harvest of 33,634 Chinook salmon was above the recent 5 year average harvest (2005–2009) of 23,000 and considerably less than the 1989–1998 average harvest of 100,700 salmon (Howard et al. 2009).

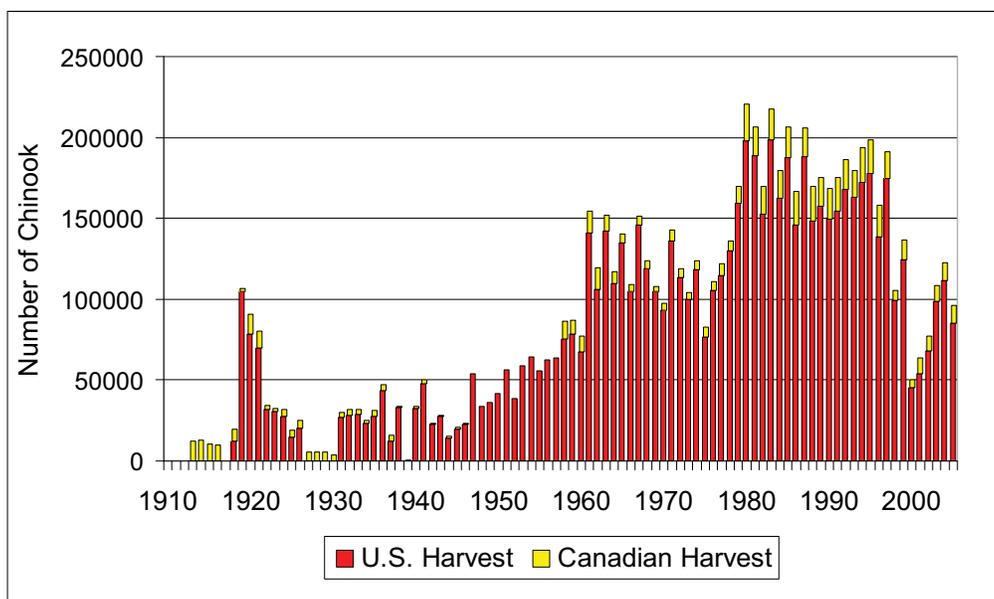


Figure 1. Reported Yukon River Chinook salmon total harvests 1910 - 2006 (JTC SSS 2006b). Harvest data prior to 1960 is not complete and may underestimate actual harvest levels.

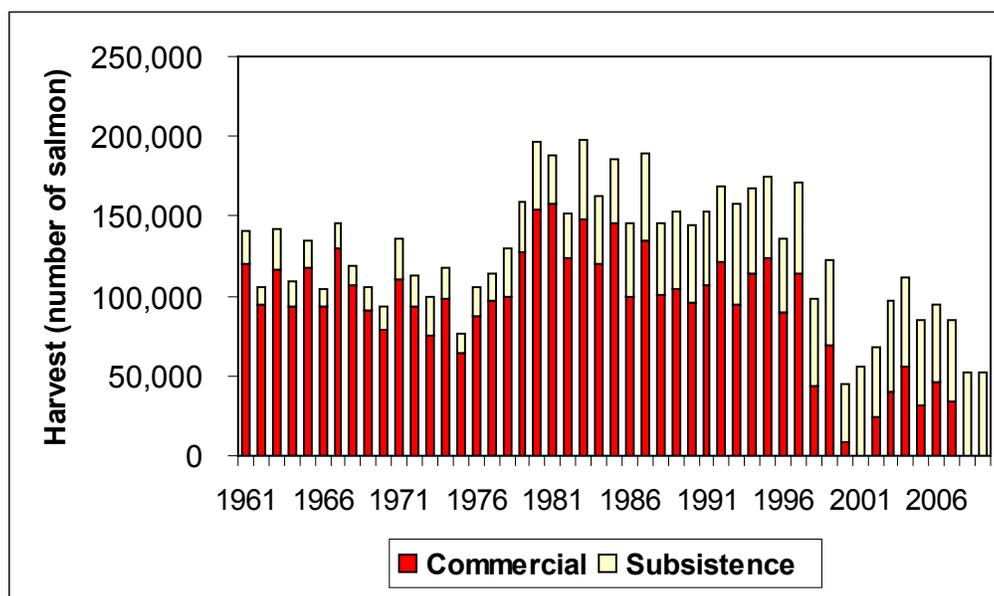


Figure 2. Chinook salmon commercial and subsistence harvests in Alaska from 1961-2009. Since 2008 and 2009 subsistence harvest data are unavailable, the average 2002-2007 subsistence harvest was substituted in the stacked bar graphic (Howard et al. 2009).

Exploitation Rates

Evenson (2008) provided revised estimates of exploitation rates for Yukon River Canadian origin Chinook salmon stocks which comprise in most years about 50% of the Alaskan harvest (**Figure 3**). The average run size for Canadian origin stocks for 1982–2008 was 130,976 Chinook salmon, and ranged

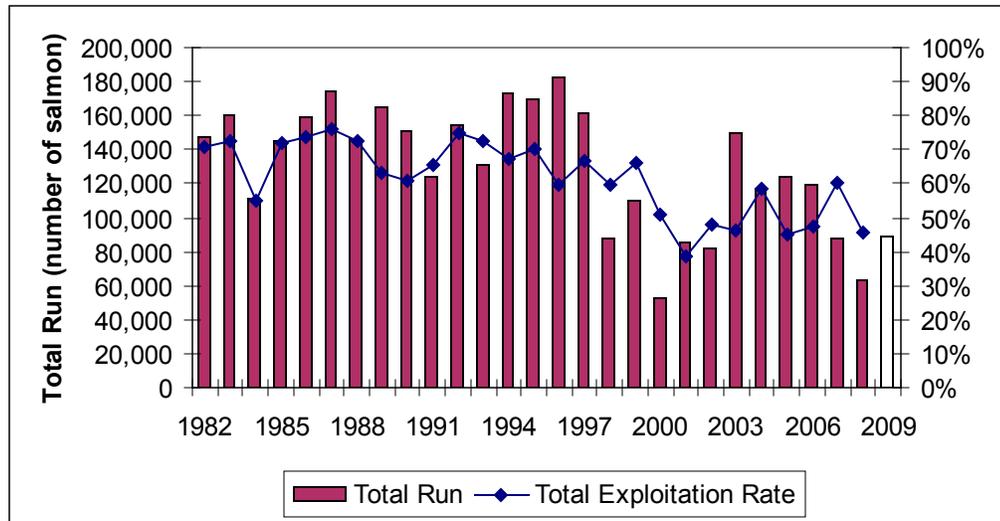


Figure 3. Total run and exploitation rates of Canadian-origin Yukon River Chinook salmon, 1982-2009. 2009 data are preliminary (white bar). Data from Howard et al. 2009

from 52,843 in 2000 to 182,504 in 1996. The average total exploitation rate on these stocks was 68% during 1982–1999, and 49% during 2000–2008. The decrease in exploitation during recent years reflects more conservative fishery management in response to low runs.

Escapement

The Yukon River Panel approved the Joint Technical Committee (JTC) recommendation of a minimum interim management escapement goal (IMEG) for Canadian-origin Chinook salmon of 45,000 for 2008 and 2009, based on passage estimates from a sonar project located downstream of the U.S./Canadian border near the village of Eagle (Bue and Hayes 2008 and 2009). A comprehensive Biological Escapement Goal for Canadian-origin Yukon River Chinook salmon has not been developed at this time using available data. The JTC will continue to reconcile data and investigate methods to develop a spawning goal objective for these stocks (JTC 2009).

Figure 4 presents the historic escapement of Yukon River Canadian–origin salmon from 1982–2009 (Howard et al. 2009). The IMEG of >45,000 is included in the figure providing a visual perspective of historic escapements and the current (2008 and 2009) escapement goal.

Tanana River tributaries support the largest spawning escapements of Yukon River Chinook salmon in Alaska and based on radio tagging data, approximately 20% of total production drainage-wide (Eiler et al. 2004). The two major spawning tributaries of the Tanana River are the Chena (**Figure 5**) and Salcha (**Figure 6**) rivers. Biological escapement goals (BEG) are 2,800–5,700 for the Chena River and 3,300 – 6,500 for the Salcha River. The upper end of the BEG for the Chena and Salcha river stocks equals 1.6 times the escapement that would produce maximum sustained yield (MSY) (ADF&G 2004b).

Fecundity

There is large variation in the numbers of eggs per female (fecundity) in Chinook salmon; larger females tend to produce more and larger eggs than smaller females. Both of these reproductive strategies can

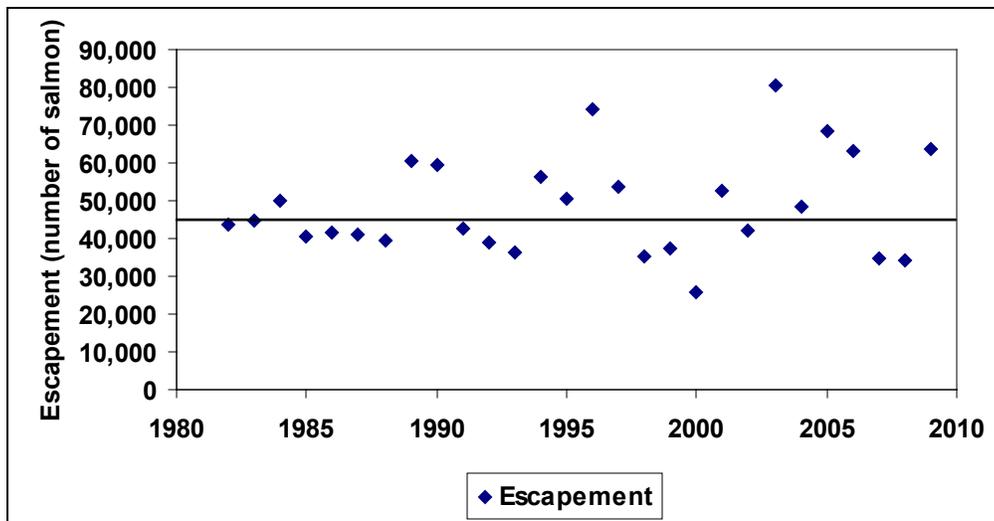


Figure 4. Escapement of Yukon River Canadian-origin Chinook salmon, 1982-2009. 2009 data are preliminary. Interim minimum escapement goal of 45,000 set by JTC for 2008 - 2009 (black line). Data from Howard et al. 2009.

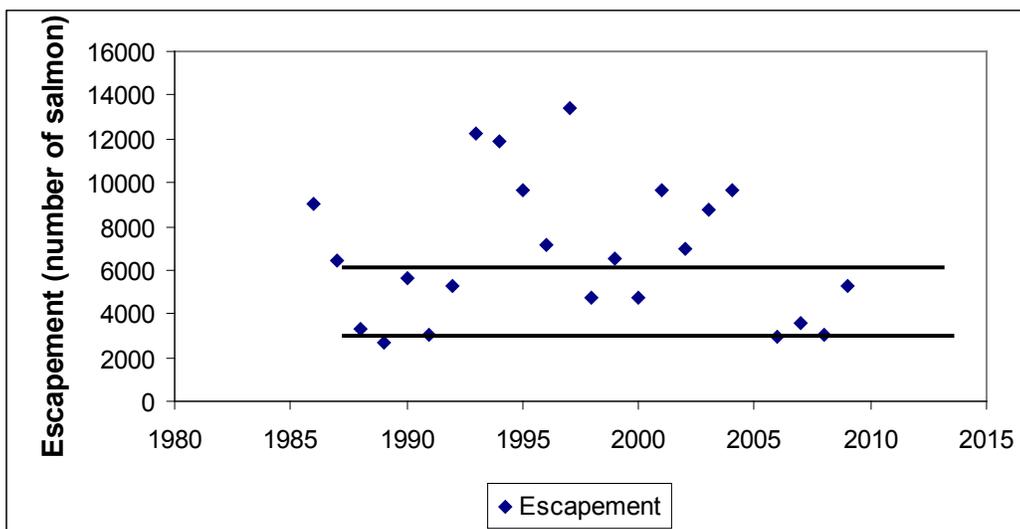


Figure 5. Chinook salmon escapement for the Chena River 1986 - 2009. Biological Escapement Goal (BEG) range = 2,800 – 5,700 (black bars). Incomplete counts available for 2003 and 2005. Data from Howard et al. 2009.

increase productivity of the stock (Groot et al.1991, Healy and Heard 1984). Data describing fecundity of Yukon River Chinook salmon is limited. Bromaghin et al. (in prep.) described the fecundity of Yukon River Chinook salmon sampled in 2008. Females were sampled from the catches of lower river test fisheries operated by ADF&G. Genetic tissue samples from the catch provided information about the likely destination of each fish. Fecundity estimates obtained in 2008 were compared with historical estimates (Skaugstad and McCracken 1991; Jasper and Evenson 2006). The study revealed broad patterns

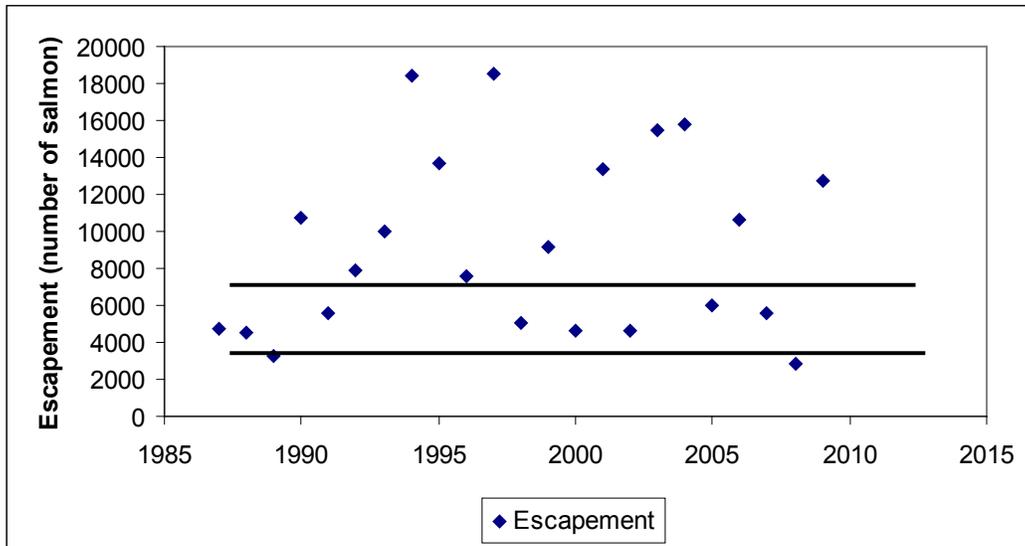


Figure 6. Chinook salmon escapement for the Salcha River 1987 - 2009. Biological Escapement Goal (BEG) range = 3,300 – 6,500 (black bars). Incomplete counts available for 2003 and 2008. Data from Howard et al. 2009.

in the relationship between fecundity and length among sub-basins of the Yukon River drainage; the most relevant finding was that small fish from the middle and upper portions of the drainage have markedly fewer eggs than small fish from lower portions of the drainage. For example, a 750 mm fish from the lower river stock group has an estimated mean fecundity approximately 29% and 52% greater than a fish of the same size originating from the middle and upper stock groups, respectively. Similar comparisons for larger fish (900 mm) showed that the Lower stock group had 5% and 20% greater fecundity than the Middle and Upper stock groups, respectively. These results suggest that fish reproducing in the middle and upper reaches of the drainage may have a lower reproductive potential than do lower-river populations. The authors suggest that the productivity of middle and upper river spawning fish may be more dependent on their size composition.

Determining the age of Chinook salmon

DuBois and Liller (2008) compared scale ages for Yukon River Chinook salmon in ADF&G historic data records with independent results from three other salmon scale labs. The study was directed towards older-aged Chinook salmon. Overall, consistent aging (90%) was found between historic scale age records and results of other labs. However, there was overall agreement of only 10% and a large bias by readers to underage scales when a second year of freshwater residence was reported. Results of this study can be inferred upon historical age records from the Yukon River drainage. The small bias and temporally consistent aging for age-7 (seven years) fish that spend one year in freshwater were acceptable. This component makes up the majority of total age-7 fish. However, the annual percentage for age-7 fish that spend two years in fresh water ranged from 0% to over 30% in the historic records. The large bias and low precision suggests historical estimates may lack precision in years with relatively high contributions of age-7 fish that spent two years in freshwater. The scales for age-8 fish in the historic records are rare and have a second year of fresh water residency. Consequently, there is a substantial lack of precision in historical estimates for age-8 Chinook salmon in the Yukon River (DuBois 2008, pers.comm.).

Declining Yukon Chinook Salmon Size

In 1998, a technical report developed by the JTC examined length-at-age over time in six Yukon River locations using a combination of commercial fisheries (unrestricted mesh size), test fishing and escapement data. The data sets available at the time of the analysis were: the Y-1 commercial fishery (1962, 1964–1968 and 1979–1997), Big Eddy test fishery (1979–1997), Andreafsky River escapement (1981–1997), Salcha River escapement (1982–1997), Canadian border fish wheel catch (1974–1996), and the Canadian commercial fishery (1975–1996). No decline in Chinook salmon size was found. (JTC 1998).

Other studies have provided evidence that Yukon River Chinook salmon have decreased in size over time. Decline in average weight from 1975–1993 in Subdistrict Y-1 commercial fisheries was reported by Bigler et al. (1996); and the abundance of large (≥ 900 mm) Chinook salmon in some (4 of 7) spawning stocks was reported by Hyer and Schleusner (2005). These studies were limited by relatively short time series and Bigler et al. (1996) included average fish weight data from both commercial unrestricted (> 8 inch stretch mesh) and small mesh (≤ 6 inch stretch mesh) commercial openings.

Age (from scales), sex and length (ASL) data for lower river unrestricted mesh commercial fisheries is available from 1962 through 2007. These data represent a sampling of the older, larger Chinook salmon in the run that larger mesh gillnets used in the commercial fishery will selectively harvest; but provides the longest time series of available data on size of Yukon River Chinook salmon. Hamazki (2009) analyzed these data and reported the following trends:

1. From 1964 to 2007, the proportion of female Chinook salmon fluctuated between 37% and 78% with an overall average of 51%. There was a significant slight increasing trend in the proportion of females represented in the commercial harvest of approximately 0.2% per year.
2. During this time, the proportion of large Chinook salmon (≥ 900 mm) fluctuated between 7.5% (2000) and 42% (1968) with an overall average of 24%. The proportion tended to be below average in the periods of the 1960s, 1990s, and 2000s and above average in the 1970s and 1980s. Generally, there was a significant decreasing linear trend over time between the proportion of large Chinook salmon and year, declining approximately 0.3% per year.
3. From 1964 to 2007, the proportion of age-6 Chinook salmon fluctuated between 34% and 83% with an overall average of 63%. No significant increasing or decreasing trend was observed through time.
4. From 1964 to 2007, the proportion of age-7 Chinook salmon widely fluctuated between 1% (1993) and 36% (1988) with an overall average of 9% (**Figure 7**). The proportion tended to be below average during the 1970s, 1990s, and 2000s. A significant decreasing trend was observed over time declining approximately 0.1% per year. Proportions of age-6 showed no decline over time.
5. The length at age of both the age-6 and age-7 Chinook salmon declined over time. The decline was more apparent for age-7 (2.5 mm/yr for males and 0.9 mm/yr for females) than age-6 (0.7 mm/yr for males and 0.4 mm/yr for females). Declines were more pronounced for males than females.

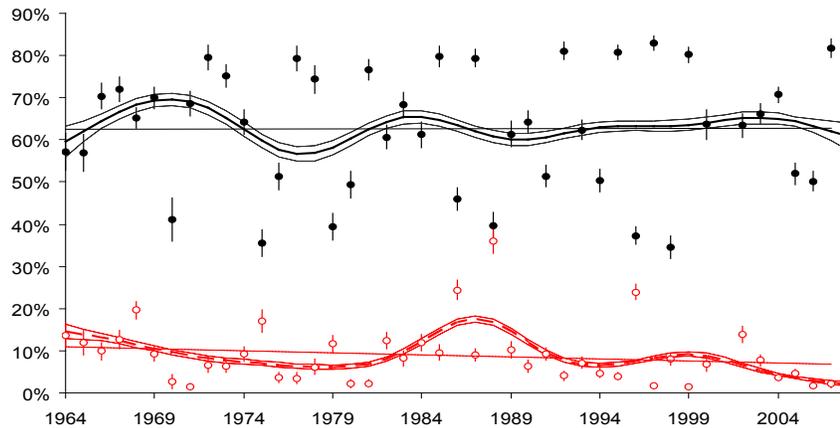


Figure 7. Proportion of age -6 (upper trend line) and age -7 (lower trend line) Yukon River Chinook salmon in lower river unrestricted mesh commercial openings (1962-2007). Data from Hamazki 2010.

Gillnet Mesh Size Selectivity

Fisheries scientists have recognized the potential impact of size selective harvests for decades (Ricker 1981). ADF&G, in an unpublished report to the BOF (ADF&G 1981), reported that potential egg deposition of Cook Inlet Chinook salmon stocks targeted with large mesh gillnets was much less than that for stocks targeted with small mesh gillnets. Concerns about the effect of selective large mesh gillnet fisheries specifically in the Yukon River were raised by ADF&G staff in 1981. In an unpublished report comparing sex ratios and age of fish in the Yukon River commercial harvest and escapement, Marshall (1981) observed that many of the largest, oldest females (5 years ocean residency) were harvested and did not contribute to the escapement.

Growing concerns about long term genetic affects of size selective fishing have been expressed in recent scientific literature. A number of peer reviewed articles have strongly encouraged managers to address adverse effects of harvest selectivity on animal populations (Allendorf et al. 2008, Anderson et al. 2008, Dunlop et al. 2009, and Enberg et al. 2009). Fisheries biologists have been reporting a declining trend in salmon stocks. The fish have been getting smaller and/or the age at maturity has changed. These patterns have been observed in Chinook salmon (Bigler et al. 1996, Hyer and Schleusner 2005), chum salmon (Ishida et al. 1993, Helle and Hoffman 1995, Kaev 1999), sockeye salmon (Kendall et al. 2009, Pyper et al. 1999, Holt and Peterman 2004) and pink salmon (Azumaya and Ishida 2000, Wertheimer et al. 2004).

In a synthesis of available studies, Hard et al. (2008) evaluated the evidence that fishing practices may be causing genetic changes in salmon populations. The authors acknowledge that most studies can not clearly distinguish genetic change in traits such as size, migration timing, maturation, growth rates and fecundity caused by fishing from natural variation that result from environmental factors. The evidence given for fisheries-induced genetic change comes from linking selectivity of fishing practices with traits that are known to be heritable in a species (e.g., mesh size and size at age). The authors argue that changes in salmon traits important to survival and productivity can be altered within ten or fewer generations.

Other researchers have proposed that decreased size at maturity and increased age at maturity observed in Pacific salmon during recent decades may be explained by environmentally induced phenotypic plasticity of genetic characteristics (reduced growth rate) of salmon although fisheries-induced evolution can not be entirely dismissed as a reason (Hillborn and Minte-Vera 2008, Morita and Fukuwaka 2007). Howard et al. (2009) compared differences between more recent and historic age class composition for three Yukon River and two other Bering Sea Chinook salmon stocks harvested with either variable or small mesh (≤ 6 inch stretch mesh) gillnets. Variable patterns were observed among age classes except age-7, where all stocks showed declines suggesting that environmental factors play some role in explaining declines in size of older fish.

Theoretical models suggest that genetic changes may be slow or impossible to reverse but rigorous empirical evidence is lacking. Conover et al. (2009) conducted controlled tank experiments with Atlantic silverside reported the first empirical observations of the effect of size selective fishing over five generations. Selective removal at high exploitation rates of large fish in one experiment as well as small fish in a second experiment resulted in altered size of subsequent generations of fish compared to a control (no size selective removal). The experiments also demonstrated that if size selective fishing was halted, altered size could be reversed. These results suggest that silverside populations have an intrinsic capacity to recover genetically from harmful evolutionary changes caused by fishing.

Demonstrating that gillnet mesh size selectivity is a primary cause for decreased size of Yukon River Chinook salmon is difficult with available data from the fishery for several reasons: 1) reliable long term data for Yukon River fisheries are limited; 2) genetic changes in traits such as body size or age at maturation are likely subtle and expressed over many generations of salmon; and 3) gear related decreases in size may be masked by environmental factors thought to be reducing the size of all salmon species returning from the ocean.

Available information confirms that gillnet mesh size is selective for size of fish harvested (Bromaghin 2005); and size (length and weight) of Chinook salmon is a heritable trait (Hard 2004, Hard et al. 2008). Since larger fish are selectively harvested by larger mesh gillnets and larger Chinook salmon are predominately female and more fecund than younger, smaller fish; reducing the mesh size should increase the reproductive potential of stocks.

Howard et al. (2009) presented a “snap shot” comparison of harvest numbers and percentages of large (>900 mm) Chinook salmon from a hypothetical, modeled Chinook salmon fishery employing 7.5, 8.0 and unrestricted mesh with exploitation rates from 30% to 60%. Commercial and subsistence fisheries harvests on simulated runs of 150,000 and 200,000 were compared. This analysis showed that although both mesh size reductions and decreased exploitation effectively reduce harvest on older and larger fish, reductions in mesh size would reduce harvest on older, larger fish while allowing more fishing opportunity (higher exploitation).

Bromaghin et al. (2008) investigated the potential long-term effects of large-mesh gill net fisheries on salmon by constructing a model employing population dynamics and the heritability of traits, using information from Yukon River Chinook salmon. The authors simulated the effects of selective exploitation under a variety of productivity and fishing scenarios. In most cases considered, the mean size and age at maturation declined rapidly for approximately 50 years and stabilized at reduced levels after approximately 100 years. In these cases, subsequent use of gill nets with moderately reduced mesh size (7.5-inch mesh) was not effective in reversing prior declines in mean size and age unless exploitation rates were also reduced. This work suggested that long-term, selective exploitation of large Chinook salmon is likely to cause reductions in fish size and maturation age, and impair population productivity.

The effectiveness of management strategies to reverse prior effects of selective exploitation was improved by reducing exploitation rates and selectivity for large individuals, especially if implemented before large declines in mean size and age have been observed in the population. (See **Appendix A** for a more detailed explanation of this work.)

Optimal Mesh Size Evaluation

Gillnet mesh size selectivity studies for Yukon River salmon (Bromaghin 2005) can be used to evaluate an optimal mesh size for harvesting smaller, more abundant Chinook salmon age classes (5 and 6 year old fish) while minimizing harvest of chum salmon. Size selectivity curves were estimated for Chinook and summer chum salmon captured at Pilot Station for mesh sizes ranging from 6.0 to 8.5 inches (**Figure 8**). Using these selectivity curves, the mid-eye to fork (MEF) length ranges of Chinook and summer chum salmon for which relative selectivity would be $\geq 90\%$ can be estimated (**Table 1**).

Table 1. Mid-eye to fork length (mm) for Chinook and summer chum salmon where 100% and ranges for which at least 90% of fish would be susceptible to capture in different gillnet stretch mesh sizes. Data based on mesh size selectivity curves developed by Bromaghin (2005).

Mesh Size (inches)	Chinook 100%	Chinook 90% Range	Summer Chum 100%	Summer Chum 90% Range
6.0	585	559-617	597	579-617
6.5	634	606-669	647	627-668
7.0	683	653-720	697	675-720
7.5	732	699-772	747	723-772
8.0	780	746-823	796	771-823
8.5	829	793-875	846	820-875

Age and length data were collected by ADF&G from subsistence and commercial harvests, test fisheries and escapement projects during 2004–2006 (Bales 2008, 2007; Karpovich and DuBois 2007). Mean MEF lengths at age data for Chinook and summer chum salmon samples were computed and reported in ADF&G reports available on the agency website. It is possible to inspect these data for each year to allow for some general comparisons of fish size (**Tables 2 and 3**). Since means were not weighted by either the number of fish sampled in each project or the abundance of the population from which samples were taken, only qualitative observations can be made. Chinook and chum salmon grow substantially larger each additional year they rear in the ocean. An inspection of the data suggests that large Chinook salmon reached MEF lengths of over 900 mm, while large chum salmon reached MEF lengths of over 600 mm for the years included in this analysis. For Chinook salmon, females tended to be larger than males of the same age within the same return year. For chum salmon, males tended to be larger than females of the same age within the same return year.

Setting a maximum stretch mesh size of 7.5 inch mesh during directed Chinook salmon openings would shift the overall composition of the harvest to smaller, younger Chinook salmon (**Figure 8, Tables 1 and 2**). For 7.5 inch mesh, peak selectivity is 1.0 for Chinook salmon having a MEF length of 732 mm and 0.9 or greater for Chinook salmon having MEF lengths between 699 mm and 772 mm. For 8.5 inch stretch mesh, peak selectivity is 1.0 for Chinook salmon having a MEF length of 829 mm and 0.9 or greater for Chinook salmon having MEF lengths between 793 mm and 875 mm.

Table 2. Average length at age of Yukon River Chinook salmon from commercial, subsistence, test fisheries, and escapement project samples (Bales 2008, 2007; Karpovich and DuBois 2007). Total age equals the sum of fresh water (before decimal) and marine (after decimal) residence years plus 1 for first year of incubation.

Year	Age									
	1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5
<i>Males</i>										
2004	381	609	717	655	846	725	955	851	-	-
2005	325	583	747	-	824	747	910	837	-	900
2006	-	569	736	550	828	728	913	901	-	-
<i>Females</i>										
2004	-	630	768	-	864	-	918	889	-	-
2005	-	569	786	-	841	771	901	843	-	-
2006	390	593	778	-	852	772	889	833	-	-

Table 3. Average length at age of Yukon River summer chum salmon from commercial, subsistence, test fisheries, and escapement project samples (Bales 2008, 2007; Karpovich and DuBois 2007). Total age equals the sum of fresh water (before decimal) and marine (after decimal) residence years plus 1 for first year of incubation.

Year	Age				
	0.2	0.3	0.4	0.5	0.6
<i>Males</i>					
2004	543	574	597	627	575
2005	539	582	600	608	-
2006	525	574	594	608	-
<i>Females</i>					
2004	526	555	569	606	-
2005	548	556	577	572	-
2006	516	546	568	610	-

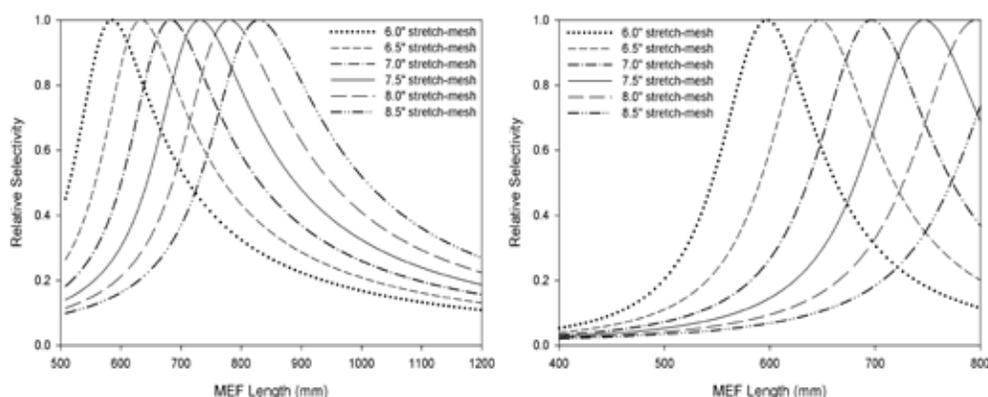


Figure 8. Mesh size selectivity curves for mid-eye to fork length (MEF) of Yukon River Chinook (left graph) and chum salmon (right graph) from Bromaghin 2005.

Selectivity curves are not symmetrical (**Figure 8**), but are skewed right towards larger fish. This probably occurs because larger fish can more easily be tangled and caught even if not gilled or wedged, while smaller fish are more likely to swim through a larger mesh size. The skewed nature of selectivity curves is important in considering effects upon larger Chinook salmon. **Appendix B** provides a description of gillnet construction and specifications as well as how gillnets capture fish. For example, relative selectivity decreases 33% for 900 mm Chinook salmon when mesh size is reduced from 8.5 (0.81 relative selectivity) to 7.5 (0.48 relative selectivity) inches. Due to their smaller size, differences in relative selectivity for summer chum salmon do not vary greatly for these stretch mesh sizes (**Figure 8, Tables 1 and 3**).

The high degree of overlap and shift in size selection among mesh sizes is apparent from actual gillnet catches of Chinook salmon with three mesh sizes during ADF&G test fishing at Pilot Station (**Figure 9**). Strict protocols were used to standardize fishing methods since the actual size distribution of fish captured depends on the size of fish available for capture as well as the selectivity of the gillnet. All drift gillnets used are 25 fathoms (210 ft) long, 25 ft deep, hung at a ratio of .5. Gillnets were fished at prescribed locations and times to minimize sampling bias (Pfisterer 2002).

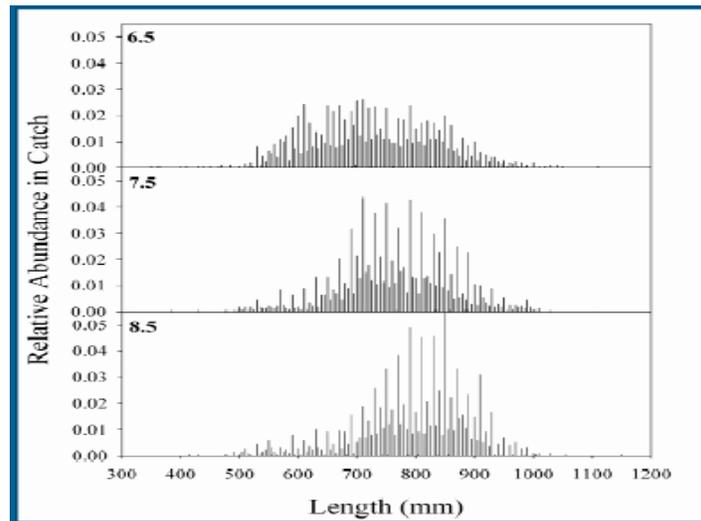


Figure 9. Lengths of Chinook Salmon caught by different mesh sizes at Pilot Station (JTC SSS 2006).

Bromaghin (2008, pers.comm.) used historic (1990–2003) gillnet test fishing information from Pilot Station to compare Chinook and summer chum salmon CPUE data for four different stretch mesh sizes (**Figure 10**). His comparison only used data for time periods (250 days) when all four of the mesh sizes were fished, and reported CPUE as the number of fish caught per fathom of gillnet fished per hour. The 7.5 inch stretch mesh caught more Chinook and summer chum salmon than the 8.5 inch stretch mesh, and more Chinook but less summer chum salmon than the 6.5 inch stretch mesh. CPUE increased 18% between 8.5 and 7.5 inch stretch mesh for Chinook salmon and 76% for summer chum salmon. CPUE decreased 22% between 8.5 and 6.5 inch stretch mesh for Chinook salmon and increased 309% for summer chum salmon.

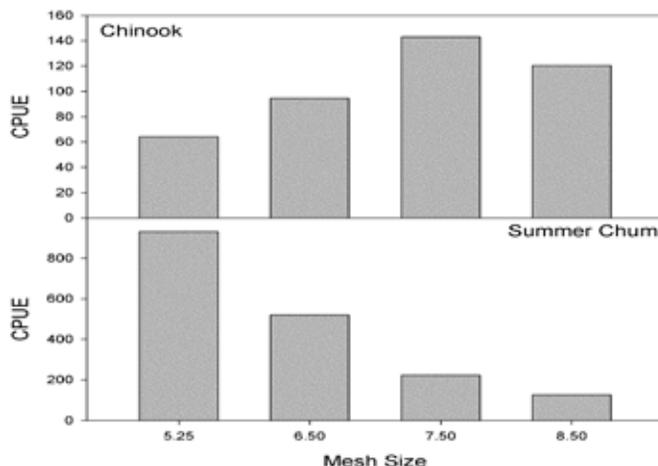


Figure 10. Catch per unit effort (CPUE) of Chinook and summer chum salmon in historic Pilot Station gillnet harvest data, 1990-2003 (Bromaghin 2008, pers. comm.).

Reconstruction of historic total run statistics, including size distribution for Yukon River salmon, have not been done to date due to data limitations, although a study recently funded by OSM will be pursuing this objective in 2010. For this reason, Bromaghin (2008, pers. comm.) estimated size distributions for Chinook and summer chum using adjusted (weighted by selectivity) and smoothed (averaging model) length frequency data from a subset of Pilot Station test fishery data (**Figure 11**).

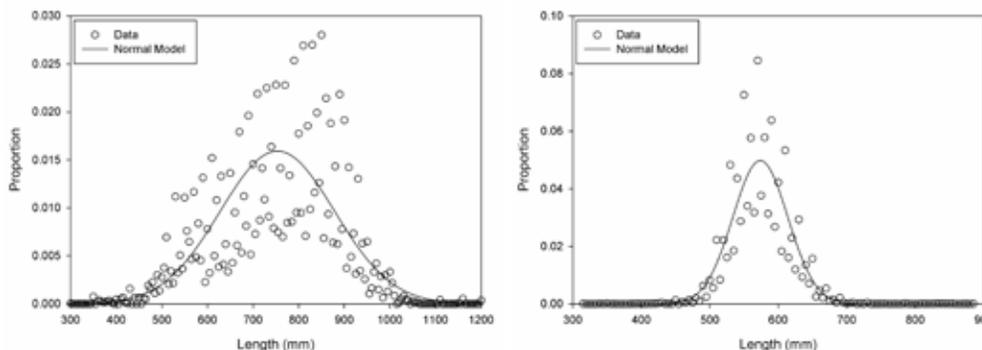


Figure 11. Proportions of Chinook (left graph) and summer chum (right graph) salmon by length (MEF) collected at Pilot Station from 1990-2003 (Bromaghin 2008, pers.comm.).

Pilot Station 1990–2003 data contain length measurements for 7,261 Chinook and 39,522 summer chum salmon. However, salmon fisheries occur downriver from Pilot Station. These fisheries had more unrestricted mesh size commercial and subsistence fishing periods directed at Chinook salmon during 1990–2003 than restricted mesh size periods directed at summer chum salmon. This may have altered the size distribution of Chinook salmon passing Pilot Station, and Bromaghin’s (2008, pers. comm.) estimated Chinook salmon size distribution may be somewhat skewed towards smaller Chinook salmon than were actually present in these runs.

Bromaghin (2008, pers. comm.) used his estimated size distributions and the selectivity curves he had previously developed (Bromaghin 2005) to compare effects of 8.5 and 7.5 inch stretch mesh fisheries on Chinook and summer chum salmon runs (**Figure 12**). The data indicate that 7.5 inch stretch mesh would more effectively target the most abundant size classes of the Chinook salmon run than would 8.5 inch stretch mesh. The 8.5 inch stretch mesh would tend to target larger, less abundant Chinook salmon. Neither stretch mesh size would primarily target summer chum salmon, but the 7.5 inch stretch mesh would probably be somewhat more effective. These results are based on a simplification of the highly complex interactions occurring in the actual fishery where continually shifting size distributions of salmon occur throughout the season. They are also based on the assumption that the entire Chinook and summer chum salmon runs would be exposed to the effect of gear selectivity when, in fact, the timing and location of fishing effort with a range of mesh sizes would vary within and between years.

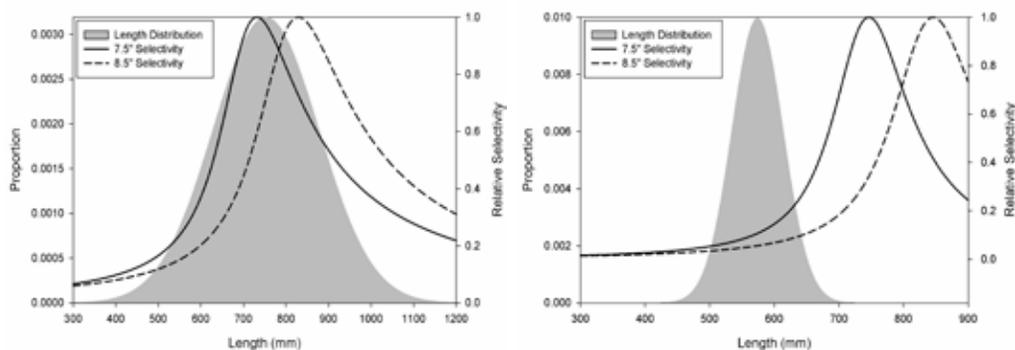


Figure 12. Comparison of estimated size distributions of Chinook (left graph) and chum salmon (right graph) runs and mesh selectivity for 7.5 and 8.5 inch mesh gillnets (Bromaghin 2008, pers. comm.).

Bromaghin (2008, pers. comm.) expanded his analysis by applying hypothetical exploitation rates of 50% to Chinook and 25% to chum salmon estimated size distributions (**Figure 13**). Resulting size distributions of Chinook salmon escapements were bimodal for both mesh sizes. However, the right mode for the 8.5 inch stretch mesh (825 mm–1000 mm fish) was much smaller than the left mode (500 mm–825 mm fish), while the left (500 mm–700 mm) and right (750 mm–1000 mm) modes for 7.5 inch stretch mesh were of roughly equal magnitude due to a shift to the right in the proportion of larger size fish in the escapement. These results are due to the greater overlap of the relative selectivity curve with Chinook salmon size distribution for 7.5 than for 8.5 inch stretch mesh (**Figure 12**). Unlike escapement size distributions for Chinook salmon, those for summer chum salmon were unimodal, and similar for both stretch mesh sizes. These results are due to the poor fit of 7.5 and 8.5 inch stretch mesh relative selectivity curves to the summer chum salmon size distribution (**Figure 12**). Both mesh sizes target the larger, less abundant size classes; however, the 7.5 inch stretch mesh would likely catch more, larger chum salmon.

The purpose of the analysis was to examine the likely direction and relative magnitude of expected effects, and not to predict the size composition of the escapement based on reducing gillnet stretch mesh size. Reducing gillnet mesh size to a maximum of 7.5 inch stretch mesh may increase the overall number of Chinook salmon harvested, decrease the proportion of larger and older Chinook salmon in the harvest, and increase the incidental harvest of summer chum salmon. Therefore, use of gillnets with 7.5 inch stretch mesh may strike a reasonable balance in more efficiently harvesting Chinook salmon, increasing

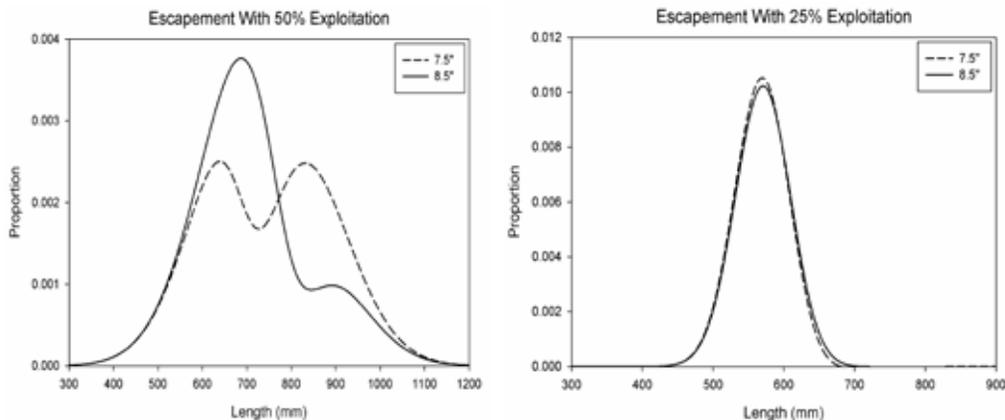


Figure 13. Comparison of estimated length frequencies for escapements of example Chinook (left graph) and summer chum (right graph) salmon runs for fisheries using 7.5 and 8.5 inch mesh gillnets (Bromaghin 2008, pers. comm.).

the number of larger female Chinook salmon in spawning escapements, and reducing potential for incidental harvest of summer chum salmon.

During a three year study, ADF&G researchers worked with local fishermen from District Y-1 to determine whether the proportion of harvested Chinook and chum salmon varied by mesh size and whether age, sex, length, and girth of individual Chinook salmon harvested varied by mesh size. Designated fishermen used gillnets provided by YRDFA that were characteristic of nets used in the commercial drift gillnet fisheries. Three mesh sizes (7.0-inch, 7.5-inch and 8.0-inch stretched mesh) were employed. In addition, the study evaluated the marketability of Chinook salmon caught in the different mesh sizes. Observations for all three years were combined to increase sample size and the analysis was augmented with observations of catch by mesh size from complimentary test fisheries (8.5 inch stretch mesh set nets), unrestricted mesh commercial fishing periods in 2007 and restricted mesh (≤ 6 inch mesh) commercial fishing data sets collected during similar time frames. The investigators noted that direct comparison of results from the mesh size study results and complimentary data sets may be influenced by differences in fishing characteristics between set and drift fishing techniques (Howard 2010).

Analysis of various characteristics of the fish captured resulted in the following statistically significant differences:

1. The Chinook to chum ratio was significantly lower for 7.0-inch stretched mesh than for larger mesh sizes.
2. Unrestricted mesh disproportionately targets larger and older Chinook salmon.
3. The 7.5-inch stretched mesh likely targets the most abundant Chinook salmon size classes.
4. Length of Chinook salmon was significantly greater in 8.0-inch mesh than in smaller mesh sizes. Length and girth were positively related to mesh size.

The study concluded that the 7.5-inch stretch mesh net performs similarly to the 8-inch stretch mesh net for targeting Chinook salmon, but the average fish caught in the 7.5-inch stretch mesh net is relatively younger and smaller. In addition, the 7.0-inch stretch mesh gillnets caught more chum salmon than

Chinook salmon and therefore did not effectively target Chinook salmon. These findings support mesh size to fish size relationships developed with selectivity models presented above.

Effects of the Proposal

Adoption of this proposal would affect both Federally qualified subsistence users and non-Federally qualified users in Federal public waters of the Yukon River. The Board has the authority to close Federal public waters to Federally qualified and/or non-Federally qualified users “for the conservation of healthy populations of fish and wildlife” (ANILCA 815(3)), and also has the authority to impose methods, means, time and harvest restrictions on those users— less restrictive options than closures.

If adopted, this proposal would restrict the maximum gillnet mesh size to 7.5 inch stretch mesh for both subsistence and commercial salmon fisheries targeting Chinook salmon throughout Federal public waters of the Yukon River drainage. Most of the commercial and over half of the subsistence harvest in the Yukon River drainage occurs in Federal public waters. Both commercial and subsistence fishermen currently use gillnets > 8.0 inch stretch mesh to target Chinook salmon; however, size of nets differs throughout the river. Reducing the maximum allowable mesh size for harvesting Chinook salmon will shift exploitation towards the most abundant age classes and should allow a higher proportion of the larger and older age classes, including the larger and more fecund females, to spawn. This should result in fisheries that effectively harvest in proportion to the size class distribution of the run, as well as spawning escapements that more closely mirror the age composition of the total run and offer the potential for increased Chinook salmon production.

Using gillnets of reduced mesh size will likely increase the incidental harvest of co-migrating summer chum salmon and smaller Chinook salmon migrating through Yukon River fisheries. The value of Yukon River Chinook salmon to commercial buyer/processors varies by size (weight) of the fish. Fish larger than 18 pounds command the highest price while fish weighing less than 7 pounds are considered low value and are priced similar to chum salmon (Howard et al. 2009). Short term loss of revenue caused by a mesh size reduction in the commercial fisheries may be compensated by overall increased abundance and sustainability of fish in future runs. A 7.5-inch mesh size may strike a balance between a more efficient harvest of targeted Chinook salmon and the incidental harvest of chum salmon.

Continued monitoring of size and age of both Chinook and chum salmon stocks will be needed to ensure that adoption of this proposal does not have unanticipated consequences. If the size at age of Chinook salmon continues to decrease, the mesh size proposed here may need to be further evaluated. In addition, concerns raised about Chinook salmon in this analysis could also apply to other salmon species. Based on relative gillnet mesh size selectivity relationships, the risk of increasing selective pressure on Yukon River chum salmon would be small compared to the potential benefits for Chinook salmon when mesh size is reduced from 8.5 to 7.5 inch mesh (**Figures 12 and 13**).

Adoption of this proposal could create a financial cost for affected users who use gillnets, since they would either have to buy new or modify existing gillnets to comply with the mesh size change. The cost to do this could range between \$300 and \$1,800 per net (Shultheis 2007, pers. comm.). The lower cost would be for replacing the webbing and using existing lead and cork lines. Presently, a new gillnet for Chinook salmon (50 fathoms long and 45 meshes deep with 8.5, 8.0, or 6.0 inch stretch mesh), including delivery along the river, costs approximately \$1,800, and gillnets need to be replaced every three to five years as a result of wear (Shultheis 2007, pers. comm.).

OSM PRELIMINARY CONCLUSION

Support Proposal FP09-12 with modification to limit the application of the proposed mesh size restriction to Federally qualified subsistence users only, and to provide only a one year phase-in period (not necessary to specify in regulatory language) by making the regulation effective beginning with the 2011 fishing season. This action would match the phase-in period adopted by the Alaska Board of Fisheries.

The modified proposal should read:

(A) In the Yukon River drainage, the maximum gillnet size is 7.5 inch stretch mesh for subsistence salmon fishing in Federal public waters.

Justification

The goal of the recommended regulatory action is to do what is necessary for the conservation of healthy populations of fish. Although direct evidence that mesh size has adversely affected genetic traits including size of Yukon River Chinook salmon is limited, the staff analysis provides reasons for addressing this issue. A reduction of mesh size allowed in Federal public waters of the Yukon River from unrestricted to a maximum of 7.5 inch should allow more larger, older females to escape the fisheries and pass on desirable heritable traits (size at age). Reduction of mesh size in combination with other conservation actions should enhance the productivity and health of runs and continued sustainability of fisheries. A recent modeling study by Bromaghin et al. (2008) indicated that the long-term effect of size selective fishing with large mesh gillnets could shift the size distribution of the Chinook salmon population towards smaller fish that mature at a younger age. Study results also indicated that reduced mesh size will begin to reverse this trend if overall harvest rates are also reduced to allow an increased number of larger fish to spawn. This action is also supported by recent, peer-reviewed scientific literature that strongly encourage managers to address adverse effects of harvest selectivity on salmon populations. Given the action taken by the BOF to limit gillnet mesh size to 7.5 inches in commercial and State-managed subsistence fisheries in the Yukon River drainage, the Federal regulation need only address Federally qualified subsistence users.

A second recommended modification would align the phase-in period to the 2011 schedule adopted by the BOF. To do otherwise would create a complex mix of gillnet gear on differing phase-in schedules. It is expected that most fishermen would choose to not change nets until the conversion was required in 2011. Cost for switching to the allowed mesh size is an issue of concern, and stakeholder organizations may want to consider avenues for assistance in this effort.

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APPENDIX A

Net Selectivity Model for Yukon River Chinook Salmon

Bromaghin et al. (2008) developed a population model for Chinook salmon employing interacting sub models controlling exploitation, mating, fecundity, freshwater survival, marine survival, sex determination, heritability and fitness. Like real ecosystems although much less complex, this type of model allows for many possible outcomes because model inputs interact over time in random and often unpredictable ways. The authors state that one advantage of using a model is that you can evaluate the effect of one parameter (size or age selective fishing) while controlling the effect of other parameters (marine growth and survival) that influence the results (change in size or age structure over time). This is particularly true when trying to evaluate changes in heritable traits like size and age at maturity where controlled experiments in real fisheries might require extreme actions that would not be socially acceptable including not allowing any harvest for many life cycles. An obvious limitation of models is the inability to fully replicate the full complexity of natural systems; the usefulness of study conclusions are dependent on the validity of assumptions.

In this study, the effects of a size selective gillnet fishery operating on a hypothetical Chinook salmon population was evaluated over a period of 200 years. The authors attempted to use parameter values similar to or that would reasonably bracket conditions influencing Yukon River Chinook salmon. One control simulation with no fishing and 12 simulations with fishing using 8.5-inch stretch mesh gillnets were conducted for two populations, one with higher productivity where density independent productivity (α) equaled 2.25 and a second with lower productivity ($\alpha=1.50$).

The study attempted to evaluate a realistic range of actions commonly applied in managed fisheries where managers often don't have sufficient data to determine true productivity or escapement producing MSY and must approximate these parameters e.g. fisheries managed with harvest guidelines and aerial survey escapement goals based on historic averages. Simulations with fishing included unique combinations of a low rate (0.50) of exploitation and high rate (0.85) for numbers of fish assessed above escapement goals, high ($\pm 15\%$) and low ($\pm 30\%$) management precision, and escapement goals (S_G) where $S_G = kS_{MSY}$ and k equaled multiples of S_{MSY} representing management achieving goals that were consistently below the escapement target ($S_G = 0.5S_{MSY}$), near maximum sustained yield ($S_G = 1.0S_{MSY}$) and above the escapement target ($S_G = 1.5S_{MSY}$). Management precision was defined as the ability of managers to assess the true run size and harvest accordingly.

Similar to current management practices in Alaska, a management strategy was applied that achieved escapements near the low end of the range during years with small runs and toward the upper end during large runs. Target escapement goal ranges were set at $.8 - 1.6$ times S_G . Escapement goals increased linearly between $.8S_G$ and $1.6S_G$ with assessed run size. Simulations could allow no exploitation if the assessed run size was below the escapement goal range. Catch levels were determined for an assessed run abundance and exploitation rate. Net selectivity estimates from Bromaghin (2005) were applied to the entire run resulting in a catch with a defined size and age distribution; remaining fish made up the escapement.

Results for simulations were based on 250 two hundred year (25 eight year Chinook salmon generations) replications of modeled variables. Control simulations (no fishing) remained stable showing no change in age at maturity or length over time. Exploitation rate and escapement goals exerted the greatest control over population demographics. Trends observed in the results of simulations are summarized in **Table 1**. Mean annual total exploitation ranged from 30 – 60 % for the lower productivity and from 50 – 75%

Table 1. Comparison of changes over time in fisheries metrics and population demographics with fishing between high and low productivity simulations (from Bromaghin et al. 2008)		
Fishery Metrics	High productivity	Low Productivity
Increase escapement goals	Increase run & escapement	Increase run & escapement
Increase escapement goals	Decreased exploitation	Decreased exploitation
Catch levels	Larger increase	Smaller increase
Exploitation 0.5 vs .85	Increased run & escapement	Decreased run & escapements
Population demographics	High productivity	Low Productivity
Mean length both sexes	20-40% decrease	20-30% decrease
Mean length at age, both sexes	Decreased	Decreased
Higher management precision	Small decline in length & age	Small decline in length & age
Mean age	Percent age-4 & 5 increased	Percent age-4 & 5 increased
Mean age	Percent age-6 decreased	Percent age-6 decreased
Mean age	Age-7 & 8 extirpated	Age-7 & 8 extirpated
Percent age 6, 7 & 8 females	Decreased	Decreased
Fecundity	Decreased	Decreased
Total egg deposition	Decreased	Decreased
Productivity function	Decreased	Decreased

in the higher productivity simulations. Nearly all simulations with fishing displayed a consistent rate of decline in mean length and age at maturity after 50 years of fishing with a leveling and stabilization after 100 years. Trends in length and age were similar and decreased by about one third in the higher productivity and one quarter in the lower productivity simulations. The population age structure shifted from primarily age-6 to age-4 and 5 and removal of age-7 and 8 fish for most simulations. Average fecundity declined from approximately 8,900 eggs per female in the controls to < 6,000 for most simulations with fishing.

Alternative stock rebuilding scenarios to address declines in size and age were also evaluated on a subset of the original simulations. Each of these simulations was extended for an additional 200 years while applying alternative management actions: no fishing, reducing mesh size to 7.5 inch stretch mesh, reducing or maintaining exploitation rates and increasing escapement goals in 0.50 increments from 0.50 - 3.5 times SMSY until size or age at maturity returned to pre fishery values.

Although over 60 figures were presented in this study, this analysis chose three (**Figures 1–3**) that help to illustrate results relevant to the proposed change in mesh size. Because similar trends were reported for age at maturity and length as well as between the two levels of management precision, only simulations describing trends in length with high management precision are presented. In each figure, the box represents the central 50% of values and circles show extreme observations.

Most extended simulations for both age and length followed the pattern shown in **Figure 1** where reduction in mesh size from 8.5 to 7.5 inch stretch mesh in addition to a reduction in exploitation and a subsequent increase in escapements of 2.5 SMSY resulted in recovery within 200 years. However, extended simulations where mesh size was reduced and exploitation remained high (0.85) did not see

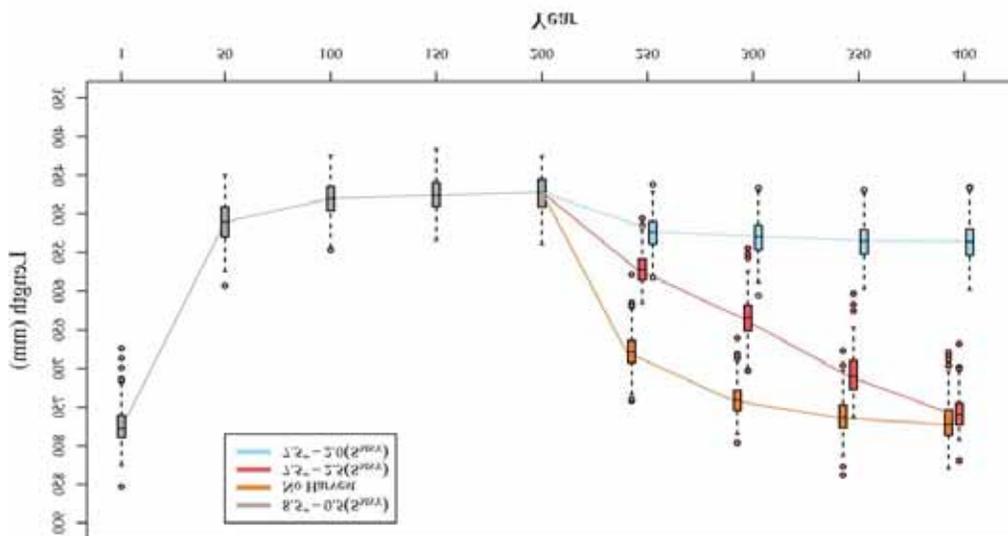


Figure 1. Box-plots of mean length observed in a high productivity ($\alpha=2.25$), high management precision ($\pm 15\%$) with lower escapement goal simulation (0.50SMSY) and three extended simulations under alternative fishing scenarios, with escapement goals of 2.0(SMSY) and 2.5(SMSY) and a no-fishing scenario. In the two extended simulations with fishing, mesh size was reduced from 8.5 in to 7.5 in and the exploitation rate was reduced from $\gamma = 0.85$ to $\gamma = 0.50$ (Bromaghin et al. 2008).

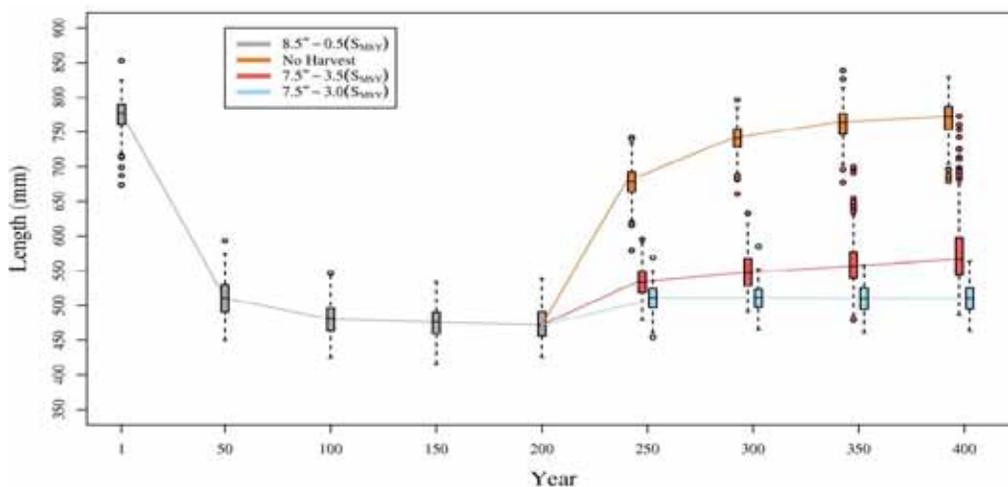


Figure 2. Box-plots of mean length observed in a high productivity ($\alpha=2.25$), high management precision ($\pm 15\%$), high exploitation (0.85) with low escapement simulation (0.50) and three extended simulations under alternative scenarios, with escapement goals of 3.0(SMSY) and 3.5(SMSY) and a no-fishing scenario. In the two extended simulations with fishing, mesh size was reduced from 8.5 in to 7.5 in and the exploitation rate was held constant at $\gamma = 0.85$ (Bromaghin et al. 2008).

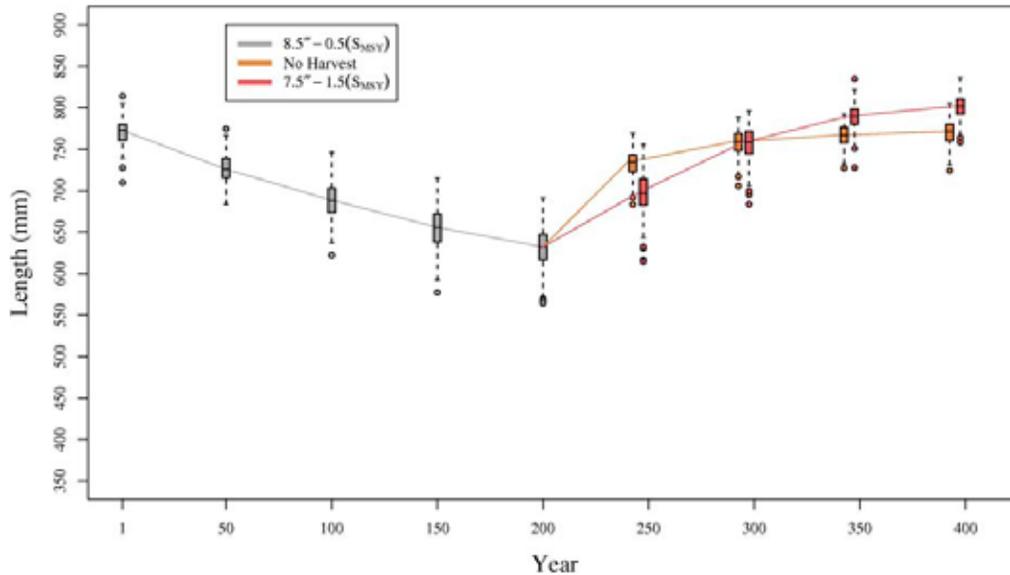


Figure 3. Box-plots of mean length observed in a low productivity ($\alpha=1.50$), moderate exploitation (0.50), high management precision ($\pm 15\%$) with high escapement simulation (1.50SMSY) and two extended simulations under alternative fishing scenarios, with an unchanged escapement goal of 1.50(SMSY) and a no-fishing scenario. In the extended simulation with fishing, mesh size was reduced from 8.5 in to 7.5 in and the exploitation rate was held constant at $\gamma = 0.50$ (Bromaghin et al. 2008).

recovery in length (**Figure 2**) or age at maturity when escapement goals were increased up to 3.5 times SMSY.

Notable exceptions to the general pattern observed in **Figure 1** also occurred for simulations (**Figure 3**) with reduced exploitation and higher escapement levels (1.5 SMSY) where length of fish continued to decrease at a slower rate over time than other simulations but never stabilized. Similar patterns for age at maturity were reported. The authors suggest that given more time, stabilization would have likely occurred. However, in these simulations when extended for an additional 200 years, reduction in mesh size with continuation of conservative management (lower exploitation and higher escapement) was sufficient to see recovery.

The authors concluded that size-selective gillnet fisheries targeting the largest and most fecund fish have the potential to rapidly (< 10 generations) reduce fish size and age at maturation, as well as decreasing fecundity and population productivity. They recommend that fisheries managers should take steps to reduce or eliminate gear selection for larger and more fecund individuals to maintain genetic diversity and population productivity. However, this study also demonstrated that failure to address selective pressure of fishing gear could diminish the resiliency of a population to a level where reducing mesh size alone would not be sufficient to reverse trends caused by size selective fishing. In addition to reducing mesh size, they recommend that spawning escapements be maintained well above levels that would produce MSY to maintain the resiliency of the population to both fishery and natural selective forces.

The simulation as shown in **Figure 3** may best represent general trends most similar to the Yukon River Chinook salmon stock status at this time where although the average size of fish has declined; larger, older salmon (age-7) are still present in the population, age-6 fish remain the dominant age class, total exploitation has been reduced to under 50% on major stocks in recent years and escapements have been maintained at or above levels that would produce MSY. Tanana River escapements (**See Figures 5 and 6 in staff analysis**) have been consistently within and often above the range which represents from 80 - 160% of escapement at MSY (ADF&G 2004b). Run reconstructions and preliminary production models employing significantly revised data for the Canadian-origin stocks suggest that escapement producing maximum sustained yield may be 31,000 salmon with a 90% confidence interval of 25,000 – 40,000 (Sandone 2008). Escapements of Canadian-origin Chinook salmon have been above 31,000 (1.0 SMSY) during all years with the exception of 2000 (25,900) and above 46,500 (1.5 SMSY) during thirteen years (46%) from 1982 – 2009 (**See Figure 4 in staff analysis**). The Yukon River Panel has the responsibility for establishing escapement goals for the Canadian origin stocks based on technical recommendations from the JTC; the interim management escapement goal (IMEG) for Canadian-origin Chinook salmon was $\geq 45,000$ for 2008 and 2009. Rather than attempting to predict changes in size or age structure or time frames, this staff analysis provides a precautionary perspective for consideration of preventative measures.

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APPENDIX B

Gillnet Description, Specifications and Capture

A gillnet consists of netting attached between a head-rope (cork line) and a weighted, foot-rope (lead line). State and Federal fishing regulations for Yukon River salmon fisheries require that gillnet webbing be constructed of multifilament nylon of 30 filaments (or more) of equal diameter or at least 6 filaments of at least 0.2 mm in diameter. Gillnet mesh size is measured by the bar length (distance from knot to knot of net mesh); stretch mesh is two times the bar length. Gillnets are size selective in the fish they catch, and a specific mesh size tends to catch fish within a limited size range. Mesh size may therefore be considered the most important characteristic of a gillnet (*Hovgård and Lassen 2000*).

While the selectivity of gillnets is largely determined by mesh size, hanging ratio can also affect selectivity. The hanging ratio is a measure of slackness and describes how tightly the net is stretched along the head and foot rope. Hanging ratio is calculated by dividing the length of the net by the length of mesh material used to hang the net. For example: the hanging ratio of a 50 fathom gillnet would be 0.50 if 100 fathoms of mesh were used. Theoretically, hanging ratio can vary between 0.0, if all meshes are mounted at the same point on the ropes so the net has no length, and 1.0, if the netting is fully stretched out so the net has no height (**Figure 1**). In commercial fisheries, hanging ratios are normally found between 0.25 and 0.65.

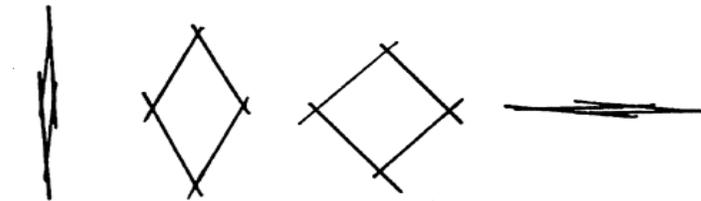


Figure 1. Various hanging ratios, from left to right: 0, 0.4, 0.67 and 1.0 (*Hovgård and Lassen 2000*).

The hanging ratio also affects net depth. The depth of a gillnet (D) can be calculated as

$$D = (2Ns) \sqrt{1-E^2}, \text{ where}$$

N = number of meshes,

s = bar length, and

E = hanging ratio

Slackness may also be introduced by inserting a vertical line or rope, called snoods, between the head and foot rope of a net that is shorter than the depth of the net. Nets that are hung with more slack tend to tangle more fish.

For example, a gillnet constructed with 8.5 inch stretch mesh (4.25 inch bar length), 45 meshes in depth, and a hanging ratio of 0.5, would be 27.6 feet deep. A gillnet hung in the same ratio with the same mesh depth, but having 7.5 inch stretch mesh (3.75 inch bar length), would be 24.4 feet deep.

The name gillnet suggests that the fish are caught behind the gill cover. However, the term is somewhat misleading as fish are also caught by a number of other means. The most common catch processes are:

- **Gilled** The fish is meshed immediately behind the gill cover.
- **Wedged** The fish is meshed around the body somewhere behind the gill cover. Wedging is hardly distinguishable from gilling when the maximal girth is found at a position close to the gill cover.
- **Snagged** The fish is attached to the netting at the head region. This catch process is most common for species with protruding maxilla (jaw bones) or preopercula (cheek bones in front of the bones covering the gills).
- **Entangled** The fish is wrapped into the netting, held by pockets of netting or attached to the net by teeth, fins, spines or other projections. Fish that are already caught by other catch processes may subsequently be entangled in the netting while struggling.

Fish caught in the mesh of a gillnet must have a similar girth to the mesh perimeter. For a given mesh size, different fish sizes are caught by different catch processes (**Figure 2**). The largest fish will be mainly snagged, whereas smaller fish will be mainly gilled or wedged. Entangling is less size dependent and can occur for both large and small individuals (Hovgård and Lassen 2000).

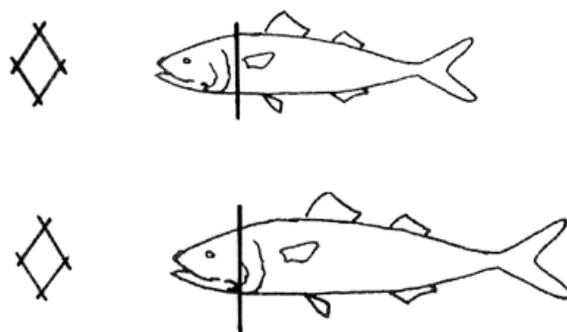


Figure 2. The relation between fish size and catch process. For the smaller fish (top) the girth at the gills (indicated by the bar) matches the mesh-size and this fish is likely to be gilled. For the larger individual (bottom) the girth at the head region matches the mesh-size and this fish is therefore potentially snagged (Hovgård and Lassen 2000).

Drop out and release mortality rates associated with gillnets are poorly understood, and are therefore difficult to quantify. Given the variety of ways gear can be hung, variations in relative abundance of salmon species and age composition through time, and differences between drift and set gillnets, it is hard to predict how incidental fishing mortality may be affected by changing mesh size. In 1997, the Pacific Salmon Commission's Chinook Technical Committee (CTC) reviewed the available literature on these topics in an attempt to quantify these rates to increase the accuracy of fisheries modeling efforts. The following details CTC (1997) findings:

Chinook salmon drop-out mortality rates were derived from the available literature. This is a poorly investigated subject; the rates must be viewed as very uncertain. Rates are expected to vary from fishery to fishery due to variables such as mesh size, prevailing weather and sea conditions, and predator abundance. Gillnet fisheries with reported drop out mortality rates include Southeast Alaska 2%, Fraser River 8%, Puget Sound 8%, the Washington Coast 2%, and Columbia River 3%.

Review of the available literature indicated that gillnet release mortality rates (mortality of fish caught in gillnets and intentionally released) can be highly variable for salmon in their final year of life and close to maturity. Release mortality rates are generally assumed to be high, but the rate is influenced by the time between capture and release, size and tension of the meshes, and the physiological state of the captured fish.

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Alaska Department of Fish and Game
Comments to the Regional Advisory Councils

FP09-12 YUKON RIVER GILLNET MESH SIZE RESTRICTION

Introduction: FP09-12 would restrict subsistence and commercial gillnets fished in waters where federal regulations apply to a maximum of 7.5-inch stretch mesh size, phased in over a 3-year period for subsistence fishermen and 1-year for commercial fishermen. The Federal Subsistence Board deferred taking action on a similar proposal, FP08-13, until the Alaska Board of Fisheries reviewed the results of a three-year comparative mesh size study. The Alaska Board of Fisheries adopted a maximum mesh size of 7.5 inches for subsistence and commercial gillnets effective in 2011 in the Yukon Area at its January 26-31, 2010, meeting after thoroughly reviewing oral and written reports, public testimony, and a proposal to restrict gillnets to 6-inch maximum mesh size in an open public process.

Impact on Subsistence Users: If adopted, subsistence users will need to purchase new nets at an approximate cost of \$1200 to \$1400 per net and \$500 for mesh-only. Those who could not afford new nets would be significantly affected in obtaining Chinook salmon for subsistence use. If federal regulations differ from state regulations, there will be a conflicting patchwork of waters under state and federal regulations which will create confusion among subsistence users. Although use of fish wheels would not be directly affected, adoption of this proposal could result in effectively reallocating some harvest of larger Chinook salmon from gillnet users to fish wheel operators.

Issues: Concerns have been expressed that nets with larger mesh size select for older and larger Chinook salmon. The evidence that Yukon River Chinook salmon have undergone phenotypic alteration over time is limited, but suggestive. Analyses document a decrease in the weight of commercial harvests (Bigler et al. 1996), a reduction in the prevalence of the largest fish (Hyer and Schleusner 2005), and the apparent near disappearance of age-8 fish, although age-8 fish were never a large component of the run (typically <1%) (JTC 1998). Fish and Wildlife Service also conducted a stochastic modeling study of potential long-term effects of large-mesh gillnet fisheries on the Yukon River, which indicated productivity, age, sex, and size structure of Yukon River Chinook populations may be affected by selective harvest of the larger and older Chinook salmon demographic constituents (Bromaghin et al).

Three oral reports were presented by Alaska Department of Fish and Game to the Alaska Board of Fisheries. One summarized current fisheries and stock status, a second report provided the trend in decreasing age-7 fish in the District 1 commercial fishery, and a third report summarized a gillnet mesh size study conducted in District 1 from 2007–2009 and provided options for providing more larger and older Chinook salmon to the spawning grounds. The comparative mesh size study conducted by the Alaska Department of Fish and Game working with Yukon Delta Fisheries Development Association found that a mesh size of 7.5-inch to 8-inch will allow for increased escapement of larger and older Chinook salmon. While 6-inch and 7-inch mesh size will also decrease harvest of older and larger Chinook salmon, these mesh sizes direct harvest more on summer chum salmon and would make it more difficult to obtain Chinook

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salmon for subsistence use. Targeting chum salmon can be problematic for users attempting to harvest Chinook salmon for subsistence use by creating potential wastage if fishermen do not need or want chum salmon caught. Commercial fishing periods restricted to 6-inch or less mesh size have resulted in chum to Chinook salmon ratios of approximately 20:1. In addition, there have been times when the summer chum salmon run was poor and it is not appropriate to target chums in subsistence and commercial fisheries.

Conservation Issues: The Yukon River Chinook salmon stock is currently classified as a yield concern. A majority of the Yukon River drainage escapement goals have been met or exceeded since 2000, including the Chena and Salcha rivers, which are largest producers of Chinook salmon in the United States portion of the drainage. The agreed-to escapement objective for the Canadian mainstem was met every year from 2001 – 2006, with 2001, 2003, and 2005 being the three highest spawning escapement estimates on record. However, the escapement objective for the Canadian mainstem was not met in 2007 and 2008. Exploitation rate on the Canadian-origin stock by Alaskan fishermen has changed from an average of about 55% (1989–1998) to an average of about 44% from 2004-2008 (Howard et al). Although the subsistence harvest continues to remain stable near 50,000 Chinook salmon annually, commercial harvests have decreased over 60% from an average of 100,000 annually (1989–1998) to the recent 5-year average (2005–2009) of nearly 23,000 fish. It is not possible to determine whether size-selective harvests or variation in environment or a combination of factors is the cause for decreasing proportion of age-7 fish and decreasing size trends of older fish. However, increasing the number of larger and older Chinook salmon in spawning escapements will provide for better future production potential.

Opportunity Provided by State: Salmon may be harvested under state regulations throughout the majority of the Yukon River watershed, including a liberal subsistence fishery. Gear types allowed are gillnet, beach seine, hook and line attached to a rod or pole, handline, and fish wheel. Although all gear types are not used or allowed in all portions of the Yukon River drainage, drift and set gillnets and fish wheels harvest the majority of fish taken for subsistence uses. Under State regulations, subsistence is the priority consumptive use. Therefore, State subsistence fishing opportunity is directly linked to abundance and is not restricted unless run size is inadequate to meet escapement needs. When Yukon River salmon run is below average, the State subsistence fishing periods may be conducted based on a schedule implemented chronologically throughout the Alaska portion of the drainage, which is consistent with migratory timing as the salmon run progresses upstream. Federal regulations under Special Actions to restrict federally-eligible users have been rare and duplicated the State inseason actions necessary to meet escapement goals, except where state and federal regulations differ in Subdistricts 4-B and 4-C. Amounts reasonably necessary for subsistence Chinook salmon (5AAC 01.236 (b)), as determined by the Alaska Board of Fisheries, have been met in the Yukon River drainage for 7 of the last 10 years.

Other Issues: (1) Maps are needed showing the specific boundaries and areas where federal regulations are claimed to apply, along with providing the justification for claiming those boundaries; (2) A large percentage of the lands along the Yukon River are state or private lands where federal subsistence users cannot use gear types illegal under state regulations; (3) The

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Federal Subsistence Board does not have authority to adopt gillnet mesh size regulations that would apply to State commercial and subsistence fisheries.

Recommendation: Support with modification to become effective in 2011 for federal subsistence fisheries. The Federal Subsistence Board deferred taking action on this proposal in 2008 until the Alaska Board of Fisheries reviewed the results of the three-year comparative mesh size study. The Alaska Board of Fisheries did adopt a maximum mesh size of 7.5 inches for subsistence and commercial gillnets effective in 2011 in the Yukon Area at its meeting in January 26-31, 2011.

Cited References:

- Bigler, B. S., D. W. Welch, and J. H. Helle. 1996. A review of size trends among North Pacific salmon (*Oncorhynchus* spp.). *Canadian Journal of Fisheries and Aquatic Sciences* 53:455-65.
- Bromaghin, J. F., R. M. Nielson and J. J. Hard. 2008. An investigation of the potential effects of selective exploitation on the demography and productivity of Yukon River Chinook Salmon. U.S. Fish and Wildlife Service Technical Report 100, Alaska Region, Anchorage, AK.
- Howard, K. G., S. J. Hayes, and D. F. Evenson. 2009. Yukon River Chinook salmon stock status and action plan 2010; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 09-26, Anchorage.
- Hyer, K.E. and C.J. Schleusner. 2005. Chinook salmon age, sex, and length analysis from selected escapement projects on the Yukon River. Alaska Fisheries Technical Report Number 87. U.S. Fish and Wildlife Service, Anchorage, AK.
- JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2006. Potential causes of size trends in Yukon River Chinook salmon populations. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 3A06-07, Anchorage, AK.
- JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 1998. Yukon River Joint Technical Committee report to the March 1998 negotiation session, Anchorage, Alaska.

FP09-13 Executive Summary	
General Description	Proposal FP09-13 requests that all gillnets (subsistence and commercial) with greater than 6-inch stretch mesh be restricted to not more than 35 meshes in depth in Federal public waters of the Yukon River drainage. <i>Submitted by the Eastern Interior Alaska Subsistence Regional Advisory Council</i>
Proposed Regulation	<p>§ ____.27(i)(3)(xiii) <i>You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.</i></p> <p>(A) <i>In the Yukon River drainage, all gillnets with greater than six-inch stretch mesh, may not be more than 35 meshes in depth in Federal public waters.</i></p> <p>§ ____.27(i)(3)(xv) <i>In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:</i></p> <p><i>(A) In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;</i></p> <p><i>(B) In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14.</i></p> <p><i>(C) In the Yukon River mainstem, Subdistricts 4-B and 4-C, with a Federal subsistence fishing permit, you may take Chinook salmon during the last 18-hour period of the weekly regulatory opening(s) by drift gillnets no more than 150 feet long and no more than 35 meshes deep, from June 10 through July 14.</i></p>
OSM Preliminary Conclusion	Oppose
Yukon-Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Eastern Interior Regional Council Recommendation	

continued on next page

FP09-13 Executive Summary (continued)

Interagency Staff Committee Comments	
ADF&G Comments	Oppose
Written Public Comments	

DRAFT STAFF ANALYSIS FP09-13

ISSUES

Proposal FP09-13, submitted by the Eastern Interior Alaska Subsistence Regional Advisory Council, requests that all gillnets (subsistence and commercial) with greater than 6-inch stretch mesh be restricted to not more than 35 meshes in depth in Federal public waters of the Yukon River drainage.

The Eastern Interior Alaska Subsistence Regional Advisory Council is requesting changes in allowable gillnet specifications in the Yukon River salmon fishery to address concerns that the average size of returning adult Chinook salmon is declining and because of the belief that the existing allowable gillnets (deeper than 35 meshes) disproportionately harvest larger size female Chinook salmon over males.

DISCUSSION

The proponent's intent is to apply this regulatory change to all users in Federal public waters. Most of the commercial fishing and over half of the subsistence harvest in the Yukon River drainage takes place in Federal public waters.

The Eastern Interior and Western Interior Alaska Subsistence Regional Advisory Councils have repeatedly expressed their concerns over the status of Yukon River Chinook salmon during recent meetings, frequently citing declining fish size, decreasing occurrence of 50+ pound Chinook salmon, extirpation of age-8 fish and loss of age-7 fish, decreasing percentage of female Chinook salmon, and more slender fish (EIRAC 2004, EIRAC 2005, EIRAC 2006, EIRAC 2007, WIRAC 2006, WIRAC 2007). Some fishermen have expressed their belief that the larger, stronger fish migrate in the deeper waters. A variety of net depths are utilized by fishermen in the Yukon River, with deeper mesh nets used for deeper fishing sites to increase harvest effectiveness (Holder 2007, pers.comm.).

The Board considered the same proposal (FP08-13) during its December 2007 meeting. The Board unanimously rejected the proposal because no substantial evidence was presented to support a change in net depth and because passage of the proposal would have been detrimental to the satisfaction of subsistence uses.

This is the fifth year that the proponent has submitted at least one proposal to the Board to limit net depth to address its continuing concern with a declining average size of returning adult Yukon River Chinook salmon. Similar proposals have been submitted to the Alaska Board of Fisheries (BOF) by the Fairbanks Fish and Game Advisory Committee as well as the Eastern Interior Alaska Subsistence Regional Advisory Council.

Existing Federal Regulations

Yukon-Northern Area—Salmon

§ __.27(i)(3)(xiii) You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.

§ __.27(i)(3)(xv) In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:

- (A) *In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;*
- (B) *In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14.*
- (C) *In the Yukon River mainstem, Subdistricts 4-B and 4-C, with a Federal subsistence fishing permit, you may take Chinook salmon during the last 18-hour period of the weekly regulatory opening(s) by drift gillnets no more than 150 feet long and no more than 35 meshes deep, from June 10 through July 14.*

Proposed Federal Regulations

Yukon-Northern Area—Salmon

§ __.27(i)(3)(xiii) *You may take salmon only by gillnet, beach seine, fish wheel, or rod and reel, subject to restrictions set forth in this section.*

- (A) *In the Yukon River drainage, all gillnets with greater than six-inch stretch mesh, may not be more than 35 meshes in depth in Federal public waters.***

§ __.27(i)(3)(xv) *In Districts 4, 5, and 6, you may not take salmon for subsistence purposes by drift gillnets, except as follows:*

- (A) *In Subdistrict 4-A upstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14, and chum salmon by drift gillnets after August 2;*
- (B) *In Subdistrict 4-A downstream from the mouth of Stink Creek, you may take Chinook salmon by drift gillnets less than 150 feet in length from June 10 through July 14.*
- (C) *In the Yukon River mainstem, Subdistricts 4-B and 4-C, with a Federal subsistence fishing permit, you may take Chinook salmon during the last 18-hour period of the weekly regulatory opening(s) by drift gillnets no more than 150 feet long and no more than 35 meshes deep, from June 10 through July 14.*

Existing State Regulations

Commercial gillnets greater than 6-inch mesh, may not be more than 45 meshes in depth in Districts 1–3, and no more than 60 meshes in depth in Districts 4–6. There is no restriction on the depth of gillnets used to harvest salmon for subsistence purposes. However, during times when it is deemed necessary to conserve Chinook salmon, the Alaska Department of Fish and Game (ADF&G) has the authority, by Emergency Order, to place limitations on gillnet depth for commercial fishermen and State-managed subsistence fishermen [5 AAC 01.220 (n)(1)(B)].

Pertinent commercial fishing gear regulations:

5 AAC.05 331. Gillnet specifications and operations. (f) Gillnets with greater than six-inch mesh may not be more than 60 meshes in depth. Gillnets with six-inch or smaller mesh may not be more than 70 meshes in depth. Beginning January 1, 1996, this subsection only applies in Districts 4–6.

(g) Beginning January 1, 1996, in the Districts 1–3, (1) gillnets with greater than six-inch mesh may not be more than 45 meshes in depth; (2) gillnets with six-inch or smaller mesh may not be more than 50 meshes in depth.

Extent of Federal Public Waters

For purposes of this discussion, the phrase “Federal public waters” is defined as those waters described under 50 CFR 100.3. Federal public waters in the Yukon River watershed includes all navigable and non-navigable waters located within and adjacent to the exterior boundaries of the Innoko, Kanuti, Koyukuk, Nowitna, Tetlin, and Yukon Flats National Wildlife Refuges (NWR); Yukon-Charley Rivers National Preserve; the Steese National Conservation Area; the White Mountains National Recreation Area; and those segments of the National Wild and Scenic River system, of the Yukon River drainage, located outside the boundaries of these Federal conservation units (i.e., portions of Beaver and Birch creeks and the Delta and Fortymile rivers). Additionally, those navigable and non-navigable waters of the Yukon River drainage, within or adjacent to the exterior boundaries of the Arctic NWR, the Denali National Preserve, the 1980 additions to the Denali National Park, the Gates of the Arctic National Park and Preserve, the Wrangell-St. Elias National Park and Preserve, and the Yukon Delta NWR are within Federal jurisdiction for purposes of Federal subsistence fisheries management. Federal public waters include commercial fishing in the Yukon River for all of District Y-1 (except marine waters), all of Y-2, part of Y-3, parts of Subdistricts 4-A, 4-B and 4-C; most of Subdistrict 5-D; and part of Subdistrict 6-C (**Map 1**).

Customary and Traditional Use Determinations

Customary and traditional use determinations for Yukon River drainage salmon are: Salmon, other than fall chum salmon—Yukon River residents of the Yukon River drainage, including the community of Stebbins. Fall chum salmon—Residents of the Yukon River drainage, including the communities of Stebbins, Scammon Bay, Hooper Bay, and Chevak.

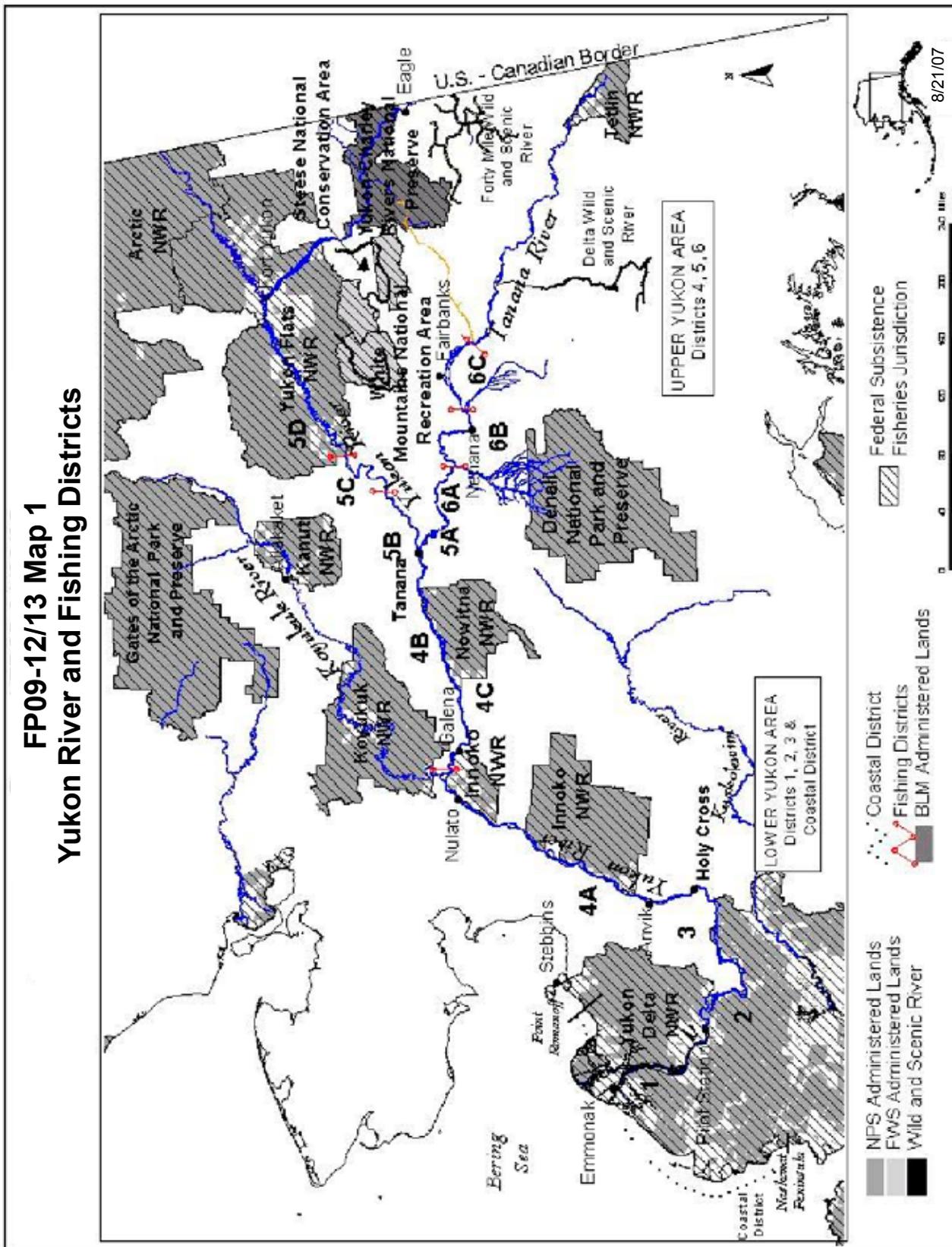
Recent Regulatory History

State of Alaska Regulatory History

In November 1994, the BOF considered a regulatory change proposed by ADF&G managers to reduce the depth of gillnets with greater than 6 inch mesh in Districts 1, 2 and 3 of the Yukon River from 60 meshes to 45 meshes and for gillnets with less than or equal to 6 inch mesh from 60 meshes to 50 meshes in depth. ADF&G staff comments in support of the proposal stated that the commercial fishery had become more efficient in recent years and consequently fishing efficiency should be reduced to spread out the harvest over the entire run and provide increased protection to individual stocks (ADF&G 1994).

In January 2004, the BOF addressed Proposal 36, which requested an increase in the allowable gillnet gear mesh depth from 35 meshes to 45 meshes in the nearby Kuskokwim River. ADF&G opposed the proposal because “an increase in the depth of gillnets would increase the efficiency and harvest rate of

FP09-12/13 Map 1 Yukon River and Fishing Districts



Chinook salmon, which is a stock of concern, and undermine the objectives of Kuskokwim River salmon rebuilding management plan” (ADF&G 2004). The BOF agreed with ADF&G and rejected the proposal.

In February 2007, the BOF considered and rejected Proposal 165 to reduce the depth of commercial gillnets over 6-inch stretch mesh size to 35 meshes deep, submitted by the Eastern Interior Alaska Regional Advisory Council.

In March 2007, the Fairbanks Fish and Game Advisory Committee (Committee) submitted an Agenda Change Request (ACR) to the BOF requesting restriction of the depth of subsistence and commercial gillnets with greater than 6-inch mesh size to a maximum of 35 meshes in depth in the Yukon River, with an effective date of 2007. The ADF&G analyzed the request and concluded that no finding of an emergency under 5 AAC 96,625 (f) was satisfied (Sandone 2007). During its October 9–11, 2007 work session, the BOF stated that this issue was thoroughly discussed at its January/February 2007 AYK meeting. The ACR failed (ADF&G 2007).

In January 2010, the BOF considered and rejected Proposal 89 to reduce the depth of six inch or larger gillnets used for commercial and subsistence fishing in the Yukon River to 35 meshes. This proposal was one of several proposals submitted by the Eastern Interior Alaska Regional Advisory Council to address conservation of Yukon Chinook salmon (BOF 2010). ADF&G staff analysis reported that although many fishermen believe that larger Chinook salmon migrate at greater depth than smaller fish, available scientific information can not confirm that reducing gillnet depth would effectively reduce gear selectivity for larger Chinook salmon (Howard et al. 2009). ADF&G opposed the proposal because a decrease in gillnet depth may reduce fishing efficiency and thus require fishermen to expend more effort to harvest salmon for subsistence use or commercial sale.

Federal Regulatory History

In March 2003, the Western Interior Alaska Subsistence Regional Advisory Council submitted Proposal FP04-05 (OSM 2003), which requested the expansion of the drift gillnet fishery to Yukon River Subdistricts 4-B and 4-C. During deliberation at its fall 2003 meeting, the Western Interior Alaska Subsistence Regional Advisory Council supported its proposal, with modification, to include the conservation measure of limiting nets used for subsistence salmon fishing to a maximum of 7-inch stretch mesh and no deeper than 35 meshes. The Eastern Interior Alaska and Yukon-Kuskokwim Delta Subsistence Regional Advisory Councils opposed the original proposal to expand the use of drift gillnets. The proposal and the Western Interior Alaska Subsistence Regional Advisory Council’s recommendation were considered, but rejected, by the Board in December 2003.

In March 2004, two fisheries proposals relevant to this issue were submitted to the Board. FP05-03, from the Eastern Interior Alaska Subsistence Regional Advisory Council, requested that, within the Yukon River drainage, all gillnets greater than 6-inch mesh not be more than 35 meshes in depth. FP05-04, submitted by the Western Interior Alaska Subsistence Regional Advisory Council, requested expansion of the subsistence drift gillnet fishery on the Yukon River to include Subdistricts 4-B and 4-C, as well as District 5 (OSM 2005).

At its Fall 2004 meeting, the Western Interior Alaska Subsistence Regional Advisory Council recommended that the proposal only apply to Subdistricts 4-B and 4-C; that it be limited to the harvest of Chinook salmon from June 10 through July 14 and the harvest of chum salmon after August 2; and that drift gillnets could only be used during the final 18 hours of the Federal subsistence fishing periods. The Western Interior Alaska Subsistence Regional Advisory Council reduced what it initially sought in its

proposal to alleviate some of the concerns of Federal and State fisheries managers and the Eastern Interior Alaska Subsistence Regional Advisory Council.

In January 2005, the Board rejected FP05-03 but adopted FP05-04, with modification, to allow the harvest of only Chinook salmon (and not chum salmon) by drift gillnet in the Federal public waters of Subdistricts 4-B and 4-C during the final 18 hours of the weekly regulatory openings under a Federal subsistence fishing permit.

In March 2005, the Eastern Interior Alaska Subsistence Regional Advisory Council submitted Proposal FP06-04 (OSM 2006), which requested that all gillnets with greater than 6-inch mesh, be restricted to not more than 35 meshes in depth. The Council previously submitted a similar proposal to the BOF in November 2004 as an emergency petition, which was rejected.

During its January 2006 meeting, the Board heard public testimony and discussed the proposal. In particular, the Board discussed the need for a coordinated effort to address the issues raised by the proposal. The Board voted to reject the proposal. Board members noted conflicting recommendations from the three affected Councils and that the information and evidence presented was not definitive or conclusive. However, the Board made a commitment to keep the Yukon River Chinook salmon size issue on the forefront and to look for processes and solutions to ultimately bring the issue to resolution (FSB 2006).

In March 2006, the Eastern Interior Alaska Subsistence Regional Advisory Council submitted four proposals, FP07-01 to -04, to address the issue of declining Chinook salmon size. These proposals were deferred by the Board early in the regulatory process, before analyses had been conducted. At the time it deferred these four proposals, the Board endorsed the Yukon River Drainage Fisheries Association (YRDFA)-led process as a means of addressing the issue of declining salmon size. The YRDFA-led Salmon Size Working Group held four meetings in late 2006 and early 2007, with no consensus attained.

In March 2007, the Eastern Interior Alaska Subsistence Regional Advisory Council submitted FP08-13 and -14 and requested that the Board approve withdrawal of its four proposals submitted in 2006. The Board granted the request and considered proposals FP08-13 and 14 in December 2007. The Board rejected proposal FP08-14 to restrict gillnet mesh size with a tie vote. The Board also rejected FP08-13 because there was not substantial evidence to support a change in net depth and because passage of the proposal would have been detrimental to the satisfaction of subsistence uses.

Current Events Involving Species

The YRDFA-led Salmon Size Working Group met four times between October 2006 and January 2007 (YRDFA 2006 a, b ;2007 a, b). These meetings were held to provide an opportunity for the people who fish or manage Yukon River Chinook salmon to discuss the issue of declining salmon size and related issues. Participants included subsistence and commercial fishermen from the length of the Yukon River, fisheries scientists, and representatives of nonprofit organizations, State of Alaska Fish and Game Advisory Committees, Federal Subsistence Regional Advisory Councils and fishery and resource management agencies.

The objectives of the Working Group were to:

- Share local and scientific knowledge about Yukon River Chinook salmon size and other information about the fishery,

- Identify if there is agreement on aspects of the issue, and
- Develop next steps for drainage-wide work on the salmon size issue.

An immediate goal of the group was to see if it could reach consensus on a proposal (or proposals) addressing the salmon size issue, for the BOF to consider during its January–February 2007 Arctic-Yukon-Kuskokwim fisheries meeting. YRDFA had submitted a placeholder proposal, 167, “*Modify commercial fishery to address changing size of Chinook salmon.*” Because no consensus was reached, YRDFA was unable to provide the BOF with any specific proposal to consider. Therefore, no action was taken on Proposal 167.

Declining Salmon Size and Depth of Gillnets

During the 2007 regulatory cycle, the Board received public testimony and was provided an analysis of available information regarding the declining size of Yukon River Chinook salmon. The staff reported that there was reliable, documented evidence from adequate long-term data that Pacific salmon, in general, and Yukon River Chinook salmon, in particular, were decreasing in size, and some possible causes of the decline may be related to harvest methods (OSM 2007).

The analysis reported that the scientific literature on the connection between mesh depth and harvest of larger fish was limited; particularly for spawning salmon migrations in rivers. Gillnets are known to be highly selective with respect to fish size (mesh size selectivity) and the catch is also biased in favor of active, fast swimming fish (Côté and Perrow 2006). A few studies described migrating Chinook salmon vertical distribution. Karlsson et al. (1996) employed data storage tags to study the depth distribution of Baltic salmon (*Salmo salar L.*) in the Gulf of Bothnia. Depth data registered on the tags indicated that most salmon migrated at a few meters depth. Candy and Quinn (1999) did observe that Chinook salmon that migrated in deep water (>200 m) were significantly larger than fish that remained nearer the surface (87 cm vs. 77 cm) in upper Johnstone Strait, BC. Fukuwaka et al. (2008) reported that bias in size composition of gillnet catches of chum salmon in the central Bering Sea may be caused by differences in encounter probability among mesh sizes, variability in fish swimming speed based on fish size, mesh visibility influencing fish behavior, and diel vertical distribution of migration. However, these observations were made for salmon migrating in the ocean environment, not rivers.

Studies that describe the swimming depth of migrating salmon in rivers are limited. As part of a basin-wide telemetry study on Yukon River Chinook salmon in 2002–2004 (Eiler et al. 2006), 137 fish were tagged with radio-archival tags. In addition to transmitting a radio signal for locating and identifying the fish, the tags also recorded water temperature and depth every 3 minutes during their upriver migration. The tagged fish were predominantly 6-year-olds (62%) and averaged 815 mm in length, ranging from 560 to 1,060 mm. **Figure 1** shows swimming depth and water temperature by hours for a fish recovered in a spawning area in the Salcha River (Tanana River drainage). This pattern was typical for the fish in the sample (Eiler et al. in prep). The investigators believed that the differences in swimming depth observed for the tagged fish reflect changing channel depths along the selected migration route. Migration depths of approximately 27 meters to less than 1 meter were recorded. Swimming depths decreased substantially as the fish migrated upriver.

Observations at the ADF&G sonar site in the Kenai River confirmed that most Chinook salmon migrated offshore and were bottom-oriented (Burwen and Bosch 1998). Although vertical distribution for different Chinook salmon size classes was not specifically addressed in this study, smaller sockeye salmon migrating near the river bank were contrasted with the larger Chinook salmon migrating farther offshore in deeper water.

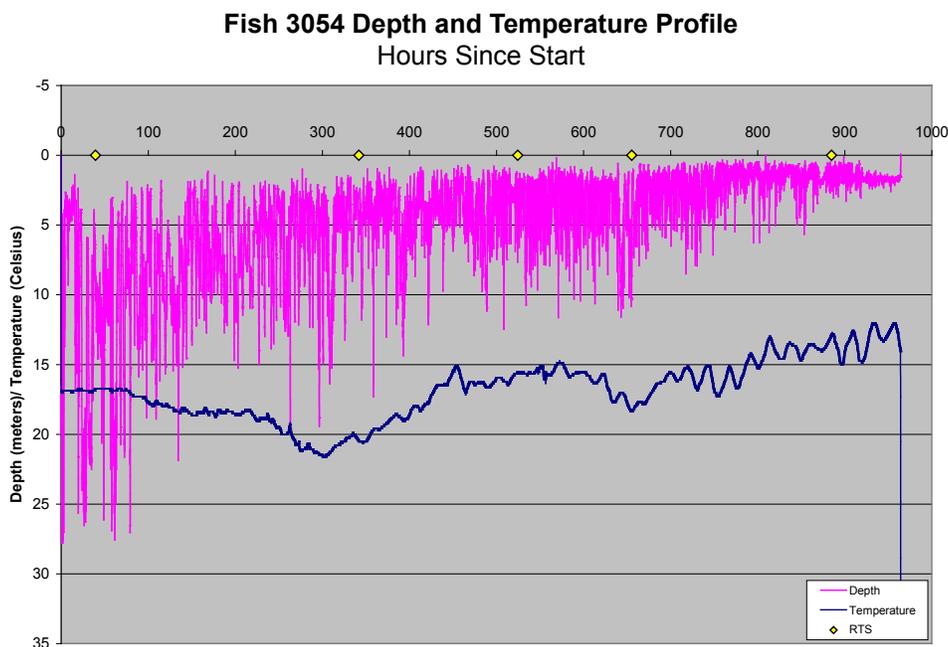


Figure 1. Depth and temperature recordings from an archival tag placed in a Yukon River Chinook salmon near Russian Mission and tracked upriver to the Salcha River. Temperature in C° (lower data) and depth in meters (upper data) by hours since deployment. Data provided by Eiler in prep.

Hughes (2004) proposed an explanation for anecdotal observations by biologists that larger Chinook salmon run farther offshore in deeper, higher velocity water than smaller fish such as sockeye or smaller Chinook salmon. He noted that ADF&G sonar biologists have used this criterion when determining whether an acoustical target may be a sockeye or a larger Chinook salmon. His work evaluated the effect of increased resistance (wave drag) on swimming fish from generation of surface waves. Wave drag appears to increase with increasing size of fish; therefore, a larger fish must swim deeper than a smaller fish to reduce surface wave drag. He applied wave drag calculations to fish size (girth) and submersion depth data to predict Chinook and sockeye salmon migration corridors in the Nushagak River. The author assumed that all fish swim near the river bottom where water velocity is reduced. Prediction of lateral distribution of each species was improved by including wave drag verses traditional models based largely on water velocity alone. Although there was a significant difference between optimum depths of migration corridors for Chinook compared to sockeye salmon, wave drag was greatest at depths less than 3 m (10 ft) and becomes negligible at greater than 4 m (13 ft). At these depths¹, neither 35 mesh nor 45 mesh gillnets would be affected; although the deeper nets may be harder to use in shallower water.

Pfisterer (2002) reported fish passage levels at the Pilot Station sonar on the Yukon River decline sharply as a function of the distance offshore. From 1995–2001, 90 % of the detected fish passage occurred from directly in front of the sonar out to 90 m–190 m offshore from the south bank and out to 50 m–70 m on the north bank. Gillnets were fished in three zones: north bank, south bank near shore (5 m–10 m from shore) and south bank offshore (approximately 50 m–70 m from shore).

¹ Depth (D) of gillnets formula: $D = (2Ns) \sqrt{(1-E^2)}$ where N = number of meshes, s = bar length and E = hanging ratio. (e.g. for 8.5” stretch mesh, 45 meshes with .5 hanging ratio, D = 27.7 ft, for 35 meshes D = 21.6 ft)

Table 1. Percent of Chinook salmon caught from 1995–2007 in all meshes by zone in gillnet apportionment sampling at Pilot Station sonar. Percents are not adjusted for fishing effort (Pfisterer 2008, pers. comm.).

Percent of Chinook catch from 1995–2007 in all meshes by Zone				
Bank	Zone	Depth	≥ 655 mm	< 655 mm
South	Off shore	5–8 m	84.43%	15.57%
South	Near shore	1–5 m	81.83%	18.17%
North	Off shore	1–14 m	74.38%	25.62%
Total			80.64%	19.36%

The south bank drifts were conducted on or close to the bottom. The maximum depth was approximately 5 m for the south bank near shore drifts and 8 m in depth for south bank offshore drifts (**Table 1**). Because the north bank is much steeper, at 50 m from the bank a third to half of the net was on the bottom. The 8.5 in mesh net was 43 meshes deep; the 7.5 in mesh net was 48 meshes deep. For Chinook catches from 1995–2007 in all meshes, the percentage of large Chinook (≥655 mm) were only slightly higher in the offshore relative to near shore. Gillnet fishing appears to effect fish behavior and distribution. Fish were observed on side scanning sonar moving offshore when gillnets were fished and moving back inshore after fishing ends (Pfisterer 2008, pers. comm.).

The catch for a net with a mesh size that is selective for larger salmon (e.g. 8.5 in stretch mesh) can be reduced by decreasing its exposure to fish. Exposure can be defined as the exposure area (depth x length) of the net and the time the net is fished. Hypothetically, reducing 50 fathom long, 45 meshes deep gillnets by 10 meshes in depth or 11 fathoms of length would reduce the exposure area of gillnets by about 22%; while reducing 6 hour fishing periods by 1.5 hours decreases exposure by 25%. However, estimating the effect of reducing net exposure is difficult. Although a decrease in catch efficiency might be expected by decreasing exposure (net area or fishing time) of gillnets, Minns and Hurley (1988) in their studies of gillnet efficiency found that these relationships are more complex and often non-linear. Observed variations were related to differences in activity patterns and net saturation among species; leading the authors to conclude the results of gillnet catch per unit effort data must be evaluated species by species.

Studies of gillnet catch bias for salmon have focused on mesh size selectivity; studies evaluating fishing time and net area (length and/or depth of nets) bias for gillnets were not found in available published literature. Quantitative analyses of mesh depth effects for Yukon River salmon have not been undertaken, and comparisons between existing 28 mesh and 45 mesh depth gillnets from long term ADF&G assessment projects have not been conducted because bottom depth, current velocity, and varying mesh sizes would confound analyses.

Effects of the Proposal

Adoption of this proposal would restrict all Federally qualified and non-qualified users in Federal public waters. The Board has the authority to close Federal public waters to Federally qualified and/or non-Federally qualified users “for the conservation of healthy populations of fish and wildlife” (ANILCA 815(3)), and also has the authority to impose methods, means, time and harvest restrictions on those users — options which are less restrictive than closures.

This proposal would reduce gillnet depth throughout Federal public waters of the Yukon River where most commercial fishing and over half of the subsistence harvest takes place. The use of gillnets no more than 35 meshes in depth would likely result in reduced fishing efficiency of gear for commercial and subsistence fishermen. However, there are no quantifiable data available to predict what effect

this reduction would have on the harvest of the larger and older-aged female Chinook salmon. No new information supporting decreasing size selectivity of gillnets by reducing mesh depth has been identified since the Board last considered and rejected this proposal.

If adopted, the proposal would pose an additional burden on some, if not all, affected users, since they would have to modify existing gillnets to 35 meshes deep. If modification includes cutting the nets, there would likely be an increase in maintenance time and costs, because once a net has been cut down in size (i.e. from 45 meshes to 35 meshes in depth), it may become more susceptible to tearing on snags (Rearden 2004). Adoption of the proposal would also likely reduce the number of fishable locations and/or increase the need to relocate to other sites.

Adoption of this proposal would expand the differences between Federal and State regulations, while increasing regulatory complexity and enforcement concerns. Commercial and subsistence users fishing in State-managed waters under State regulations would still be permitted to use deeper gillnets.

OSM PRELIMINARY CONCLUSION

Oppose Proposal FP09-13.

Justification

Reduction of the depth of gillnets used in the commercial and subsistence fisheries to harvest Chinook salmon in the Yukon River would likely reduce gear efficiency but may not influence the size, sex or age of fish harvested. Anecdotal information suggests that deeper gillnets may catch larger fish, but this observation has not been confirmed or reported in scientific studies. Reduced fishing efficiency and the costs of replacing or altering gear to comply with the proposed regulation would adversely affect subsistence and commercial fishermen without reasonable confidence that the proposed change would effectively address the concerns raised by the proponents. No additional information was identified by the proponent or available from other sources since the Board considered and rejected a similar proposal during the 2008 regulatory cycle.

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Alaska Department of Fish and Game
Comments to the Regional Advisory Councils

FP09-13 YUKON RIVER GILLNET DEPTH RESTRICTION

Introduction: FP09-13 proposes to limit all gillnets with a stretch mesh size of greater than 6 inches to a maximum depth of 35 meshes for all users (subsistence and commercial) in waters of the Yukon River where federal subsistence regulations apply. The Federal Subsistence Board reviewed similar proposals twice before (FP05-03 and FP06-04) and took no action or opposed those proposals. The Alaska Board of Fisheries did not adopt a proposal to restrict subsistence and commercial gillnets of 6-inch and larger mesh size to 35 meshes in depth in the Yukon Area at its meeting in January 26-31, 2010, after thoroughly reviewing in an open public process numerous oral and written reports by the Alaska Department of Fish and Game.

Concerns have been expressed that deeper gillnets select for older and larger Chinook salmon, and it is local traditional knowledge that larger fish migrate in deeper water. Data from a recent radio tagging project on Yukon River Chinook salmon, however, do not support this claim (John Eiler, National Marine Fisheries Service Auke Bay Laboratory, Juneau; personal communication 2009). Even if net depth restrictions could alter the catch from a specific location, fishermen could easily compensate for reduced net depth by fishing in shallower locations where a shallower depth net would not impede the catch of larger and more valuable Chinook salmon. There are insufficient data to demonstrate that gillnet depth restrictions would effectively alter size and age composition of the catch.

Impact on Subsistence Users: The stated intent of this proposal is to reduce the catch of large female Chinook salmon in Yukon River gillnet fisheries. If this proposal is adopted, the gear restriction would apply to participants in federal subsistence fisheries on the Yukon River, who potentially would need to fish longer hours to harvest the same number of fish with less efficient nets and may require modifying existing nets or purchase of new nets. If federal regulations are not the same as state regulations, it will create a conflicting patchwork of waters under state and federal regulations and be confusing to subsistence users.

Conservation Issues: The Yukon River Chinook salmon stock is currently classified as a yield concern. Subsistence harvests levels have reached the amounts necessary for subsistence, except for 2000, 2008, and 2009. A majority of the Yukon River drainage escapement goals have been met or exceeded since 2000, including the Chena and Salcha rivers, which are the largest producers of Chinook salmon in the U.S. portion of the drainage. The agreed-to escapement objective for the Canadian mainstem was met every year from 2001 through 2006, with 2001, 2003, and 2005 being the three highest spawning escapement estimates on record. However, the escapement objective for the Canadian mainstem was not met in 2007 and 2008. Exploitation rate on the Canadian-origin stock by Alaskan fishermen has changed from an average of about 55% (1989–1998) to an average of about 44% from 2004—2008 (Howard et al). Although the subsistence harvest continues to remain stable at nearly 50,000 Chinook salmon annually, commercial harvests have decreased over 60% from an average of 100,000 annually (1989–1998) to the recent 5-year average (2005–2009) of nearly 23,000 fish. It is not possible to determine whether size-selective harvests or variation in environment or a combination of factors

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is the cause for decreasing proportion of age-7 fish and decreasing size trends of older fish. However, increasing the number of larger and older Chinook salmon in spawning escapements will provide for better future production potential, which can be accomplished through mesh size regulations.

Opportunity Provided by State: Salmon may be harvested under state regulations throughout the majority of the Yukon River watershed, including a liberal subsistence fishery. Gear types allowed are gillnet, beach seine, hook and line attached to a rod or pole, handline, and fish wheel. Although all gear types are not used or allowed in all portions of the Yukon River drainage, drift and set gillnets and fish wheels harvest the majority of fish taken for subsistence uses. Under State regulations, subsistence is the priority consumptive use. Therefore, State subsistence fishing opportunity is directly linked to abundance and is not restricted unless run size is inadequate to meet escapement needs. When Yukon River salmon run is below average, the State subsistence fishing periods may be conducted based on a schedule implemented chronologically throughout the Alaska portion of the drainage, which is consistent with migratory timing as the salmon run progresses upstream. Federal regulations under Special Actions to restrict federally-eligible users have been rare and duplicated the State inseason actions necessary to meet escapement goals, except where state and federal regulations differ in Subdistricts 4B and 4C. Amounts reasonably necessary for subsistence Chinook salmon (5AAC 01.236 (b)), as determined by the Alaska Board of Fisheries, have been met in the Yukon River drainage for 7 of the last 10 years.

Other Issues: (1) Maps are needed showing the specific boundaries and areas where federal regulations are claimed to apply, along with providing the justification for claiming those boundaries. (2) A large percentage of the lands along the Yukon River are state or private lands where federal subsistence users cannot use gear types illegal under state regulations. (3) The federal board does not have authority to apply gillnet mesh size regulations to State commercial and subsistence fisheries.

Recommendation: Oppose. The Federal Subsistence Board deferred taking action on this proposal in 2008 until the Alaska Board of Fisheries reviewed the results of the three-year comparative mesh size study. The Alaska Board of Fisheries considered and unanimously opposed a proposal to restrict subsistence and commercial gillnets to 35 meshes in depth in the Yukon Area at its January 26-31, 2010, meeting. However, the Alaska Board of Fisheries adopted a maximum mesh size of 7.5 inches for subsistence and commercial gillnets effective in 2011 in the Yukon Area. This change in mesh size effectively reduces the maximum depth of commercial gillnets in Districts 1-3 by approximately 3 feet from the depth of an 8.5-inch mesh gillnet (commensurate with the current gillnet fishery).

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WP10-01 Executive Summary	
General Description	Proposal WP10-01 requests the addition of a definition for “drawing permit” to the Federal subsistence management regulations. <i>Submitted by the USFWS, Office of Subsistence Management</i>
Proposed Regulation	<i>Statewide-General Regulations</i> § __.25(a) Definitions Drawing permit—a permit issued to a limited number of Federally qualified subsistence users selected by means of a lottery held for all Federally qualified subsistence users submitting valid applications for such permits and who agree to abide by the conditions specified for each hunt. Drawing permits are issued based on priorities determined by 36 CFR 242.17 and 50 CFR 100.17.
OSM Preliminary Conclusion	Support Proposal WP10-01 with modification to simplify and clarify the definition. The modified regulation would read: <i>Statewide-General Regulations</i> § __.25(a) Definitions Drawing permit—a permit issued to a limited number of Federally qualified subsistence users selected by means of a random drawing.
Southeast Regional Council Recommendation	
Southcentral Regional Council Recommendation	
Kodiak/Aleutians Regional Council Recommendation	
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Northwest Arctic Regional Council Recommendation	
Eastern Interior Regional Council Recommendation	

continued on next page

WP10-01 Executive Summary (continued)	
North Slope Regional Council Recommendation	Support
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP10-01**

ISSUES

Proposal WP10-01, submitted by the USFWS, Office of Subsistence Management, requests the addition of a definition for “drawing permit” to the Federal subsistence management regulations.

DISCUSSION

Existing Federal subsistence management regulations do not include a definition for “drawing permit” (§§ __.4 and __.25(a)). However, because this term is used in the hunting regulations (§ __.26(n) (19)), a definition should be provided.

Existing Federal Regulation

Statewide-General Regulations

§ __.25(a) Definitions—No existing definition

Proposed Federal Regulation

Statewide-General Regulations

§ __.25(a) Definitions

Drawing permit—a permit issued to a limited number of Federally qualified subsistence users selected by means of a lottery held for all Federally qualified subsistence users submitting valid applications for such permits and who agree to abide by the conditions specified for each hunt. Drawing permits are issued based on priorities determined by 36 CFR 242.17 and 50 CFR 100.17.

Existing State Regulation

Definitions

Drawing permit—a permit issued to a limited number of people selected by means of a lottery held for all people submitting valid applications for such permits and who agree to abide by the conditions specified for each hunt.

Extent of Federal Public Lands/Waters

This proposal would apply to the entire state. Federal public lands comprise approximately 65% of Alaska and consist of 23% Bureau of Land Management, 15% National Park Service, 21% U.S. Fish and Wildlife Service, and 6% U.S. Department of Agriculture, U.S. Forest Service lands.

Effects of the Proposal

The addition of this definition does not affect fish and wildlife populations, subsistence uses or other uses (i.e., sport/recreational or commercial). The Federal Subsistence Management Program has used drawings as one way to distribute permits among residents of a community that are similarly situated relative to

customary and traditional uses of those wildlife populations. Current hunting regulations use the phrase “drawing permit” to describe the permit for the Unit 19A moose hunt, and there have been other situations where drawings have been used to distribute registration permits among qualified applicants. Proposal WP10-09, submitted by the Southeast Alaska Subsistence Regional Advisory Council, requests a drawing permit hunt. The addition of a definition for “drawing permit” to the Federal regulations would help provide clarity to regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-01 **with modification** to simplify and clarify the definition.

The modified regulation would read:

Statewide-General Regulations

§ __.25(a) Definitions

Drawing permit—a permit issued to a limited number of Federally qualified subsistence users selected by means of a random drawing.

Justification

The definition clarifies a term that is used in the Federal subsistence hunting regulations and does not affect fish and wildlife populations, subsistence uses or other uses. The modified wording simplifies the definition and makes it clear that drawing permits are based on a “random” drawing for all similarly situated Federally qualified subsistence users.

STATUS OF WP10-02 (DEFERRED WP08-05)

Proposal WP10-02 (deferred proposal WP08-05), submitted by the Alaska Department of Fish and Game, requested clarification of the existing Federal Subsistence management regulation governing the use of brown bear claws in handicrafts for sale. The proposal specifically asked for the removal of all unit-specific regulations related to the statewide sale of brown bear handicrafts made of skin, hide, pelt or fur and that sales of brown bear handicrafts made of claws, bones, teeth, sinew, or skulls should occur only between Federally qualified subsistence users.

Proposal WP10-02 was deferred by the Federal Subsistence Board (Board) at its May 2008 meeting at the suggestion of the Alaska Department of Fish and Game, pending formation of a workgroup to address the issue of developing a method of tracking brown bear claws made into handicrafts for sale. The Board voted unanimously to defer the proposal “to allow a work group to address this issue of sale and tracking, specifically whether or not it’s even feasible” (FSB 2008:117). The Board directed that the working group include representatives from all interested Subsistence Regional Advisory Councils (Councils) and State and Federal staff (FSB 2008: 102-119).

An initial scoping meeting between Federal and State staff was held in January 2009; at that meeting a draft charge was developed¹. A briefing was provided to all Councils during the Winter 2009 meeting cycle on the status of the workgroup, and Councils selected representatives to participate in the workgroup. The workgroup, including representatives from nine Councils, and Federal and State staff met in June 2009. At that meeting, participants from the Councils posed a number of questions directed at whether or not bear claw tracking is a problem for subsistence users, and if regulations needed to be changed. These questions prompted Federal and State staff to conduct further research, and to meet as agency staff to compare notes and to follow up on research questions, which they did twice during summer 2009. The work group attempted to meet again during the summer of 2009, but this was not possible. In the interim, another briefing on the status of the workgroup was provided to the Councils at the Fall 2009 meetings.

FUTURE DIRECTION

The workgroup, including Council members, will meet during spring/summer 2010 to address the questions raised at its first meeting, and to begin working towards resolution of the issues. This will provide ample time for the workgroups’ findings to be presented to each Council for their recommendations during the Fall 2010 meeting cycle, and for a full report to be provided to the Federal Subsistence Board for action at its January 2011 meeting. A report will also be provided to the Alaska Board of Game at an appropriate meeting. Proposal 10-02 (WP08-05) will be deferred until that time.

LITERATURE CITED

FSB. 2008. Transcripts of the Federal Subsistence Board proceedings, April 29, 2008. Office of Subsistence Management, FWS. Anchorage, AK.

¹ Draft charge for workgroup:

Develop a method(s) to recommend to the Federal Subsistence Board and Board of Game for tracking brown bear claws made into handicrafts that is enforceable and culturally sensitive, commensurate with the need to provide conservation of this wildlife resource.

WP10-03 Executive Summary	
General Description	Proposal WP10-03 requests the addition of a general provision in Federal subsistence management regulations to allow the harvest of fish and wildlife by participants in a cultural or educational program. <i>Submitted by the Office of Subsistence Management</i>
Proposed Regulation	<i>See the analysis for the proposed regulation language.</i>
OSM Preliminary Conclusion	Support Proposal WP10-03 with modification to simplify the proposed regulation.
Southeast Regional Council Recommendation	
Southcentral Regional Council Recommendation	
Kodiak/Aleutians Regional Council Recommendation	
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Northwest Arctic Regional Council Recommendation	
Eastern Interior Regional Council Recommendation	
North Slope Regional Council Recommendation	Support Proposal WP10-03 with Modification to simplify the proposed regulation.
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS WP10-03

ISSUES

Proposal WP10-03, submitted by the Office of Subsistence Management, requests the addition of a general provision in Federal subsistence management regulations to allow the harvest of fish and wildlife by participants in a cultural or educational program.

DISCUSSION

This proposal is a housekeeping measure intended to provide clarity in the guidelines for issuing permits for the harvest of fish and wildlife by cultural and educational programs. Doing so will help to inform the public, fish and wildlife managers, Office of Subsistence Management staff, members of the Interagency Staff Committee, and members of the Federal Subsistence Board (Board) of the guidelines currently in use by Office of Subsistence Management staff with regard to permits to harvest wildlife and fish for cultural and educational programs. Since the Federal program began in 1990, the process for issuing permits has gone through a number of changes. Because some of these changes have not been well documented, there is some confusion over the process. The intent of this regulation then is to provide clarity in Federal subsistence management regulations.

Currently, there is no specific provision allowing for the harvest of wildlife for cultural and educational programs although there is a general allowance that provides for such a practice. A specific provision allows for the harvest of fish for a cultural and educational program.

Most requests speaking to the allowance of fish or wildlife harvests on behalf of a cultural or educational program are on behalf of culture camps sponsored by Native nonprofit organizations. Requests for permits also have been received from a substance abuse rehabilitation program and for college courses. The permits are typically requested both to teach cultural and educational activities associated with harvest, and to provide food for participants in the cultural and educational program. Once a program has been approved for a permit, follow-up requests (referred to as repeat requests in the regulation), may be made annually for up to five years by the same cultural or educational program to harvest the same animal species and amount.

Existing Federal Regulation

Program structure

§____.10(d)

(5) The Board may implement one or more of the following harvest and harvest reporting or permit systems:

(iii) The fish and wildlife is taken by individuals or community representatives permitted (via a Federal Subsistence Registration Permit) a one-time or annual harvest for special purposes including ceremonies and potlatches.

General regulations

No existing regulation

Fish regulations**§____.27(e)**

(2) The U.S. Fish and Wildlife Service Office of Subsistence Management may issue a permit to harvest fish for a qualifying cultural/educational program to an organization that has been granted a Federal subsistence permit for a similar event within the previous 5 years. A qualifying program must have instructors, enrolled students, minimum attendance requirements, and standards for successful completion of the course. Applications must be submitted to the Office of Subsistence Management 60 days prior to the earliest desired date of harvest. Permits will be issued for no more than 25 fish per culture/education camp. Appeal of a rejected request can be made to the Federal Subsistence Board. Application for an initial permit for a qualifying cultural/educational program, for a permit when the circumstances have changed significantly, when no permit has been issued within the previous 5 years, or when there is a request for harvest in excess of that provided in this paragraph (e)(2), will be considered by the Federal Subsistence Board.

Proposed Federal Regulation**Program structure****§____.10(d)**

(5) The Board may implement one or more of the following harvest and harvest reporting or permit systems:

(iii) The fish and wildlife is taken by individuals or community representatives permitted (via a Federal Subsistence Registration Permit) a one-time or annual harvest for special purposes including ceremonies and potlatches.

General regulations**§____.25(g) Cultural/educational program permits**

(1) A qualifying program must have instructors, enrolled students, minimum attendance requirements, and standards for successful completion of the course. Applications must be submitted to the Federal Subsistence Board through the Office of Subsistence Management 60 days prior to the earliest desired date of harvest. Generally permits will be issued for no more than one large mammal per cultural/educational program, permits will be issued for no more than 25 fish per cultural/educational program, and permits for the harvest of shellfish will be addressed on a case by case basis. Any animals harvested will count against any established Federal harvest quota for the area in which harvested.

(2) Application for an initial permit for a qualifying cultural/educational program, for a permit when the circumstances have changed significantly, when no permit has been issued within the previous 5 years, or when there is a request for harvest in excess of that provided in paragraph

(g)(1), will be considered by the Federal Subsistence Board. Appeal of a rejected request can be made to the Federal Subsistence Board.

(3) A permit to harvest fish, wildlife, or shellfish for a qualifying cultural/educational program which has been granted a Federal subsistence permit for a similar event within the previous 5 years may be issued by the Federal in-season manager (for fisheries) or the Federal local land manager (for wildlife). Requests for follow-up permits must be submitted to the in-season or local land manager 60 days prior to the earliest desired date of harvest.

(4) Federal in-season and local land managers will report the re-issue of any cultural/educational program permits and the harvest results to the U.S. Fish and Wildlife Service, Office of Subsistence Management.

Fish regulations

§ ____ .27(e)

(2) The U.S. Fish and Wildlife Service Office of Subsistence Management may issue a permit to harvest fish for a qualifying cultural/educational program to an organization that has been granted a Federal subsistence permit for a similar event within the previous 5 years. A qualifying program must have instructors, enrolled students, minimum attendance requirements, and standards for successful completion of the course. Applications must be submitted to the Office of Subsistence Management 60 days prior to the earliest desired date of harvest. Permits will be issued for no more than 25 fish per culture/education camp. Appeal of a rejected request can be made to the Federal Subsistence Board. Application for an initial permit for a qualifying cultural/educational program, for a permit when the circumstances have changed significantly, when no permit has been issued within the previous 5 years, or when there is a request for harvest in excess of that provided in this paragraph (e)(2), will be considered by the Federal Subsistence Board.

State Regulations

5 AAC 92.034 Permit to take game for cultural purposes

The commissioner may issue a permit for the taking of game for the teaching and preservation of historic or traditional Alaskan cultural practices, knowledge, and values, only under the terms of a permit issued by the department upon application. A permit may not be issued if the taking of the game can be reasonably accommodated under existing regulations. For purposes of this section, "game" includes (1) deer; (2) moose; (3) caribou; (4) black bear; (5) mountain goat; (6) small game; (7) furbearers; and (8) any migratory bird for which a federal permit has been issued.

Regulatory History

At the inception of the Federal Subsistence Management Program, all requests for permits to allow harvests for special purposes between regulatory cycles were treated as special actions that went directly to the Board. In 2000, the Board adopted a general provision in Federal regulations that delegated authority to Office of Subsistence Management to issue special harvest permits for repeated requests from

cultural and educational camp operators (§____.25(c)(4)¹; 66 FR 10148, February 13, 2001). Thus, the initial request went to the Board and any subsequent requests to the Office of Subsistence Management. This regulation included provisions for issuing permits to harvest up to 25 fish and one species of wildlife (deer, moose, caribou, black bear, or mountain goat only). These species were included in the regulation because permits had previously been distributed for these species. At the time of its adoption, the Board expressed the desire to evaluate the effectiveness of the regulation following its implementation (FWS 2004).

Concurrently, in 2000 the Board also adopted regulations to manage fisheries occurring in Federal public waters. As part of this activity, the Board adopted a regulation addressing the subsistence take of fish on behalf of cultural and educational programs (§____.27(e)(2); 66 FR 33745, June 25, 2001). The regulation adopted by the Board required that initial requests are considered by the Board and repeat requests are considered by Office of Subsistence Management. The Board gave the Office of Subsistence Management the authority to issue repeat permits for the harvest of up to 25 fish per program. It should be noted that this regulation was adopted even though a similar regulation (described in the previous paragraph) already existed in general provisions of Federal regulations, which was probably an oversight.

In November 2003 the Board rescinded the general provisions regulation that delegated authority to the Office of Subsistence Management to issue cultural and educational permits (§____.25(g) [§____.25(c)(4)]; 69 FR 40177, July 1, 2004). Instead of a regulation, the Board established guidelines for issuing permits for the harvest fish and wildlife for cultural and educational programs. Additionally, the Board delegated the authority to issue repeat permits to field managers.

When a permit to harvest wildlife by a cultural or educational program is issued, at the same time a letter containing guidelines for delegation is completed by the analyst at the Office of Subsistence Management and sent to the Federal field manager by the policy coordinator at the Office of Subsistence Management. The guidelines require that the field manager become familiar with the management history of the species and with the State and Federal regulations and management plan, and be up-to-date on population and harvest status information. Also, the guidelines direct the field manager to consult with the local ADF&G fish and wildlife managers.

Effects of the Proposal

If this proposal is adopted, the provision in fish regulations for issuing cultural and educational permits should be rescinded. The description of how to apply for a permit to harvest fish or wildlife as part of a cultural or educational program that is in the Federal subsistence regulation booklets published for the public will flow directly from the new regulation requested in this proposal.

If this proposal is not adopted, there will continue to be confusion among the public, fish and wildlife managers, Office of Subsistence Management staff, members of the Interagency Staff Committee, and members of the Federal Subsistence Board concerning the issuing of these permits.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-03 with modification to simplify the proposed regulation.

¹ The regulation located at §____.25(c)(4) in Federal regulations was later moved to §____.25(g) during a reorganization of the Federal regulations (66 FR 33745–33746, June 25, 2001).

The modified regulation should read:

General regulations

§____.25(g) Cultural/educational program permits

(1) A qualifying program must have instructors, enrolled students, minimum attendance requirements, and standards for successful completion of the course. Applications must be submitted to the Federal Subsistence Board through the Office of Subsistence Management and should be submitted 60 days prior to the earliest desired date of harvest. Harvests must be reported and any animals harvested will count against any established Federal harvest quota for the area in which it is harvested.

(2) Requests for follow-up permits must be submitted to the in-season or local manager and should be submitted 60 days prior to the earliest desired date of harvest.

Justification

The harvest of fish and wildlife by participants in cultural and educational programs is generally allowed in the Federal Subsistence Management Program regulations. Proposal WP10-03 will further clarify for fish and wildlife managers, Office of Subsistence Management staff, members of the Interagency Staff Committee, and members of the Federal Subsistence Board the cultural and educational permit regulations.

LITERATURE CITED

FWS. 2004. Staff analysis for Proposal WP04-26. Pages 178–188 in Federal Subsistence Board Meeting Materials May 18–21, 2004. Office of Subsistence Management, FWS. Anchorage, AK. 622 pages.

WP10-04 Executive Summary	
General Description	This proposal would remove Units 6, 12, 20A, 20B, 20C east of the Teklanika River, 20D and 20E from the areas for which the Assistant Regional Director for Subsistence Management has the delegated authority to open, close or adjust Federal subsistence lynx seasons and to set harvest and possession limits. <i>Submitted by the Office of Subsistence Management</i>
Proposed Regulation	<p>§ __.26 (f)(3)</p> <p><i>The Assistant Regional Director for Subsistence Management, FWS, is authorized to open, close, or adjust Federal subsistence lynx seasons and to set harvest and possession limits for lynx in Units 6, 7, 11, 12, 13, 14, 15, and 16, 20A, 20B, 20C east of the Teklanika River, 20D, and 20E, with a maximum season of November 1–February 28. This delegation may be exercised only when it is necessary to conserve lynx populations or to continue subsistence uses, only within guidelines listed within the ADF&G Lynx Harvest Management Strategy, and only after staff analysis of the potential action, consultation with the appropriate Regional Council Chairs, and Interagency Staff Committee concurrence.</i></p>
OSM Preliminary Conclusion	Support proposal WP10-04 with modification to delete the regulatory language found in § __.26 (f)(3), and delegate the authority to open, close, or adjust Federal lynx seasons and to set harvest and possession limits for lynx via a delegation of authority letter only.
Southeast Regional Council Recommendation	
Southcentral Regional Council Recommendation	
Kodiak/Aleutians Regional Council Recommendation	
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Northwest Arctic Regional Council Recommendation	

continued on next page

WP10-04 Executive Summary (continued)	
Eastern Interior Regional Council Recommendation	
North Slope Regional Council Recommendation	Support proposal WP10-04 with modification to delete the regulatory language found in §__.26 (f)(3), and delegate the authority to open, close, or adjust Federal lynx seasons and to set harvest and possession limits for lynx via a delegation of authority letter only.
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS
WP10-04

ISSUE

This proposal , submitted by the Office of Subsistence Management, would remove Units 6, 12, 20A, 20B, 20C east of the Teklanika River, 20D and 20E from the areas for which the Assistant Regional Director for Subsistence Management has the delegated authority to open, close or adjust Federal subsistence lynx seasons and to set harvest and possession limits.

DISCUSSION

Lynx trapping seasons are adjusted annually based on recommendations determined using Alaska Department of Fish and Game (ADF&G) Tracking Harvest Strategy for managing lynx (FSB 2001). The Alaska Board of Game removed Units 6, 12, 20A, 20B, 20C east of the Teklanika River, 20D and 20E from the list of units that are managed using the lynx harvest strategy. Based on this action these units should also be eliminated from regulation.

Existing Federal Regulation

§__.26 (f)(3)

The Assistant Regional Director for Subsistence Management, FWS, is authorized to open, close, or adjust Federal subsistence lynx seasons and to set harvest and possession limits for lynx in Units 6, 7, 11, 12, 13, 14, 15, 16, 20A, 20B, 20C east of the Teklanika River, 20D, and 20E, with a maximum season of November 1–February 28. This delegation may be exercised only when it is necessary to conserve lynx populations or to continue subsistence uses, only within guidelines listed within the ADF&G Lynx Harvest Management Strategy, and only after staff analysis of the potential action, consultation with the appropriate Regional Council Chairs, and Interagency Staff Committee concurrence.

Proposed Federal Regulation

§__.26 (f)(3)

The Assistant Regional Director for Subsistence Management, FWS, is authorized to open, close, or adjust Federal subsistence lynx seasons and to set harvest and possession limits for lynx in Units ~~6, 7, 11, 12, 13, 14, 15, and 16, 20A, 20B, 20C east of the Teklanika River, 20D, and 20E,~~ with a maximum season of November 1–February 28. This delegation may be exercised only when it is necessary to conserve lynx populations or to continue subsistence uses, only within guidelines listed within the ADF&G Lynx Harvest Management Strategy, and only after staff analysis of the potential action, consultation with the appropriate Regional Council Chairs, and Interagency Staff Committee concurrence.

Regulatory History

In 1987, ADF&G adopted a Tracking Harvest Strategy for managing lynx (ADF&G 1987). This strategy calls for shortening or closing trapping seasons when lynx numbers are low, and lengthening or opening seasons when lynx are abundant. In the spring of 1992, the Alaska Board of Game adopted

maximum possible seasons for a number of management units within the State. Authority to make season adjustments within seasonal windows was delegated to ADF&G by the Alaska Board of Game. The decision to adjust the season is based upon the reported number of lynx harvested and the percentage of kittens within the total harvest.

The Federal Subsistence Board (Board) endorsed the State's strategy for setting seasons on lynx and has regularly made annual adjustments to the Federal seasons to align with the State seasons. In 2001 the Federal Subsistence Board (FSB 2001) added a statewide regulatory provision and issued a Delegation of Authority Letter (**Appendix I**) so that the Office of Subsistence Management could adjust lynx trapping regulations through the use of the ADF&G tracking harvest strategy. This delegated authority requires coordination with ADF&G, consultation with the appropriate Federal land management agencies, and development of a staff analysis to evaluate the effects of the changes to the season and harvest limit and Interagency Staff Committee concurrence.

In March 2008, the Alaska Board of Game eliminated the lynx tracking strategy in the interior game management units and established permanent seasons for Unit 20. Unit 12 was previously removed from the tracking strategy and in March 2009 the Alaska Board of Game eliminated the tracking strategy for Unit 6.

Effects of the Proposal

When the Board first delegated its authority to the Assistant Regional Director for Subsistence Management, Units 6, 7, 11, 12, 13, 14, 15, 16, 20A, 20B, 20C east of the Teklanika River, 20D, and 20E were managed by the State using the lynx strategy. Over time, however, the State has removed a number of units from its lynx tracking strategy. If this proposal is adopted it would align Federal and State regulations regarding lynx management.

There should be no impacts on wildlife populations as season and harvest limits can still be changed through the normal regulatory cycle or through special action if needed. There will be no adverse impacts to subsistence users as season and harvest limits may still be changed. This proposed change only addresses the authority delegated to the Assistant Regional Director for the Office of Subsistence Management.

OSM PRELIMINARY CONCLUSION

Support proposal WP10-04 **with modification** to delete the regulatory language found in § __.26 (f)(3), and delegate the authority to open, close, or adjust Federal lynx seasons and to set harvest and possession limits for lynx via a delegation of authority letter only (**Appendix II**).

The regulation would be deleted:

§ __.26 (f)(3) [*Reserved*]

The Assistant Regional Director for Subsistence Management, FWS, is authorized to open, close, or adjust Federal subsistence lynx seasons and to set harvest and possession limits for lynx in Units 6, 7, 11, 12, 13, 14, 15, 16, 20A, 20B, 20C east of the Teklanika River, 20D, and 20E, with a maximum season of November 1–February 28. This delegation may be exercised only when it is necessary to conserve lynx populations or to continue subsistence uses, only within guidelines listed within the ADF&G Lynx Harvest Management Strategy, and only after staff analysis of the potential action, consultation with the appropriate Regional Council Chairs, and Interagency Staff Committee concurrence.

Justification

There should be no impacts on wildlife populations as season and harvest limits can still be changed via the normal regulatory cycle or via special action if needed. There will be no impacts to subsistence users as season and harvest limits may still be changed. This proposed change is only addressing the authority delegated to the Assistant Regional Director for the Office of Subsistence Management. The current delegation is already done through a letter and the regulatory language in §__.26 (f)(3) is redundant and not needed. The draft letter found in **Appendix II** would update the delegation of authority letter making it more consistent with other delegation letters issued throughout the state by the Board.

LITERATURE CITED

ADF&G, Division of Wildlife Conservation. 1987. Report to the Board of Game on lynx management. 30 pages.

ADF&G, Division of Wildlife Conservation. 2009. Recommendations for the 2008–2009 lynx trapping seasons: Interior Alaska Tracking Harvest Strategy. 2 pages.

FSB. 2001. Transcripts of the Federal Subsistence Board proceedings, May 9, 2001. Anchorage, AK.



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

Federal Subsistence Board

3601 C Street, Suite 1030
Anchorage, Alaska 99503-6199



FOREST SERVICE

JUN 15 2001

FWS/OSM/C:/LynxDelegation

Mr. Thomas H. Boyd
Assistant Regional Director, Subsistence Management
U.S. Fish and Wildlife Service
3601 C Street, Suite 1030
Anchorage, Alaska 99503

Dear Mr. Boyd:

This letter delegates regulatory authority from the Federal Subsistence Board to you as Project Leader of the Office of Subsistence Management to issue special actions when necessary to assure the conservation of healthy lynx populations and to provide for subsistence uses of lynx, consistent with the Alaska Department of Fish and Game Lynx Harvest Management Strategy, on Federal lands subject to ANILCA Title VIII.

Overview

It is the intent of the Federal Subsistence Board that lynx management by Federal officials be coordinated with the Alaska Department of Fish and Game and involve Regional Advisory Council representatives to conserve healthy lynx populations while providing for subsistence uses. Federal managers are expected to cooperate with State managers and minimize disruption to resource users and existing agency programs, as agreed to under the Interim Memorandum of Agreement for Coordinated Fisheries and Wildlife Management for Subsistence Uses on Federal Public lands in Alaska.

DELEGATION OF AUTHORITY

- 1. Delegation:** The Project Leader of the Office of Subsistence Management is hereby delegated authority to approve special actions affecting lynx on Federal lands as outlined under **2. Scope of Delegation.**
- 2. Scope of Delegation:** The regulatory authority hereby delegated is limited to authority to open, close, or adjust Federal subsistence lynx seasons and to set harvest and possession limits for lynx. This delegation may be exercised only when it is necessary to conserve lynx populations or to continue subsistence uses, only within guidelines listed within the Lynx Harvest Management Strategy, and only after staff analysis of the potential action and Staff Committee concurrence.

Mr. Thomas H. Boyd

2

All other proposed changes to codified regulations, such as customary and traditional use determinations or adjustments to method or means of take, shall be directed to the Federal Subsistence Board.

The Federal lands subject to this delegated authority are those described in the Subsistence Management Regulations for Public Lands in Alaska. You will coordinate your decisions with all affected Federal land managers and the Alaska Department of Fish and Game.

3. Effective Period: This delegation of authority is effective from the date of this letter, and continues until revoked by the Federal Subsistence Board.

4. Guidelines for Delegation: You will review special action requests or situations that may require a special action and all supporting information to determine (1) if the request/situation falls within the scope of delegation, (2) if the action would be consistent with the conservation of healthy lynx populations, and (3) what the consequences of taking an action may be on potentially affected subsistence users and non-subsistence users. You will consider the management history of lynx in the affected region, current State and Federal lynx regulations and management plans, and lynx population and harvest status information. Requests not within your delegated authority will be forwarded to the Federal Subsistence Board for consideration. You will keep a record of all special action requests and their disposition.

You will immediately notify the Federal Subsistence Board and notify/consult with appropriate ADF&G managers, Regional Advisory Council members, and other affected Federal conservation unit managers concerning special actions being considered. You will issue timely decisions. Users, affected State and Federal managers, law enforcement personnel, and Regional Advisory Council representatives will be notified before the effective date/time of decisions.

5. Support Services: Administrative support for management activities will be provided by the Office of Subsistence Management, U.S. Fish and Wildlife Service, Department of the Interior.

6. Authority: This delegation of authority is established pursuant to 36 CFR 242.10(d)(6) and 50 CFR 100.10(d)(6).

This delegation of authority will assure conservation of lynx populations through sound management decisions in cooperation with State managers, thereby providing for the long-term needs of the subsistence user.

Sincerely,



Mitch Demientieff, Chair
Federal Subsistence Board

Attachment: Tracking Harvest Strategy for Lynx

cc: Members of the Federal Subsistence Board

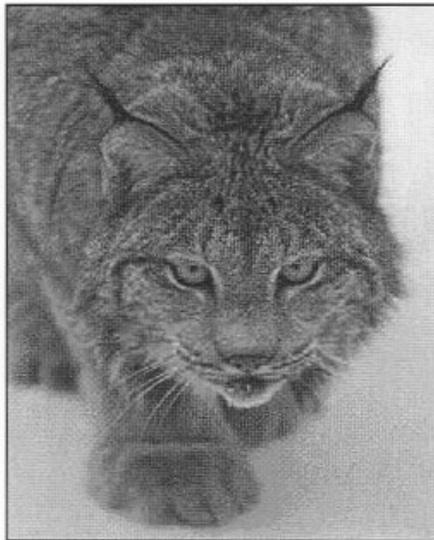
Mr. Stanley Pruszanski, Assistant Regional Director - Law Enforcement

Mr. Walter Soroka, Deputy Assistant Regional Director - Law Enforcement

Mr. Frank Rue, Commissioner, Alaska Department of Fish and Game

Tracking Harvest Strategy for Lynx

by Howard Golden
Furbearer Biologist, Southcentral Region



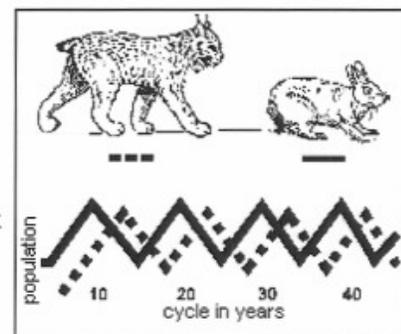
Lynx (*Lynx canadensis*) populations in Alaska and much of Canada fluctuate greatly over a 9-11-year period, responding mainly to the abundance of snowshoe hares (*Lepus americanus*). Lynx population trends are closely tied with those of snowshoe hares even when other prey is available. Lynx respond directly to changes in hare abundance through the number of kittens that are produced and the survival of kittens and adults. This response by lynx follows the hare population cycles, which are remarkably synchronous in northern latitudes.

Managers of lynx harvest in these areas must be able to respond with appropriate harvest regulations to ensure sustainable harvests are maintained. A tracking harvest strategy is one method for managing the harvest of populations in a fluctuating environment. Under a tracking harvest strategy, harvest is increased while a population is growing and is decreased during a population decline. In 1987, the Alaska Department of Fish

and Game (ADF&G) and the Board of Game (BOG), which authorizes seasons and bag limits in Alaska, adopted a tracking harvest strategy to allow the dynamic management of lynx based on the ability of populations to support harvest. This was in response to concerns by lynx managers that high lynx-pelt prices would encourage excessive harvest during the declining phase of the lynx cycle.

The tracking harvest strategy applies to the road-connected areas of Interior and Southcentral Alaska that have high trapper use. Several criteria are used to determine if lynx seasons should be changed, including:

1. Percent kittens in the harvest
2. Evidence of increasing or decreasing populations of both lynx and hares
3. Period of pelt primeness
4. Potential negative effects of early seasons' orphaning kittens too young to survive
5. Possible effects of late seasons on higher harvests due to increased movement and greater vulnerability of lynx

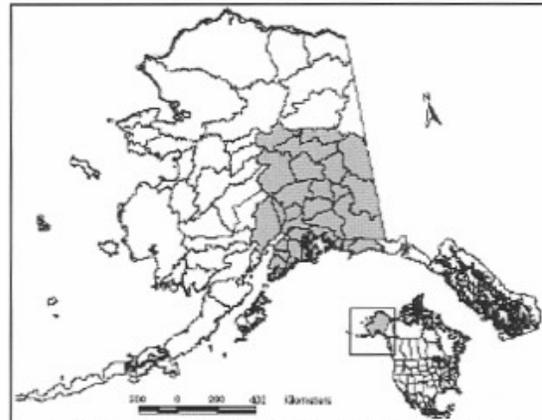


The tracking harvest strategy for lynx was implemented in 1988. The strategy resulted in season closures in some units when lynx populations seemed to be at low levels but later allowed seasons in those units to reopen once lynx populations began to increase. The tracking harvest strategy became difficult to use because of the need to issue emergency orders to change seasons outside the usual regulatory schedule established by the BOG. This problem was resolved in 1992 when the BOG authorized ADF&G to

change season lengths within the broad seasons of 1 November-28 February in Interior game management units and 10 November-28 February in Southcentral units. ADF&G is not authorized to modify bag limits under this plan because that is a BOG allocation prerogative. There is a no-limit bag for lynx trapping throughout most of the state.

Every spring ADF&G biologists analyze data collected over winter during the trapping season to determine the most appropriate lynx seasons for the next winter. Biologists use a variety of tools to make their decisions. These tools include:

1. Track counts in snow to monitor the relative abundance of lynx and snowshoe hares
2. Pelt measurements to estimate the proportion of kittens in the harvest
3. Biological measurements from lynx carcasses purchased from trappers
4. Harvest data to determine where and how many lynx were trapped
5. Reports from trappers to get their on-the-ground observations
6. Other things like weather and snow conditions and pelt prices



Tracking harvest strategy area (shaded) and Game Management Unit boundaries in Alaska.

The new seasons may be long during the high years in a population cycle, closed during a low period, or somewhere in between during the middle years.

LynxTrak: A Tool for Lynx Harvest Managers



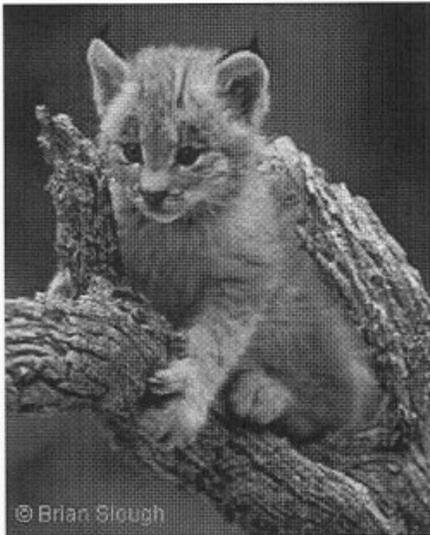
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Last Modified 08/10/2001 14:02:00

LynxTrak: A Tool for Lynx Harvest Managers

by Howard Golden
Furbearer Biologist, Southcentral Region

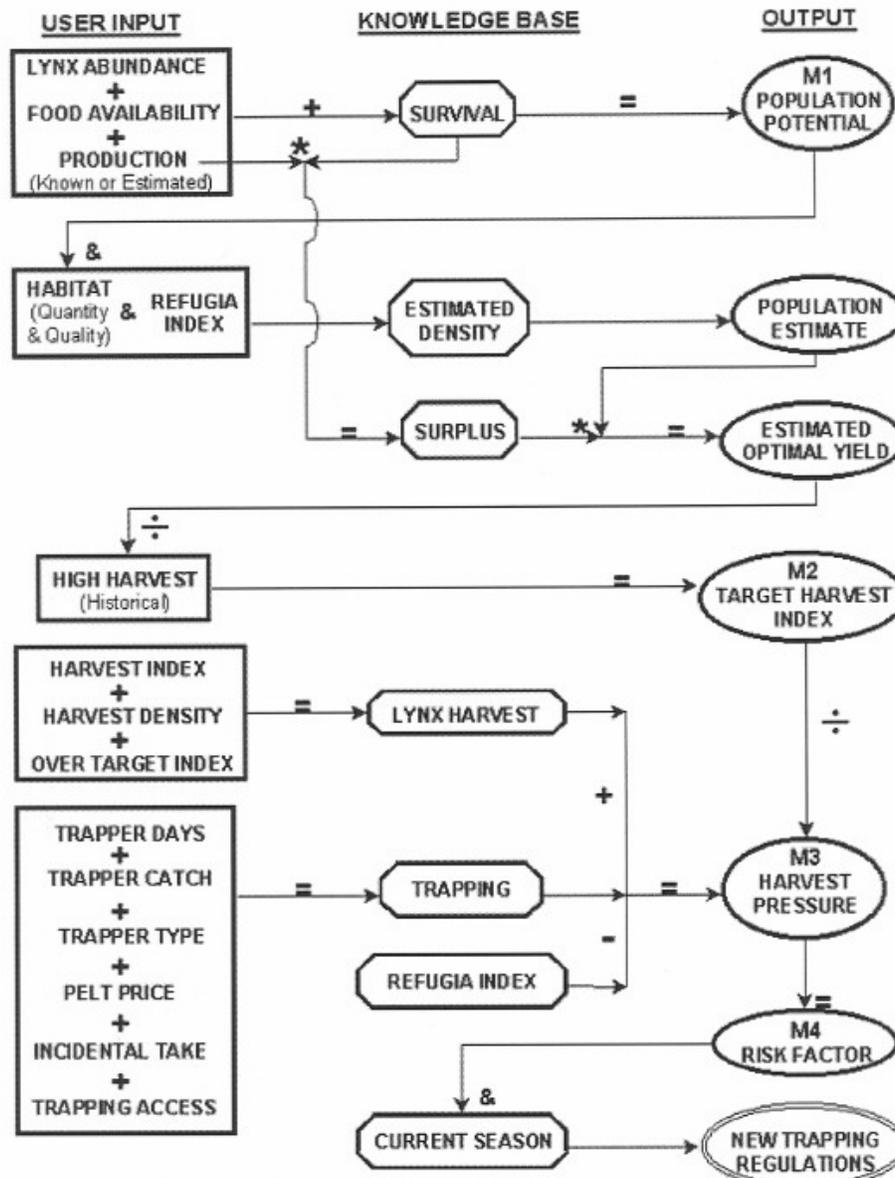


© Brian Slough

To aid lynx managers achieve sustainable harvest objectives under the tracking harvest strategy, I developed a rule-based model, called **LynxTrak**, as a decision-making tool. The advantage of the rule-based model is that it provides a documented, logical structure to the decision-making process that is both intuitive and experiential. Such models can process quantitative data but are most useful when coping with qualitative information to reach decisions. Rule-based models build on what is known using available literature, in-house databases, and the collective knowledge of experts. These types of models have become known as knowledge-based systems or expert systems. Expert systems are now widely used to address many situations in natural resource management, such as management of rangelands and lake systems, prescribed burning, and population modeling. The knowledge base for **LynxTrak** incorporates material from pertinent literature, lynx researchers, managers, and trappers in Alaska and Canada, and from Alaskan

lynx harvest data gathered through pelt sealing.

Expert systems are used with a computer program shell to incorporate the user's experience and available information into a decision tree, which is the foundation of the rule-based model. Designers of a model first establish all potential decisions or goals that could reasonably be made regarding a particular situation. Next, questions using qualitative variables are formulated about the specific conditions or situations that may exist. Finally, a set of rules is devised as if-then scenarios that direct the user toward an informed, logical, and consistent decision. This modeling approach can provide the user with a protocol that, because it is fully documented, ensures accountability. Lynx harvest managers in southcentral Alaska have been using the model for the last few years.



Summary flow diagram of LynxTrak depicted as user input, knowledge base, and output through the 4 modules: population potential (M1), target harvest index (M2), harvest pressure (M3), and risk factor (M4). The user input (rectangles) is the response given to questions (or occasionally variables) which LynxTrak asks as questions. The responses are then used to calculate numerical variables that become the knowledge base (octagons). The output (ovals) consists of the knowledge base variables used in combination to calculate other numerical variables and, finally, the goal of new trapping regulations.

LynxTrak is available in a runtime version that may be downloaded from this web site. The user guide ([PDF version](#) – 33K) for the model should be printed to aid installation and running the model. The model is in a [self-extracting zip file](#) (668K) that includes all the files needed to run **LynxTrak**.

Full documentation and technical support for **LynxTrak** is available from Howard Golden (mailto:20howard_golden@fishgame.state.ak.us).



[Wildlife Conservation Home](#) | [Furbearers & Trapping](#) | [Top of Document](#)

Contact: Howard Golden (mailto:%20howard_golden@fishgame.state.ak.us)

Division Webmaster: <mailto:%20wcweb@fishgame.state.ak.us>

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Last Modified 08/10/2001 14:02:14

Mr. Peter J. Probasco
Assistant Regional Director, Subsistence Management
U.S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, Alaska 99503

Dear Mr. Probasco:

This letter delegates regulatory authority from the Federal Subsistence Board to you as Project Leader of the Office of Subsistence Management to take action when necessary to assure the conservation of healthy lynx populations and to provide for subsistence uses of lynx, consistent with the Alaska Department of Fish and Game Lynx Harvest Management Strategy, on Federal lands subject to ANILCA Title VIII. This supersedes and replaces the original delegation letter dated June 15, 2001.

Overview

It is the intent of the Federal Subsistence Board that lynx management by Federal officials be coordinated with the Alaska Department of Fish and Game and involve Regional Advisory Council representatives to conserve healthy populations while providing for subsistence uses. Federal managers are expected to cooperate with State managers and minimize disruption to resource users and existing agency programs, as agreed to under the Memorandum of Understanding for Coordinated Fisheries and Wildlife Management for Subsistence Uses on Federal Public lands in Alaska (December 18, 2008).

DELEGATION OF AUTHORITY

1. Delegation: The Project Leader of the Office of Subsistence Management is hereby delegated authority to issue special action regulations affecting lynx on Federal lands as outlined under **2. Scope of Delegation.**

2. Scope of Delegation: The regulatory authority hereby delegated is limited to authority to open, close or adjust Federal subsistence lynx seasons and to set harvest and possession limits for lynx. This delegation may be exercised only when it is necessary to conserve lynx populations or to continue subsistence uses, only within guidelines listed within the Lynx Harvest Management Strategy.

All other proposed changes to codified regulations, such as customary and traditional use determinations or adjustments to method or means of take, shall be directed to the Federal Subsistence Board.

The Federal lands subject to this delegated authority are those described in the Subsistence Management Regulations for Public Lands in Alaska. You will coordinate your decisions with all affected Federal land managers and the Alaska Department of Fish and Game.

3. Effective Period: This delegation of authority is effective from the date of this letter, and continues until revoked by the Federal Subsistence Board.

4. Guidelines for Delegation: You will become familiar with the management history of lynx in the region, with the current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will review situations that may require action and all supporting information to determine (1) if the request/situation falls within the scope of authority, (2) if significant conservation problems or subsistence harvest concerns are indicated, and (3) what the consequences of taking an action may be on potentially affected subsistence users and non-subsistence users. Requests not within your delegated authority will be forwarded to the Federal Subsistence Board for consideration. You will keep a record of all special action requests and their disposition.

You will immediately notify the Federal Subsistence Board and notify/consult with local ADF&G managers, Regional Advisory Council members, and other affected Federal conservation unit managers concerning actions being considered. You will issue timely decisions. Users, affected State and Federal managers, law enforcement personnel, and Regional Advisory Council representatives will be notified before the effective date/time of decisions.

5. Support Services: Administrative support for management activities will be provided by the Office of Subsistence Management, U.S. Fish & Wildlife Service, Department of the Interior.

6. Authority: This delegation of authority is established pursuant to 36 CFR 242.10(d)(6) and 50 CFR 100.10(d)(6).

This delegation of authority will assure conservation of lynx populations through sound management decisions in cooperation with State managers, thereby providing for the long-term needs of the subsistence user.

Sincerely,

Michael R. Fleagle, Chair
Federal Subsistence Board

cc:

Members of the Federal Subsistence Board
Interagency Staff Committee
Tina Cunning, ADF&G

WP10-05 Executive Summary	
General Description	Proposal WP10-05 seeks to update, clarify, and simplify the regulations regarding accumulation of harvest limits for both fish and wildlife. <i>Submitted by the Office of Subsistence Management</i>
Proposed Regulation	<p>§ __.25(c) <i>Harvest Limits.</i></p> <p>(1) <i>Harvest limits authorized by this section and harvest limits established in State regulations may not be accumulated, unless specified otherwise in §§ __.26 or __.27 or __.28.</i></p> <p>(2) ****</p> <p>(3) <i>A harvest limit may applies apply to the number of fish, wildlife, or shellfish that can be taken daily, seasonally and/or during a regulatory year or held in possession.; however, harvest limits for grouse (in some Units), ptarmigan, and caribou (in some Units), are regulated by the number that may be taken per day. Harvest limits of grouse, and ptarmigan are also regulated and the number that can be held in possession.</i></p>
OSM Preliminary Conclusion	Support
Southeast Regional Council Recommendation	
Southcentral Regional Council Recommendation	
Kodiak/Aleutians Regional Council Recommendation	
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Northwest Arctic Regional Council Recommendation	
Eastern Interior Regional Council Recommendation	
North Slope Regional Council Recommendation	Support

continued on next page

WP10-05 Executive Summary (continued)	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	None

DRAFT STAFF ANALYSIS WP10-05

ISSUES

Proposal WP10-05, submitted by the Office of Subsistence Management, seeks to update, clarify, and simplify the regulations regarding accumulation of harvest limits for both fish and wildlife.

DISCUSSION

A prohibition against accumulating Federal and State harvest limits has been included in the statewide general Federal subsistence regulations since 1990 (§__.25(c)(1)). Wording in Section __.25(c)(3) dates back to 1994; this section identifies the species for which harvest limits apply. There is a need to update both Sections __.25(c)(1) and (3). While the Board has addressed a number of area specific proposals concerning the accumulation of harvest limits over the years, these two sections of the general regulations have not been updated to reflect changes to the unit and area specific regulations; the current proposal addresses those inconsistencies.

Existing Federal Regulations

Statewide – Subsistence taking of fish, wildlife, and shellfish: general regulations

§__.25(c) *Harvest Limits.*

(1) *Harvest limits authorized by this section and harvest limits established in State regulations may not be accumulated.*

(2)****

(3) *A harvest limit applies to the number of fish, wildlife, or shellfish that can be taken during a regulatory year; however, harvest limits for grouse, ptarmigan, and caribou (in some Units) are regulated by the number that may be taken per day. Harvest limits of grouse and ptarmigan are also regulated by the number that can be held in possession.*

Proposed Federal Regulations

Statewide – Subsistence taking of fish, wildlife, and shellfish: general regulations

§__.25(c) *Harvest Limits.*

(1) *Harvest limits authorized by this section and harvest limits established in State regulations may not be accumulated, **unless specified otherwise in §§__.26 or __.27 or __.28.***

(2)****

(3) *A harvest limit **may applies apply** to the number of fish, wildlife, or shellfish that can be taken **daily, seasonally and/or** during a regulatory year **or held in possession.** ~~; however, harvest limits for grouse (in some Units), ptarmigan, and caribou (in some Units), are regulated by the number~~*

that may be taken per day. Harvest limits of, grouse, and ptarmigan are also regulated and the number that can be held in possession.

Existing State Regulations

In State hunting regulations a harvest (bag) limit applies to a regulatory year unless otherwise specified, and includes animals taken for any purpose, including for subsistence. State hunting regulations provide daily limits for wolves (all or part of Units 9, 10, 13, 17 and 19); caribou (all or part of Units 21, 22, 23, 24 and 26); coyote (Units 6–17, 19 and 20); grouse (1–7, 9, 11–26); hare (all or part of Units 1–5 and 14) and ptarmigan (Units 1–26).

State regulations do not prohibit the accumulation of harvest limits taken in State sport, personal use, and subsistence fisheries across most of Alaska (Kotzebue, Norton Sound-Port Clarence, Yukon-Northern, Kuskokwim, Bristol Bay, Aleutian Islands, Alaska Peninsula, Chignik, Kodiak, Cook Inlet and Prince William Sound areas). In the Southeast Area, the State prohibits fishers from possessing salmon taken in the sport fishery on the same day as salmon taken in either subsistence or personal use fisheries (5 AAC 01.745(b); 5 AAC 77.682(e)). In the Yakutat Area, the State prohibits possession of personal use-taken and sport-taken salmon on the same day (5 AAC 77.628(f)).

In State subsistence fish regulations, ten areas (Norton Sound-Port Clarence, Yukon-Northern, Bristol Bay, Aleutian Islands, Alaska Peninsula, Chignik, Kodiak, Cook Inlet, Prince William Sound and Southeast (5 AAC 01)) have annual harvest limits for some species of freshwater fish. The annual subsistence harvest limits specified in the Aleutian Islands, Chignik and Kodiak areas are the same as those in Federal subsistence regulations and the subsistence fisheries in these three areas are administered using State permits. There is no State subsistence daily, possession or annual harvest limit regulations for freshwater fisheries in two areas (Kotzebue and Yakutat). Only one area (Southeast Alaska) has a specific State subsistence regulatory daily and possession limit (for one species at one location; 5 AAC 01.760). Most State sport fish harvest regulations are based on daily and possession limits (5 AAC 47-75).

Extent of Federal Public Lands and Waters

This proposal would apply to the entire state. Federal public lands comprise approximately 65% of Alaska and consist of 23% Bureau of Land Management, 15% National Park Service, 21% U.S. Fish and Wildlife Service, and 6% U.S. Department of Agriculture, U.S. Forest Service lands.

Regulatory History

Accumulating Federal and State harvest limits

The current wording in Section __.25(c)(1) that addresses the prohibition against accumulating Federal and State harvest limits dates back to 1990. Based on requests from subsistence users, ADF&G, and the review and recommendations of the Southcentral Alaska and Southeast Alaska Subsistence Regional Advisory Councils, the Federal Subsistence Board (Board) supported several exemptions to and clarification of the general prohibition against accumulation of harvest limits in Section __.25(c)(1).

In 2004, the Board authorized accumulation of subsistence harvest limits for salmon in the Copper River drainage upstream from Haley Creek with harvest limits for salmon authorized under State of Alaska sport fishing regulations (27(i)(11)(B)). In 2005, the Board also authorized the accumulation of Federal subsistence fish annual harvest limits with State sport fishing limits for the Southeast Alaska area (27(i)(13)(vii)).

In 2006, the Board allowed accumulation of Federal subsistence fishing harvest limits with State of Alaska sport fishing harvest limits within the Chugach National Forest and in the Copper River drainage downstream from Haley Creek provided that the accumulation of fishing harvest limits would not occur in the same day (27(i)(11)(A)).

In 2009, the Board clarified regulations by stipulating that a subsistence fisher may not accumulate Federal subsistence harvest limits authorized for Southeast Alaska Area with any harvest limits authorized under any State of Alaska fishery with the following exceptions: annual and seasonal Federal subsistence harvest limits may be accumulated with State sport fishing harvest limits provided that accumulation of harvest limits does not occur during the same day (27(i)(13)(vii)). That year, the Board further clarified that fishers may not possess subsistence taken and sport taken fish of a given species on the same day in the Yakutat (27(i)(12)(viii)) and Southeast Alaska (27(i)(13)(xi)) Areas.

Current Federal subsistence management regulations that address applicability for subsistence take of wildlife (§__26) provide the following clarification concerning accumulation of harvest limits (§__26(e)(1)):

Except as specified in paragraphs (e)(2) or (f)(1) of this section, or as otherwise provided, you may not take a species of wildlife in any unit, or portion of a unit, if your total take of that species already obtained anywhere in the State under Federal and State regulations equals or exceeds the harvest limit in that unit.

Sections __26(e)(2) and (f)(1) address established community harvest limit allowances and an allowance for accumulating hunting and trapping harvest limits.

The regulations that address applicability for subsistence taking of fish (§__27) provides the following clarification concerning accumulation of harvest limits:

(§__27(a)(2)) The harvest limit specified in this section for a subsistence season for a species and the State harvest limit set for a State season for the same species are not cumulative, except as modified by regulations in §__27(i). This means that if you have taken the harvest limit for a particular species under a subsistence season specified in this section, you may not, after that, take any additional fish of that species under any other harvest limit specified for a State season.

The regulations that address applicability for subsistence taking of shellfish (§__28) provides the following clarification concerning accumulation of harvest limits:

(§__28(d)(1)) The harvest limit specified in this section for a subsistence season for a species and the State harvest limit set for a State season for the same species are not cumulative. This means that if you have taken the harvest limit for a particular species under a subsistence season specified in this section, you may not, after that, take any additional shellfish of that species under any other harvest limit specified for a State season.

Application of harvest limits

The current wording in Section __25(c)(3) dates back to 1994 and specifies that harvest limits apply to “regulatory year”, with the exception of ptarmigan, and in some units for grouse and caribou.

Current Federal hunting regulations (§__26) include daily limits for beaver (Unit 9 and 17), caribou (all or part of Units 21–24 and 26); hare (all or part of Units 1–5 and 14); and wolf (part of Unit 19). There

are daily and possession limits for grouse (all or part of Units 1–7, 9 and 11–25); ptarmigan (Units 1–26); and beaver (all or part of Units 7, 11, 13 and 25).

When Federal subsistence management regulations for fish (§ __.27) were first implemented on October 1, 1999, there were no specified daily or possession limits for fish in Federal regulations except on the Kenai Peninsula. Since that time, the Federal Subsistence Board has established daily and/or possession limits for specific fish species and locations in 5 of 13 fishery management areas. Federal regulatory provisions for daily harvest and/or possession limits for specific species of fish were first established in the Southeast Area in 2001, the Yukon-Northern and Cook Inlet areas in 2002, the Bristol Bay Area in 2003, and the Yakutat Area in 2006.

Current Federal subsistence management regulations include daily and/or possession limits for sockeye and coho salmon, steelhead trout, brook trout, grayling, Dolly Varden, cutthroat trout, and rainbow trout in all or parts of the Southeast Area. Yakutat Area regulations include a daily harvest and possession limit for Dolly Varden and address a daily limit for steelhead trout.

In parts of the Cook Inlet Area there are specific daily harvest and possession limits in Federal regulations for Chinook, sockeye, coho and pink salmon; Dolly Varden/Arctic char; lake trout and rainbow/steelhead trout. In other parts of the Cook Inlet Area, Federal subsistence regulations specify that the daily harvest and possession limits for fish are the same as those in Alaska sport fishing regulations. In a November 24, 2008 letter to OSM, Federal Subsistence Board Chairman Fleagle clarified that the Board's intent was that Federal subsistence and State sport harvest limit for fish not be accumulated for the Kasilof and Kenai river drainages and vicinity.

Federal subsistence management regulations also specify daily and possession limits for rainbow trout in the Bristol Bay Area and daily and possession limits for grayling in a part of the Yukon-Northern Area. There are no Federal daily or possession limits for fish in the Kotzebue, Norton Sound-Port Clarence, Kuskokwim, Aleutian Islands, Alaska Peninsula, Chignik, Kodiak, or Prince William Sound areas. Federal subsistence management regulations specify annual harvest limits for fish species and locations in seven areas (Aleutian Islands, Alaska Peninsula, Chignik, Kodiak, Cook Inlet, Prince William Sound, and Southeast). There are no daily, possession or annual limits for fish under Federal subsistence management regulations in three areas (Kotzebue, Norton Sound-Port Clarence, and Kuskokwim).

Shellfish regulations (§ __.28) include daily and possession limits as well. There are daily limits for shellfish in Bering Sea Area. There are daily and/or possession limits for shellfish in the Cook Inlet, Kodiak, and Alaska Peninsula-Aleutian Islands Areas.

Effects of the Proposal

Proposal WP10-05 does not affect fish and wildlife populations, subsistence uses or other uses (i.e., sport/recreational or commercial). Rather, the proposal seeks to update, clarify, and simplify Sections __.25(c) (1) and (3), all of which reference accumulation of harvest limits. Section __.25(c)(1) dates back to 1990 and Section __.25(c)(3) dates back to 1994. The proposed wording changes retain the general prohibition of accumulation of Federal and State harvest limits, and points to unit and area specific regulations for details and exceptions. Unit and area specific regulations currently provide daily, daily and possession, or possession limits for ptarmigan, grouse, caribou, wolf, hare, beaver, fish and shellfish. This proposal does not change any unit or area specific Federal subsistence regulations concerning accumulation of harvest limits or the timeframe (daily, seasonal or regulatory year) for harvest limits.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-05.

Justification

The general regulations concerning accumulation of harvest limits need to be updated to reflect Board action over the years. The Board has addressed a number of proposals concerning accumulation of harvest limits; the approved exceptions are reflected within the Federal hunting and trapping (§__.26), fishing (§__.27), and shellfish (§__.28) regulations. The changes to the general regulations proposed herein recognize all of the previously approved exceptions. This proposal does not affect fish and wildlife populations, subsistence users or other users. Given the number of species, areas and units affected, and the changes that may occur in the future, it is appropriate to use more general wording in these general regulations.

WP10-72 Executive Summary	
General Description	WP10-72 requests that the closure to harvest coyotes on Federal public lands be rescinded. <i>Submitted by the Seward Peninsula Regional Advisory Council</i>
Proposed Regulation	<p>Unit 22 — Coyote Hunting <i>Federal public lands are closed to the taking of coyotes</i> <i>No Federal open season</i></p> <p>Unit 22 — Coyote Trapping <i>Coyote, incidentally taken with a trap or snare intended for red fox or wolf, may be used for subsistence purposes</i> <i>No Federal open season</i></p>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Neutral
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP10-72**

ISSUES

WP10-72, submitted by the Seward Peninsula Regional Advisory Council, requests that the closure to harvest coyotes on Federal public lands be rescinded.

DISCUSSION

The proponent is requesting the Federal harvest season for coyotes be reopened to allow harvest of coyotes on Federal public lands under State regulations. The proponent states that the closure is not needed due to the limited amount of coyotes within Unit 22 and subsequently there not being a Federal harvest season. The proponent states rescinding the closure of Federal public lands to harvesting coyotes will allow individuals to harvest coyotes on Federal public lands under State regulations.

Existing Federal Regulations

Unit 22 — Coyote Hunting

Federal public lands are closed to the taking of coyotes *No Federal open season*

Unit 22 — Coyote Trapping

Coyote, incidentally taken with a trap or snare intended for red fox or wolf, may be used for subsistence purposes *No Federal open season*

Proposed Federal Regulations

Unit 22 — Coyote Hunting

Federal public lands are closed to the taking of coyotes *No Federal open season*

Unit 22 — Coyote Trapping

Coyote, incidentally taken with a trap or snare intended for red fox or wolf, may be used for subsistence purposes *No Federal open season*

Existing State Regulations

Unit 22 — Coyote Hunting

2 coyotes. *Sept. 1 – Apr. 30*

Unit 22 — Coyote Trapping

No limit *Nov. 1 – Apr. 15*

Extent of Federal Public Lands

Federal public lands comprise 32% of Unit 22 and consist of 18% Bureau of Land Management, 12% National Park Service (NPS), and 2% Fish and Wildlife Service (FWS) lands. The NPS managed lands are part of the Bering Land Bridge National Preserve. The FWS lands are managed as a small portion of the Yukon Delta National Wildlife Refuge in Unit 22A (see **Unit 22 Map**).

Customary and Traditional Use Determinations

All rural residents of Unit 22 have a positive customary and traditional use determination for coyote in Unit 22.

Regulatory History

In 1995, Proposal 45 requested the closure of Federal public lands to hunting and trapping coyote in Unit 22 and was subsequently adopted by the Federal Subsistence Board. The Seward Peninsula Regional Council at the time felt that there should not be an open season for a resource that does not exist in the region and that regulations should reflect the reality of the animals that exist in the region (SPSRAC 1995). The Council provided a modification to close Federal public lands to all taking, except incidental take by trapping (FWS 1995).

Biological Background

There is a lack of information regarding coyote in most parts of Alaska and specifically for Unit 22. In 1999, the Alaska Department of Fish and Game (ADF&G) received the first report of coyotes in Unit 22 from a trapper harvesting two coyotes in the Unalakleet River drainage in Unit 22A (Persons, K. 2001). Previously, ADF&G had no recorded account of coyote in Unit 22.

Coyotes have expanded their range in Alaska over the past 50 years and are most prominent in the Kenai Peninsula, Matanuska-Susitna valleys, and Copper River Valley. Populations were first reported in Southeast Alaska and have expanded north into the Tanana Valley (Thurber and Peterson 1991). Potential immigration from areas surrounding Unit 22 contain few records of coyote north of the Yukon River but small populations do occur (ADFG 2009) and occasional coyotes have been harvested in the Goodnews River drainage, the Kwethluk River and the Andreafsky River drainages in Unit 18 (Seavoy 2001). Coyotes also are reported as being rare in Unit 21 and only three coyotes were reported harvested between 1989–2000 from fur acquisition reports and fur export permits (Stout 2001). No coyote harvest has been reported in Unit 23 and trapping questionnaires list coyotes as being not present (Blejwas 2006).

Available food is the major factor in regulating coyote abundance, especially in the winter and influences broad aspects of coyote populations including survival, reproduction, and spatial-use patterns and density (Gese et al. 1996 and Knowlton 1999). Potential prey sources within Unit 22 would determine successful immigration of coyotes from other areas. Coyotes are typically classified as generalist predators, however, research in the Central Alaska Range (CAR) in Unit 20A showed coyotes functioned more as prey selection specialists focusing primarily on snowshoe hares, with alternative prey varying between carrion in the CAR (Prugh 2005), voles in the southwest Yukon (O'Donoghue et al. 1998) and on Dall sheep lambs during periods of deep snow drifts in the winter or during the spring lambing season in the CAR (Arthur 2003). However, the distribution of snowshoe hares is primarily in Interior Alaska as they typically inhabit boreal and mixed spruce forests and brushy areas (Prugh 2005) and therefore would not be a possible prey source for coyotes in the Seward Peninsula except possibly in areas west of Koyuk. Arctic or tundra hares inhabit western coastal Alaska and can be found in upland tundra and rocky slopes

and would potentially be the prey source for immigrating coyotes in Unit 22 (ADFG 2009, Murray 2003) as hare numbers have been high for a number of years (Bente 2008). The population status of tundra voles in Unit 22 is unknown, but may be a possible additional prey source for coyotes seeking to expand their range into Unit 22. Dall sheep inhabit mountain ranges in Alaska and therefore, do not occur in Unit 22 (ADFG 2009). Carrion of large ungulates (caribou and muskoxen) in Unit 22 would be the most likely prey source and would potentially increase coyote populations in Unit 22 if coyote immigration occurred. In northern climates, coyote litter size has been shown to increase with a prevalence of ungulate carcasses from winter mortality because large meat sources are available to ovulating female coyotes (Gese 1996, O'Donahue 1998).

Management Direction

The current ADF&G management objectives for the coyote population in Unit 22 are undefined. ADF&G lists several furbearers, excluding coyote, in Unit 22 and has a management goal to maintain viable numbers of furbearers and monitor harvest through the fur sealing program, annual hunter/trapper questionnaires, and Community-based Harvest Assessments conducted annually in selected Unit 22 villages.

Harvest History

Only 4 species of the 15 defined as furbearers by the Alaska Department Fish and Game are required to be sealed throughout Alaska. Coyote is not required to be sealed and consequently, information on numbers and distribution throughout the state is extremely limited. ADF&G relies upon trapping reports to determine the population status of coyotes within Alaska. However, the most recent furbearer management report by ADF&G (Persons and Gorn 2007) does not list coyote as one of the furbearers found in Unit 22. In the 2007 Furbearer Management Report, trappers listed coyote as the ninth (of 13) most valuable species to trap and listed it as the tenth most valuable in the arctic and western regions of Alaska. Most of the furbearer harvest in Unit 22 is by subsistence and recreational users or is done opportunistically by local residents while engaged in other activities (Persons and Gorn 2007).

Since 1999, limited harvest information has been collected through sporadic household surveys in some communities in Unit 22, however, these surveys focus primarily on big game harvest and the only furbearer data collected in these surveys is on wolves and wolverines (Persons and Gorn 2007). Trapper surveys provide additional information for most furbearers; however coyote has not been included in Unit 22 (Persons and Gorn 2007). The most recently available trapping report (2004–2005) generated by ADF&G lists coyotes as being scarce within Unit 22 with no change in the population trend for the previous four years and recorded eleven coyotes harvested for Unit 22 for this time period (Blejwas 2006).

There is no specific harvest data available for coyotes on Federal lands in any part of Alaska. The Federal database only has trapping records for beaver, lynx, otter, wolf and wolverine.

Fur acquisition and fur export reports are another index to coyote harvest within Alaska. Despite inherent difficulties in this data due to significant under-reporting by trappers keeping coyote furs for self-use or exaggerated harvest for a specific year if trappers eventually sell furs from previous years, it does provide a very broad indicator of coyote harvest over longer periods of time. However, this information is statewide and individual units are not reported.

Effects of the Proposal

By rescinding the closure and not establishing a Federal season of hunting coyotes on Federal lands, individuals would be able to hunt or trap a coyote opportunistically under State regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP-72

Justification

Most of the furbearer harvest in Unit 22 is by subsistence and recreational users or is done opportunistically by local residents while engaged in other activities (Persons and Gorn 2007). Specifically for coyote, there is a lack of information for most parts of Alaska and specifically for Unit 22 with the only known report of coyote in Unit 22 being from a trapper harvesting two coyote in the Unalakleet drainage in Unit 22A in 1999 (Persons, K. 2001). Potential immigration from areas surrounding Unit 22 contains few records of coyotes in Unit 18, 21, or 23. Coyotes are not required to be sealed and consequently, information on numbers and distribution throughout the state is extremely limited. By rescinding the closure and not establishing a Federal season of hunting coyotes on Federal lands, individuals would be able to hunt or trap a coyote opportunistically under State regulations.

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Comments WP10-72
January 29, 2010; Page 1 of 1

Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-72: This proposal allows for federal subsistence use of incidental catch of coyotes taken by federally qualified subsistence users under federal regulations during the federal subsistence trapping season for red fox and wolf in Unit 22.

Introduction: Coyotes are expanding their range and abundance throughout much of western Alaska. This proposal allows for federal subsistence use of coyotes accidentally trapped as non-target species in Unit 22. The state allows hunting and trapping of coyotes in Unit 22; however, federal subsistence regulations do not have open seasons for either hunting or trapping.

Impact on Subsistence Users: None. Subsistence users can already harvest coyote under state regulations on federal and nonfederal lands. Allowing the use of incidental catch under federal subsistence trapping regulations is not likely to impact the take or subsistence use of coyotes.

Opportunity Provided by State: In Unit 22, regulations for coyote are:

Hunting: (Coyotes are classed as 'Fur Animal'; take requires a state hunting license) the season in September 1 through April 30 with a bag limit of 2 coyotes.

Trapping: (Coyotes are classed as 'Furbearer'; take requires a state trapping license) the season is November 1 through April 15 with no bag limit.

Conservation Issues: Coyotes are expanding their range, and trapping or hunting take is not considered an impediment or conservation concern.

Recommendation: Neutral; hunting and trapping of coyotes for subsistence use are already provided on federal public lands under state regulations.

WP10-73 Executive Summary			
General Description	Proposal WP10-73 requests expansion of the customary and traditional use determination for muskoxen in all of Unit 22D to add residents of Units 22B west, 22C, and 22E to the current customary and traditional use determination that only includes residents of Unit 22D. <i>Submitted by the Seward Peninsula Subsistence Regional Advisory Council</i>		
Proposed Regulation	<i>See the analysis for regulation language.</i>		
OSM Preliminary Conclusion	<p>Support Proposal WP10-73 with modification to add all residents of Unit 22B (with no distinction between east and west) to the customary and traditional use determination for Unit 22D, in addition to the residents of Units 22C, 22D, and 22E.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Unit 22D—Muskox</p> <p><i>Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim river drainages</i></p> <p><i>Unit 22D—remainder</i></p> </td> <td style="width: 50%; vertical-align: top;"> <p>Customary and traditional use determination</p> <p><i>Rural residents of Units 22B, 22C, 22D (excluding St. Lawrence Island) and White Mountain, and 22E.</i></p> <p><i>Rural residents of Unit 22D—excluding St. Lawrence Island</i></p> </td> </tr> </table>	<p>Unit 22D—Muskox</p> <p><i>Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim river drainages</i></p> <p><i>Unit 22D—remainder</i></p>	<p>Customary and traditional use determination</p> <p><i>Rural residents of Units 22B, 22C, 22D (excluding St. Lawrence Island) and White Mountain, and 22E.</i></p> <p><i>Rural residents of Unit 22D—excluding St. Lawrence Island</i></p>
<p>Unit 22D—Muskox</p> <p><i>Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim river drainages</i></p> <p><i>Unit 22D—remainder</i></p>	<p>Customary and traditional use determination</p> <p><i>Rural residents of Units 22B, 22C, 22D (excluding St. Lawrence Island) and White Mountain, and 22E.</i></p> <p><i>Rural residents of Unit 22D—excluding St. Lawrence Island</i></p>		
Seward Peninsula Regional Council Recommendation			
Interagency Staff Committee Comments			
ADF&G Comments			
Written Public Comments	None		

**DRAFT STAFF ANALYSIS
WP10-73**

ISSUES

Proposal WP10-73, submitted by the Seward Peninsula Subsistence Regional Advisory Council, requests expansion of the customary and traditional use determination for muskoxen in all of Unit 22D to add residents of Units 22B west, 22C, and 22E to the current customary and traditional use determination that only includes residents of Unit 22D.

DISCUSSION

The proponent submitted Proposal WP10-73 to expand the existing customary and traditional use determination for muskox so that all rural residents of Unit 22B west, 22C, 22D (excluding residents of St. Lawrence Island), and 22E (see **Map 1**) would be able to harvest muskoxen anywhere in Unit 22D. This proposal also would eliminate the division of Unit 22D into the Kougarok, Kuzitrin, and Pilgrim River drainages and Unit 22D—remainder.

White Mountain residents in Unit 22B west, and residents of Unit 22C and 22D already have a customary and traditional use determination for the Kougarok, Kuzitrin, and Pilgrim River drainages. The Federal Subsistence Board (Board) recognizes the customary and traditional uses of muskox of all residents in Units 22B, 22C, 22D, and 22E. This analysis focuses on the question of “where;” specifically whether or not Wales and Shishmaref in Unit 22E, Nome and Solomon in Unit 22C, and White Mountain and Golovin in Unit 22B west have customarily and traditionally used all of Unit 22D for harvesting muskoxen. The Board has already recognized the customary and traditional uses of muskoxen in Unit 22D by residents of Teller and Brevig Mission (the only communities in Unit 22D), thus this discussion does not include Teller and Brevig Mission.

During discussions of Proposal WP10-73, the Seward Peninsula Subsistence Regional Advisory Council (Council) noted that subsistence users will travel long distances to harvest muskox when there is a shortage, consequently the Council believes the customary and traditional use determination should be expanded to the residents of subunits surrounding Unit 22D (SPRAC 2009:37).

Existing Federal Regulation

Unit 22D—Muskox

Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim river drainages

Unit 22D—remainder

Customary and traditional use determination

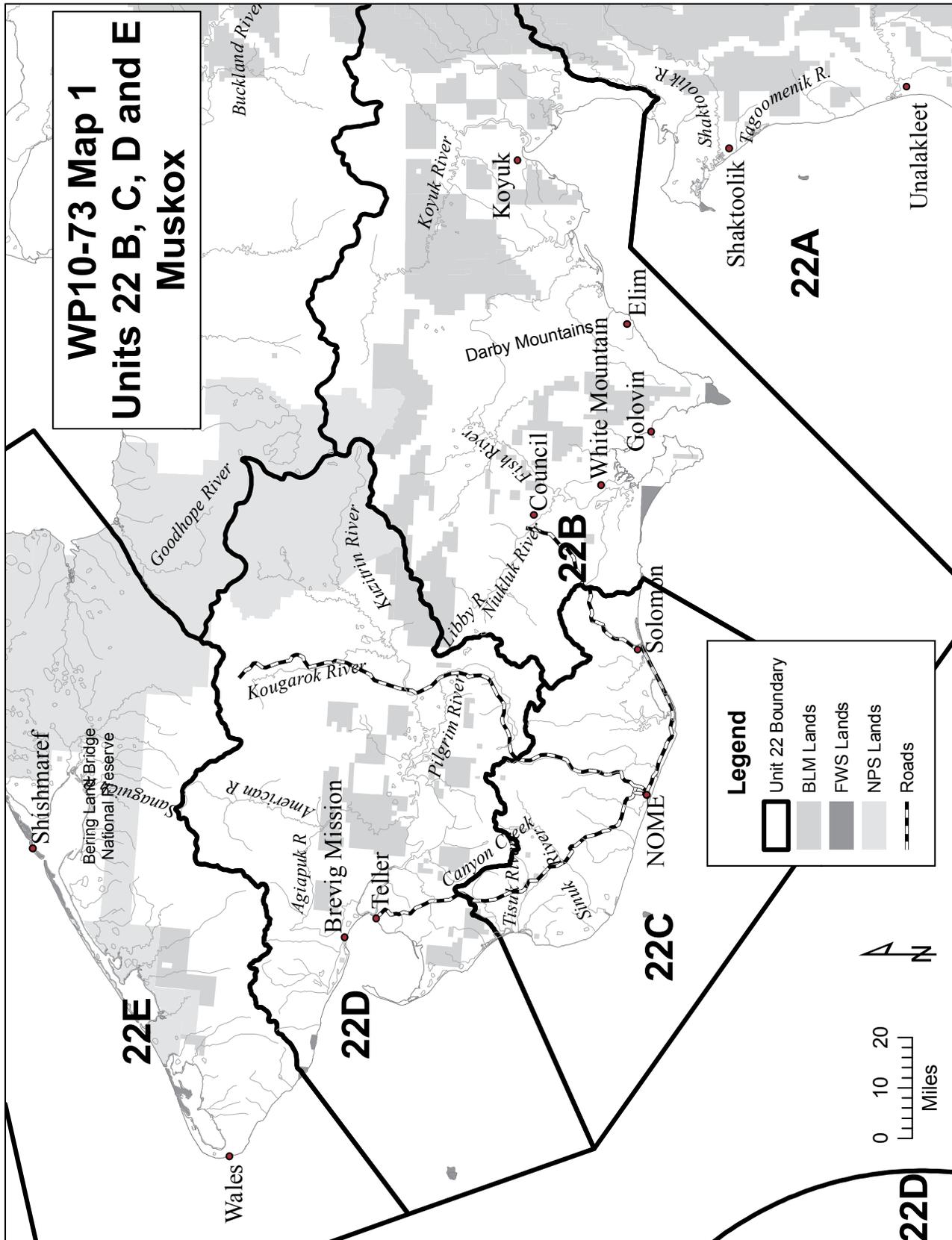
Rural residents of Units 22C, 22D, (excluding St. Lawrence Island) and White Mountain

Rural residents of Unit 22D excluding St. Lawrence Island

Proposed Federal Regulation—as presented in the Proposal Book

Unit 22D—Muskox

Customary and traditional use determination



Unit 22D, that portion west of the Tisuk river drainage and Canyon Creek—Rural residents of Unit 22D excluding St. Lawrence Island	<i>Rural residents of Unit 22D (excluding St. Lawrence Island)</i>
<i>Unit 22D—remainder</i>	<i>Rural residents of Unit 22C, 22D, excluding St. Lawrence Island, and White Mountain</i>

Proposed Federal Regulation—Council’s rewrite in September 2009

Unit 22D—Muskox	Customary and traditional use determination
<i>Unit 22D, that portion within the Kougarok, Kuzitrin, and Pilgrim river drainages</i>	<i>Rural residents of Units 22B west, 22C, 22D, and 22E (excluding St. Lawrence Island) and White Mountain</i>
<i>Unit 22D—remainder</i>	<i>Rural residents of Unit 22D excluding St. Lawrence Island</i>

Extent of Federal Public Lands

Federal public lands in Unit 22D are managed by the National Park Service (11%) and the Bureau of Land Management (5%). All of the Federal public land in Unit 22D—remainder is managed by the Bureau of Land Management. No estimations are available on how much of the Federal public land in Unit 22D—remainder is managed by the Bureau of Land Management (see **Map 1**).

Regulatory History

The muskox population on the Seward Peninsula was established from a transplant of 36 animals in 1970. A supplemental transplant of 31 animals occurred in 1981. The herd has been growing since 1981 and has expanded its range on the Seward Peninsula. Until 1995, there was no Federal or State muskox hunt in Unit 22. The initial Federal customary and traditional use determinations were made in 1995 (Proposal 43) and based on traditional tribal use territories (SPRAC 1995:115). The 1995 customary and traditional use determinations were specific to each subunit¹. After the Board recognized customary and traditional uses of muskoxen in Unit 22, a subsequent Federal hunt was established in Units 22D, E, and 23sw, and in Unit 22B in 2001. State muskox seasons and harvest limits have been established in Units 22B, 22C, 22D, 22E, and 23sw.

In 2004, through review of Proposal WP04-71, the Board adopted the customary and traditional use determinations that were recommended with modification by the Council (FSB2004:366; this was a consensus agenda item, thus the Board adopted the Council’s recommendation through adoption of the consensus agenda). Proposal WP04-71 requested that the existing customary and traditional use determination for muskoxen for Units 22B and 22D be expanded to include all residents of Unit 22, excluding the residents of St. Lawrence Island. The Board added residents of Unit 22C to the customary and traditional use determination for muskox in Unit 22B west of the Darby Mountains and added

¹The 1995 customary and traditional use determinations for muskoxen were:
 Unit 22(A)—No determination (All rural residents)
 Unit 22B—Rural residents of Unit 22B
 Unit 22C—Rural residents of Unit 22C
 Unit 22D—Rural residents of Unit 22D excluding St. Lawrence Island
 Unit 22(E)—Rural residents of Unit 22(E) excluding Little Diomed Island

residents of Unit 22C and White Mountain to Unit 22D in the Kougarok, Kuzitrin, and Pilgrim River drainages. However, the Board did not adopt that portion of Proposal WP04-71 that would have made residents of Unit 22C (Nome) and Unit 22B eligible to harvest muskoxen on Federal public lands in all of Unit 22D. The Board's decision in 2004 was consistent with the recommendation of the Council. At that time, the Council noted that residents of Unit 22C (residents of Nome and Solomon) and White Mountain had not demonstrated customary and traditional use of muskoxen in Unit 22D outside of the Kougarok, Kuzitrin, and Pilgrim River drainages. At the winter 2004 Council meeting, the Council noted that other communities in Unit 22 have not demonstrated customary and traditional use of muskoxen in all of Unit 22D and the customary and traditional use determination for Unit 22D—remainder should remain as it was for residents of Unit 22D.

The customary and traditional use determinations currently in place were adopted by the Board's decision in 2004.

Community Characteristics

The communities currently under consideration for a positive customary and traditional use determination in the proposed regulation include all communities in Unit 22B west, 22C, 22D except Gambell and Savoonga on St. Lawrence Island, and 22E (see **Unit 22 Map and Table 1**). Nome is the largest community with a population of 3,505 in the 2000 census; the total population of the eight villages affected by this proposal was 1,755 in 2000 (US Census 2000).

Eight Factors for Determining Customary and Traditional Uses

A community or area's customary and traditional use is generally exemplified through the eight factors: (1) a long-term, consistent pattern of use, excluding interruptions beyond the control of the community or area; (2) a pattern of use recurring in specific seasons for many years; (3) a pattern of use consisting of methods and means of harvest which are characterized by efficiency and economy of effort and cost, conditioned by local characteristics; (4) the consistent harvest and use of fish or wildlife as related to past methods and means of taking: near, or reasonably accessible from the community or area; (5) a means of handling, preparing, preserving, and storing fish or wildlife which has been traditionally used by past generations, including consideration of alteration of past practices due to recent technological advances, where appropriate; (6) a pattern of use which includes the handing down of knowledge of fishing and hunting skills, values, and lore from generation to generation; (7) a pattern of use in which the harvest is shared or distributed within a definable community of persons; and (8) a pattern of use which relates to reliance upon a wide diversity of fish and wildlife resources of the area and which provides substantial cultural, economic, social, and nutritional elements to the community or area.

The Board makes customary and traditional use determinations based on a holistic application of these eight factors (50 CFR 100.16(b) and 36 CFR 242.16(b)). In addition, the Board takes into consideration the reports and recommendations of any appropriate Regional Advisory Council regarding customary and traditional use of subsistence resources (50 CFR 100.16(b) and 36 CFR 242.16(b)). The Board makes customary and traditional use determinations for the sole purpose of recognizing the pool of users who generally exhibit the eight factors. The Board does not use such determinations for resource management or restricting harvest. If a conservation concern exists for a particular population, the Board addresses that concern through the imposition of harvest limits or season restrictions rather than by limiting the customary and traditional use finding.

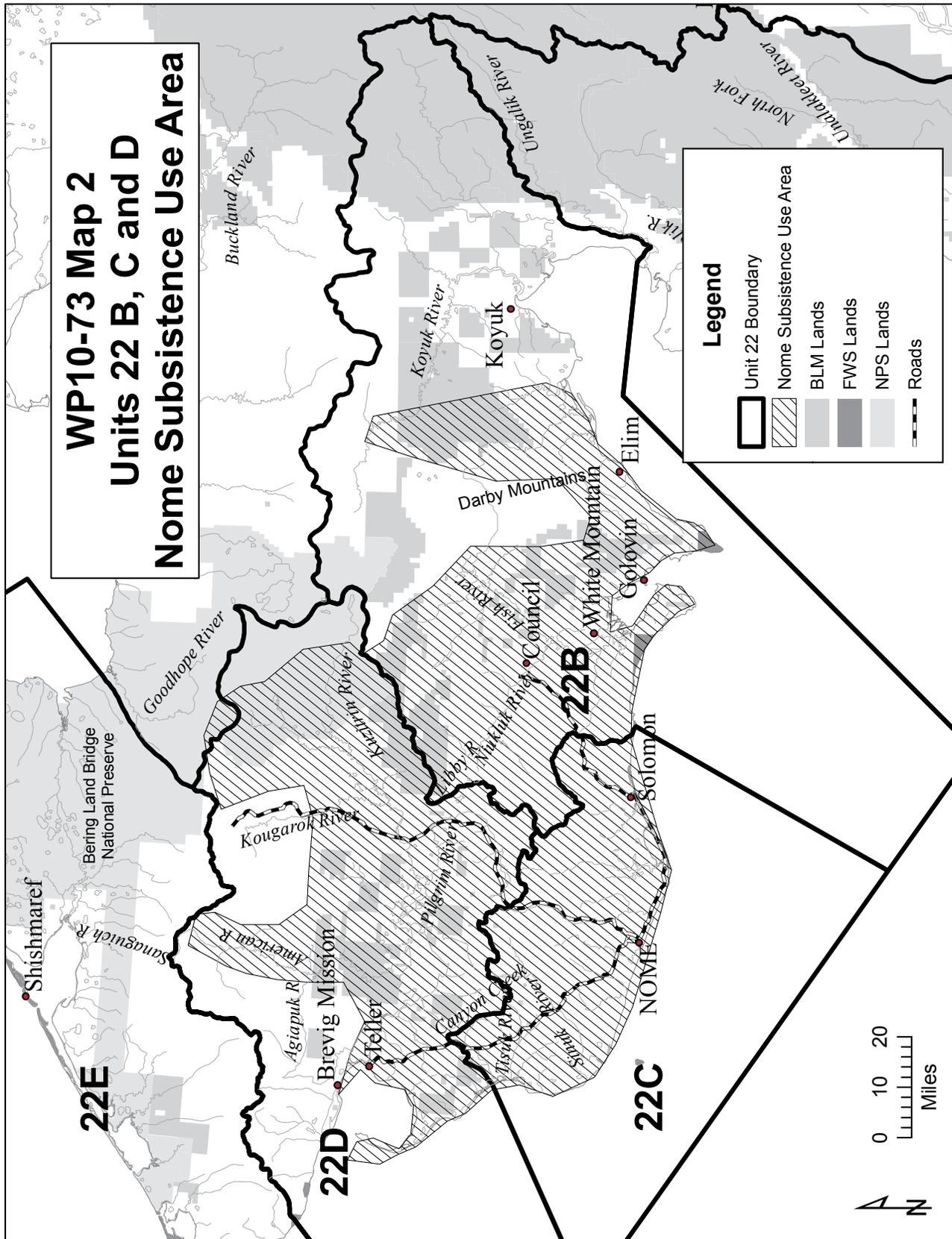
Table 1. Population of Unit 22B west, 22C, 22D (with the exception of St. Lawrence Island), and 22E (US Census 2000).

Community	2000 Census Population
Unit 22B west Communities	
Golovin	144
White Mountain	203
Council	0
Unit 22C Communities	
Nome	3,505
Solomon	4
Unit 22D Communities	
Teller	268
Brevig Mission	276
Unit 22E Communities	
Shishmaref	562
Wales	152
Little Diomedede	146

Specific information on each of the eight factors is not required because a community or area seeking a customary and traditional use determination only has to “generally exhibit” the eight factors (50 CFR 100.16(b) and 36 CFR 242.16(b)).

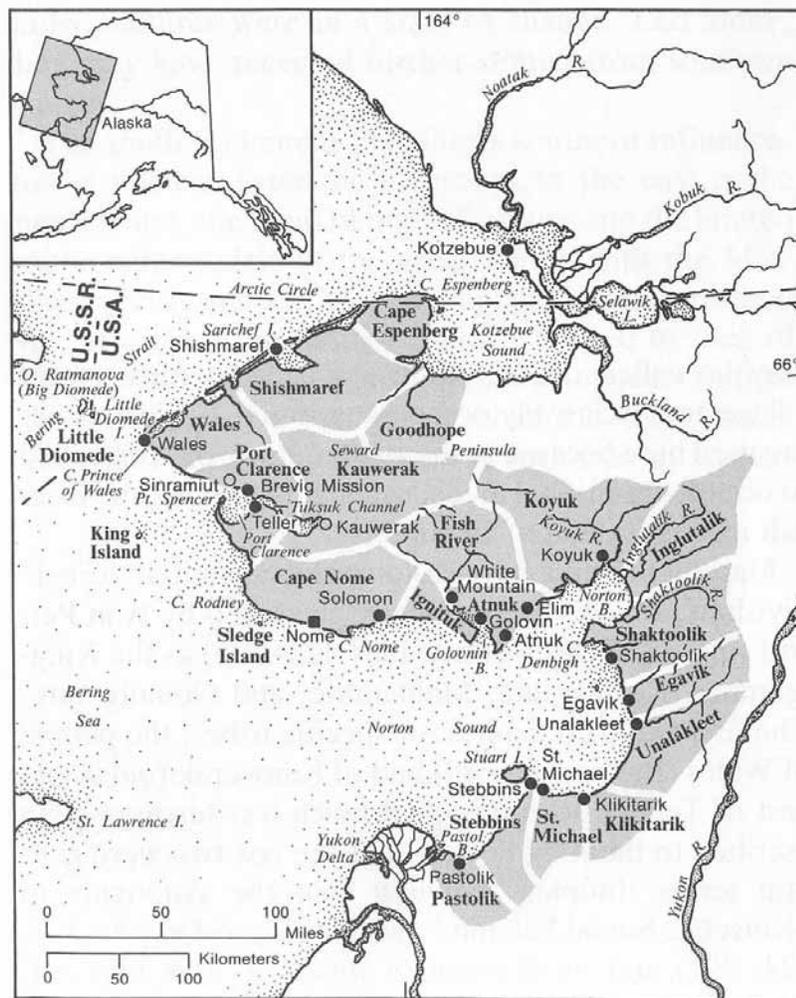
The Federal Subsistence Board has already recognized the customary and traditional uses of muskoxen for all of the communities in Unit 22B west, 22C, and 22E. The information previously provided on the application of the eight factors from Proposals 43 in 1995 and WP04-71 in 2004 is provided in **Appendix A**. The questions for this analysis are focused on which communities have harvested muskox in Unit 22D, specifically, whether or not White Mountain and Golovin in Unit 22B west, Nome and Solomon in Unit 22C, and Wales and Shishmaref in Unit 22E have harvested muskox in Unit 22D—remainder (which is outside of the Kuzitrin, Kougarok, and Pilgrim River drainages).

Unit 22C (Nome and Solomon): Muskoxen are accessible in Unit 22D either by road, boat, or snowmachine. In Proposal WP04-71, Nome’s subsistence land use map was provided (see **Map 2**). Ray (1984:286) provided information on traditional subsistence use areas in the Seward Peninsula in the 19th century. The Kawerak hunted and fished in an area that generally covered Unit 22D, with the exception of



the area used by the Sinramiut, the people of Brevig Mission and Teller (see **Map 3**). The traditional use area referred to as “Cape Nome” by Ray (see Map 3) utilized the area that is now Unit 22C. Today, there are no people living permanently in what Ray termed the “Kawerak territory” in Unit 22D (see **Map 3**). Magdanz and Olanna (1986) documented Nome’s subsistence land use in an ADF&G report (**Map 2**). A comparison of Map 2 and Map 3 show that Nome’s subsistence land use area in the 1980s in Unit 22D included the use areas of the people living in the Cape Nome area and the Kawerak area (plus some areas outside of Unit 22D).

When Magdanz and Olanna mapped the Nome subsistence use area in 1986 there was not a State or Federal muskox hunt. A look at the moose hunting area mapped by Magdanz and Olanna (1986) found that Nome moose hunters ranged from the Upper Fish River in the east in Unit 22B to the American River in the west in Unit 22D (Unit 22D—remainder in muskox regulations), with hunting concentrated along the Kougarok Road in Unit 22C and D, the Teller Road in Unit 22C and D, and the Council Road in Unit 22C and B. In addition, there was significant moose hunting along the Kuzitrin River in Unit 22D, accessed by the Kougarok Road. The Niukluk River, in Unit 22B, accessed via the Council Road, was also used. Roads are the most convenient access routes, particularly since the river ice is too thin with



Map 3. Tribal territories in the Seward Peninsula in the 19th Century (Ray 1984:286).

too much open water for travel by snowmachine. Minimal snow cover can make snowmachine access difficult. Nome residents also used aircraft for hunting moose in the Agiapuk and American river areas, but there is no Federal land in this area (Magdanz and Olanna 1986:31-35).

Nome's primary use area for subsistence muskox hunting, similar to moose hunting, is in the Kuzitrin, Kougarok, and Pilgrim River drainages in the eastern portion of Unit 22D. Of Nome's total muskox harvest, 81% (126) have been harvested in the Kuzitrin, Kougarok, and Pilgrim River drainages, and 18% (28) in Unit 22D—remainder (see **Table 2**). Since the Board addressed the customary and traditional use determination for muskox in Unit 22D in 2004, Nome residents have increased their usage of Unit 22D—remainder. Prior to 2004, only 3 muskoxen had been harvested by Nome residents in Unit 22D—remainder; from 2004 through 2009, 25 muskoxen have been taken in Unit 22D—remainder. (Other muskox harvests by Nome residents occur in Unit 22C, but aren't under consideration in this proposal for Unit 22D). Under the direction of the Muskox Cooperators Group, 2009 was the first year that a Federal muskox permit was given to a Nome resident to harvest a muskox on Federal public lands in Unit 22D (Adkisson 2009, pers. comm.).

In addition to Nome, the only other community in Unit 22C is Solomon, which in the 2000 census had only four residents, all of whom were over 65. Solomon residents have never harvested muskoxen in Unit 22D.

Unit 22B west: The communities in Unit 22B west are White Mountain and Golovin. From 1998 through 2007, only one muskox has been harvested in Unit 22D by a Golovin resident; the muskox was harvested on State lands within the Kuzitrin, Kougarok, and Pilgrim River drainages. White Mountain residents have harvested 35 muskoxen from 1998 through 2009, all of them have been harvested on State lands within the Kuzitrin, Kougarok, and Pilgrim River drainages. Elim, which is in Unit 22B East, also has harvested muskoxen in Unit 22D, one in Unit 22D remainder and one in the Kougarok, Kuzitrin, and Pilgrim River drainages, and all on State lands (**Table 2**).

At the fall 2009 Council meeting, a Council member noted that:

Well, you know, as I sit here and think about this, I would be supportive of this proposal including White Mountain. . . . White Mountain has a history of leaving White Mountain, going outside of its local area and traveling a long ways to get to muskox. And if we had to travel to Wales, we would have went to Wales to get muskox. . . we went after that resource in that other area. So with that said, I think they should be included (SPRAC 2009:37).

Unit 22E: Wales and Shishmaref are the only communities in Unit 22E. Shishmaref residents have never harvested a muskox in Unit 22D, and only one resident of Wales harvested a muskox in Unit 22D—remainder in 2003. Currently there is no reason for Wales and Shishmaref residents to travel outside of Unit 22E to harvest muskoxen because there are muskoxen locally available within Unit 22E.

Although Seward Peninsula residents traditionally did not hunt in another tribe's area, hunting could and did occur in other tribes' areas if there were marriage or kinship ties (Ray 1984:284). Generally, the nature of subsistence hunting is that subsistence hunters choose to hunt close to their communities, unless they are visiting their relatives in another community. In recent years the high price of gas has contributed to villagers hunting even closer to home.

Table 2. Total muskox harvests by community¹ in Unit 22D 1998-2009 (ADF&G 2009).

COMMUNITY	22D REMAINDER ²	KOUGAROK, KUZITRIN, & PILGRIM RIVER DRAINAGES ³	UNKNOWN	% of Total Harvest on State Lands
Unit 22B West Communities:				
White Mountain	0	35	0	100%
Golovin	0	1	0	100%
Unit 22B East Communities:				
Elim	1	1	0	100%
Koyuk	0	0	0	NA
Unit 22C Communities:				
Nome	28	126	2	100%
Council	1	0	0	100%
Unit 22D Communities:				
Brevig Mission	43	2	4	76%
Teller	30	2	1	72%
Unit 22E Communities:				
Wales	1	0	0	100%
Shishmaref	0	0	0	NA

¹ Only includes the harvests of residents in the units under consideration for Proposal WP10-73.

² Harvests in Unified Coding Units in the 100s and 200s.

³ Harvests Unified Coding Units in the 300s.

Effects of the Proposal

If this proposal is adopted, Federally qualified subsistence users from Units 22B west, 22C, and 22E would to be added to the customary and traditional use determination to harvest muskoxen anywhere in Unit 22D on Federal public lands. Residents of these communities are already eligible to harvest muskoxen on State lands. In 2004 there was concern that expanding the pool of eligible users had the possibility of affecting Teller and Brevig's harvests of muskoxen because it overlaps with their customary and traditional use areas, however, this is already occurring with muskox harvests on State lands in Unit 22D—remainder. Federal public land in Unit 22D—remainder are all managed by the Bureau of Land Management and are scattered in a patchwork of lands within lands managed by the State.

If this proposal is adopted, it would not affect the State harvest of muskoxen as the harvests in Unit 22 are managed by a quota system as recommended by the Muskox Cooperators Group.

Expanding the customary and traditional use determination for muskoxen in Unit 22D would not affect the muskox population. If a conservation concern exists, the Board would address this concern through changes to harvest limitations or season restrictions.

If this proposal is not adopted, residents of Units 22B west, 22C, and 22E would not be able to harvest muskoxen throughout Unit 22D under Federal regulations. Nome residents would continue to harvest muskox on State lands, as they have in the past.

The difficulty for subsistence users only being able to harvest muskox on State lands and not on Federal public lands in Unit 22D—remainder is that the Federal public lands, which are all managed by the Bureau of Land Management, are scattered and do not have landmarks that makes them easily identified. Adopting this proposal also would reduce regulation complexity for subsistence users and eliminate the possibility of accidental harvest on Federal lands.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-73 with modification to add all residents of Unit 22B (with no distinction between east and west) to the customary and traditional use determination for Unit 22D, in addition to the residents of Units 22C, 22D, and 22E.

The modified regulation should read:

Unit 22D—Muskox

~~Unit 22D, that portion within the Kougarak, Kuzitrin, and Pilgrim river drainages~~

~~Unit 22D—remainder~~

Customary and traditional use determination

~~Rural residents of Units 22B, 22C, 22D (excluding St. Lawrence Island) and White Mountain, and 22E.~~

~~Rural residents of Unit 22D excluding St. Lawrence Island~~

Justification

Adopting Proposal WP10-73 would eliminate the division in customary and traditional use determination areas within Unit 22D and would recognize the customary and traditional uses of the residents of Unit 22B, 22C, and 22E for harvesting muskoxen in all of Unit 22D. In Nome, 18% of their muskox harvest from 1998 to 2009 has been in Unit 22D—remainder on State lands. While the use of Unit 22D—remainder is low by residents of Unit 22B and 22E, there is history of use since the hunt began in 1995. The Unit 22D muskox hunt has been evolving since its inception in 1995 and providing a broader customary and traditional use determination now would be consistent with the unit- or subunit- based customary and traditional use determinations elsewhere in the state. Consistent with this is eliminating the division between the eastern and western parts of Unit 22B, thus making the customary and traditional use determination include all of Unit 22B, particularly since Elim, in Unit 22B east, has harvested more muskoxen in Unit 22D than Golovin, which is in Unit 22B west.

The difficulty for subsistence users only being able to harvest muskox on State lands and not on Federal public lands in Unit 22D—remainder is that the Federal public lands, which are all managed by the Bureau of Land Management, are scattered and do not have landmarks that makes them easily identified. Adopting this proposal also would reduce regulation complexity for subsistence users and eliminate the possibility of accidental harvest on Federal lands.

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APPENDIX A

Factors for Determining the Customary and Traditional Uses of Muskoxen in Unit 22 D (excluding discussion of location, which is in the analysis):

Muskoxen are known to have inhabited the Seward Peninsula in earlier times prior to their reintroduction in 1970. In the 1950's a recently killed muskox skull was found in a cave near Kivalina (Giddings and Anderson 1986:11). Muskox skulls and bones from Koyuk and Nome also have been found. Beechey collected a "very modern" complete skull at Elephant Point in 1826 (Buckland 1831:595). Beechey also found that local Natives could identify pictures of muskox. The word oomingak in Inupiaq means "bearded one" or muskox (Beechey 1831:295).

It is not known definitively why the muskox population disappeared by the early 19th century from the Seward Peninsula nor is it known when muskoxen were last available on the Seward Peninsula. It is known that, by the time the Yankee whalers reached the Bering Strait, muskoxen were extinct on the Seward Peninsula. By the 1800s the elders remembered their elders talking about muskoxen, indicating that the extinction probably occurred somewhere at the end of the 18th century to the early part of the 19th century. Presumably people used muskoxen for food, utensils, and for clothing much as they did for caribou and sheep as well as incorporated muskox into the seasonal round of subsistence activities (Angnaboogok 1994).

There was no legal muskox hunting on the Seward Peninsula in the 20th century prior to 1995 because muskoxen were not available until their re-introduction in 1970. Consequently, there are no official accounts of customary and traditional uses of muskoxen on the Seward Peninsula prior to 1995.

Since 1995, muskox hunting has taken on the customary and traditional use patterns similar to harvesting other large land mammal resources in the Seward Peninsula such as moose and caribou. A primary characteristic of subsistence hunting is that it is opportunistic and people hunt what is available and accessible in their area. Seward Peninsula residents have harvested muskoxen for almost fifteen years, incorporating this resource into their seasonal round and into their subsistence culture and way of life.

The muskox season in Unit 22 has been limited by regulations since 1995. It is unknown what the "customary and traditional" season of muskoxen was prior to extinction. Regulations have determined the harvest season, which have varied somewhat since 1995. State and Federal regulations have been in the fall (August/September) through late-winter (mid-March). Muskoxen have been incorporated into the seasonal round of subsistence activities. Nome residents have primarily hunted muskoxen in the fall, as this is the time-period when access is easiest via the road system and rivers, while hunters from other villages in Unit 22 have hunted primarily in late March. The villagers prefer taking muskoxen in March, when access by snowmachine is best due to better snow cover, better weather, longer days, and good quality of the meat. The majority of hunters travel to the area in winter months by snowmachine. In summer months, they use boats and/or four-wheelers. Nome residents primarily use four-wheelers, followed by highway vehicles along the road system. Once a herd is seen, they are usually approached on foot. Hunters use large caliber rifles (Magdanz 1995:2-3).

Of all large mammals, muskox hunting is one of the most efficient and economical. When threatened, muskoxen often cluster and stand their ground. Hunters can easily approach and take the animal preferred (Burch 1977). Muskox hunting is done by individuals or small groups of hunters. Hunters have to travel by boat in the fall or by snowmachine in the winter, with the exception of Nome residents who can travel by motor vehicle on the road system.

As with the harvest of all large terrestrial mammals, the muskox is quartered in the field and brought back to the community for final processing and distribution. Muskox meat is preferred fresh, but is also frozen and occasionally processed into dried meat. Muskox is considered a highly desired meat by most people. Seward Peninsula hunters have particular hunting skills and knowledge regarding hunting and processing muskoxen. These include handling the meat and principles of resource conservation such as avoiding over-harvest and waste, similar to other large mammal resources.

On the Seward Peninsula, large terrestrial mammals are usually taken in the fall when meat is more easily preserved. Meat dries well and if taken late enough can be stored fresh frozen in caches. Most people also have adopted newer technologies such as freezers. Even when freezers are available, people will often use cold storage pits dug in well drained ground to cut down on the cost of electricity and to save space in the freezer. A proper cold storage pit can freeze meat throughout the summer. People in Brevig Mission, Wales, and Shishmaref still use such cold storage pits. Traditional processing and storage techniques are used because of the special and traditionally appealing flavors in foods, which cannot be attained by freezing and canning. Typically families use a combination of traditional and modern food storage methods (Magdanz 1995:4)

Local residents are interested in muskoxen and talk with family and friends about their behavior and location. In spite of disruptions or postponements caused by the demands of today's educational process, knowledge and skills related to subsistence uses remain largely passed down from generation to generation. Children in the area's villages, and from some subcommunities in Nome, grow up immersed in a web of extended families and surrounded by relatives. For the child, subsistence knowledge and skills begin to be acquired in the household from close relatives, and expand outward (often relatives) as the child grows older and becomes more mobile and capable. The process itself is still largely one of observing, listening, and emulating the older relatives, supplemented by stories and accounts of oral traditions told by elders and punctuated sometimes by pointed "how to" demonstrations (Adkisson unpublished). Learning commonly occurs experientially, when children follow their parents hunting, fishing, gathering, and to camp. For muskoxen, hunters are aware of and frequently discuss their locations, habits, and behaviors. Sobleman (1985) points out the relationship in Inupiaq society between economic production in subsistence activities and the household and family as producers. Magdanz (1995:5) points out that teenage boys in villages look forward to accompanying their fathers or older brothers on hunting trips, that children at home watch the butchering and preparation of meat and skins, and children listen as adults discuss hunting, travelling conditions, and animal behavior.

Sharing meat has been a long-standing tradition in Inupiaq culture. In traditional Inupiaq culture, hunters harvest only what they need and what they can properly care for, and then share the harvest with the community. If the hunter does not properly handle the meat or does not share the meat with the community, then the Inupiaq believe that it will hurt the hunter. In particular, the elders, widows, disabled, and homes without hunters have needed to be cared for, and often the less successful hunters would also ask for a share of the hunt. Community solidarity depended on cooperative hunting as well as cooperative sharing of the meat (Spencer 1959; Spencer 1984).

Today these customs continue, but there have been some shifts. Where traditionally all able-bodied males hunted, today not everyone can hunt when necessary. There may be times when a hunter is unable to hunt because of job constraints. Their jobs may require them to be out of town or they may be too busy to hunt. As a result, today there are other reasons besides being sick, elderly, or disabled in determining why one might want or need someone else to hunt under a designated hunter provision. Often someone might provide money for gas and supplies to their designated hunter. The institution of harvest limits and

seasons have caused traditional hunting practices to shift (Armstrong 2005, pers. comm., Adkisson 2006, pers. comm.).

The muskox meat harvested in Unit 22 is shared throughout the community and occasionally shared with extended family in the region. It also is shared at community feasts such as Thanksgiving and Christmas or at a celebration of a child's first harvest. Unusual or significant harvests are often widely shared. In smaller communities, when a young hunter first harvests an animal, the meat is typically distributed to every house in the community. The first moose of the season is sometimes similarly distributed (this also distributes the burden or preservation of meat in warm weather). Muskox, an unusual and a significant harvest, is shared in a similar way. Today, sharing wild resources continues as a central feature to the life and culture on the Seward Peninsula (Magdanz 1995:5-6).

Subsistence hunters on the Seward Peninsula harvest a wide diversity of resources including caribou, moose, bear, seals, walrus, birds, furbearers, small game, and fishes, relying upon virtually all of the edible fish and wildlife resources in the area. In most communities, over 90 percent of households harvested at least some subsistence resources and harvested some type of large mammal. Almost all households used subsistence resources. In all communities in the region, some resources may not provide a large percentage of the total pounds of meat consumed; however, they do provide variety to the diet (ADF&G 2009). As examples of some of this research, in 1986, in Brevig Mission, 50% of the households surveyed used more than 20 different species of wild resources (Magdanz 1995). In a 1989 survey, (Conger and Magdanz 1990), respondents in Shishmaref reported harvesting 45 different categories of resources. A 1982-83 study (Sobleman 1985) in Shishmaref found the 72% of the households surveyed reported that most of the meat and fish in their household diet came from subsistence harvests. In the same study, an additional 195 reported that at least half to more than half came from subsistence harvests.

WP10-74 Executive Summary	
General Description	WP10-74 requests that the closure of Federal public lands to the harvest of muskoxen in Unit 22E be rescinded. <i>Submitted by the Seward Peninsula Regional Advisory Council</i>
Proposed Regulation	<p>Unit 22—Muskox</p> <p><i>1 muskox by Federal permit or State permit; Aug. 1–Mar. 15 however, cows may only be taken during the period Jan. 1 – Mar. 15 Federal public lands are closed to the taking of musk ox except by the Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM.</i></p>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Support
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP10-74**

ISSUES

WP10-74, submitted by the Seward Peninsula Regional Advisory Council, requests that the closure of Federal public lands to the harvest of muskoxen in Unit 22E be rescinded.

DISCUSSION

The proponent is requesting the current closure of Federal public lands to the take of muskoxen except by Federally qualified subsistence users be rescinded to allow harvest of muskoxen under Federal and State regulations on Federal public lands in Unit 22E. The proponent states there will be minimal impact to the population due to current harvest quotas, while allowing for more harvest opportunity.

Existing Federal Regulation

Unit 22E—Muskox

1 muskox by Federal permit or State permit; however, cows may only be taken during the period Jan. 1–Mar. 15 Federal public lands are closed to the taking of musk ox except by the Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM. Aug. 1–Mar. 15

Proposed Federal Regulation

Unit 22—Muskox

1 muskox by Federal permit or State permit; however, cows may only be taken during the period Jan. 1–Mar. 15 ~~Federal public lands are closed to the taking of musk ox except by the Federally qualified subsistence users hunting under these regulations.~~ Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM. Aug. 1–Mar. 15

Existing State Regulation

Unit 22E—Muskox

One bull by registration permit for residents only. Season will be closed by emergency order when the quota of 62 muskox are taken (including up to 31 cows). Aug. 1–Mar. 15

OR

One muskox by registration permit for residents only. Season will be closed by emergency order when the quota of 62 muskox are taken (including up to 31 cows) Jan. 1–Mar. 15

One bull 4 years old or older by drawing permit for both residents and non-residents Aug. 1–Mar. 15

Extent of Federal Public Lands

Federal public lands comprise approximately 49% of Unit 22E and are primarily by the National Park Service as part of the Bering Land Bridge National Preserve and the Bureau of Land Management manages approximately 2.6% of the lands (See **Unit 22 Map**).

Customary and Traditional Use Determinations

The rural residents of Unit 22E excluding Little Diomed Island, have a positive customary and traditional use determination for muskoxen in Unit 22E.

Regulatory History

The Seward Peninsula Cooperative Muskox Management Plan (1994) established the guiding management goals for muskoxen in this region.

In 1995, WP95-44 was adopted by the Federal Subsistence Board (Board) to establish the first Federal muskoxen hunt on the Seward Peninsula and recognized a Federal subsistence priority for Alaskan residents with a positive 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 (FWS 1995).

In 1998, the Seward Peninsula Subsistence Regional Advisory Council submitted Proposal 89 to extend the season (Sept 1–Jan 31) two and a half months to August 1–March 31 for Units 22D, 22E, and Unit 23 SW. However, Proposal 89 was adopted with modification by the Board to extend the season to Aug. 1 to Mar. 15 in Units 22D and 22E and that portion of Unit 23.

In 1999, Proposal 46 extended the Special Action (SA 97-14) that combined the State/Federal harvest quota system. Due to the long traveling distances needed to reach Federal public 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 regulations by both the Alaska Board of Game (1998) and the Federal Subsistence Board (1999). 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 (FWS 2001).

In 2001, WP01-35 was adopted and added a cow harvest to several units, including 22E, and changed the overall harvest quotas for all subunits.

In 2005, the Alaska State Board of Game (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. In addition, the State season for the muskox drawing hunt in Unit 22E was lengthened to Aug. 1–Mar. 15, established a nonresident season, and allocated 10% of the drawing permits to nonresidents.

In 2006, WP06-41 established the use of a designated hunter permit for muskoxen in Unit 22 by Federally qualified subsistence users. The designated hunter may hunt for any number of recipients in the course of a season, but have no more than two harvest limits in their possession at any one time; except in Unit 22E where a resident of Wales or Shismaref acting as a designated hunter may hunt for any number of recipients, but have no more than four harvest limits in their possession at any one time. The special provision was differentiated between Unit 22E and the rest of Unit 22 because the muskoxen population continued to grow in Unit 22E whereas muskoxen numbers have stabilized in the remainder of Unit 22.

Biological Background

The entire current range of muskoxen in Alaska comprises many of the locations where Nunivak Island muskoxen were originally transplanted (**Figure 1**). Muskoxen have dispersed and extended their range east throughout Seward Peninsula (**Figure 2 and 3**) and now occupy suitable habitat in Units 22C, 22D, 22E, 22B-West, and 23-SW. Individuals and small groups are found in Units 22B-East, 22A-North, Unit 23 along the Tagagawik River and in the Purcell Mountain, Unit 21 along the Yukon River near Ruby, and in Unit 24 near Huslia (July 2007). Muskoxen observations are increasingly common in the summer months for these expansion areas, but few muskoxen are found in these areas in the winter (Gorn 2007).

Muskoxen censuses are scheduled every three years (2007, 2010, 2013, etc) to determine population size, distribution and percentage yearlings in the population. In 2007, the Seward Peninsula muskoxen census found 2688 muskoxen in Unit 22 and Unit 23SW which is a 12.6% increase from the 2005 census count of 2,387 muskoxen and a 16.4% increase in population size since 2002 when 2050 muskoxen were counted (**Table 1**). Specifically for Unit 22E, the Seward Peninsula muskoxen census results for 1992–2007 have showed an increasing population trend since 1998 (**Table 1**). In 2005, the Seward Peninsula census data showed group locations per subunits within Unit 22E (**Figure 3**) where there were a total of 58 groups located for a total of 863 muskoxen.

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) 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 in the winter on the Seward Peninsula to avoid the deep snow drifts (Adkisson pers comm. 2009) and are much more widely distributed throughout the region through the year. 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). Bulls may tend to be undercounted in composition surveys due to their proclivity for being solitary and therefore, more difficult to spot during census. Despite the difficulty in counting lone bulls, bull:cow ratio is important to track to determine if a declining bull:cow trend is beginning.

The most recent available information for composition surveys for Unit 22E were completed in 2008 and classified 99% of the animals (198 of 199 muskoxen) by sex and age. In 2008, the population

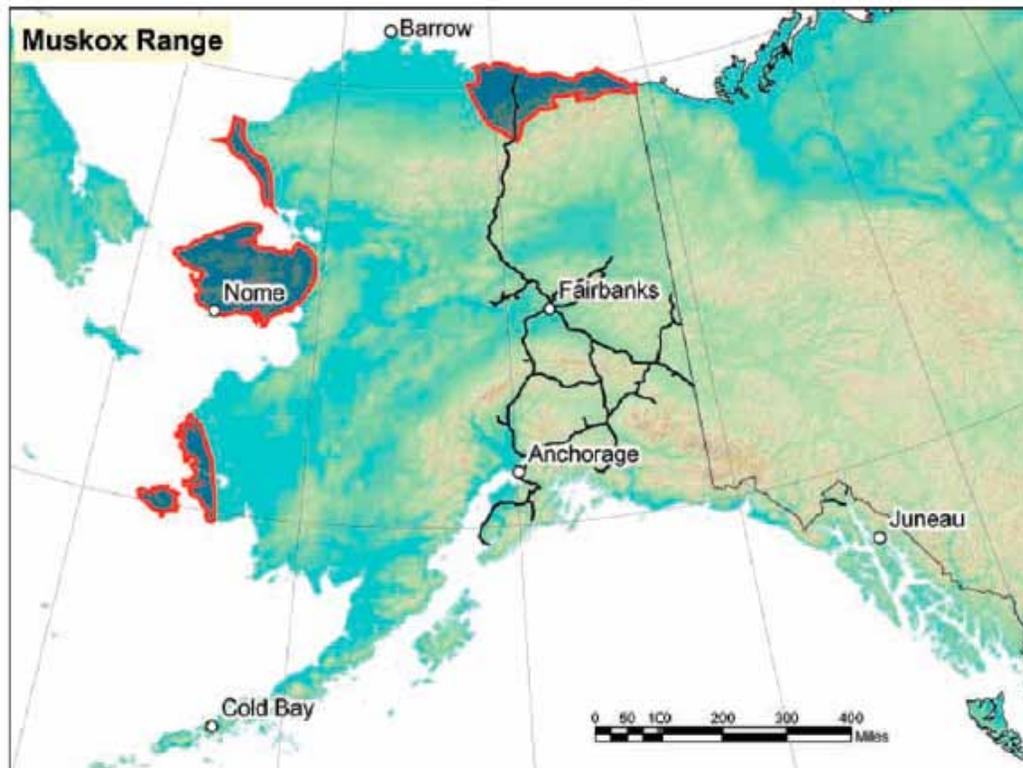


Figure 1. Current range of muskoxen in Alaska (ADF&G).

composition for Unit 22E comprised 19% (37 of 199) of mature bulls (≥ 4 years), 37% (73 of 199) of mature cows (≥ 3 years), and 10% (19 of 199) yearlings (**Table 2**). The proportion of yearling, 2-year old, and 3-year old animals surveyed in 2008 is similar to results in 2005 (**Table 2**). The 2008 composition survey categorized 35 calves (18%) of the sampled population which suggests good calf survival during this time. The percentage of cows (37%) shows a moderately high reproductive potential within the 22E muskoxen population (**Table 2**). Muskoxen in Arctic National Wildlife Refuge showed the age of first reproduction ranged between two to five years with 60% (9 of 15) successfully reproducing at three years of age. Older female muskoxen (≥ 10 years) reproduced successfully 76% (13 of 17) within this population (Reynolds 2001).

Management Direction

The Seward Peninsula Muskox Cooperators Group (SPMCG) provides recommendations regarding muskox management on the Seward Peninsula. The SPMCG is comprised of staff from Alaska Department of Fish and Game (ADF&G), National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), U.S. Bureau of Land Management (BLM), 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.

Management goals for muskoxen in Unit 22 are to allow for continued growth and range expansion while providing for a limited harvest of muskoxen in accordance with State and Federal laws. Muskoxen along the Nome road systems of subunits 22B and 22C are managed for viewing, education, and other nonconsumptive uses.



Figure 2. Seward Peninsula muskox census results, 2002 (July 2007, courtesy of ADF&G). Black lines are GMU (game management unit) boundaries; red lines are SU (survey unit) boundaries.

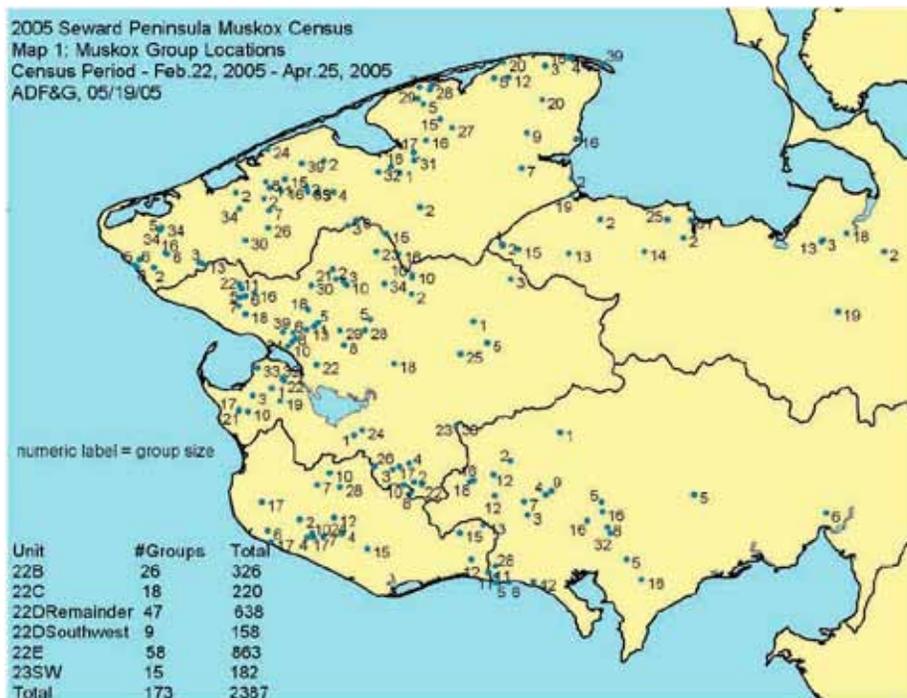


Figure 3. Seward Peninsula muskox census results, 2005 (July 2007, courtesy of ADF&G)

Table 1. Seward Peninsula muskox census results, Units 22 and 23 Southwest, 1992-2007 (ADF&G 2008 and Gorn 2007)

Year	Unit					Total Muskoxen in Unit 22 and Unit 23SW	Total % increase from previous census	Total % change from previous census in Unit 22E only	% Average Annual rate of increase in Unit 22E
	22B	22C	22D	22E	23SW				
1992	3	49	340	180	134	706	n/a	n/a	
1994	11	79	405	184	246	925	31.0%	+2.2%	+1.1%
1996	51	87	308	327	178	951	0.03%	+78%	+39%
1998	27	124	714	362	205	1432	50.5%	+10.7%	+5.4%
2000	159	148	774	461	255	1797	25.4%	+27.3%	+13.7%
2002	189	257	771	632	201	2050	14.1%	+37.1%	+18.6%
2005	326	220	796	863	182	2387	16.4%	+36.5%	+12.2%
2007	329	445	746	949	219	2688	12.6%	+9.9%	+4.9%

Current management objectives for muskoxen in Unit 22 require a complete census throughout the unit to be completed at 3-year intervals for population and distribution changes. A census is completed in one subunit (22B, 22C, etc) on an annual basis to determine changes in age and sex structure of the population.

Harvest History

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. However, despite this allowing a harvest opportunity to Alaska residents outside of Unit 22, the harvest within Unit 22E was still below harvest quotas (**Table 3**) for all hunts. From 2004–2007, annual average hunter success rate for bull harvest was approximately 65% and 21% success rate for cow harvest (**Table 3**).

In Unit 22E, muskoxen inhabit Federal, State, and private lands with varying degrees throughout the subunit. Typically, hunters from the village of Shismaref have been successful under both the State and Federal permits because muskoxen inhabit Federal and private lands close to the village. In the village of Wales within Unit 22E, State permits are more readily filled due to the Federal lands being further from the village.

In addition to the State and Federal registration hunts, the State administers a drawing hunt for Unit 22E (DX098) for bulls only which for the period of 2004–2008 has a hunter success rate of 80% with an average of 9 male muskoxen harvest (ADF&G 2009b).

Effects of the Proposal

Harvest quotas are rarely met for this portion of Unit 22E and there is a harvestable surplus of muskoxen to allow harvest under both State and Federal regulations on Federal lands. Rescinding the Federal land closure would provide an opportunity to meet the harvest quota either under Federal or State regulations on Federal public lands in Unit 22E with minimal impact to the muskoxen population because harvest quotas are in place.

Table 2. Age and sex composition of Seward Peninsula muskox groups in Unit 22E (ADF&G 2009a and FWS 2009)

Unit	Year	Total Sampled	Males ≥4 yrs old (%)	Males 3 yrs old (%)	Males 2 yrs old (%)	Females ≥4 yrs old (%)	Females 3 yrs old (%)	Females 2 yrs old (%)	Yearlings (%)	Unk (%)	Bull:cow ratio	Yearling: cow ratio
22E	2002	313	57 (18%)	19 (6%)	32 (10%)	84 (27%)	29 (9%)	32 (10%)	57 (18%)	0	50:100*	50:100
22E	2005	501	83 (17%)	28 (6%)	43 (9%)	161 (32%)	69 (14%)	34 (7%)	77 (15%)	6 (1%)	36:100	33:100
22E	2008	199	37 (19%)	13 (7%)	9 (5%)	59 (30%)	14 (7%)	12 (6%)	19 (10%)	1 (1%)	51:100	26:100

(%) is of total sampled population

* In 2002, 50% of the population was sampled and favored larger groups. Smaller groups were likely to be all bulls, therefore the number of bulls is probably underestimated. This bull:cow ratio should be seen as a minimum.

Table 3: Results of state and federal muskox hunts on the Seward Peninsula 2004-2007 (ADF&G 2009b and FWS 2009)

Hunt #	Year	Muskox Harvest Quota ^a	Cow Muskox Harvest Quota ^a	# of State Permits Issued (TX104 or RX104 ^b)	# of State hunters who hunted	State Bull Harvest	State Cow Harvest	# of Federal Permits Issued (RX 114)	# of Federal hunters who hunted	Federal Bull Harvest	Federal Cow Harvest
TX104 and RX114	2004	51	25	31	18	14	2	15	2	2	0
TX104 and RX114	2005	69	35	47	32	18	9	16	6	3	2
RX104 ^b and RX114	2006	69	35	26	12	10	0	11	5	1	4
RX104 and RX114	2007	69	35	57	36	24	6	7	0	0	0

^a Combined State and Federal quotas (Gorn 2005 and 2007)

^b TX104 was changed from a Tier II hunt to a Tier I subsistence registration hunt (RX104) effective for the 2006-2007 regulatory year

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-74

Justification

Harvest quotas are rarely met for this portion of Unit 22E and there is a harvestable surplus of muskoxen to allow harvest under both State and Federal regulations on Federal public lands. In 2005, the State changed the Tier II subsistence hunt (TX104) to a Tier I registration hunt (RX104), which is open to all Alaskan residents regardless of community residence. Despite this increase in opportunity for all Alaskan residents, the harvest of muskoxen for Unit 22E has consistently been below quotas thereby giving a harvestable surplus of muskoxen in this area. By rescinding the Federal land closure, it would give an opportunity to meet the harvest quota either under Federal or State regulations on Federal public lands in Unit 22E with minimal impact to the muskoxen population because harvest quotas are in place.

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Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-074: This proposal requests changing the Unit 22E federal subsistence muskox season by removing the closure of federal public lands to non-federally qualified users.

Introduction: Muskox populations in Unit 22E have increased over the past 15 years and now sustain hunting harvest through federal subsistence and state subsistence and drawing hunts. This proposal requests the reopening Unit 22E federal public lands to non-federally qualified users for the hunting of muskox. If adopted, more hunters could participate in the hunt.

Impact on Subsistence Users: Removing the closure to non-federally qualified users may increase Alaska resident participation in muskox hunts on federal public lands in Unit 22E without impact to subsistence opportunity since the existing quotas have not been reached.

Opportunity Provided by State: In Unit 22E the following muskox hunting regulations are effective during 2009-2010:

One bull by registration permit RX104; residents only; season August 1 through March 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome Alaska Department of Fish and Game and license vendors in Unit 22E during July 24 through March 15; tag required; no fee for required tag; trophy destruction required if skull (with horns) removed from Unit 22.

One cow by registration permit RX104; residents only; season January 1 through March 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome Alaska Department of Fish and Game and license vendors in Unit 22E during July 24 through March 15; tag required; no fee for required tag; trophy destruction required if skull (with horns) removed from Unit 22.

RX104 Harvest Quota: Total combined quota is 62 muskox (including up to 31 cows) in Unit 22E.

Drawing hunt DX097 has an August 1 through March 15 season for resident or nonresident hunters with drawing permit; bag limit is one bull 4 years old or older by permit; tag fee required.

Conservation Issues: There are no conservation concerns due to hunting by permit with established harvest quotas. Recent harvest quotas have not been reached in Unit 22E, so allowing additional opportunity is a way to increase annual harvest.

Recommendation: Support.

WP10-75 Executive Summary	
General Description	WP10-75 requests that the harvest of cow muskoxen be allowed for the entire season August 1–March 15, not only the period from January 1–March 15, in Unit 22E. <i>Submitted by the Seward Peninsula Regional Advisory Council</i>
Proposed Regulation	<p>Unit 22E—Muskox</p> <p><i>1 muskox by Federal permit or State permit; Aug. 1–Mar. 15 however, cows may only be taken during the period Jan. 1–Mar. 15–Federal public lands are closed to the taking of musk ox except by the Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM.</i></p>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Support
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP10-75**

ISSUES

WP10-75, submitted by the Seward Peninsula Regional Advisory Council, requests that the harvest of cow muskoxen be allowed for the entire season August 1–March 15, not only the period from January 1–March 15, in Unit 22E.

DISCUSSION

The proponent is requesting that the regulation allowing cow harvest during part of the season be rescinded so that cows can be harvested for the entire season. The proponent states that the population has increased in this area, and states there would be minimal impact to the total muskoxen population because there are quotas on the total number of cow muskoxen allowed for harvest in Unit 22 E.

Existing Federal Regulation

Unit 22E—Muskox

1 muskox by Federal permit or State permit; however, cows may only be taken during the period Jan. 1–Mar. 15 Federal public lands are closed to the taking of musk ox except by the Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM. Aug. 1–Mar. 15

Proposed Federal Regulation

Unit 22E—Muskox

1 muskox by Federal permit or State permit; ~~however, cows may only be taken during the period Jan. 1–Mar. 15~~ Federal public lands are closed to the taking of musk ox except by the Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM. Aug. 1–Mar. 15

Existing State Regulation

Unit 22E—Muskox

One bull by registration permit for residents only. Season will be closed by emergency order when the quota of 62 muskoxen are taken (including up to 31 cows). Aug. 1–Mar. 15

OR

*One muskox by registration permit for residents only. Season Jan. 1–Mar. 15
will be closed by emergency order when the quota of 62
muskoxen are taken (including up to 31 cows)*

*One bull 4 years old or older by drawing permit for both Aug. 1–Mar. 15
residents and non-residents*

Extent of Federal Public Lands

Federal public lands comprise approximately 49% of Unit 22E and are managed by the National Park Service as part of the Bering Land Bridge National Preserve. (See **Unit 22 Map**).

Customary and Traditional Use Determinations

The rural residents of Unit 22E excluding Little Diomed Island have a positive customary and traditional use determination for muskoxen in Unit 22E.

Regulatory History

Refer to WP10-74

Biological Background

In 2007, the Seward Peninsula muskoxen census found 2688 muskoxen in Unit 22 and Unit 23SW which is a 12.6% increase from the 2005 census count of 2,387 muskoxen and a 16.4% increase in population size since 2002 when 2050 muskoxen were counted (**Table 1**). For Unit 22E, the Seward Peninsula muskoxen census results for 1992-2007 have showed an increasing population trend since 1998 (**Table 1**). In 2005, the Seward Peninsula census data showed group locations per subunits within Unit 22E (**Figure 3**) where there were a total of 58 groups located for a total of 863 muskoxen.

The most recent available information for composition surveys for Unit 22E were completed in 2008 and classified 99% of the animals (198 of 199 muskoxen) by sex and age. In 2008, the population composition for Unit 22E comprised 19% (37 of 199) of mature bulls (≥ 4 years), 37% (73 of 199) of mature cows (≥ 3 years), and 10% (19 of 199) yearlings (**Table 2**). The proportion of yearling, 2-year old, and 3-year old animals surveyed in 2008 is similar to results in 2005 (**Table 2**). The 2008 composition survey categorized 35 calves (18%) of the sampled population which suggests good calf survival during this time (ADF&G 2009a). The percentage of cows that are ≥ 3 years old (37%) shows a moderately high reproductive potential within the 22E muskoxen population. Muskoxen in Arctic National Wildlife Refuge showed the age of first reproduction ranged between two to five years with 60% (9 of 15) successfully reproducing at three years of age. Older female muskoxen (≥ 10 years) reproduced successfully 76% (13 of 17) within this population (Reynolds 2001).

Harvest is not the only limiting factor to muskoxen populations. Predation of muskoxen by grizzly bears and other predators has been well-documented in the Arctic National Wildlife Refuge population (Reynolds 2002). However, few accounts of other mortality factors have been documented on the Seward Peninsula (Gorn 2007, Persons 2005).

Management Direction

Refer to WP10-74

Table 1. Seward Peninsula muskox census results, Units 22 and 23 Southwest, 1992-2007 (ADF&G 2008 and Gorn 2007)

Year	Unit					Total Muskoxen in Unit 22 and Unit 23SW	Total % increase from previous census	Total % change from previous census in Unit 22E only	% Average Annual rate of increase in Unit 22E
	22B	22C	22D	22E	23SW				
1992	3	49	340	180	134	706	n/a	n/a	
1994	11	79	405	184	246	925	31.0%	+2.2%	+1.1%
1996	51	87	308	327	178	951	0.03%	+78%	+39%
1998	27	124	714	362	205	1432	50.5%	+10.7%	+5.4%
2000	159	148	774	461	255	1797	25.4%	+27.3%	+13.7%
2002	189	257	771	632	201	2050	14.1%	+37.1%	+18.6%
2005	326	220	796	863	182	2387	16.4%	+36.5%	+12.2%
2007	329	445	746	949	219	2688	12.6%	+9.9%	+4.9%

Harvest History

In 2005, the Alaska State Board of Game (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. However, the harvest within Unit 22E was still below harvest quotas (**Table 3**) for all hunts, despite allowing a harvest opportunity to Alaska residents outside of Unit 22 (**Table 4**). From 2004-2007, annual average hunter success rate for bull harvest was approximately 65% and 21% success rate for cow harvest (**Table 3**). The current harvest rate of cow muskoxen does not negatively impact the population growth in 22E, however extending the cow harvest opportunity throughout the entire season could risk diminishing this growth and must be monitored (Gorn 2009, pers. comm.).

In Unit 22E, muskoxen inhabit Federal, State, and private lands with varying degrees throughout the subunit. Typically, hunters from the village of Shishmaref have been successful under both the State and Federal permits because muskoxen inhabit Federal and private lands close to the village. In the village of Wales within Unit 22E, State permits are more readily filled due to the Federal lands being further from the village. The State currently has a cow harvest only for Jan. 1–Mar. 15, and therefore residents from villages further from Federal lands may not experience the same Federal subsistence opportunity to harvest cow muskoxen as other rural residents with a positive customary and traditional determination in Unit 22E.

In addition to the State and Federal registration hunts, the State administers a drawing hunt for Unit 22E (DX098) for bulls only which for the period of 2004-2008 has a hunter success rate of 80% with an average of 9 male muskoxen harvest (ADF&G 2009b).

Effects of the Proposal

Allowing cow harvest for the whole season would likely increase the total harvest of cows and have the overall effect on reducing the population growth within Unit 22E. However, annual average hunter success (2004-2007) was 21% for cow harvest and cow harvest is currently in single digits. Currently the cow harvest is well below the harvest quota for muskoxen in 22E, therefore minimal impact to the population is expected even with an increase in cow harvest. If the proposal is approved, muskoxen

Table 2. Age and sex composition of Seward Peninsula muskox groups in Unit 22E (ADF&G 2009a and FWS 2009)

Unit	Year	Total Sampled	Males ≥4 yrs old (%)	Males 3 yrs old (%)	Males 2 yrs old (%)	Females ≥4 yrs old (%)	Females 3 yrs old (%)	Females 2 yrs old (%)	Yearlings (%)	Unk (%)	Bull:cow ratio	Yearling: cow ratio
22E	2002	313	57 (18%)	19 (6%)	32 (10%)	84 (27%)	29 (9%)	32 (10%)	57 (18%)	0	50:100*	50:100
22E	2005	501	83 (17%)	28 (6%)	43 (9%)	161 (32%)	69 (14%)	34 (7%)	77 (15%)	6 (1%)	36:100	33:100
22E	2008	199	37 (19%)	13 (7%)	9 (5%)	59 (30%)	14 (7%)	12 (6%)	19 (10%)	1 (1%)	51:100	26:100

(%) is of total sampled population

* In 2002, 50% of the population was sampled and favored larger groups. Smaller groups were likely to be all bulls, therefore the number of bulls is probably underestimated. This bull:cow ratio should be seen as a minimum.

Table 3: Results of state and federal muskox hunts on the Seward Peninsula 2004-2007 (ADFG 2009 and FWS 2009)

Hunt #	Year	Muskox Harvest Quota ^a	Cow Muskox Harvest Quota ^a	# of State Permits Issued (TX104 or RX104 ^b)	# of State hunters who hunted	State Bull Harvest	State Cow Harvest	# of Federal Permits Issued (RX 114)	# of Federal hunters who hunted	Federal Bull Harvest	Federal Cow Harvest
TX104 and RX114	2004	51	25	31	18	14	2	15	2	2	0
TX104 and RX114	2005	69	35	47	32	18	9	16	6	3	2
RX104 ^b and RX114	2006	69	35	26	12	10	0	11	5	1	4
RX104 and RX114	2007	69	35	57	36	24	6	7	0	0	0

^a Combined State and Federal quotas (Gorn 2005 and 2007)

^b TX104 was changed from a Tier II hunt to a Tier I subsistence registration hunt (RX104) effective for the 2006-2007 regulatory year

Table 4: Alaskan residence community for Unit 22E State muskoxen hunt on the Seward Peninsula 2005-2008 (ADF&G 2009b and FWS 2009)

Community	Muskox Harvest 2005		Muskox Harvest 2006		Muskox Harvest 2007		Muskox Harvest 2008	
	State	Federal	State	Federal	State	Federal	State	Federal
Anchorage	n/a	n/a	n/a	n/a	10	n/a	3	n/a
Big Lake	1	n/a	1	n/a	n/a	n/a	n/a	n/a
Chugiak	n/a	n/a	n/a	n/a	1	n/a	n/a	n/a
Eagle River	1	n/a	n/a	n/a	1	n/a	n/a	n/a
Fairbanks	1	n/a	1	n/a	1	n/a	n/a	n/a
Glennallen	n/a	n/a	n/a	n/a	1	n/a	n/a	n/a
Homer	1	n/a	1	n/a	n/a	n/a	1	n/a
Kenai	n/a	n/a	n/a	n/a	1	n/a	1	n/a
Nome	1	n/a	n/a	n/a	0	n/a	4	n/a
Petersburg	n/a	n/a	n/a	n/a	1	n/a	1	n/a
Seward	n/a	n/a	n/a	n/a	1	n/a	n/a	n/a
Shishmaref	17	4	0	5	7	0	n/a	0
Sitka	n/a	n/a	n/a	n/a	3	n/a	n/a	n/a
Soldotna	n/a	n/a	n/a	n/a	3	n/a	3	n/a
Stebbins	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sterling	n/a	n/a	n/a	n/a	1	n/a	1	n/a
Tin City	n/a	n/a	n/a	n/a	1	n/a	1	n/a
Wales	5	0	7	n/a	2	n/a	2	n/a
Wasilla	n/a	n/a	n/a	n/a	1	n/a	1	n/a
Total	29	n/a	10	n/a	29	n/a	18	n/a
n/a represents no hunter success or unsuccess								
0 represents that at least one hunter was unsuccessful								

population growth in Unit 22E would need to be monitored to determine if the increase in cow harvest was having an effect by declining the population.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-75

Justification

Harvest quotas are rarely met for this portion of Unit 22E, and therefore, a harvestable surplus of muskoxen exists for both State and Federal regulations on Federal public lands. In 2005, the State changed the Tier II subsistence hunt (TX104) to a Tier I registration hunt (RX104), which is open to all Alaskan residents regardless of community residence. Despite this increase in opportunity for all Alaskan residents, the harvest of cow muskoxen for Unit 22E has consistently been below quotas thereby giving a harvestable surplus of muskoxen in this area, therefore minimal impact to the population is expected.

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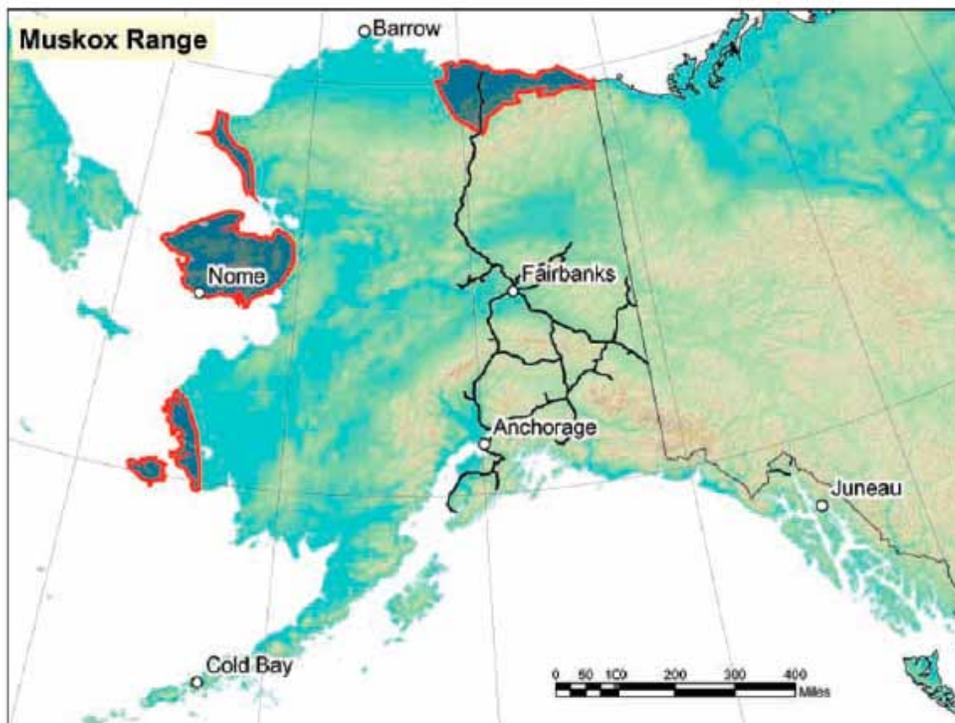


Figure 1. Current range of muskoxen in Alaska (ADF&G).

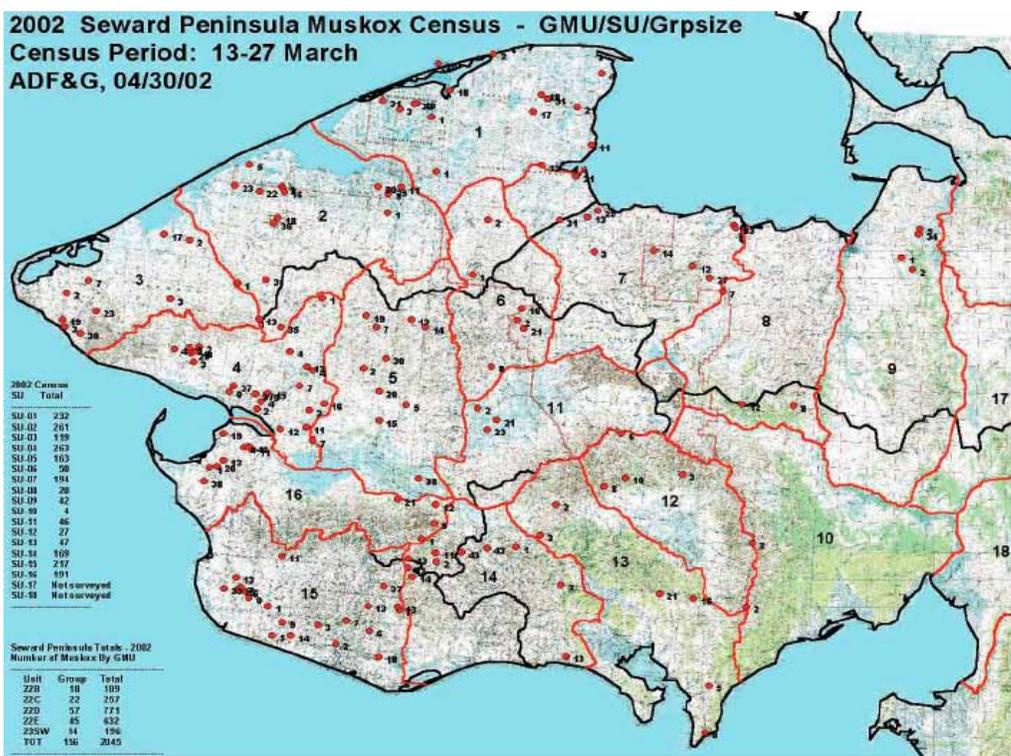


Figure 2. Seward Peninsula muskox census results, 2002 (July 2007, courtesy of ADF&G). Black lines are GMU (game management unit) boundaries; red lines are SU (survey unit) boundaries.

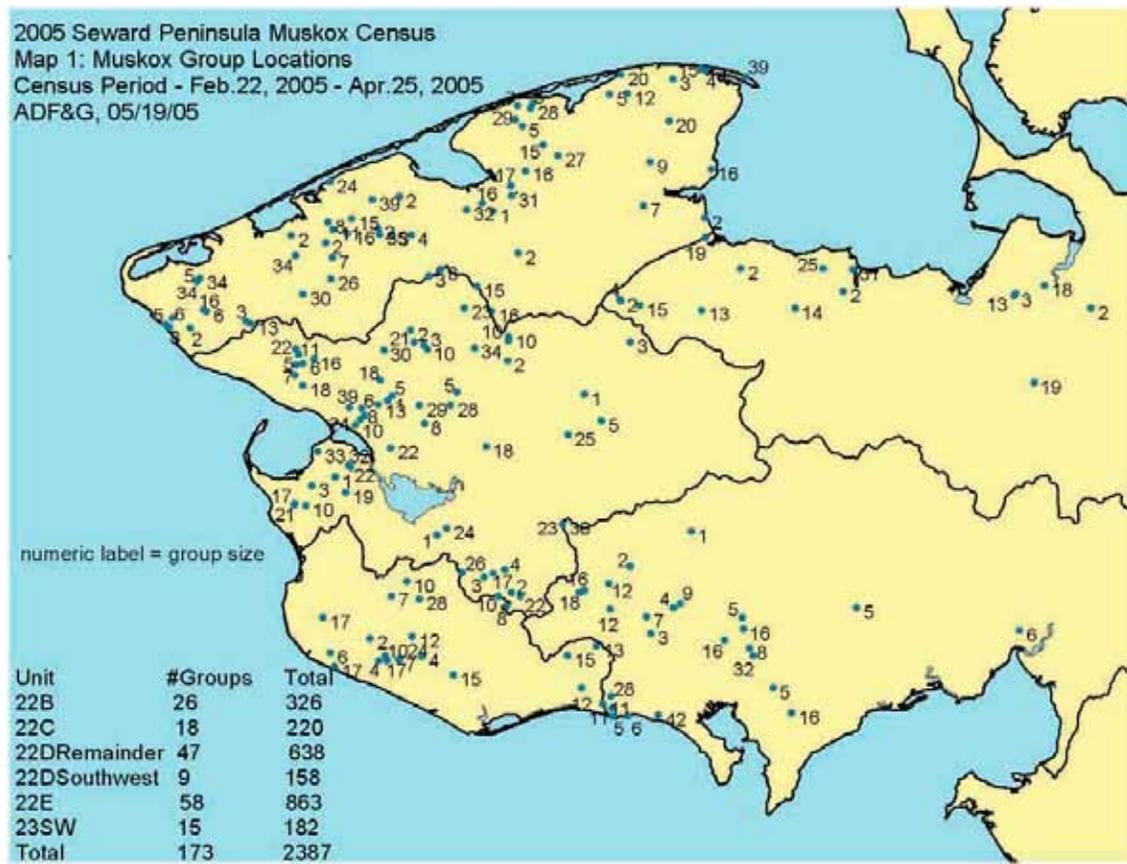


Figure 3. Seward Peninsula muskox census results, 2005 (July 2007, courtesy of ADF&G).

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Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-75: This proposal requests changing the Unit 22E federal subsistence muskox season by removing the closure of federal public lands to non-federally qualified users and by opening the federal subsistence cow season on August 1. The portion of the proposal to remove the closure to non-federally qualified users for muskox in Unit 22E is supported by the department (see comments on WP10-74). The portion of the proposal to liberalize the federal subsistence cow muskox season for Unit 22E is addressed below.

Introduction: The proposal would liberalize the federal subsistence cow muskox hunting season by five months in Unit 22E. The current muskox harvest quota allocates 50% of the harvest as cows. The cow muskox quota has not been reached in Unit 22E.

Impact on Subsistence Users: Expanding the federal subsistence cow muskox hunting season by five months will significantly expand federal subsistence hunter opportunity to harvest a cow and reach the established quota for Unit 22E.

Opportunity Provided by State: In Unit 22E, the following muskox hunting regulations were effective in 2009-2010:

One bull by registration permit RX104; residents only; season Aug 1-Mar 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome ADF&G and license vendors in Unit 22E during July 24 through March 15; tag required; no fee for required tag; trophy destruction required if skull (with horns) removed from Unit 22.

One cow by registration permit RX104; residents only; season January 1 through March 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome ADF&G and license vendors in Unit 22E during July 24 through March 15; tag required; no fee for required tag; trophy destruction required if skull (with horns) removed from Unit 22.

RX104 Harvest Quota: Total combined quota is 62 muskox (including up to 31 cows) in Unit 22E.

Drawing hunt DX097 has an August 1 through March 15 season for resident or nonresident hunters with drawing permit; bag limit is one bull 4 years old or older by permit; tag fee required.

Conservation Issues: None. Hunting is by permit with established harvest quotas in RX104 hunt that have not been reached so additional opportunity and participation is warranted.

Other Comments: In the 2010-2011 regulatory year, the state muskox season for cows in hunt RX104 will open on August 1 which match the dates requested in WP10-75.

Recommendation: Support.

WP10-76 Executive Summary	
General Description	Proposal WP10-76 requests the addition of Unit 22 to the list of areas from which the skin, hide, pelt or fur, including claws, of brown bears harvested under Federal subsistence regulations can be used to make handicrafts for sale. <i>Submitted by the Seward Peninsula Subsistence Regional Advisory Council</i>
Proposed Regulation	§ __.25(j)(7) <i>If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur of a brown bear (including claws) taken from Units 1–5, 9A–C, 9E, 12, 17, 20, 22, 23, 24B (only that portion within Gates of the Arctic National Park) 25 and 26.</i>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Defer action on this proposal until the work group completes its work on finding solutions to protect subsistence users and the resource.
Written Public Comments	None

DRAFT STAFF ANALYSIS WP10-76

ISSUES

Proposal WP10-76, submitted by the Seward Peninsula Subsistence Regional Advisory Council, requests the addition of Unit 22 to the list of areas from which the skin, hide, pelt or fur, including claws, of brown bears harvested under Federal subsistence regulations can be used to make handicrafts for sale.

DISCUSSION

The Seward Peninsula Subsistence Regional Advisory Council (Council) stated that it submitted the proposal so that subsistence users may more fully utilize brown bears they harvest under Federal subsistence regulations. The Federal Subsistence Board (Board) and the Subsistence Regional Advisory Councils, statewide, have considered several proposals related to brown bear handicrafts and have repeatedly emphasized the importance of the region-specific approach to bear handicraft regulations (FSB 2004: 209–274). The Council has discussed the sale of bear handicrafts extensively during eight of their meetings since 2002. The addition of Unit 22 to the list of units with brown bear handicraft regulations is consistent with Section 803 of ANILCA, where the term “subsistence uses” means,

... the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal and family consumption; for barter, or sharing for personal or family consumption; and for customary trade.

Existing Federal Regulation: Bear Handicrafts

§ __.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur of a brown bear (including claws) taken from Units 1–5, 9A–C, 9E, 12, 17, 20, 23, 24B (only that portion within Gates of the Arctic National Park) 25 and 26.

Proposed Federal Regulation: Bear Handicrafts

§ __.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur of a brown bear (including claws) taken from Units 1–5, 9A–C, 9E, 12, 17, 20, 22, 23, 24B (only that portion within Gates of the Arctic National Park) 25 and 26.

Extent of Federal Public Lands

Federal public lands comprise approximately 32% of Unit 22 and consist of 18% Bureau of Land Management (BLM) 12% National Park Service (NPS), 2% and U.S. Fish and Wildlife Service (FWS) lands (**Unit 22 map**).

Customary and Traditional Use Determinations

Rural residents of Unit 22 have a positive customary and traditional use determination for brown bear in Unit 22.

Regulatory History

The Board has considered numerous proposals regarding the sale of handicrafts made from the nonedible byproducts of black and brown bears harvested under Federal subsistence regulations. The Board has adopted bear handicraft regulations for the regions that have requested them and has acknowledged the importance of region-specific regulations because of cultural differences throughout the state. The Council has discussed handicrafts made from bear parts, in detail, during its 2002, 2004, 2005, 2006, 2007, 2008 winter meetings and at both its winter and fall 2009 meetings (SPSRAC 2009: 96–98; SPSRAC 2008: 100–102; SPSRAC 2007: 24–26; SPSRAC 2006: 40–50; SPSRAC 2005: 25, 28–33; SPSRAC 2004: 23–26; SPSRAC 2002: 53–56). They have opposed most proposals to restrict the sale of handicrafts made from bear parts where allowed in other regions of the state.

In 2002, the Board considered a statewide proposal, WP02-01, to classify black and brown bears as furbearers for the purpose of allowing the sale of bear hides and parts. While the Board denied this request, citing conservation concerns, it adopted a regulation allowing the use of black bear fur for handicrafts, seeking to align with the regulation adopted by the State of Alaska in 1998 (FWS 2002: 2). The Council voted to oppose the proposal in deference to diverse beliefs about bears throughout the state and because black bears are not common in their region (SPSRAC 2002:53–56).

In 2004, the Board considered Proposal WP04-01 to allow the sale of handicraft items made from the fur of brown bear. This same proposal was submitted to and adopted by the Alaska Board of Game in spring 2004. After extensive discussion, the Board adopted Federal regulations that allow for the sale of handicrafts made from brown bear fur including claws. Various Regional Advisory Councils held different views of the proposal. The Board adopted the proposal, but only for those three regions whose Regional Advisory Councils considered it appropriate: Eastern Interior, Bristol Bay and Southeast Alaska (Units 1–5, 9A–C, 9E, 12, 17, 20 and 25) (FWS 2004: 16). The Council voted to oppose the proposal because they harvest bears for meat and were concerned about the impact of the sale of bear handicrafts and also in deference to diverse beliefs regarding bears throughout the state (SPSRAC 2004: 23–26).

In 2005, Proposal WP05-01, which asked to clarify the definition of bear handicrafts to include fur and claws and to prevent commercial sale of bear handicrafts, was submitted by the USFWS (FSB 2005: 198). The proposal addressed regulations for the sale of handicrafts made from both black and brown bears. The Board adopted the proposal with modifications. The Council deferred the proposal to those regions that recommended allowed sales of bear handicrafts (SPSRAC 2005: 25, 28–33).

As noted above, Proposal WP05-01 was intended to clarify the definition of bear handicrafts and to prevent commercial sales of bear handicrafts. The Board acted on all elements of that proposal except the language addressing commercial sales. In 2006, Proposal WP06-01 was submitted by the Board to limit commercial sales of bear handicrafts (FWS 2006:8). The Council opposed this proposal because it was concerned about restrictions on customary trade. This proposal was discussed subsequent to the Board's adoption of regulations for customary trade of subsistence harvested fish in January 2003 (FSB 2003). The Council did not want to see future regulation of customary trade of other subsistence resources (SPSRAC 2006: 40–50).

In 2007, Proposal WP07-01 was submitted by the Alaska Department of Fish and Game (ADF&G) and requested that claws be removed from the Federal definition of fur and that sales of handicraft items made from the claws, bones, teeth, sinew, or skulls of black and brown bears to be allowed for sale only between Federally qualified subsistence users statewide (FWS 2007: 10). The Council voted to oppose this proposal because they did not want to limit the ability of subsistence harvesters in other regions to sell bear claw handicrafts (SPSRAC 2007: 24–26).

In 2008, Proposal WP08-05 was submitted by the ADF&G and requested the removal of all unit-specific regulations related to the sale of brown bear handicrafts made of skin, hide, pelt or fur. It also requested that the sales of brown bear handicrafts made of claws, bones, teeth, sinew or skull should occur only between Federally qualified subsistence users (FWS 2008: 183). The Council voted to oppose this proposal in deference to regions that allow for the sale of brown bear handicrafts. At this meeting, the Council decided to consider a proposal to add Unit 22 to the list of regions that allow for the sale of handicrafts made from brown bear parts (SPSRAC 2008: 100–102).

At its spring 2008 meeting, the Board addressed Proposal WP08-05 and, at the request of the ADF&G, deferred action on the proposal pending the formation of a brown bear claw handicraft working group. The working group was charged with developing a method of tracking brown bear claw handicrafts that are sold. The Board directed that the group include representatives from all interested Subsistence Regional Advisory Councils and State and Federal staff (FSB 2008: 102–119). This proposal is still being deferred pending the outcome of the brown bear claw handicraft working group. An update on the workgroup has been provided under the discussion of Proposal WP10-02.

Proposal WP10-76 is the result of discussions at the winter 2009 Council meeting. The Office of Subsistence Management staff presented a briefing on the ADF&G's request for the formation of a brown bear handicraft working group. This briefing prompted a discussion on the practical aspects of the sale of brown bear claw handicrafts. During this meeting, the Council decided to propose the inclusion of Unit 22 to the list of areas from which the skin, hide, pelt or fur, including claws, of brown bears harvested under Federal subsistence regulations can be used to make handicrafts for sale (SPSRAC 2009: 96–98).

Effects of the Proposal

The Federal subsistence harvest limit for brown bear in Unit 22 is one bear per year. This proposal does not change the harvest limit. Therefore, if adopted, it would have little or no effect on bear populations or on other users. Adoption of this proposal will allow for increased utilization of brown bears already harvested under Federal subsistence regulations. Adoption of this proposal may provide subsistence users with a small amount of cash if they opt to make and sell handicrafts from the skin, hide, pelt or fur, including claws, of brown bears harvested for food. As noted, subsistence harvest limits for brown bears are in place and these regulations dictate that edible meat must be salvaged. Thus, the amount of brown bear skin, hide, pelt or fur, including claws, for handicrafts is limited by these regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-76.

Justification

In the past, the Council has supported the sale of brown bear claw handicrafts in other regions. The addition of Unit 22 to the list of areas from which the skin, hide, pelt or fur, including claws, of brown bears harvested under Federal subsistence regulations can be used to make handicrafts for sale is

consistent with Section 803 of ANILCA. Adoption of this proposal will allow for increased utilization of brown bears already harvested under Federal subsistence regulations. Adoption of this proposal may provide subsistence users with a small amount of cash if they opt to make and sell handicrafts from the skin, hide, pelt or fur, including claws, of brown bears harvested for food. As noted, subsistence harvest limits for brown bears are in place and these regulations dictate that edible meat must be salvaged.

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Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-076: This proposal adds Unit 22 to the list of units where it is legal to sell brown bear handicrafts (including claws) made by federal subsistence users from brown bears harvested under federal subsistence regulations.

Introduction: The Seward Peninsula Regional Advisory Council submitted this proposal to reverse their previous decision prohibiting sales of handicrafts made from federal subsistence harvested brown bears in Unit 22. The previous position was based on the Council's conclusion that sale of brown bear handicrafts was not customary and traditional for residents of this region. Existing federal regulations authorize sale of federal subsistence brown bear handicrafts in Units 1-5, 9A-C, 9E, 12, 17, 20, and 25. This proposal requests adding Unit 22 as an authorized area.

State regulations prohibit the buying, selling, or bartering of any part of a black or brown/grizzly bear, except an article of handicraft made from the fur of a bear.

Handicraft is defined as: a finished product in which the shape or appearance of the natural material has been substantially changed by skillful use of hands, such as sewing, carving, etching, scrimshawing, painting, or other means and which has substantially greater monetary and aesthetic value than the unaltered natural material alone.

Conservation Issues: Brown bear harvests have increased since incremental liberalization of seasons and bag limits were initiated in 1997. Recent unit-wide harvests are approximately 85% higher than the 5-year average harvest prior to 1997. Providing an economic incentive might further increase brown bear harvests. The state-wide prohibition in state regulations is intended to reduce the take of brown bears for economic purposes. Adopting this proposal as written compounds problems with the international trade of endangered species and contributes to the illegal harvest, overharvest, and waste of bears in Alaska and in other states and countries. With the North American brown and black bears listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and brown bear populations in the 48 conterminous states listed as threatened under the Endangered Species Act, regulations allowing unlimited and untracked sales of bear claws, teeth, bones, and skulls violate sound wildlife management principles.

Enforcement Issues: Without uniform regulations applicable to state and federal subsistence harvested brown bears, the sale of handicraft bear claws, as proposed, will create an enforcement problem and increase risk of enforcement action on legitimate subsistence users. Different state and federal subsistence regulations will be difficult to enforce in Unit 22 because of the patchwork of land status and uncertainty of the source of harvested bears that are turned into handicrafts.

Other Comments: A brown bear handicraft committee was formed to address some of the State of Alaska's concern, on behalf of the legitimate subsistence user and management of the resources. This workgroup is comprised of Regional Advisory Council members, federal and state biologists, and federal and state enforcement officers. Progress towards finding solutions to

Comments WP10-76
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the state concerns have been made during the work group meeting held in 2009. Further meetings are necessary to complete the task of developing a means to ensure Alaska's brown bear resources, the federal subsistence users, and handicrafts buyers are protected.

Recommendation: Defer action on this proposal until the work group completes its work on finding solutions to protect subsistence users and the resource.

WP10-77 Executive Summary	
General Description	WP10-77 requests that the Federal hunt areas for muskoxen within Unit 22D remainder be aligned with the State hunt areas by establishing a Kougarok, Kuzitrin, and Pilgrim river drainages hunt area. <i>Submitted by the National Park Service</i>
Proposed Regulation	<p>Unit 22D—Muskox</p> <p><i>Unit 22D, that portion within the Kougarok, Kuzitrin and Pilgrim River drainages — 1 muskox by Federal permit or State Tier I subsistence registration permit; however, cows may only be taken during the period Jan. 1 – Mar. 15. Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Bering Land Bridge National Preserve, in consultation with ADF&G and BLM.</i> Aug. 1–Mar. 15</p> <p><i>Unit 22D, remainder—1 musk ox by Federal permit or State Tier H I subsistence registration permit; however, cows may only be taken during the period Jan. 1–Mar. 15. Federal public lands are closed to the taking of musk ox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands Bering Land Bridge National Preserve, in consultation with ADF&G and BLM.</i> Aug. 1–Mar. 15</p>
OSM Preliminary Conclusion	<p>Support Proposal WP10-77 with modification to clarify the regulatory language because the Kuzitrin River drainage encompasses the Kougarok and Pilgrim river drainages.</p> <p><i>Unit 22D, that portion within the Kuzitrin River drainages — 1 muskox by Federal permit or State Tier I subsistence registration permit; however, cows may only be taken during the period Jan. 1 – Mar. 15. Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Bering Land Bridge National Preserve, in consultation with ADF&G and BLM.</i></p>
Seward Peninsula Regional Council Recommendation	

continued on next page

WP10-77 Executive Summary (continued)	
Interagency Staff Committee Comments	
ADF&G Comments	Support with modification to reduce the description difference between state and federal regulations.
Written Public Comments	None

DRAFT STAFF ANALYSIS WP10-77

ISSUES

WP10-77, submitted by the National Park Service, requests that the Federal hunt areas for muskoxen within Unit 22D remainder be aligned with the State hunt areas by establishing a Kougarok, Kuzitrin, and Pilgrim river drainages hunt area.

DISCUSSION

The proponent is requesting the current Federal hunt area of Unit 22D remainder be separated into two hunt areas to align with the State hunt areas by establishing a Kougarok, Kuzitrin and Pilgrim river drainages hunt area. Currently the entire Federally designated 22D remainder is closed when harvest quotas are met, while the State was able to keep its eastern 22D hunt area (the proposed Kuzitrin area) open and allowing continued subsistence harvest in this area. 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 (ADF&G 2009a). Based on this closure, the National Park Service (the Federal in-season manager) followed suit and closed the Federal subsistence muskoxen hunt in GMU 22D remainder on October 17, 2009. Currently the Federal regulations designate two hunt areas within Unit 22D while the State has three hunt areas within Unit 22D. This results in a discrepancy between available lands for Federal subsistence opportunity and state subsistence opportunity for muskoxen. Aligning the Federal and State hunt areas would give Federal managers additional flexibility to keep areas open to subsistence harvest when the joint State/Federal harvest quotas have not been met in specific areas.

Existing Federal Regulation

Unit 22D—Muskox

Unit 22D, remainder – 1 musk ox by Federal permit or State Tier II permit; however, cows may only be taken during the period Jan. 1–Mar. 15. Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM.

Aug. 1–Mar. 15

Proposed Federal Regulation

Unit 22D—Muskox

Unit 22D, that portion within the Kougarok, Kuzitrin and Pilgrim River drainages – 1 muskox by Federal permit or State Tier I subsistence registration permit; however, cows may only be taken during the period Jan. 1 – Mar. 15. Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Bering Land Bridge National Preserve, in consultation with ADF&G and BLM.

Aug. 1–Mar. 15

Unit 22D, remainder—1 musk ox by Federal permit or State Tier H I subsistence registration permit; however, cows may only be taken during the period Jan. 1–Mar. 15. Federal public lands are closed to the taking of musk ox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the ~~Western Arctic National Parklands~~ Bering Land Bridge National Preserve, in consultation with ADF&G and BLM.

Aug. 1–Mar. 15

Existing State Regulation

Unit 22D—Muskox

22D, Kuzitrin River Drainage – One muskox by registration permit for residents only. Season will be closed by emergency order when the quota of 11 muskox are taken (including up to 4 cows)

*Jan. 1 – Mar 15
(Permit/Hunt #RX099)*

22D, remainder – One bull by registration permit for residents only. Season will be closed by emergency order when the quota of 16 muskox are taken (including up to 7 cows)

*Aug. 1 – Mar 15
(Permit/Hunt #RX104)*

OR

One muskox by registration permit. Season will be closed by emergency order when the quota of 16 muskox are taken (including up to 7 cows)

*Jan 1 – Mar 15
(Permit/Hunt #RX104)*

One bull 4 years old or older by drawing permit for both residents and non-residents

*Aug 1 – Mar 15
(Permit/Hunt #DX102)*

Extent of Federal Public Lands

Federal public lands comprise approximately 16% of Unit 22D and consist of 11% National Park Service and 5% Bureau of Land Management lands (See **Unit 22 Map**).

Customary and Traditional Use Determinations

Rural residents of Units 22C, 22D (excluding St. Lawrence Island), and White Mountain have a positive customary and traditional use determination for muskox in Unit 22D, which includes the Kougarok, Kuzitrin, and Pilgrim River drainages.

Rural residents of Unit 22D excluding St. Lawrence Island have a positive customary and traditional use determination for muskoxen in Unit 22D remainder.

Regulatory History

The Seward Peninsula Cooperative Muskox Management Plan (1994) established the guiding management goals for muskoxen in this region.

In 1995, WP95-44 was adopted by the Federal Subsistence Board (the Board) to establish the first Federal muskoxen hunt on the Seward Peninsula and granted a Federal subsistence priority for Alaskan residents with a positive 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 (FWS 1995).

In 1996, WP 96-51 was adopted by the Board to increase the harvest from 2 to 8 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 stratified Unit 22D into two permit areas comprising BLM lands and Bering Land Bridge National Preserve (NPS lands), with half of permits designated in each area. 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 proposed Proposal 89 to extend the season (Sept. 1 – Jan. 31) two and a half months to Aug. 1 – Mar. 31 for Units 22D, 22E, and Unit 23 SW. However, 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.

In 1999, Proposal 46 extended the Special Action (SA 97-14) that combined the State/Federal harvest system. 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 approved into permanent regulations by both the Alaska Board of Game (1998) and the Federal Subsistence Board (1999). 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 be 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 (FWS 2001).

In 2000, the Board approved Proposal 00-56 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, WP01-35 was adopted and added a cow harvest to several units, including 22D, and changed the overall harvest quotas for all subunits.

In 2006, 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 (recipient) may designate another Federally qualified subsistence user (designated hunter) to take muskoxen on their behalf, unless the recipient is a member of a community operating under a community harvest system.

In 2009, 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 GMU 22D remainder on October 17, 2009.

The Federal Subsistence Board authorized 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).

Biological Background

Historical accounts of muskoxen in Alaska show they were extirpated by the late 1800s and may have disappeared from the Seward Peninsula hundreds of years earlier. Muskoxen were globally in decline which led to the decision to restore a protected population in Alaska. Thirty-four muskoxen were originally released in Fairbanks from Greenland in 1930. In 1935 and 1936, the entire herd in Fairbanks was transported to Nunivak Island where they continue to thrive. In 1970, thirty-six muskoxen were translocated from Nunivak Island to the southern portion of the Seward Peninsula in Units 22C and 22D and an additional thirty-five muskoxen from Nunivak Island were translocated in 1981 to join the existing population on Seward Peninsula. The entire current range of muskoxen in Alaska comprises many of the locations where Nunivak Island muskoxen were originally transplanted (**Figure 1**).

Muskoxen have dispersed and extended their range east throughout Seward Peninsula (**Figure 2 and 3**) and now occupy suitable habitat in Units 22C, 22D, 22E, 22B-West, and 23-SW. Individuals and small groups are found in Units 22B-East, 22A-North, Unit 23 along the Tagagawik River and in the Purcell Mountain, Unit 21 along the Yukon River near Ruby, and in Unit 24 near Huslia (July 2007).

Muskoxen censuses are scheduled every three years (2007, 2010, 2013, etc) to determine population size, distribution and percentage of yearlings in the population. In 2007, the Seward Peninsula muskoxen census found 2,688 muskoxen in Unit 22 and Unit 23SW, which is a 12.6% increase from the 2005 census count of 2,387 muskoxen and a 16.4% increase in population size since 2002 when 2,050 muskoxen were counted (**Table 1**). Specifically for Unit 22D, the Seward Peninsula muskoxen census results for 1992–2007 have shown a stable population trend since 1998 (**Table 1**). In 2005, the Seward Peninsula census data showed group locations per subunits within Unit 22D (**Figure 3**). For that portion west of the Tisuk River drainage and Canyon Creek in 22D, there were a total of 9 groups located for a total of 158 muskoxen.

The most recent composition surveys for Unit 22D were completed in 2006 and 97% of the animals were classified (503 of 516 muskoxen) by sex and age (**Table 2**). The population composition for Unit 22D was

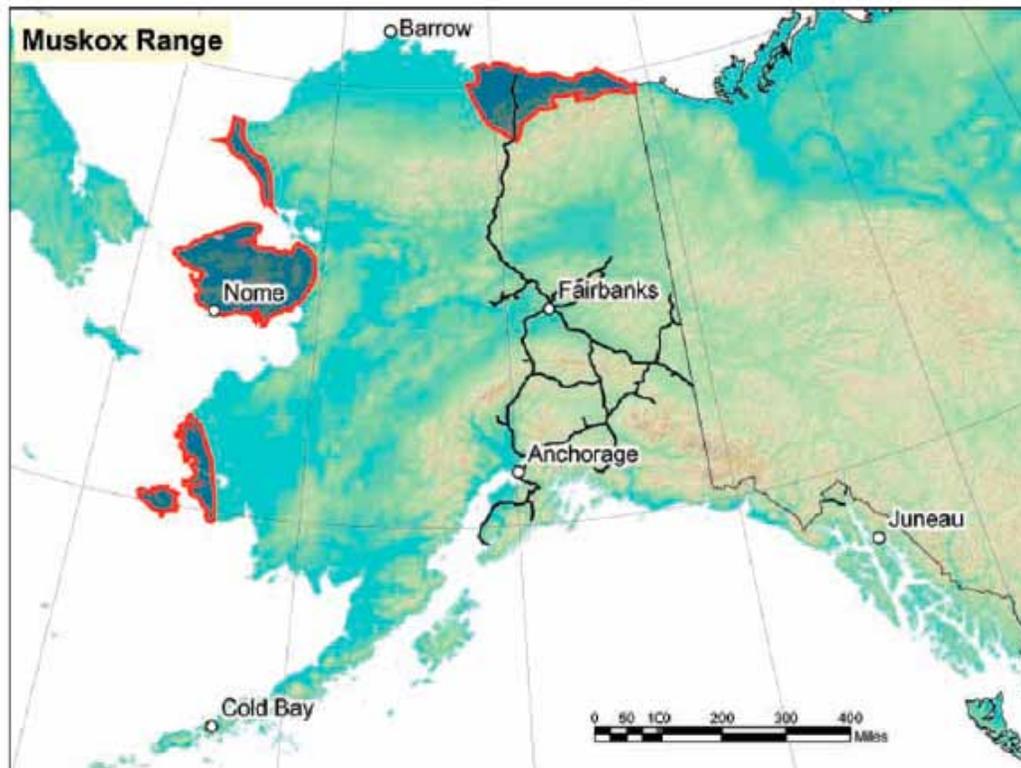


Figure 1. Current range of muskoxen in Alaska (ADF&G)

25% (131 of 516) bulls ≥ 3 years, 5% (28 of 516) two-year old bulls, 45% (234 of 516) cows ≥ 3 years, 5% (26 of 516) two-year old cows, and 16% (84 of 516) yearlings. Bulls of all age classes comprised 31% (159 of 516) of the population surveyed and cows of all age classes represented 58% (301 of 516) (**Table 2**). The percentage of cows (50%) shows a high reproductive potential within the 22D muskoxen population. Muskoxen in Arctic National Wildlife Refuge showed the age of first reproduction ranged between two to five years with 60% (9 of 15) successfully reproducing at three years of age. Older female muskoxen (≥ 10 years) reproduced successfully 76% (13 of 17) within this population (Reynolds 2001).

Management Direction

The Seward Peninsula Muskox Cooperators Group (SPMCG) provides recommendations regarding muskoxen management on the Seward Peninsula. The SPMCG is comprised of staff from Alaska Department of Fish and Game (ADF&G), National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), U.S. Bureau of Land Management (BLM), 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.

Management goals for muskoxen in Unit 22 are to allow for continued growth and range expansion while providing for a limited harvest of muskoxen in accordance with State and Federal laws. Muskoxen along the Nome road systems of subunits 22B and 22C are managed for viewing, education, and other nonconsumptive uses.

Current management objectives for muskoxen in Unit 22 require a complete census throughout the unit to be completed at 3-year intervals for population and distribution changes. A census is completed

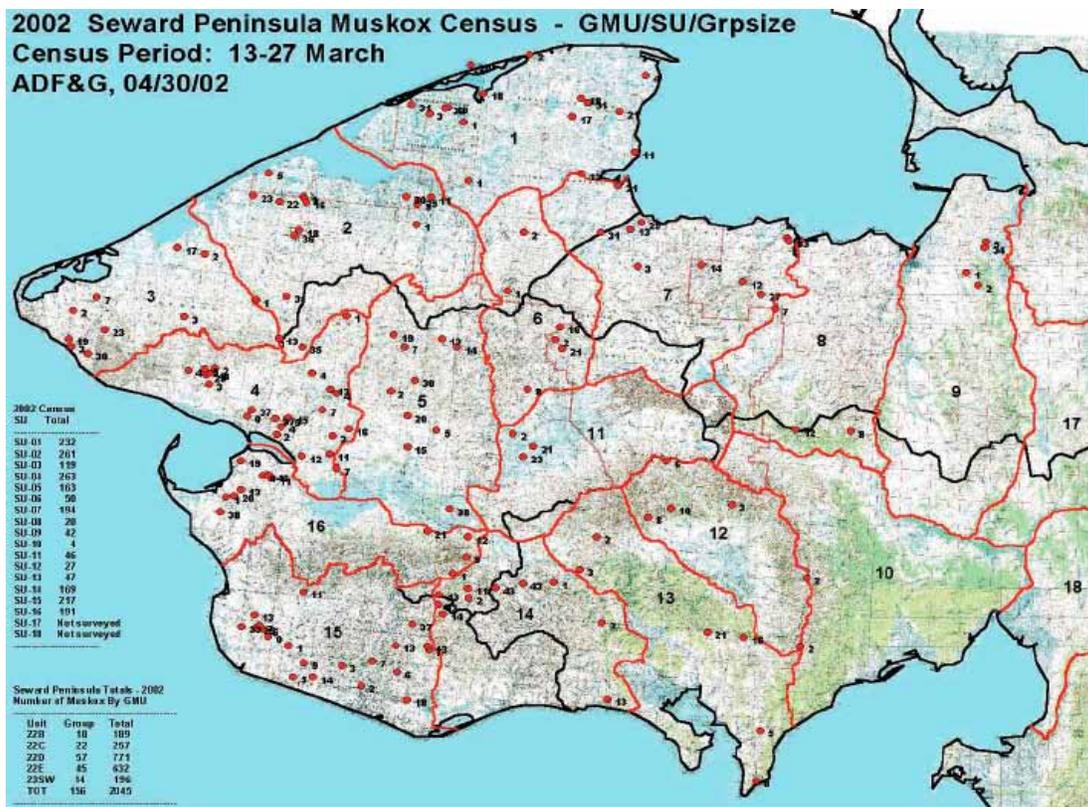


Figure 2. Seward Peninsula muskox census results, 2002 (July 2007, courtesy of ADF&G). Black lines are GMU (game management unit) boundaries; red lines are SU (survey unit) boundaries.

in one subunit (22B, 22C, etc) on an annual basis to determine changes in age and sex structure of the population. A resident drawing hunt is administered in Unit 22D remainder and 22D Southwest and registration hunts are administered in the remaining subunits of Unit 22.

Harvest History

In 2005–2006 the allowable harvest rates recommended for Unit 22D by the SPMCG and adopted by the Alaska Board of Game were 5% in Unit 22D remainder (including up to 2% cow harvest).

Prior to 2008, the State administered a Tier II subsistence hunt in Unit 22D. In regulatory year 2008–2009, the State changed the Tier II subsistence hunt to a Tier I registration hunt (RX102) which is open to all Alaska residents. In the regulatory year 2009–2010, the hunt number changed to RX 104 but continues to be a registration subsistence hunt open to residents only.

In addition to the State and Federal registration hunts, the State administers a drawing hunt (DX102) for bulls only for portions of Unit 22D including 22D remainder starting in the 2008–2009 regulatory year. In 2008, three bulls were harvested in Unit 22D remainder from the drawing hunt.

From 2006–2008, the average annual cow harvest for the State has been three cow muskoxen in Unit 22D. For the same time period, the average annual State hunter success rate was 08% with the highest success rate of 14% (5 cows from 36 hunters) occurring in 2006 (**Table 3**).

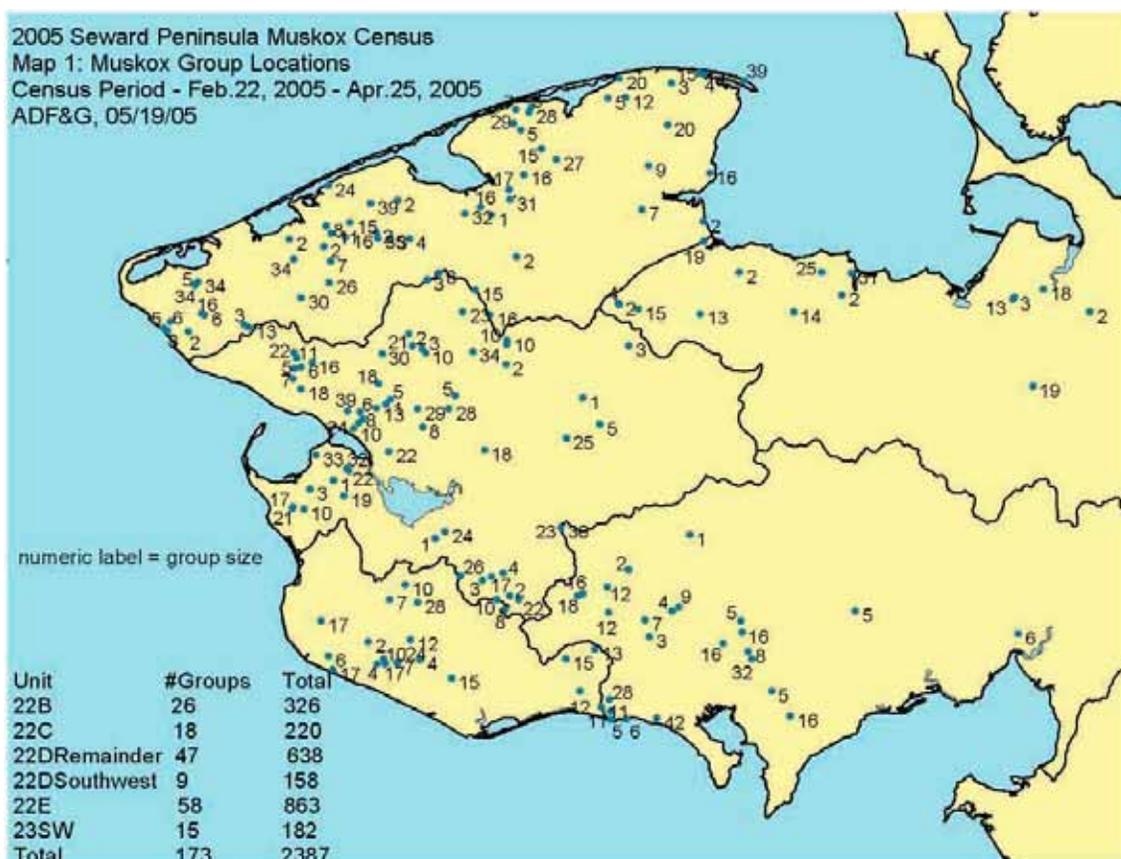


Figure 3. Seward Peninsula muskox census results, 2005 (July 2007, courtesy of ADF&G)

Table 1. Seward Peninsula muskox census results, Units 22 and 23 Southwest, 1992–2007 (ADFG 2008 and Gorn 2007)

Year	Unit					Total Muskoxen in Unit 22 and Unit 23SW	Total % increase from previous census	Total % change from previous census in Unit 22D only	% Average Annual Change in population in Unit 22D
	22B	22C	22D	22E	23SW				
1992	3	49	340	180	134	706	n/a	n/a	
1994	11	79	405	184	246	925	31.0%	+19.1%	+9.5%
1996	51	87	308	327	178	951	0.03%	-23.9%	-11.95%
1998	27	124	714	362	205	1432	50.5%	+131%	+65.5%
2000	159	148	774	461	255	1797	25.4%	+8.4%	+4.2%
2002	189	257	771	632	201	2050	14.1%	-0.3%	-0.15%
2005	326	220	796	863	182	2387	16.4%	+3.2%	+1.06%
2007	329	445	746	949	219	2688	12.6%	-6.2%	-3.1%

Table 2. Age and sex composition of Seward Peninsula muskoxen groups in Unit 22D (Gorn 2007)

Year	Total Sampled	Males ≥4 yrs old (%)	Males 3 yrs old (%)	Males 2 yrs old (%)	Females ≥4 yrs old (%)	Females 3 or 4 yrs old (%)	Females 2 yrs old (%)	Females 3 yrs old (%)	Yearlings: cow ratio ^b
2002	454	70 (15%)	17 (4%)	30 (7%)	157 (35%)	9 (2%)	33 (7%)	49 (11%)	33:100 ^c
2006	516	99 (19%)	32 (6%)	28 (5%)	193 (37%)	0 (0%)	26 (5%)	41 (8%)	42:100

(%) is of total sampled population

^a Number of males ≥ 4 years old/100 cows ≥ 3 years old

^b Number of yearlings/100 cows ≥ 3 years old

^c In 2002, 59% of the population was sampled and favored larger groups. Smaller groups were likely to be all bulls; therefore the number of bulls is probably underestimated. This bull:cow ratio should be seen as a minimum.

Table 3: Results of state and federal muskox hunts in Unit 22D Remainder on the Seward Peninsula 2006–2008 (ADF&G 2009b and FWS 2009)

Hunt #	Year	Total 22D Remainder Muskox Harvest Quota ^a	# of State Permits Issued (TX102 ^b or RX102 ^c)	# of State hunters who hunted	State Bull Harvest	State Cow Harvest	# of Federal Permits Issued (RX 115 ^e)	# of Federal hunters who hunted	Federal Bull Harvest	Federal Cow Harvest
TX102 and RX115/118	2006	32	45	36	19	5	3	2	0	0
TX102 and RX115/118	2007	30	54	36	23	3	3	0	0	0
RX102 and RX115	2008	16	90	55	22	2	7	0	0	0

^a Combined State and Federal quotas for Unit 22D remainder and Unit 22D Kuzitrin (Gorn 2005 and 2007)

^b TX102 for 2006–2007 was Unit 22D remainder and Unit 22D Kuzitrin/Pilgrim drainages

^c RX102 in 2008 was formerly TX102 for Unit 22D remainder and Unit 22D Kuzitrin/Pilgrim drainages

^d TX102 and RX102 were changed from a Tier II hunt to a Tier I subsistence registration hunt (RX104) effective starting the 2008–2009 regulatory year

^e RX115 is for the remainder of Unit 22D

When compared to other Alaskan residence communities, the successful residents harvesting muskoxen in Unit 22D remainder were predominately from Nome and Brevig Mission (**Table 4, Figure 4**). In 2008, the State changed the Tier II subsistence hunt (TX102) to a Tier I registration hunt (RX102) which resulted in Alaskan residents outside Unit 22 being successful for muskoxen harvest (**Table 4**).

Effects of the Proposal

If this proposal is adopted it would align Federal and State hunt areas in Unit 22D remainder. This would allow the Federal managers the same flexibility as the State managers to keep areas open to Federal subsistence harvest when the joint State/Federal harvest quotas have not been met in specific areas. This proposal would also allow Federally qualified users an opportunity to hunt in Unit 22D (that portion within the Kuzitrin River drainage) consistent with the opportunity already afforded by the State with minimal impact on the muskoxen population because a harvest quota is in place.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-77 **with modification** to clarify the regulatory language because the Kuzitrin River drainage encompasses the Kougarok and Pilgrim river drainages.

The modified regulation should read:

*Unit 22D, that portion within the **Kuzitrin** River drainages — 1 muskox by Federal permit or State Tier I subsistence registration permit; however, cows may only be taken during the period Jan. 1 – Mar. 15. Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations. Annual harvest quotas and any needed closures will be announced by the Superintendent of the Bering Land Bridge National Preserve, in consultation with ADF&G and BLM.*

Justification

Aligning the Federal and State hunt areas would give Federal managers additional flexibility to keep areas open to subsistence harvest when the joint State/Federal harvest quotas have not been met in specific areas. Currently the State and Federal regulations are out of alignment with the designation of hunt areas within Unit 22D. The Federal regulations list two hunt areas within Unit 22D while the State has three hunt areas which results in a discrepancy between available lands and in diminished harvest opportunities for Federally qualified subsistence users in Unit 22D if the quota for the unit is reached.

Allowing Federally qualified users an opportunity to hunt in Unit 22D (that portion within the Kuzitrin river drainage) would be consistent with the opportunity already afforded by the State with minimal impact on the muskoxen population because a quota is in place.

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ADF&G 2008. Muskox Annual Survey and Inventory. Federal Aid Annual Performance Report Grant W-33-06, Anchorage, AK.

ADF&G 2009a. Emergency Orders 05-02-09 and 05-11-09. Alaska Department of Fish and Game, Nome, AK.

ADF&G 2009b. Harvest ticket database. Microcomputer database, updated June 16, 2009.

Table 4: Alaskan residence community for Unit 22D State muskoxen hunt on the Seward Peninsula 2006–2008 (ADF&G 2009b and FWS 2009)

City	Total Muskox Harvest 2006	Total Muskox Harvest 2007	Total Muskox Harvest 2008
Anchorage	n/a	n/a	2
Brevig Mission	5	6	3
Elim	1	1	n/a
Homer	n/a	n/a	0
Kotzebue	0	n/a	n/a
Noatak	n/a	1	n/a
Nome	16	17	15
Shaktolik	1	n/a	n/a
Teller	n/a	1	1
Unalakleet	1	n/a	0
Valdez	n/a	n/a	1
Wasilla	n/a	n/a	2

Federal permits were given to residents of Brevig Mission and Teller but harvest was not successful (2006–2008) as shown in Table 2.
 n/a represents no hunter success or unsuccess.
 0 represents that at least one hunter was unsuccessful.

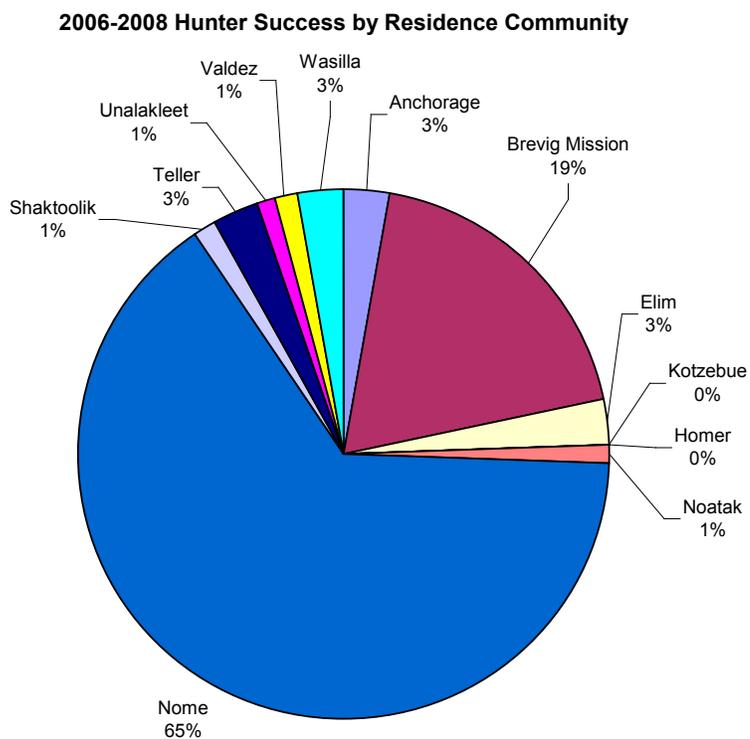


Figure 4. Average hunter success (2006–2008) by Alaskan residence community (ADF&Gb as shown in Table 4).

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

FWS. 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.

FWS. 2009. Federal registration permit database. Microcomputer database, updated June 16, 2009.

Gorn, T.S. 2007. Unit 22 and southwest portion of Unit 23 muskox. Pages 12–34 *in* P.Harper, editor. Muskox management report of survey and inventory activities 1 July 2004–30 June 2006. Alaska Department of Fish and Game. Project 16.0. Juneau, Alaska, USA.

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Comments WP10-77
January 29, 2010; Page 1 of 2

Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-77: This proposal divides Unit 22D Remainder federal subsistence muskox hunt areas into two parts (Kuzitrin and Remainder) to match the state hunt areas in this portion of Unit 22D.

Introduction: Muskox populations in Unit 22D have increased over the past 15 years and now sustain hunting harvest through federal subsistence and state hunts. This proposal recognizes the advantages of matching hunt areas in the respective federal and state regulatory systems.

Impact on Subsistence Users: Matching hunt areas in the state and federal subsistence hunting regulations will give increased flexibility for all hunters to respond to emergency closures when harvest quotas are reached.

Opportunity Provided by State: In Unit 22D, the following muskox hunting regulations were effective in 2009-2010:

Unit 22D Kuzitrin River drainage:

One muskox by registration permit RX099; residents only; season January 1 through March 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome Alaska Department of Fish and Game and license vendors in Unit 22D beginning July 24; tag required; no fee for required tag; trophy destruction of boss horn within 72 hours by Alaska Department of Fish and Game, trophy destruction required if other skulls (with horns) removed from Unit 22.

RX099 Harvest Quota:

Unit 22D Kuzitrin River drainage: Total combined quota is 11 muskox (including up to 4 cows).

Unit 22D Remainder:

One bull by registration permit RX104; residents only; season August 1 through March 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome Alaska Department of Fish and Game and license vendors in Unit 22D during July 24 through March 15; tag required; no fee for required tag; trophy destruction required if skull (with horns) removed from Unit 22.

One cow by registration permit RX104; residents only; season January 1 through March 15; season will be closed by emergency order when harvest quota is reached; permits available at Nome Alaska Department of Fish and Game and license vendors in Unit 22D during July 24 through March 15; tag required; no fee for required tag; trophy destruction required if skull (with horns) removed from Unit 22.

RX104 Harvest Quota:

Unit 22D Remainder: Total combined quota is 16 muskox (including up to 7 cows).

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Drawing hunt DX102 has an August 1 through March 15 season for resident or nonresident hunters with drawing permit; bag limit is one bull 4 years old or older by permit; tag fee required.

Conservation Issues: None. Hunting is by permit with established harvest quotas.

Other Comments: The proposed description of the Kuzitrin drainage in Unit 22D is worded differently than in State regulation. State regulations do not identify the Kougarok or Pilgrim river drainages because both are tributaries and, thus, are a part of the Kuzitrin drainage. If adopted, federal and subsistence regulations would be parallel but worded differently.

Recommendation: Support with modification to reduce the description difference between state and federal regulations.

WP10-78 Executive Summary	
General Description	WP10-78 requests that the special provision to allow the harvest limit of one muskoxen and one bull moose for the Kingikmiut Dance Festival increase to three muskoxen in addition to one bull moose to occur within the regularly established season (1 muskox between August 1–March 15; cows allowed from January 1–March 15 and one bull moose between August 1–December 31) in Unit 22E. <i>Submitted by the Native Village of Wales</i>
Proposed Regulation	<p>Unit 22E—Special Provision—Moose, Muskox</p> <p><i>Unit 22E—The taking of one bull moose and one up to three musk oxen by the community of Wales is allowed for the celebration of the Kingikmiut Dance Festival under the terms of a Federal registration permit. Permits will be issued to individuals only at the request of the Native Village of Wales. The harvest may only occur within regularly established seasons in Unit 22E. between January 1 and March 15 in Unit 22E for a bull moose and in Unit 22E for a muskox. The harvest will count against any established quota for the area</i></p> <p style="text-align: right;">Moose Aug. 1–Dec. 31 Muskoxen Aug. 1–Mar. 15</p>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Oppose
Written Public Comments	None

DRAFT STAFF ANALYSIS WP10-78

ISSUES

WP10-78, submitted by the Native Village of Wales, requests that the special provision to allow the harvest limit of one muskoxen and one bull moose for the Kingikmiut Dance Festival increase to three muskoxen in addition to one bull moose to occur within the regularly established season (1 muskox between August 1–March 15; cows allowed from January 1–March 15 and one bull moose between August 1–December 31) in Unit 22E.

DISCUSSION

The proponent requests that special provision of one muskoxen and one bull moose for the celebration of the Kingikmiut Dance Festival correspond with the established seasons and that the harvest limit of one muskoxen be expanded to three muskoxen in Unit 22E. The proponent states since the reestablishment of the festival several years ago, the date has settled into a late summer/early fall period, however the dates of the festival are flexible and can be scheduled to follow the successful hunt. The proponent states the change of harvest season would allow taking moose and muskoxen for fresh meat prior to the festival thus reducing the demands for storage. The additional muskoxen would help ensure the community and guests are supplied with subsistence resources for the festival in accordance with traditional and customary hospitality.

Existing Federal Regulations

Unit 22E—Special Provision—Moose, Muskox

Unit 22E—The taking of one bull moose and one musk ox by the community of Wales is allowed for the celebration of the Kingikmiut Dance Festival under the terms of a Federal registration permit. Permits will be issued to individuals only at the request of the Native Village of Wales. The harvest may only occur between January 1 and March 15 in Unit 22E for a bull moose and in Unit 22E for a muskox. The harvest will count against any established quota for the area

Jan. 1–Mar. 15

Unit 22E—Muskox

Unit 22E — 1 muskox by Federal permit or State permit; however, cows many only be taken during the period Jan. 1–Mar. 15

Aug. 1–Mar. 15

Federal public lands are closed to the taking of muskox except by Federally qualified subsistence users hunting under these regulations.

Annual harvest quotas and any needed closures will be announced by the Superintendent of the Western Arctic National Parklands, in consultation with ADF&G and BLM

Unit 22E—Moose

1 bull

Aug. 1–Dec. 31

Federal public lands are closed to the taking of moose except by Federally qualified subsistence users hunting under these regulations.

Proposed Federal Regulation

Unit 22E—Special Provision—Moose, Muskox

<i>Unit 22E—The taking of one bull moose and one up to three musk oxen by the community of Wales is allowed for the celebration of the Kingikmiut Dance Festival under the terms of a Federal registration permit. Permits will be issued to individuals only at the request of the Native Village of Wales. The harvest may only occur within regularly established seasons in Unit 22E. between January 1 and March 15 in Unit 22E for a bull moose and in Unit 22E for a muskox. The harvest will count against any established quota for the area</i>	Moose	Aug. 1–Dec. 31
	Muskoxen	Aug. 1–Mar. 15

Existing State Regulation

Unit 22E — Muskox

<i>One bull by registration permit for residents only. Season will be closed by emergency order when the quota of 62 muskoxen are taken (including up to 31 cows).</i>	Aug. 1–Mar. 15
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OR

<i>One muskox by registration permit for residents only. Season will be closed by emergency order when the quota of 62 muskoxen are taken (including up to 31 cows)</i>	Jan. 1–Mar. 15
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<i>One bull 4 years old or older by drawing permit for both residents and non-residents</i>	Aug. 1–Mar. 15
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Unit 22E—Moose

<i>1 bull for residents only</i>	Aug. 1–Dec. 31
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OR

<i>1 antlered bull for residents only</i>	Jan. 1–Jan. 31
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<i>One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit for non-residents. Season closed by emergency order when 10 bulls are taken.</i>	Sept. 1–Sept. 14
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Extent of Federal Public Lands

Approximately 52% of the lands in Unit 22E are Federal public lands. Bering Land Bridge National Preserve manages 49% of the lands and Bureau of Land Management manages approximately 3% of the lands (**Unit 22 Map**).

Customary and Traditional Use Determinations

Rural residents of Unit 22 have a positive customary and traditional use determination for moose in Unit 22. All rural residents of Unit 22E, excluding Little Diomed Island have a positive customary and traditional use determination for muskoxen in Unit 22E. The only village that is affected by this proposal would be the Village of Wales.

Regulatory History

Muskoxen

In 2002, the Seward Peninsula Subsistence Regional Advisory Council submitted two proposals which were approved with modification by the Federal Subsistence Board (Board), WP02-36 which established the Special Provision for the harvest for Kingikmiut Dance Festival in Unit 22E and WP02-37 which revised the quota system for muskoxen to authorize the Superintendent of the Western Arctic National Parklands to announce an annual harvest quota and any needed closures in consultation with ADF&G and BLM for Units 22B, 22D, 22E, and 23SW.

WSA 03-02 was submitted by the Native Village of Wales and adopted by the Board to extend the opportunity to harvest one muskox from November 15–December 31 to November 15–March 15 for the Kingikmiut Dance Festival to provide additional opportunity for the village to harvest a muskox for the festival. The harvest counted against any established quota for the area.

In the summer of 2003, the Village of Wales submitted a Temporary Special Action request, WSA03-09, to change the harvest season for muskox for the Kingikmiut Dance Festival to Jan. 1–Mar. 15. This Temporary Special Action was approved by the Federal Subsistence Board in October 2003 and was subsequently proposed in WP04-69 to extend the dates for both moose and muskoxen, and adopted by the Board in the 2004–2005 regulations.

For the celebration of the Kingikmiut Dance Festival, the current special provision allows for one muskox to be harvested between January 1 and March 15. For the regular harvest season in Unit 22(E), 1 muskox may be harvested by Federal permit or State Tier II permit from August 1–March 15; however cows may only be taken during the period January 1–March 15.

Biological Background

Muskoxen

In 2007, the Seward Peninsula muskoxen census found 2688 muskoxen in Unit 22 and Unit 23SW which is a 12.6% increase from the 2005 census count of 2,387 muskoxen and a 16.4% increase in population size since 2002 when 2050 muskoxen were counted (**Table 1**). Specifically for Unit 22E, the Seward Peninsula muskoxen census results for 1992–2007 have showed an increasing population trend since 1998 (**Table 1**). In 2005, the Seward Peninsula census data showed group locations per subunits within Unit 22E (**Figure 1**) where there were a total of 58 groups located for a total of 863 muskoxen.

The most recent available information for composition surveys for Unit 22E were completed in 2008 and classified 99% of the animals (198 of 199 muskoxen) by sex and age. In 2008, the population composition for Unit 22E comprised 19% (37 of 199) of mature bulls (≥ 4 years), 37% (73 of 199) of mature cows (≥ 3 years), and 10% (19 of 199) yearlings (**Table 2**). The proportion of yearling, 2-year old, and 3-year old animals surveyed in 2008 is similar to results in 2005 (**Table 2**). The 2008 composition

Table 1. Seward Peninsula muskoxen census results, Units 22 and 23 Southwest, 1992-2007 (ADF&G 2008 and Gorn 2007)

Year	Unit					Total Muskoxen in Unit 22 and Unit 23SW	Total % increase from previous census	Total % change from previous census in Unit 22E only	% Average Annual rate of increase in Unit 22E
	22B	22C	22D	22E	23SW				
1992	3	49	340	180	134	706	n/a	n/a	
1994	11	79	405	184	246	925	31.0%	+2.2%	+1.1%
1996	51	87	308	327	178	951	0.03%	+78%	+39%
1998	27	124	714	362	205	1432	50.5%	+10.7%	+5.4%
2000	159	148	774	461	255	1797	25.4%	+27.3%	+13.7%
2002	189	257	771	632	201	2050	14.1%	+37.1%	+18.6%
2005	326	220	796	863	182	2387	16.4%	+36.5%	+12.2%
2007	329	445	746	949	219	2688	12.6%	+9.9%	+4.9%

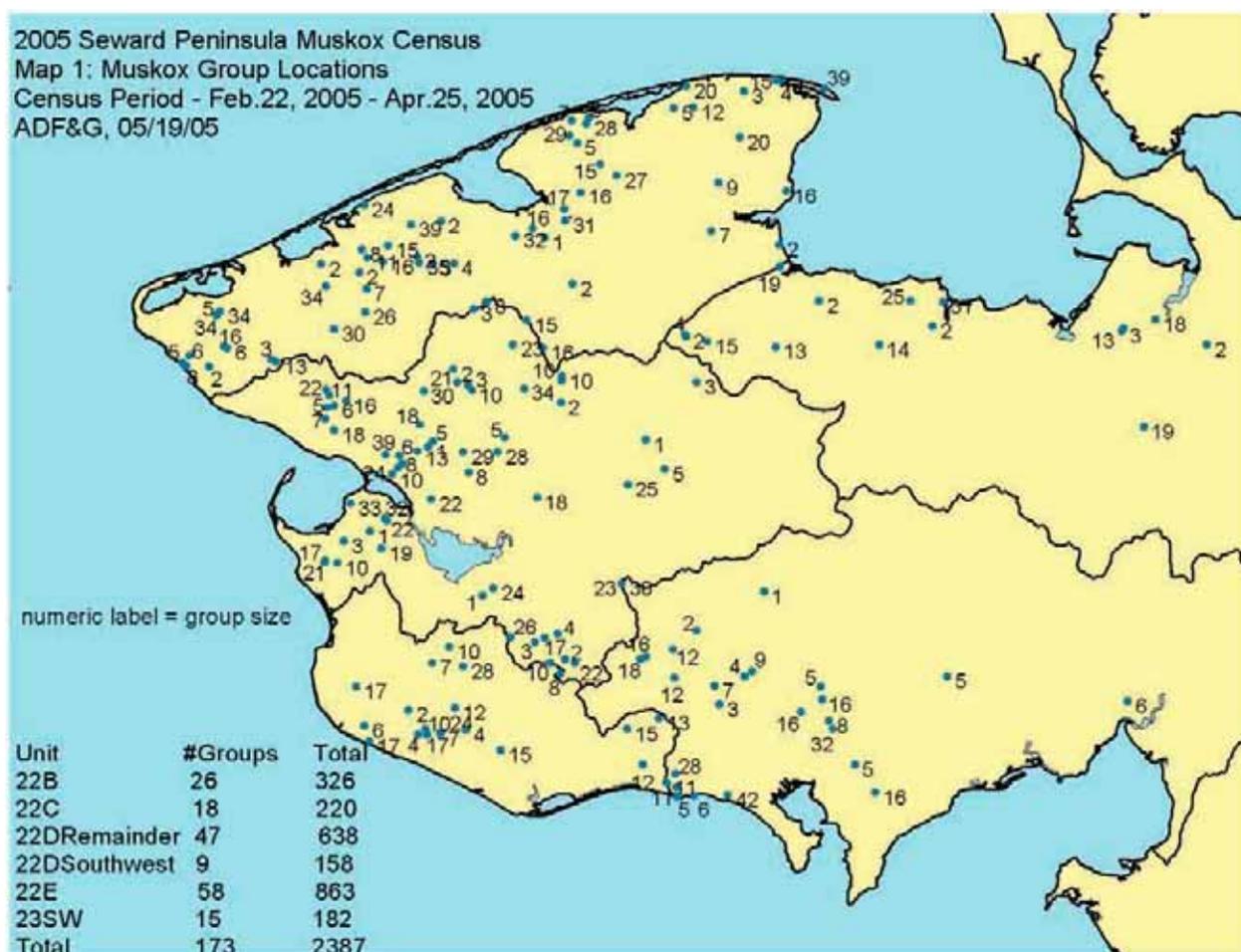


Figure 1. Seward Peninsula muskox census results, 2005 (July 2007, courtesy of ADF&G)

Table 2. Age and sex composition of Seward Peninsula muskox groups in Unit 22E (ADF&G 2009a and FWS 2009)

Unit	Year	Total Sampled	Males ≥4 yrs old (%)	Males 3 yrs old (%)	Males 2 yrs old (%)	Females ≥4 yrs old (%)	Females 3 yrs old (%)	Females 2 yrs old (%)	Yearlings (%)	Unk (%)	Bull:cow ratio	Yearling:cow ratio
22E	2002	313	57 (18%)	19 (6%)	32 (10%)	84 (27%)	29 (9%)	32 (10%)	57 (18%)	0	50:100*	50:100
22E	2005	501	83 (17%)	28 (6%)	43 (9%)	161 (32%)	69 (14%)	34 (7%)	77 (15%)	6 (1%)	36:100	33:100
22E	2008	199	37 (19%)	13 (7%)	9 (5%)	59 (30%)	14 (7%)	12 (6%)	19 (10%)	1 (1%)	51:100	26:100

(%) is of total sampled population

* In 2002, 50% of the population was sampled and favored larger groups. Smaller groups were likely to be all bulls, therefore the number of bulls is probably underestimated. This bull:cow ratio should be seen as a minimum.

survey categorized 35 calves (18%) of the sampled population which suggests good calf survival during this time (ADF&G 2009a). The percentage of cows that are ≥ 3 years old (37%) shows a moderately high reproductive potential within the Unit 22E muskoxen population. Muskoxen in Arctic National Wildlife Refuge showed the age of first reproduction ranged between two to five years with 60% (9 of 15) successfully reproducing at three years of age. Older female muskoxen (≥ 10 years) reproduced successfully 76% (13 of 17) within this population (Reynolds 2001).

Moose

Historically, moose probably immigrated into the Seward Peninsula in the late 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked between 7,000 and 10,000 animals during the 1980s (Gorn 2008). Density independent factors were believed to have caused the population to decrease during the early 1990s with several severe winters during that time period (Nelson 1995). Populations within Unit 22 have never recovered to the peak levels of the 1980s with brown bear predation on moose calves being speculated as the main limiting factor (Gorn 2008). The current population of moose in Unit 22E remains well above the management goal of 200–250 animals (Gorn 2008).

From 1996 to 2001, aerial moose census conducted by ADF&G showed the population declined 2.8% annually in Unit 22E (**Table 3**). In March 2003, the aerial census estimated approximately 504 moose within 22E, which showed a drastic increase in the population by 99% annually since 2001 (**Table 3**). However, the 2003 census used a spatial census technique to stratify habitat areas likely to support moose and is not directly comparable to previous population estimates which were minimum direct counts during surveys of riparian habitat. In addition, it is probable that the observed increase is due to scarcity of snow cover during the winter which enabled moose to remain in their summer range in Unit 22E rather than migrate to winter drainages in Unit 22D as had been shown during past telemetry studies in the 1980s (Gorn 2008).

Management Direction

Muskoxen

Refer to WP10-74

Moose

State management goals for moose in Unit 22 are to complete censuses in the 5 subunits of Unit 22 on a 3-year rotational basis to estimate moose abundance. The latest census completed in 2006 estimated 587 moose in Unit 22E. The State has a goal of 200–250 moose for Unit 22E and therefore, intends to reduce the population to the upper threshold and attempt to maintain a bull:cow ratio of 30 bulls:100 cows (Gorn 2008). In addition, there is a State management objective to complete late fall and/or early spring aerial surveys to provide an index of moose population status and trends, sex and age composition, and yearling recruitment. However, a sex and age composition for Unit 22E has never been completed by ADF&G.

Harvest History

Muskoxen

In 2005, the Alaska (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. However, despite this

Table 3. Seward Peninsula **moose** census results, Unit 22E, 1991-2006 (ADF&G 2008 and Gorn 2008)

Year	Unit 22E	Total % change from previous census in Unit 22E only	% Average Annual rate of increase in Unit 22E
1991	226	n/a	n/a
1996	196	-13.3%	-2.6%
2001	169	-13.8%	-2.7%
2003	504	+198%	+99%
2006	587	+16.5%	+5.5%

allowing a harvest opportunity to Alaska residents outside of Unit 22, the harvest within Unit 22E was still below harvest quotas (**Table 4**) for all hunts. From 2004–2007, annual average hunter success rate for bull harvest was approximately 65% and 21% success rate for cow harvest (**Table 4**).

In Unit 22E, muskoxen inhabit Federal, State, and private lands with varying degrees throughout the subunit. Typically, hunters from the village of Shismaref have been successful under both the State and Federal permits because muskoxen inhabit Federal and private lands close to the village. In the village of Wales within Unit 22E, State permits are more readily filled due to the Federal public lands being further from the village.

In addition to the State and Federal registration hunts, the State administers a drawing hunt for Unit 22E (DX098) for bulls only which for the period of 2004–2008 has a hunter success rate of 80% with an average of 9 male muskoxen harvest (ADF&G 2009b).

Moose

Although moose have been present in Unit 22 for a relatively short time, they rapidly became an extremely important food source for many Seward Peninsula residents, with the demand by hunters high throughout the Unit (Persons 2000). Gravel roads and navigable rivers provide easy access to suitable moose habitat.

The State administers two general harvest seasons for moose in Unit 22E. Residents may harvest one bull August 1–December 31 OR one antlered bull January 1–January 31. In 2008, ADF&G added a registration hunt (RM853) for residents and non-residents for one bull moose from September 1–September 14. The season (RM853) is closed once 10 bulls have been harvested. The Federal subsistence harvest season is August 1 and December 31.

The annual harvest in Unit 22E has been relatively low and hunter effort typically occurs in the first general harvest season between August and December (**Table 5**). Average annual hunter success between 2004 and 2007 has been approximately 43% in Unit 22E. Access by road and river and the use of ATVs and other off-road vehicles allows harvest prior to snowfall.

Table 4. Results of state and federal muskoxen hunts on the Seward Peninsula 2004-2007 (ADFG 2009b and FWS 2009)

Hunt #	Year	Muskox Harvest Quota ^a	Cow Muskox Harvest Quota ^a	# of State Permits Issued (TX104 or RX104 ^b)	# of State hunters who hunted	State Bull Harvest	State Cow Harvest	# of Federal Permits Issued (RX 114)	# of Federal hunters who hunted	Federal Bull Harvest	Federal Cow Harvest
TX104 and RX114	2004	51	25	31	18	14	2	15	2	2	0
TX104 and RX114	2005	69	35	47	32	18	9	16	6	3	2
RX104 ^b and RX114	2006	69	35	26	12	10	0	11	5	1	4
RX104 and RX114	2007	69	35	57	36	24	6	7	0	0	0

^a Combined State and Federal quotas (Gorn 2005 and 2007)

^b TX104 was changed from a Tier II hunt to a Tier I subsistence registration hunt (RX104) effective for the 2006-2007 regulatory year

Table 5. Results of state and federal **moose** hunts on the Seward Peninsula 2004-2007 (ADFG 2009b and FWS 2009)

Year	General harvest Aug 1–Dec 31	General harvest Jan 1–Jan 31	# of State hunters reported ¹	Total State Bull Harvest	Federal subsistence harvest Aug. 1–Dec. 31	# of Federal hunters reported	Total Federal Bull Harvest
2004	9	0	14	9	0	1	0
2005	9	0	21	9	0	0	0
2006	6	1	23	7	1	1	1
2007	16	0	40	16	0	0	0

¹ Actual number of hunters who hunted

Effects of the Proposal

This proposal would allow the Native Village of Wales, to take a bull moose and up to three muskoxen either early in the season to celebrate the festival in the fall, or during optimal winter traveling conditions which would make it safer for the hunter. The timing of the hunt is not tied to a scheduled festival date which would allow the flexible opportunity for the festival to be scheduled.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-78

Justification

Both muskoxen and moose populations within Unit 22E can support the harvest limits for the celebration of the Kingikmiut Dance Festival to be changed to increase the number of muskoxen that may be taken and lengthen the harvest season by five months to correspond with the established seasons for muskoxen and moose in Unit 22E.

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Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-078: This proposal allows ceremonial festival harvest in the community of Wales of 1 moose and 3 muskox within harvest quota guidelines using individual federal subsistence registration permits for Unit 22E.

Introduction: Muskox populations in Unit 22E have increased over the past 15 years and now support hunting harvest through federal subsistence and state hunts. Moose populations have increased above management objectives since a period of low population during 2000-2005. This proposal allows the take of game for fresh meat under federal subsistence regulations for festival celebrations that occur outside of normal seasons and harvest would be counted towards annual harvest quotas established for moose and muskox, respectively. Muskox harvest quotas have not been reached in Unit 22E and currently moose harvest is not restricted by quota, so allowing additional federal subsistence opportunity is a way to achieve annual harvest objectives.

Impact on Subsistence Users: None. Ceremonial harvest is not a subsistence use protected under ANILCA Title VIII on federal public lands. Ceremonial harvest is allowed under state regulations on all lands.

Opportunity Provided by State: Under State of Alaska regulations 5AAC 92.034, the Commissioner of the Alaska Department of Fish and Game “may issue permits for the taking of game for the teaching and preservation of historic or traditional Alaskan cultural practices, knowledge, and values.”

Conservation Issues: There are no moose conservation concerns due to low hunting pressure and population above management objective. There are no muskox conservation concerns due to hunting by permit with established harvest quotas.

Other Comments: In 2010-2011 regulatory year, the State season for cows in hunt RX104 will open on August 1, which lengthens the time female muskox are available for harvest.

The State of Alaska’s system of permitting applies to all lands, so use of a State of Alaska ceremonial permit would reduce land status issues for the persons issued a permit and enforcement issues for both federal and state enforcement staff. All of the lands surrounding and in the vicinity of the community of Wales are non federal public lands. Federal and state staff should notify the proponent of the availability of ceremonial or cultural permits from the State of Alaska. No State of Alaska ceremonial or cultural permit requests from Region V have been denied to date.

Recommendation: Oppose. This use is already authorized under state regulations. The Alaska Department of Fish and Game has asked the federal subsistence program to not authorize ceremonial harvest where not traditional and where already authorized under permit by the state.

WP10-79 Executive Summary	
General Description	WP10-79 requests that the harvest limit of one bull moose be changed to one antlered bull, and that the harvest season be extended from August 1–December 31 to August 1–March 15. <i>Submitted by the Native Village of Wales</i>
Proposed Regulation	Unit 22E—Moose <i>1 antlered bull</i> <i>Aug. 1–Dec. 31Mar. 15</i> <i>Federal public lands are closed to the taking of moose except by Federally qualified subsistence users hunting under these regulations.</i>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Support
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP10-79**

ISSUES

WP10-79, submitted by the Native Village of Wales, requests that the harvest limit of one bull moose be changed to one antlered bull, and that the harvest season be extended from August 1–December 31 to August 1–March 15.

DISCUSSION

The proponent requests the current harvest limit of one bull moose be changed to one antlered bull to help eliminate the inadvertent harvest of cow moose. In addition, the proponent requests the harvest season be increased by three months to include January through March to provide more harvest opportunity and flexibility for Federally qualified subsistence users. The State regulation allows for an additional month of harvest for antlered bulls until January 31, however, Federal lands are closed and therefore individuals are not able to harvest under State regulations on Federal lands. Therefore, Federally qualified subsistence users are unable to take advantage of an extra month of hunting opportunity.

Existing Federal Regulation

Unit 22E—Moose

1 bull

Aug. 1–Dec. 31

Federal public lands are closed to the taking of moose except by Federally qualified subsistence users hunting under these regulations.

Proposed Federal Regulation

Unit 22E—Moose

1 antlered bull

Aug. 1–~~Dec. 31~~ Mar. 15

Federal public lands are closed to the taking of moose except by Federally qualified subsistence users hunting under these regulations.

Existing State Regulation

Unit 22E—Moose

1 bull for residents only

Aug. 1–Dec. 31

OR

1 antlered bull for residents only

Jan. 1–Jan. 31

*One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit for **non-residents**. Season closed by emergency order when 10 bulls are taken.*

Sept. 1–Sept. 14

Extent of Federal Public Lands

Approximately 52% of the lands in Unit 22E are Federal public lands. Bering Land Bridge National Preserve manages 49% of the lands and BLM manages approximately 3% of the lands (**Unit 22 Map**).

Customary and Traditional Use Determinations

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

Regulatory History

In 2002, the Seward Peninsula Subsistence Regional Advisory Council submitted a proposal that was adopted with modification by the Federal Subsistence Board (Board), and WP02-34 changed the moose harvest season from August 1–March 31 to August 1–December 31 in Unit 22E and changed the harvest limit from one moose to one bull moose.

In the summer of 2003, the Village of Wales submitted a temporary special action request, WSA03-09, to change the harvest season for moose from November 15–December 31 to January 1–March 15. This Temporary Special Action was approved by the Federal Subsistence Board in October 2003 and was subsequently proposed in WP04-69 to extend the dates for both moose and muskoxen, and adopted by the Board in the 2004–2005 regulations.

In 2008, the Board approved WSA 08-19 by delegated authority to extend the moose harvest two months from August 1–December 31 to August 1–February 28 in Unit 22E.

Biological Background

Moose migrated into the Seward Peninsula in the late 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked between 7,000 and 10,000 animals during the 1980s (Gorn 2008). Density independent factors were believed to have caused the population to decrease during the early 1990s with several severe winters during that time period (Nelson 1995). Populations within Unit 22 have never recovered to the peak levels of the 1980s with brown bear predation on moose calves being speculated as the main limiting factor (Gorn 2008). Current population of moose in Unit 22E remains well above the management goal of 200–250 animals (Gorn 2008) with estimates in 2006 of 587 moose (**Table 1**).

An aerial moose census conducted by ADF&G in 2001 showed the local population declined 2.8% annually since 1996 (**Table 1**). In March 2003, the aerial census estimated approximately 504 moose within 22E, which showed a drastic increase in the population by 99% annually since 2001 (**Table 1**). However, the 2003 census used a spatial census technique to stratify habitat areas likely to support moose and is not directly comparable to previous population estimates which were minimum direct counts during surveys of riparian habitat. In addition, it is probable that the observed increase is due to scarcity of snow cover during the winter which enabled moose to remain in summer range in Unit 22E rather than migrate to winter drainages in Unit 22D as had been shown during past radiocollar studies in the 1980s (Gorn 2008). The most recent moose census in Unit 22E was completed in 2006 and estimated 587 moose within this area.

Table 1. Seward Peninsula moose census results, Unit 22E, 1991–2006 (ADF&G 2008 and Gorn 2008)

Year	Unit 22E	Total % change from previous census in Unit 22E only	% Average Annual rate of increase in Unit 22E
1991	226	n/a	n/a
1996	196	-13.3%	-2.6%
2001	169	-13.8%	-2.7%
2003	504	+198%	+99%
2006	587	+16.5%	+5.5%

Moose in Alaska typically begin to cast their antlers in late November with most mature males having cast their antlers by early January (Van Ballenberghe 1983). A few small-antlered males may retain their antlers for another 60 or 80 days (Van Ballenberghe 1983).

Management Direction

State management goals for moose in Unit 22 are to complete censuses in the 5 subunits of Unit 22 on a 3-year rotational basis to estimate moose abundance. The latest census completed in 2006 estimated 587 moose in Unit 22E. The State has a goal of 200–250 moose for Unit 22E and therefore, intends to reduce the population to the upper threshold and attempt to maintain a bull:cow ratio of 30 bulls:100 cows (Gorn 2008). In addition, there is a State management objective to complete late fall and/or early spring aerial surveys to provide an index of moose population status and trends, sex and age composition, and yearling recruitment. However, a sex and age composition for Unit 22E specifically has not been completed by ADF&G.

Harvest History

Although moose have been present in Unit 22 for a relatively short time, they rapidly became an extremely important food source for many Seward Peninsula residents (Persons 2000). Gravel roads and navigable rivers provide easy access to suitable moose habitat in the fall and early winter, and snow machines provide access during the winter season.

The State administers two general harvest seasons for moose in Unit 22E. One bull for residents may be harvested August 1–December 31 OR one antlered bull may be harvested January 1–January 31. In 2008, ADF&G added a registration hunt (RM853) for residents and non-residents for one bull moose from September 1–September 14. The season is closed once 10 bulls are harvested for the registration hunt. The Federal subsistence harvest season is aligned with the State general harvest season between August 1 and December 31, but the State general harvest continues until January 31 giving State users an additional month opportunity.

The annual harvest in Unit 22E has been relatively low (**Table 2**) and hunter effort typically occurs in the first general harvest season between August and December. Between 2004 and 2007, the combined average annual hunter success for State and Federal hunters has been approximately 42% in Unit 22E. Access by road and river and the use of ATVs and other off-road vehicles allows harvest prior to snowfall.

Table 2: Results of State and Federal moose hunts on the Seward Peninsula 2004-2007 (ADFG 2009 and FWS 2009)

Year	General harvest Aug 1–Dec 31	General harvest Jan 1 –Jan 31	# of State hunters reported ¹	Total State Bull Harvest	Federal subsistence harvest Aug. 1–Dec. 31	# of Federal hunters reported	Total Federal Bull Harvest
2004	9	0	14	9	0	1	0
2005	9	0	21	9	0	0	0
2006	6	1	23	7	1	1	1
2007	16	0	40	16	0	0	0

¹ Actual number of hunters who hunted

Effects of the Proposal

Most mature bull moose will have cast their antlers by the end of January and therefore, the extension of the harvest season through March may not provide a significant amount of additional opportunity to harvest a mature bull. However, immature bulls may cast their antlers later in the spring and could provide an opportunity for harvest. Current population of moose in Unit 22E remains well above the management goal of 200–250 animals with estimates in 2006 of 587 moose. Average hunter success between 2004 and 2007 has been approximately 42% in Unit 22E with less than 1% from Federal harvest. Therefore, no conservation concerns are raised by extending the season.

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-79

Justification

Currently, the Federally qualified subsistence user may harvest moose from August 1 to December 31 which is one month less than individuals hunting under State regulations on State lands. Because Federal lands are closed to non-Federally qualified subsistence users, individuals may not harvest under State regulations on Federal lands. If the current harvest limit of one bull moose be changed to one antlered bull it would help eliminate the inadvertent harvest of cow moose. Increasing the harvest season by three months to include January through March would provide more harvest opportunity and flexibility for Federally qualified subsistence users. The population can support additional harvest and is above the management objective for Unit 22E. The most recent moose census in Unit 22E was completed in 2006 and estimated 587 moose within this area. In addition, the annual harvest in 22E has been relatively low and hunter effort typically occurs in the first general harvest season for the State between August and December. Most mature bull moose will have cast their antlers by the end of January and therefore, extending the harvest season through March may not provide a significant amount of additional opportunity to harvest a mature bull. However, immature bulls may cast their antlers later in the spring and could provide an opportunity for harvest.

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Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-79: This proposal extends the federal subsistence moose season to August 1 through March 31 with a bag limit of one antlered bull in Unit 22E.

Introduction: This proposal requests liberalization of the federal subsistence moose hunting season in Unit 22E in response to recent growth of the moose population in Unit 22E. Since the 2002/2003 hunting season, the federal subsistence moose hunt in Unit 22E was shortened by three months and was restricted to bull-only in response a decline in the moose population.

Impact on Subsistence Users: Extending the season from December 31 to March 31 will allow an additional 3 months of harvest opportunity for hunters. The take of antlered bulls after Jan 1 will be reduced due to antler-drop during the winter season. Very few to no antlered bulls are expected to be available in the March portion of the season, so it is difficult to distinguish cows.

Opportunity Provided by State: Populations are now above management objectives and support state hunting by residents with harvest tickets for bulls and nonresidents with state registration permit for antler restricted bulls. In Unit 22E, the following moose hunting regulations were effective in 2009-2010:

One bull by harvest ticket; residents only; season August 1 through December 31;

Or

One antlered bull by harvest ticket; residents only; season January 1 through January 31;

One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by registration permit RM853; nonresidents only; season September 1 through September 14; permits available online or in person at Nome Alaska Department of Fish and Game beginning August 1; harvest must be reported within 3 days of kill; season closed by emergency order when harvest quota is reached.

Conservation Issues: None, unless cows are inadvertently harvested during February and March. The moose population in Unit 22E has increased in recent years following a period of low population during 2000-2005. There are no moose conservation issues due to low hunting pressure, bag limit of antlered bull, and population above management objective. If this proposal is adopted, bull moose harvest will likely increase but will not exceed sustained yield. No other state or federal subsistence moose season in Unit 22 extends beyond January 31 due to the lack of available antlered bulls. The number of antlered bulls in February and March are very few to none, and the department wants to avoid the take of cows for conservation reasons.

Enforcement Issues: Extending the federal subsistence moose season through the winter months for bulls only could result in the inadvertent take of cow moose misidentified as bulls that have shed their antlers.

Other Comments: A three-month expanded season is not needed to provide priority opportunity for subsistence.

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Recommendation: Support changing current regulation to “one antlered” instead of “1 bull” and modify the proposal to avoid extending the season into spring.

WP10-80 Executive Summary	
General Description	WP10-80 requests that the winter moose season in Unit 22A remainder be shifted from January 1–31 to January 15–February 15. The shift in season timing would better allow the communities of Stebbins and St. Michael to meet their subsistence needs. <i>Submitted by the Stebbins Community Association</i>
Proposed Regulation	<p>Unit 22A—Moose</p> <p><i>Unit 22A remainder—1 bull. However, during the period Dec Jan. 15–Jan.31. Feb. 15, only an antlered bull may be taken. Federal public lands are closed to the taking of moose except by residents of Unit 22A hunting under these regulations.</i></p> <p><i>Aug. 1–Sept. 30 Jan. 1–Jan. 31 Jan. 15–Feb. 15</i></p>
OSM Preliminary Conclusion	Support
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Oppose
Written Public Comments	None

**DRAFT STAFF ANALYSIS
WP10-80**

ISSUES

WP10-80, submitted by the Stebbins Community Association, requests that the winter moose season in Unit 22A remainder be shifted from January 1–31 to January 15–February 15. The shift in season timing would better allow the communities of Stebbins and St. Michael to meet their subsistence needs.

DISCUSSION

The proponent requests the current winter season be shifted from January 1–January 31 to January 15–February 15 due to short daylight and inclement weather making it too difficult to take advantage of the harvest opportunity for moose in Unit 22A remainder. The length of the season would remain the same, but shifting the winter season would more meaningful better opportunity for subsistence hunters.

Existing Federal Regulation

Unit 22A—Moose

<i>Unit 22A remainder—1 bull. However, during the period</i>	<i>Aug. 1–Sept. 30</i>
<i>Jan. 1–Jan. 31, only an antlered bull may be taken. Federal public lands are closed to the taking of moose except by residents of Unit 22A hunting under these regulations.</i>	<i>Jan. 1–Jan. 31</i>

Proposed Federal Regulation

Unit 22A—Moose

<i>Unit 22A remainder—1 bull. However, during the period Dec Jan. 15–Jan. 31. Feb. 15, only an antlered bull may be taken. Federal public lands are closed to the taking of moose except by residents of Unit 22A hunting under these regulations.</i>	<i>Aug. 1–Sept. 30</i> <i>Jan. 1–Jan. 31</i> <i>Jan. 15–Feb. 15</i>
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Existing State Regulation

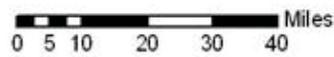
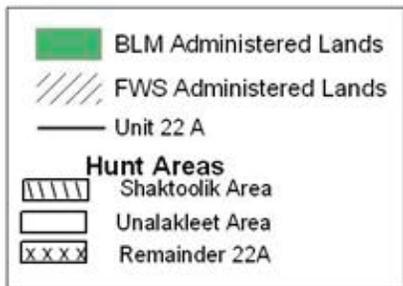
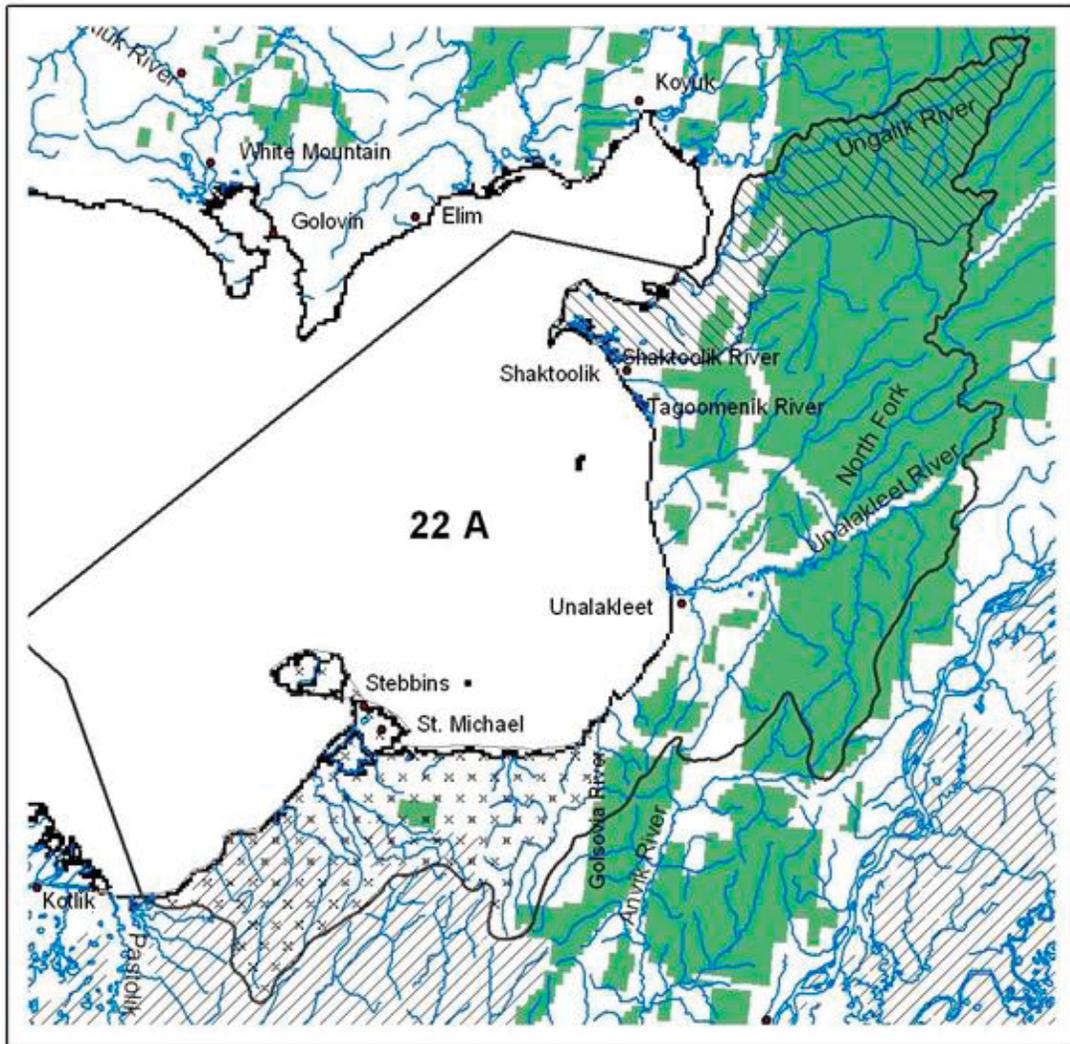
Unit 22A—Moose

<i>1 bull for residents only</i>	<i>Aug. 1–Sept. 30</i>
<i>OR</i>	
<i>1 antlered bull for residents only</i>	<i>Jan. 1–Jan. 31</i>
<i>One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit for non-residents.</i>	<i>Sept. 1–Sept. 30</i>

Extent of Federal Public Lands

Federal public lands comprise approximately 60% of Unit 22A. The BLM manages 52 % and the Yukon Delta NWR manages 9% of the Federal public lands in Unit 22A. **(Unit 22A Map).**

Map 1: Unit 22A



Customary and Traditional Use Determinations

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

Regulatory History

In 2003, the Alaska Board of Game closed the Unalakleet River drainage area for the State nonresident season, shortened the fall resident season by 3 weeks to August 15–September 25 and closed the winter season. Also in 2003, the State issued Emergency Order 05-05-03 shortening the moose season to December 1–December 31 and the harvest limit from one bull to one antlered bull in a portion of Unit 22A in the Golsovia River drainage and south, and closing the winter season north of the Golsovia River drainage.

In 2003, WSA03-14 was adopted by the Federal Subsistence Board (Board) to change the harvest from one bull to one antlered bull and shorten the moose season by 31 days in Unit 22A—remainder (the Golsolvia River drainage and south) and also close the winter season in Unit 22A north of the Golsolvia River drainage.

In 2004, Proposal WP04-70 was adopted with modification by the Board to change 1 antlered moose to 1 bull during the fall season and to shorten the harvest season in Unit 22A, that portion in the Unalakleet River drainage and all drainages flowing into Norton Sound north of the Golsovia River drainage and south of the Tagoomenik and Shaktoolik River drainages by five days, to close September 25th.

In 2005, the Alaska Board of Game passed State Proposal 6, which shifted the resident winter moose season for the remainder of Unit 22A from December 1–December 31 to January 1–January 31 under State regulations. Also in 2005, ADF&G issued Emergency Order 05-08-05, which shifted the resident winter moose season for the remainder of Unit 22A from December 1–December 31 to January 1–January 31.

In 2006, WP06-38 was adopted by the Board to shift the winter moose season in Unit 22A remainder from December 1–December 31 to January 1–January 31. WP06-38 addressed the change of the season made by special action WSA05-12/13 and placed them into permanent regulation.

In 2008, two similar proposals were submitted addressing changes to moose regulations for Unit 22A. Proposal WP08-36, submitted by the Native Village of Unalakleet and adopted with modification by the Board, opened a Federal subsistence moose hunting season in the Unalakleet River drainage in central Unit 22A from August 15–September 14 with a one bull limit. Proposal WP08-37, submitted by the Seward Peninsula Regional Advisory Council and adopted with modification by the Board, had the same request as WP08-36, but added a provision whereby the local Bureau of Land Management (BLM) manager would issue up to 20 Federal permits annually in coordination with the Alaska Department of Fish and Game (ADF&G).

Biological Background

Historically, moose immigrated into the Seward Peninsula in the late 1930s and by the late 1960s became a resident species due to suitable habitat in Unit 22. Moose populations increased during the 1970s and peaked between 7,000 and 10,000 animals during the 1980s (Gorn 2008). Density independent factors were believed to have caused the population to decrease during the early 1990s with several severe winters during that time period (Nelson 1995). Populations within Unit 22 have never recovered to the

peak levels of the 1980s with brown bear predation on moose calves being speculated as the main limiting factor (Gorn 2008). Current population estimates of moose in Unit 22A remains below the management goal of 600–800 animals (Gorn 2008) with recent estimates in 2008 of 339 moose (at 90% C.I. 259–419 moose) (ADF&G 2008). However, the aerial moose census conducted in 2008 showed an increasing trend from a low in 2003 when 75 moose were counted (**Table 1**) (ADF&G 2008).

In addition, there is a State management objective to complete late fall and/or early spring aerial surveys to provide an index of moose population status and trends, sex and age composition, and yearling recruitment. In 2006, a spring survey was completed for the central portion of Unit 22A including the Unalakleet area and classified 137 adults with a recruitment rate of 16% and a ratio of 20 calves:100 adults. In 2007, the spring survey classified 82 adults and found 18:calves:100 adults and 15% recruitment rate. Snow cover was variable between surveys, with the 2006 spring survey having excellent visibility of moose and their tracks due to complete snow cover and the 2007 survey having poor visibility due to lack of snow.

Moose in Alaska typically begin to cast their antlers in late November with most mature males having cast their antlers by early January (Van Ballenberghe 1983). A few small-antlered males may retain their antlers for another 60 or 80 days (Van Ballenberghe 1983).

Harvest History

Although moose have been present in Unit 22 for a relatively short time, they rapidly became an extremely important food source for many Seward Peninsula residents (Persons 2000). Gravel roads and navigable rivers provide easy access to suitable moose habitat in the fall and early winter, and snow machines provide access during the winter season.

The ADF&G harvest ticket database for Unit 22A provides a summary of harvest by nonresident and non-local Alaskans, but local harvest may be underreported. From 2000 through 2008, an average of 13 moose per year were reported taken by residents in Unit 22A via ADF&G moose harvest tickets (ADF&G 2009) (**Table 2**). The southern portion of Unit 22A includes harvests by residents of St. Michael and Stebbins, but much of the moose harvest is not reported on harvest tickets from these areas. However, the most complete moose harvest data from villages is from the large mammal community-based harvest assessments conducted by Kawerak. Since 2000, 62% of the known harvest by residents of Stebbins and St. Michael has occurred in December or January. The preferred time to hunt is during the winter because moose habitat is difficult to access before freeze up.

Effects of the Proposal

Currently, the Federally qualified subsistence user may harvest moose from January 1 to January 31. If the proposal is adopted, the season would be shifted to January 15 to February 15 which allows the same amount of time to harvest a moose, but during a period of the year where more snow coverage is likely. This change is unlikely to have a significant impact on the moose population; therefore, there is no conservation concern at this time. If this proposal is adopted, it would allow the residents of Stebbins and St. Michael to harvest moose when the weather and daylight are more favorable giving more flexibility for Federally qualified subsistence users while having minimal impact on the population. However, most mature bull moose will have cast their antlers by the end of January and therefore, the extension of the harvest season through February 15 may not increase the opportunity for subsistence hunters to harvest an antlered bull. However, immature bulls may cast their antlers later in the spring and could provide an opportunity for harvest.

Table 1. Unit 22A moose recruitment surveys in the Unalakleet River drainage (Gorn 2007, Pearsons 2004).

Year	Size of Survey Area	Adults	Calves	Total Moose	Calves: 100 adults	Percent Calves	Estimated Density
1989	1124 mi ²	273	52	325	19	16	0.29 mi ²
2003	2000 mi ²	64	11	75	15	15	0.05 mi ²
2005	2400 mi ²	112	10	123	9	8	0.05 mi ²
2006	2400 mi ²	137	27	164	20	16	0.05 mi ²
2008	2400 mi ²	268	71	339	21	21	0.14 mi ²
Total	—	854	171	1026	84	66	—
Average	1981 mi ²	171	34	205	17	15	0.12 mi ²

Table 2, Unit 22A moose harvest reported by residents on moose harvest tickets, 2000-2006 (ADF&G 2009)

Residence	2000	2001	2002	2003	2004	2005	2006	2007	2008
Unalakleet	11	8	13	6	4		2	1	9
St. Michael	1	2	3	2	2	2	3	5	2
Shaktolik		2		2				1	
Stebbins	1	1	4	3		5		4	1
Russian Mission									
Kotlik									
Kaltag		1				1			
Mountain Village					1				
Koyuk							1	2	
Alaknak							1		
Barrow			1						
Fairbanks			1	1				1	
Anchorage		1	1	1		2		1	
Eagle River					1				
Soldotna						1			
Nome									1
Totals	13	15	22	15	8	11	7	15	13

OSM PRELIMINARY CONCLUSION

Support Proposal WP10-80

Justification

If this proposal is adopted, it will address the interest of the residents of Stebbins and St. Michael to harvest moose in January and February when the weather and daylight are more favorable. However, most mature bull moose will have cast their antlers by the end of January and therefore, the extension of the harvest season through February 15 may not increase the opportunity for subsistence hunters to harvest an antlered bull. However, immature bulls may cast their antlers later in the spring and could provide an opportunity for harvest.

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Comments WP10-80
January 29, 2010; Page 1 of 1

Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-80: This proposal changes the federal subsistence winter moose season to January 15 through February 15 in Unit 22A Remainder (described as Unit 22A South in the proposal).

Introduction: This proposal requests a two week delay of the winter federal subsistence moose hunt in Unit 22A Remainder. The existing federal subsistence moose hunting winter season dates are January 1 through January 31. The proponent indicates delaying the season by two weeks will potentially increase hunt success.

Impact on Subsistence Users: Delaying the winter season opening by 2 weeks later in January will have a slight negative impact on available antlered bulls due to antler-drop during the winter season. Winter travel conditions may improve for hunters with slightly longer day-length.

Opportunity Provided by State: In Unit 22A Remainder the following moose hunting regulations were effective in 2009-2010:

One bull by harvest ticket; residents only; season Aug 1-Sept 30;

Or

One antlered bull by harvest ticket; residents only; season Jan 1-Jan 31;

One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by harvest ticket; nonresidents only; season Sept 1- Sept 30.

Conservation Issues: Moose populations in Unit 22A Remainder are not censused on a rotational basis by Alaska Department of Fish and Game in Unit 22. However, low hunting effort and probable exchange of moose between local areas and the Yukon River drainage (located easterly of Unit 22A) have provided stable populations that allow state hunting of bulls by harvest ticket for residents and nonresidents. An antlered bull bag limit in the state and federal subsistence winter hunts avoids the take of cows to conserve the population when little is known about bull:cow ratios or total population size. Although data are scant, current harvests are considered to be within sustained yield of the population. Adoption of this proposal will not cause conservation concerns or impede the population objective due to the winter bag limit of antlered bull.

Enforcement Issues: No other moose season in Unit 22 goes beyond January 31st on federal and non-federal lands due to the lack of available antlered bulls. The number of antlered bulls in February is very few to none, and the department wants to avoid the take of cows.

Recommendation: Oppose. The Regional Advisory Council could consider modifying this proposal to pursue establishment of a community harvest hunt under federal subsistence regulations in cooperation with the State which would establish harvest quotas per community. Developing a community harvest program will provide additional opportunity to take harvestable surplus from the growing moose population to meet needs of the communities, improve harvest reporting, and adjust harvest quotas to match biological fluctuations in the population.

WP10-81 Executive Summary	
General Description	Proposal WP10-81 seeks to lower the wolf harvest limit in Unit 22. <i>Submitted by the Alaska Wildlife Alliance</i>
Proposed Regulation	Unit 22—Wolf Hunting <i>No-limit 10 Wolves</i> <i>Nov. 1–April 15</i>
OSM Preliminary Conclusion	Oppose
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	Oppose
Written Public Comments	1 Oppose

**DRAFT STAFF ANALYSIS
WP10-81**

ISSUES

Proposal WP10-81 was submitted by the Alaska Wildlife Alliance and seeks to lower the wolf harvest limit in Unit 22.

DISCUSSION

Proposal WP10-81 requests that the harvest limit for wolf hunting in Unit 22 be reduced to 10 wolves. The proponent notes that in Unit 22, wolves are vulnerable to tracking, pursuit and shooting by hunters using snowmachines.

Existing Federal Regulation

Unit 22— Wolf Hunting

No limit

Nov. 1–April 15

Proposed Federal Regulation

Unit 22—Wolf Hunting

No limit 10 Wolves

Nov. 1–April 15

Existing State Regulation

Unit 22—Wolf Hunting

20 Wolves

Aug. 1–April 30

Extent of Federal Public Lands

Federal public lands comprise approximately 33% of Unit 22 and consist of 18% Bureau of Land Management (BLM), 11% National Park Service (NPS) and 2% U.S. Fish and Wildlife Service (FWS) lands (see Unit 22 Map).

Customary and Traditional Use Determinations

Rural residents of Units 21D (north and west of the Yukon River), 22, 23, and Kotlik have a positive customary and traditional use determination to harvest wolves in Unit 22.

Regulatory History

There has been no harvest limit for wolf hunters in Unit 22 since the beginning of the Federal Subsistence Management Program in 1990. Units 25A and 22 are the only units in Alaska that currently have no Federal harvest limit for wolves in the hunting regulations.

The Federal Subsistence Management Program wolf hunting season in Unit 22 extended from August 10–April 30 in 1990. Action taken on a proposal from the Seward Peninsula Subsistence Regional Advisory

Council (Proposal 47) changed the wolf hunting season to November 1–April 15 in regulatory year 1995/96. With a trapping license, during trapping season, a trapper may take free ranging wolves with a firearm on BLM and FWS lands of Unit 22. The Federal Subsistence Management Program wolf trapping season in Unit 22 is from November 1 to April 15 with no harvest limit. Hunters may take wolves under State regulations on FWS, BLM, and Bering Land Bridge Nation Preserve lands in Unit 22.

Defenders of Wildlife submitted a proposal (Proposal 6) to the Alaska Board of Game requesting a November 1–March 31 season and 10 limit for wolf hunters in Unit 22. At its November 2009 meeting, the Alaska Board of Game rejected that proposal noting that the Unit 22 wolf harvest is current low and that there are no conservation concerns for wolves in Unit 22 (Ardizzone 2009, pers. comm.).

Biological Background

Wolves (*Canis lupus*) are found throughout Unit 22 and are well adapted to the mountains, tundra, and river valleys of the unit. Unit 22 contains extensive open habitat. Their main prey is caribou; wolves often move toward areas of high caribou concentrations. Other prey species may be used if caribou are not available; these include reindeer, small mammals, moose, hare, and beaver. Wolves first breed at age two to four and produce pups in dens during the spring. Litters average five or six pups. Wolves abandon the den after about eight weeks and live at sites above ground until early autumn when the entire pack roams a large territory for the rest of the fall and winter. Pups constituted about half of the wolf population each August in a central Brooks Range study area, and these young wolves disperse from packs at high rates as yearlings and 2-year-olds (Adams et al. 2008). Dispersing wolves form new packs when they locate dispersers of the opposite sex from another pack and a vacant area to establish a territory (Rothman and Mech 1979). Adams et al. (2008) reported that 7 of 11 dispersing wolves (<36 months old) were subsequently detected 40–430 miles from their initial home range in the Gates of the Arctic National Park and Preserve. Garner and Reynolds (1986) observed that several wolves in northern Arctic National Wildlife Refuge dispersed as far as 500 miles from their home range. Radio collared wolves from other areas of Alaska have been found in Unit 22 (Persons 2006).

The size of the home range is believed to be dependant on prey abundance, the activities of neighboring packs, and each pack's individual habits. As a pack makes its way around its territory, it may encounter and engage other wolves within its territory at any time. A fight to the death can occur during such encounters. Predation by other wolves is probably the major cause of natural mortality among adult wolves (Adams et al. 2008). With high reproductive capacity, good survival of young, and high dispersal rates, wolf populations are able to quickly respond to changes in prey abundance (Adams et al. 2008).

Since 1960, wolf numbers in Unit 22 have gradually increased and wolves expanded their range westward across the Seward Peninsula (Persons 2006). In 1980 the wolf population was estimated at fewer than 100 wolves (Grauvogel 1980). While there are no recent population estimates, it appears that wolf numbers in Unit 22 have increased based on data from sealing certificates and anecdotal information from observations by staff, reindeer herders, and other local residents (Persons 2006, ADF&G 2009a).

Seasonal movements of the Western Arctic Caribou Herd influences wolf distribution (Ballard et al. 1997, Persons 2006). In some years up to 17% of radio-collared wolf packs followed the migrating Western Arctic Caribou Herd and then returned to their original territory for denning (Ballard et al. 1997). Since 1996, a portion of the Western Arctic Caribou Herd has wintered on the Seward Peninsula, and wolves followed the caribou (Persons 2006). She observed that wolves were most abundant in the southern half of Norton Sound where caribou frequently wintered. The Unit 22 wolf population increased during winter months when caribou were present and wolves were becoming permanent residents of the unit (Persons

2006). Ballard et al. (1997) observed that when caribou densities were low, wolves switched to preying on resident moose.

Harvest History

The harvest of wolves, and the use, barter, and sale of pelts has long been important for subsistence uses in Unit 22.

State and Federal regulations currently require that wolves harvested in Alaska must be sealed by an ADF&G representative or appointed fur sealer. During the sealing process, information is obtained on the date and location of take, sex, color of pelt, estimated size of the wolf pack, method of take and access used. One of ADF&G's management objectives for Unit 22 is to maintain license vendors and fur sealers in all Unit 22 villages (Persons 2006).

From regulatory year 1999/2000 to 2008/09, the reported annual harvest of wolves in Unit 22 ranged from 18 to 66 wolves/year and most were shot (**Table 1**). While ADF&G (ADF&G 2009a) believes that wolf numbers in Unit 22 have increased during recent years, the reported Unit 22 wolf harvest has declined (Table 1). Persons (2006) observed the magnitude of the unreported wolf harvest in Unit 22 is substantial, and fur-sealing data provides a minimum estimate of the harvest. Often hunters and trappers only seal pelts that will be commercially tanned or sold to fur buyers. Many wolf hides are home tanned and used locally, so people see no reason to get them sealed (Persons 2006). Village-based harvest surveys completed in 5 villages in Unit 22 (Stebbins, Unalakleet, St. Michaels, Shaktoolik and Koyuk) in May 2002 and 2003, and June 2004 revealed that only about 1/3 of their wolf harvest was sealed (Persons 2006).

Table 1. Reported wolf harvest and method of take for Unit 22 (ADF&G 2009b and 2010).

Regulatory Year	Reported Total Harvest	Method of take for total harvest from Unit 22				
		Trap/snare	(%)	Shot	%	Unk
1999/2000	66	5	8	44	67	17
2000/01	65	4	6	56	86	5
2001/02	41	3	7	38	93	0
2002/03	45	5	11	32	71	8
2003/04	22	1	5	21	95	0
2004/05	39	4	10	34	87	1
2005/06	29	5	17	23	79	1
2006/07	19	3	16	13	68	3
2007/08	18	0	0	18	100	0
2008/09	24	4	17	17	71	3

Effects of the Proposal

If Proposal WP10-81 is adopted, the Federal wolf hunting harvest limit for Unit 22 would decrease to 10 wolves. This proposal would make the Federal subsistence wolf hunting harvest limit lower than State regulations. Currently, there is no limit on the number of wolves that can be taken by hunters under Federal regulations in Unit 22.

The Unit 22 wolf harvest is not a conservation concern. It appears that wolf numbers in Unit 22 have increased and it is thought that the population is regulated more by natural factors than by the harvest by hunters and trappers (ADF&G 2009a, Persons 2006).

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP10-81.

Justification

Wolves have long been an important subsistence resource in Unit 22. The wolf population in Units 22 appears to be increasing and is thought to be regulated more by natural factors than by the harvest by hunters and trappers.

At its November 2009 meeting, the Alaska Board of Game rejected a proposal from the Defenders of Wildlife to shorten hunting season and reduce the harvest limit to 10 wolves in Unit 22.

Even if this proposal were adopted by the Federal Subsistence Board, hunters would still be able to take wolves under State regulations on FWS, BLM, and Bering Land Bridge Nation Preserve lands in Unit 22. As such, adoption of this proposal would not have the effect sought by the proponent.

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Comments WP10-81
January 29, 2010; Page 1 of 1

Alaska Department of Fish and Game
Comments to the Regional Advisory Council

Wildlife Proposal WP10-81: This proposal changes the wolf hunting season unlimited bag limit to 10 wolves in Unit 22.

Introduction: Wolf populations in Unit 22 are not censused; however, harvest and observation information suggest that populations have increased in recent years. The state bag limit for hunting wolves was set at 20 wolves in 2007 by the Alaska Board of Game. Current season (August 1 through April 30) allows for maximum opportunity within areas that do not have predator management programs. Current harvests approximate 41 wolves per year based on sealing records from 1997-2008 and are considered within sustained yield for the population. Among hunters/trappers taking wolves, no individual has reached the total bag limit of 20 wolves per season. In November 2009, the Alaska Board of Game rejected a proposal to change the hunting season bag limit to 10 wolves (similar proposal to WP10-81).

Impact on Subsistence Users: Reducing the bag limit 10 wolves will reduce opportunity for the few federal subsistence users who successfully harvest more than 10 wolves by hunting in Unit 22. Reducing the bag limit to 20 wolves to match the state season would still provide the federal subsistence opportunity but reduce the risk of enforcement due to travel over mixed land ownership.

Opportunity Provided by State: In Unit 22 the following wolf hunting regulations were effective in 2009-2010:

Twenty wolves; residents and nonresidents; season August 1 through April 30; tag required for nonresidents; hide must be sealed within 30 days of kill.

Conservation Issues: None.

Enforcement Issues: Different bag limits for wolves across federal land (approximately 1/3 of the unit) and non-federal lands (2/3 of the unit) will create enforcement problems due to differing land status in Unit 22. Since the customary harvest by individuals is under 20 wolves, which is the state bag limit, a reduction of the bag limit to match the state bag limit would reduce the risk of enforcement actions if individuals are not on federal lands, while continuing to provide the federal opportunity for customary and traditional subsistence by rural residents on federal lands.

Recommendation: Oppose as submitted. Support with modification to change the federal subsistence bag limit from “unlimited” to 20 wolves and liberalizing the federal subsistence season to match the state season in order to more closely adopt customary and traditional subsistence use by hunting of wolves and reduce enforcement due to mixed land ownership.

WRITTEN PUBLIC COMMENTS

Oppose. We have a very high level of respect for Alaska's wolf population and believe they are integral to the fabric of Alaska. However, they have to have population control measures that will enable prey species to live within balance of what their habitats will provide. Wolves have to be included into the management process in an active enough manner to provide maximum human benefit from the prey species. This type of management provides the best stewardship possible for the prey species as well as all people who depend upon or enjoy the benefit of high density population equilibriums. As the Federal Subsistence Board is mandated with providing important subsistence hunting opportunities and the scope of these proposals takes away from that objective, we encourage the Board not to pass these proposals.

Alaska Professional Hunters Association

FEDERAL FISHERIES CLOSURE REVIEW
FCR10-03

Closure Location: Unalakleet River upstream of the confluence of Chirosky River.

Current Federal Regulation:

27(i)(2)(C) Federal public waters of the Unalakleet River, upstream from the mouth of the Chirosky River, are closed to the taking of Chinook salmon from July 1 to July 31, by all users. The BLM field manager is authorized to open the closed area to Federally qualified subsistence users or to all users when run strength warrants.

Closure Dates: July 1 through July 31

Current State Regulation:

5 AAC 70.011(c) Season and bag, possession, and size limits for the Northwestern Management Area

(9) in the Unalakleet River drainage,

(A) the bag and possession limit for king salmon is two fish, of which only one fish may be 20 inches or greater in length;

(B) the annual limit for king salmon 20 inches or greater in length is two fish; an angler fishing for king salmon must possess and complete a current year's nontransferable harvest record as described in 5 AAC [70.024\(b\)](#);

(C) the bag and possession limit for salmon, other than king salmon, is 10 fish, of which only four fish, in combination, may be coho, chum, and sockeye salmon;

(D) a salmon removed from the water must be retained and becomes part of the bag limit of the person originally hooking it; a person may not remove a salmon from the water before releasing it;

Regulatory Year Initiated:

Proposal FP09-14 was reviewed and deliberated on during the 2009 regulatory cycle. Federal Subsistence Board action on this proposal occurred at its January 2009 meeting. The closure became effective April 1, 2009.

Proposal number of initial closure and any subsequent proposals:

FP09-14 was submitted by Kathy Johnson on behalf of the Native Village of Unalakleet. The proposal initially requested Federal public waters in the Unalakleet River be closed to Chinook salmon fishing except by Federally qualified subsistence users from June 15 through July 5. The proponent submitted this proposal as a conservation measure to provide Chinook salmon additional protection from harvest while traveling to their spawning grounds. Subsequently, the proponent modified the request to extend the closure to include Federally qualified subsistence users. The proponent further requested the closure dates be modified to July 1–31 to ensure the majority of the Chinook salmon reach the spawning grounds.

Closure last reviewed: Not previously reviewed.

Justification for original closure (Section 815(3) criteria):

Chinook salmon runs in the Unalakleet River have been poor since 2000. The Alaska Department of Fish and Game and the National Park Service, the delegated Federal in-season manager, have taken measures to restrict sport and subsistence fishing over several years. In addition, the Alaska Department of Fish and Game has closed all Chinook salmon directed commercial fishing since 2005. Escapements in the Unalakleet and North rivers have not increased in response to commercial fishing closures and the increasingly restrictive subsistence and sport fisheries. The poor runs warranted closing Federal public waters to conserve migrating Chinook salmon.

Council recommendation for original closure:

The Seward Peninsula Subsistence Regional Advisory Council supported the proposal with modification to close Federal public waters of the Unalakleet River upstream from the mouth of the Chirosky River to all users.

State recommendation for original closure:

The State's recommendation was to oppose the proposal, stating that the closure would provide little protection to Chinook salmon because few Chinook salmon are harvested that far upstream in the Unalakleet River watershed. Chinook salmon are primarily harvested closer to the village of Unalakleet or in marine waters.

Other significant comments presented when the Board adopted the original closure:

Beginning in 2004, the Alaska Board of Fisheries (BOF) identified Chinook salmon in the Unalakleet and Shaktoolik subdistricts as stocks of yield concern. In February 2007, the BOF reaffirmed this designation (Menard 2007).

Resource population trend:

Chinook salmon escapements in the Unalakleet River have been below established goals in most years since 2000. The North River tower Sustainable Escapement Goal range is 1,220 to 2,600 Chinook salmon (Soong et al. 2008). Since 2003 the lower end of the escapement goal has only been achieved in 2007 and 2009 (Menard 2009).

Harvest trend and/or fishing effort:

In the Unalakleet Subdistrict, directed commercial Chinook salmon fishing has only occurred once since 2001. Restrictive action was taken in the subsistence and sport fisheries in 2003, 2004, 2006, 2007, 2008 and 2009. Record low Chinook salmon escapements occurred in 2008 despite subsistence mesh-size restrictions and an early closure to subsistence and sport fisheries. The 2008 Chinook salmon subsistence harvest of 1,402 fish was the lowest on record since 1985 (Menard 2010 pers. comm.). In 2009, a management strategy to reduce mesh-size coupled with an early fishery closure were also instrumental in achieving, and the escapement goal.

OSM PRELIMINARY RECOMMENDATION:

maintain status quo

initiate proposal to modify or eliminate the closure

other recommendation

Justification:

Unalakleet River Chinook salmon runs have been below expectations since 2000, and the North River Sustainable Escapement Goal has only been achieved twice in the last seven years. A Chinook-directed commercial fishery remains closed and the subsistence and sport fisheries continue to be restricted. While

the estimated escapement at the North River tower was above the lower end of the escapement goal in 2009, it was only achieved by severely restricting both State and Federal subsistence fisheries and the sport fishery. The Federal public waters of the Unalakleet River should remain closed until the Chinook salmon escapements increase.

LITERATURE CITED

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Menard, J. 2010. Area Management Biologist, Personal Communication, ADF&G. Anchorage. AK.

Soong, J., S. Kent, and J. Menard. 2008. 2006 Annual Management Report Norton Sound, Port Clarence, and Kotzebue. ADF&G, Fishery Management Report No. 08-32, Anchorage., AK.

OSM UPDATE ON SALMON BYCATCH IN THE BERING SEA/ALEUTIAN ISLANDS POLLOCK FISHERY

Chum Salmon Bycatch Management

Recent Actions

- June 2009: The North Pacific Fishery Management Council (Council) started work on the alternatives under consideration for chum salmon bycatch management measures for the Bering Sea/Aleutian Islands Pollock fishery.
- October 2009: The salmon bycatch workgroup, which includes representatives from affected Western Alaska organizations and the commercial fishing industry, met and made recommendations to the Council for further refinements to the chum salmon bycatch alternatives (for the Environmental Impact Statement).
- December 2009: The Council lowered the range of numbers being considered for hard caps (now 50,000 to 353,000; previously 58,000 to 488,000), and lowered the range of numbers being considered for trigger caps (now 25,000 to 200,000). In addition, there were changes made to area closure options for triggered caps and to sector allocations, per the workgroup's recommendations. The Council's full motion can be viewed at: http://www.fakr.noaa.gov/npfmc/current_issues/bycatch/SalmonBycatchMotion1209.pdf

Upcoming Actions

- June 2010: In Sitka; Council to finalize alternatives for staff analysis.
- January 2011: Council may review some preliminary data/analysis.
- February-March 2011: Council members and staff plan to attend 5 Federal Subsistence Regional Advisory Council meetings, give presentations on the proposed chum salmon bycatch management measures and solicit public comments.
- June 2011 (tentative): In Nome; selection of the preliminary preferred alternative.
- October 2011 (tentative): In Anchorage; final action on the preferred alternative, which will be provided to the Secretary of Commerce.

Chinook Salmon Bycatch Management – Amendment 91

- December 2009: The Final Bering Sea Chinook Salmon Bycatch Environmental Impact Statement (EIS) released to the public.
- February 2010: Federal Subsistence Board sent a comment letter (see attached) on behalf of the Federal Subsistence Program reiterating previous position (hardcap of 29,323).
- Early 2010: Proposed rule to be published, with public comment period.
- May 2010: Record of Decision

Chinook Salmon Data Collection

- December 2009: The Council took final action on economic data collection associated with the April 2009 Chinook salmon management action. The economic data collection program is designed to provide data to allow agency review of the effectiveness of the incentive plans authorized under Amendment 91. The Council's full motion can be viewed at: http://www.fakr.noaa.gov/npfmc/current_issues/bycatch/SalmonBycatchDataCollectionMotion1209.pdf



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

Federal Subsistence Board
1011 E. Tudor Rd., MS 121
Anchorage, Alaska 99503-6199



FEB 4 2010

FWS/OSM 10008/DR

Robert D. Mecum, Acting Administrator
National Marine Fisheries Service, Alaska Region
P.O. Box 21668
Juneau, Alaska 99802

Dear Mr. Mecum:

The Federal Subsistence Management Program appreciates the opportunity to provide its comments and recommendation on the *Final Bering Sea Chinook Salmon Bycatch Management Environmental Impact Statement and Regulatory Impact Review (EIS/RIR)*. The Federal Subsistence Board (Board) and the Bristol Bay, Seward Peninsula, Yukon-Kuskokwim Delta, Western Interior Alaska and Eastern Interior Alaska Subsistence Regional Advisory Councils, which advise the Board, have established a record concerning this issue. This letter brings forward our comments and recommendations for purposes of your final EIS/RIR. These five councils represent Federally-qualified subsistence users of Western Alaska salmon stocks affected by the actions of the Bering Sea/Aleutian Islands commercial Pollock fishing industry. The Board's composition and a description of its responsibilities under Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) were provided in a February 8, 2008 letter to your agency.

In a letter to you dated February 18, 2009 (commenting on the Draft EIS/RIR), the Board recommended a Chinook salmon bycatch hard cap of 29,323. At the April 2009 meeting of the North Pacific Fishery Management Council in Anchorage, the Board Chair and representatives of the five noted subsistence regional advisory councils all testified and recommended a hard cap of 29,323. With this letter, the Board and the five Councils reiterate their recommendations that a hard cap of 29,323, Alternative 2(viii), be adopted. This alternative would assist in ensuring that enough Chinook salmon return to Western and Interior Alaska rivers to meet spawning escapement requirements and the subsistence uses of over 120 communities representing approximately 60,000 rural residents in the Arctic-Yukon-Kuskokwim and Bristol Bay regions. The EIS/RIR points out that this level of bycatch would have provided the "greatest benefit" in adult equivalent Chinook salmon savings for Western Alaska stocks for the years 2003-2007 at all levels of bycatch. Had this hard cap been in place during those years, an estimated increase in returns of 37,345 Chinook salmon to Western Alaska in the highest bycatch year of 2007 would have been realized. In addition, this level of bycatch comes closest to the stipulation in the U.S./Canada Yukon River Salmon Agreement, signed in 2002, which requires the United States to increase in-river returns of Yukon River origin salmon by reducing marine catches and

Robert D. Mecum, Acting Administrator

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bycatches of Yukon River salmon. The recommended hard cap of 29,323 represents the five-year average (1997-2001) of Chinook salmon bycatch, just prior to the signing of the U.S./Canada Yukon River Salmon Agreement.

The Board again urges the National Marine Fisheries Service and the North Pacific Fishery Management Council to take actions that significantly reduce the amount of Chinook salmon bycatch in the BSAI Pollock fishery. It is the Board's judgment that neither of the hard cap amounts in the Preferred Alternative (60,000 and 47,591) represents a reduction in Chinook salmon bycatch, but rather is an allowance for higher bycatch. This allowance appears to be in direct conflict with your agency's stated management goal to avoid bycatch of a prohibited species, of which Chinook salmon is one. Therefore, the Preferred Alternative should not be adopted into regulation.

The EIS/RIR acknowledges the failure to meet the Yukon River Chinook salmon escapement goal into Canada for 2007 and 2008. While the EIS/RIR points out that the minimum escapement goal for Canada was exceeded in 2009, it fails to point out that this was accomplished through the imposition of substantial restrictions on subsistence fishing and the prohibition of in-river commercial fishing.

Thank you for the opportunity to comment on the EIS/RIR. Please contact Peter J. Probasco, Assistant Regional Director, Office of Subsistence Management, at (907) 786-3888, if further information is needed. We will continue to monitor developments on this important issue and look forward to the results of your efforts to significantly reduce Chinook salmon bycatch in the BSAI Pollock fishery.

Sincerely,



Michael R. Fleagle
Chair, Federal Subsistence Board

cc: Federal Subsistence Board members

Pat Pourchot, Special Assistant to Secretary of DOI for Alaska Affairs
Jack Reakoff, Chair, Western Interior Alaska Subsistence Regional Advisory Council
Lester Wilde, Chair, Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
Sue Entsminger, Chair, Eastern Interior Alaska Subsistence Regional Advisory Council
Ralph Lohse, Chair, Southcentral Alaska Regional Advisory Council
Speridon Simeonoff, Sr., Chair, Kodiak/Aleutians Regional Advisory Council
Nancy Lyon, Vice Chair, Bristol Bay Regional Advisory Council
Weaver Ivanoff, Chair, Seward Peninsula Alaska Regional Advisory Council
Bert Adams, Chair, Southeast Alaska Regional Advisory Council
Denby Lloyd, Commissioner, Alaska Department of Fish and Game
Eric Olson, Chair, North Pacific Fishery Management Council
David Balton, Deputy Assistant Secretary, Oceans and Fisheries, U.S. Department of State

Fall 2010 Regional Advisory Council Meeting Window

August 30–October 15, 2010 current as of 11/03/09

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 22	Aug. 23	Aug. 24	Aug. 25	Aug. 26	Aug. 27	Aug. 28
		NS—Barrow				
Aug. 29	Aug. 30 WINDOW OPENS	Aug. 31	Sept. 1	Sept. 2	Sept. 3	Sept. 4
			NWA— Kotzebue			
Sept. 5	Sept. 6 HOLIDAY	Sept. 7	Sept. 8	Sept. 9	Sept. 10	Sept. 11
Sept. 12	Sept. 13	Sept. 14	Sept. 15	Sept. 16	Sept. 17	Sept. 18
Sept. 19	Sept. 20	Sept. 21	Sept. 22	Sept. 23	Sept. 24	Sept. 25
		KA—TBA	BB—Naknek			
Sept. 26	Sept. 27	Sept. 28	Sept. 29	Sept. 30 END OF FY2010	Oct. 1	Oct. 2
		SE—Sitka			YKD—TBA	
Oct. 3	Oct. 4	Oct. 5	Oct. 6	Oct. 7	Oct. 8	Oct. 9
		WI—McGrath				
Oct. 10	Oct. 11 HOLIDAY	Oct. 12	Oct. 13	Oct. 14	Oct. 15 WINDOW CLOSES	Oct. 16
			EI—Central			
			SC—Cordova			
			SP—Nome			

Winter 2011 Regional Advisory Council Meeting Window

February 15–March 24, 2011

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<i>Feb. 13</i>	<i>Feb. 14</i>	<i>Feb. 15</i> <i>Window Opens</i>	<i>Feb. 16</i>	<i>Feb. 17</i>	<i>Feb. 18</i>	<i>Feb. 19</i>
<i>Feb. 20</i>	<i>Feb. 21</i> HOLIDAY	<i>Feb. 22</i>	<i>Feb. 23</i>	<i>Feb. 24</i>	<i>Feb. 25</i>	<i>Feb. 26</i>
<i>Feb. 27</i>	<i>Feb. 28</i>	<i>Mar. 1</i>	<i>Mar. 2</i>	<i>Mar. 3</i>	<i>Mar. 4</i>	<i>Mar. 5</i>
<i>Mar. 6</i>	<i>Mar. 7</i>	<i>Mar. 8</i>	<i>Mar. 9</i>	<i>Mar. 10</i>	<i>Mar. 11</i>	<i>Mar. 12</i>
<i>Mar. 13</i>	<i>Mar. 14</i>	<i>Mar. 15</i>	<i>Mar. 16</i>	<i>Mar. 17</i>	<i>Mar. 18</i>	<i>Mar. 19</i>
<i>Mar. 20</i>	<i>Mar. 21</i>	<i>Mar. 22</i>	<i>Mar. 23</i>	<i>Mar. 24</i> <i>Window Closes</i>	<i>Mar. 25</i>	<i>Mar. 26</i>