YUKON-KUSKOKWIM DELTA Subsistence Regional Advisory Council

USFWS

Yukon Delta National Wildlife Refuge

Meeting Materials

September 29–30, 2011

Bethel

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DRAFT AGENDA

Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
September 29-30, 2011
Bethel Moravian Church Fellowship Hall
Bethel, Alaska

9:00 a.m. – 5:00 p.m. each day (evening session may be called by the Chair)

PUBLIC COMMENTS: Public comments are welcomed for each agenda item. Please fill out the green or blue testimony form or be recognized by the Chair. Public testimony time limits may be given by the Chair to provide opportunity for all to testify and to keep on schedule.

PLEASE NOTE: The times for the meeting each day, the order of business, and agenda are estimated and are subject to change without notice. Contact any Office of Subsistence Management staff present at the meeting for the current agenda and meeting schedule.

AREA CONCERNS: The Regional Advisory Council arranges its meetings to hear and understand the subsistence concerns of the area where they meet. Please feel free to share your subsistence concerns and knowledge during the meeting. The agenda is an outline for the meeting and is open to the area's subsistence concerns, whether it is listed or not.

1. **Call to Order (Lester Wilde, Chair)**
2. **Roll Call and Establishment of Quorum (Secretary)** 5
3. **Invocation** *(Local Pastor or Elder)*
4. **Housekeeping Items and Announcements** *(Alex Nick)*
5. **Welcome Remarks** *(Local official)*
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8. **Regional Advisory Council Concerns and Comments** *(Council)*
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   A. Federal Subsistence Board 2010 Annual Report Response
10. **Review of 2012–2014 Wildlife Proposals** *(Council)*

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2. Alaska Department of Fish and Game comments
3. Federal and State agency comments
4. Tribal comments
5. Interagency Staff Committee comments

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E. Association of Village Council Presidents Update *(Timothy Andrew)*

F. Yukon River Drainage Fisheries Association

G. Yukon River Inter-Tribal Watershed Council

H. Tribal Representatives

I. Orutsararmiut Native Council Natural Resources *(ONC staff)*

J. Kuskokwim Native Association *(KNA fisheries staff)*

K. Municipal Government representatives

L. ANCSA Village Corporation representatives

M. Other organizations

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15. Closing Comments *(Council)*

16. Adjournment *(Chair)*

If you have any questions regarding this agenda or need additional information, please contact Alex Nick, toll free at 1-800-621-5804 ext. 257 or 543-1037; or fax your comments at 907-543-4413.

Teleconferencing is available upon request. You must call Alex Nick at 1-800-621-5804 ext. 257, 907-543-1037 or the Office of Subsistence Management, at 1-800-478-1456, 786-3888 or 786-3676, at least 72 hours prior to the meeting to receive this service.

The U.S. Fish and Wildlife is committed to providing access to this meeting for all participants. Please direct all requests for sign language interpreting, Computer Aided Real-time Translation (CART) or other accommodation needs to Alex Nick no later than Tuesday, September 20, 2011. Call 1-800-621-5804 ext 257, fax 907-543-4413, or email alex_nick@fws.gov

If you need alternative formats or services because of a disability, please contact the Diversity and Civil Rights Manager at (907)786-3328 (Voice), via e-mail at douglas_mills@fws.gov, or via Alaska Relay (dial 7-1-1 from anywhere in Alaska or 1-800-770-8255 from out-of-state) for hearing impaired individuals with your request by close of business Tuesday, September 20, 2011.

REGION 5—Yukon-Kuskokwim Delta Regional Advisory Council

Seat	Yr Apptd *Term Expires*	Member Name & Community	
1	2004 ***2013***	**William Frank Brown** Eek	
2	1997 ***2013***	**James Aiagiak Charles** Tuntutuliak	
3	2010 ***2013***	**Noah M. Andrew, Sr.** Tuluksak	
4	2010 ***2013***	**Evan Kus Polty, Sr.** Pilot Station	
5	1993 ***2011***	**Harry O. Wilde Sr.** Mountain Village	
6	2001 ***2011***	**Raymond J. Oney** Alakanuk	
7	1999 ***2011***	**Mary M. Gregory** Bethel	
8	***2011***	**Vacant**	
9	1996 ***2011***	**Lester Wilde, Sr.** Hooper Bay	**Chair**
10	2009 ***2012***	**Aloysius B. Unok** Kotlik	
11	2003 ***2012***	**Greg J. Roczicka** Bethel	**Vice-chair**
12	2003 ***2012***	**Robert E. Aloysius** Kalskag	**Secretary**
13	2006 ***2012***	**John W. Andrew** Kwethluk	

Draft
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
Minutes from February 23 - 24, 2011 Meeting
City of Mountain Village Community Hall
Mountain Village, Alaska

Call to Order
Chair Lester Wilde called the meeting to order at 9:00 a.m.

Roll Call
Roll call by John W. Andrew, Secretary

Members present
Lester Wilde, Hooper Bay; Greg J. Roczicka, Bethel; John W. Andrew, Kwethluk; James A. Charles, Tuntutuliak; Robert E. Aloysius, Kalskag; William F. Brown, Eek; Evan K. Polty, Sr., Pilot Station; Raymond J. Oney, Alakanuk; Aloysius B. Unok, Kotlik; Harry O. Wilde, Sr., Mountain Village; Noah M. Andrew, Sr., Tuluksak;

Members Absent
Ms. Mary M. Gregory

Alex Nick, Council Coordinator informed Council that Ms. Mary M. Gregory wanted to be excused at the last minute.

Meeting Participants
Alex Nick, OSM; Helen Armstrong, OSM; Pippa Kenner, OSM; Spencer Rearden, OSM; Patricia Petrivelli, BIA; Gene Virden, BIA; Roy Hyder, NPFMC; George Weekley, SWCA; Paul Beans, Azochorak, Inc.; Anita Andrews, City of Mt. Village; Ephraim Thompson, City Council member; Alexie Walters; Brian Williams, Alakanuk; Francis Hess, Mountain Village; Clifford Walters, Mountain Village; Simon Harper, Mountain Village; Fred Bue, USFWS; George Pappas, ADF&G; Jeremy Mears, FWS; Mike James, Alakanuk; Diana Stram, NPFMC; Michael Jimmy, Emmonak (online); Timothy Andrew, AVCP (online); Paul Beans, Azochork, Inc.; Gene Sandone; Shane Iverson, KYUK; Stanslaus Sheppard; Paul Clark; Chris Redfox; Christine Moses; Edward Post; Raphael Beans; Andrew Prunes.

Invocation
Invocation was provided by Mr. Harry Wilde, Sr.

Welcome Remarks
Welcome remarks were provided by Ms. Anita Andrews, City Manager, and City Council member Mr. Ephraim Thompson. On behalf of the City Council he welcomed everyone to Mountain Village and he asked Council to listen to concerns local people have and that local people would like to hear what Council is doing. He advised that should assistance is needed, the City office is just next door and that a Village Police Officer is nearby in case help is needed.

Election of Officers
Election of a Chair was chaired by Alex Nick, DFO. Mr. Lester Wilde was nominated by Mr. Aloysius Unok. Mr. William F. Brown moved to close nominations, seconded by Mr. James A.

Charles. Mr. Roczicka made a motion and asked for unanimous consent since there is only one nominee for Lester Wilde to retain at the Chair, seconded by Mr. Aloysius Unok. Motion passed.

Chair was turned over to Mr. Lester Wilde when he was reelected as a Chair. Following are Council officer election results for FY 2011.

Mr. Lester Wilde, Chair
Mr. Greg J. Roczicka, Vice Chair
Mr. John W. Andrew, Secretary

Council discussed its coordinating fisheries committee (CFC) and unanimously reappointed following members.

Committee Appointments
Coordinating Fisheries Committee
Lower Yukon
Mr. Raymond Oney, Alakanuk
Mr. Aloysius Unok, Kotlik

Lower Kuskokwim
Mr. James A. Charles, Tuntutuliak
Mr. Robert E. Aloysius, Kalskag

Customary Trade Subcommittee
Eastern Interior and Western Interior Regional Advisory Councils appointed 3 subcommittee members to Customary Trade Subcommittee. Yukon Delta Subsistence Regional Advisory Council needs to appoint its 3 members to customary trade subcommittee. Ms. Helen Armstrong referred to page 22 of Council workbook and explained the Federal Subsistence Board action and intent to allow time for Customary Trade Subcommittee to work on recommendations as noted in the current recommendations of the Eastern Interior and the Western Interior, and the Seward Peninsula Regional Advisory Councils. The Federal Subsistence Board wanted tri-council subcommittee to come up with recommendations to consider before it acts on this issue. After discussions of the customary trade issues, the following Council members were appointed to the Customary Trade Subcommittee membership.

Harry O. Wilde, Mountain Village
Raymond J. Oney, Alakanuk
Aloysius B. Unok, Kotlik
Alternate: Evan K. Polty, Pilot Station

Housekeeping Items
Alex Nick welcomed a couple of new members on board and he provided housekeeping items. He apologized for failing to make this meeting happen in the community of Saint Mary's. Meeting logistics has been done for St. Mary's: meeting over the summer and early fall. Unfortunately, potential vendor in St. Mary's did not comply with agency policy as required to be registered in CCR. The potential vendor did not renew its CCR registration after it expired. He thanked the community of Mountain Village, especially Ms. Anita Andrews, City Manager for working with him while he worked on the meeting logistics. Couple of presenters would like to be added on the agenda: North Pacific fishery Management Council and Mr. George Weekley

with SWCA. Local ground transportation has been arranged for the guests needing any rides in community and to and from airport. There will be fundraising dinner in the evening and guests are welcome to participate.

Review and Adoption of Agenda
Council reviewed its draft agenda. Ms. Diana Stram asked to move up the NPFMC presentation salmon on bycatch because of their return travel plans. It was suggested to switch agenda item 14 and item 12, Ms. Stram agreed with the Council's suggestion to switch agenda items. Yukon River Big Game Subsistence Harvest Study update was put between agenda item "b" and "c". It was suggested the presentations should be as follows:

Item # 14.

a. Salmon bycatch
b. Wildlife closure review
c. Big Game Subsistence Harvest Study
d. Call for wildlife proposals

Fred Bue with FWS wanted to add the Yukon River Fisheries Update on the agenda. This item will be under The U. S. Fish and Wildlife Service (A).

Motion
Robert Aloysius moved, seconded by Greg Roczicka to adopt agenda as revised.

Review and Approve Minutes from September 30 – October 1, 2010
Council reviewed draft minutes from the September 30 and October 1, 2010 meeting and made following revisions. Mr. Gene Sandone wanted to added his report on the agenda stating that he also contacted Alex Nick about this earlier.

Motion
Robert Aloysius moved, seconded by William Brown to adopt minutes as revised for September 30 and October 1, 2010.

Motion carried.

Council Concerns and Comments

- Robert Aloysius commented stating now and then the Council is reminded they are just advisory to the Federal Subsistence Board. Numerous times the Council gets wrapped up on issues not related to the subsistence program. Council needs to keep in mind the Council members are here to advise the Federal Subsistence Board on the subsistence resource issues. Contrary to the Western thinking subsistence is not a lifestyle. Subsistence uses are governed by the seasons, and people have no control over nature and this is something that needs to get across the Federal Subsistence Board. Make up of the Federal Subsistence Board upsets him and if he has a say so, each of the Board members would consist of people from the rural areas. Members of the Federal Subsistence Board would consist of elderly men and women from rural areas of Alaska. Yup'ik philosophy is very simple and it's just one word, "nereneng'naqsaraq". It means the daily pursuit of food, shelter, clothing, trapping, and gathering with respect to all of creation. People needs to get away from being against each other like pitting one region against another region, coast against tundra or tundra against the Interior region. People needs to start living like they are supposed to, together, not living away from each other. He

encouraged everyone to work together and to solve resource problems. If that is not done, others could dominate local people. Everywhere he goes, every place he's been, subsistence is being chipped away little by little.

- Mr. James Charles thanked the U.S. Fish and Wildlife Service for their assistance in the Kuskokwim River fishery resources. The Kuskokwim Salmon Management Working Group has assisted people toward working together to date. Making fisheries subsistence resources available to people is hard work. People fights for what they need to harvest for food. FWS Staff makes it easier to work together in the Kuskokwim River because conserving salmon for all users is not a simple task. Through holding meetings, fisheries management is easier now because there are appropriate tools to use such as management tools mangers need to manage resources. Unlike in the past, current tools such as weirs and sonars are used for management of fishery resources. He thanked the FWS for providing funds for the projects in place.

- Mr. Evan K. Polty commented that, because he is new to the Council, he would observe what is being done by the Council. In the future he said he would be able to provide some comments relating to subsistence resources.

- Mr. Harry O. Wilde, Sr. shared that he lost his parents when he was about age 14. He thinks that some of the current Council members feels like elders, and are working with an elder. He made an effort to take care of his siblings while he hunted and fished for food and tears rolled down his cheeks those days as he attempted to hunt for food. Now at age 81, he still goes out subsistence hunting for his family's survival. He was wishing that he is out in the wilderness instead of dealing with the paperwork at meeting. He appreciates the State and Federal management of subsistence resources. Now he is resident of Mountain Village and local people started to treat him very good and he appreciates what local people do on his behalf.

- Mr. Aloysius Unok commented that this is his second year as a Council member. He thinks that he is the youngest of the Council members and he is still learning as he is involved with Council meetings. He would not pick an argument with Mr. Aloysius. What makes him concerned now are that, the local people lean more toward financial interests these days. That has an affect on local people.

- Mr. Greg Roczicka shared his frustrations about the Federal management system. The Federal Subsistence Board and the advisory councils were set up with a very good intent. The Councils are finding out that the management agency holds no accountability and responsibility to the management process. There needs to be definite changes made to make things work. The Secretary made some kind words at the Alaska Federal of Natives Convention when he stated how the subsistence management system is broken and it needs to be fixed. Mr. Roczicka shared his frustrations regarding how subsistence management system is crippled and how unfair decisions are being made for other regions such as Unimak situation based on his personal observations. The Councils need to try to make things better regardless of system's failures.

- Mr. Noah M. Andrew commented that, after he received his appointment letter, it dawned on him that he has to relearn the proper procedures. He talked aboutwhat he learned during his youth; experiences being out doors physically exercising subsistence activities as Mr. Wilde pointed out earlier. He would like to share four words: observe,

comprehend, knowledge, and execute. Throughout his life he exercised these words. When he worked briefly for a living in the past, these four words portrayed what he would say and he is still learning something about it. He interpreted what he said in Yup'ik and concluded in these four words, what's in them could be compiled into a book.

- Mr. John W. Andrew thanked the people of Mountain Village for their invitation to hold the Council meeting there. He said that he had a very bad day from the morning until he reached Mountain Village and he was just about ready to give up traveling. He would like to see winter meetings scheduled and held in Bethel and fall meetings in the Delta villages. It is harder to go to other villages in the winter time he said. He waited about two hours at his village' airstrip for the scheduled airline to arrive. When he came to Bethel, he tried to contact the Council Coordinator and could not get a hold of him. The reason why he tried to contact the Council Coordinator is because he needed to pickup his medication at the hospital. Upon arrival in Mountain Village, he and other member were brought to the wrong lodging place. He said staff had about four months to get this meeting ready and not allow any hardships to the traveler. He said he did not have an itinerary for travel and he called the Anchorage office to get a copy of his itinerary for this trip. Another concern he have is that there is no predator control program for the Federal resource management agencies. Some people called him up in his village regarding wolves and bears preying on moose calves, wolves were also focusing on caribou in the field. When moose escaped a small packs of wolves they just come up to his village and land boundaries. His other concern is the regulatory change proposals which are submitted in layman's terms, when analyzed and written by Staff, proposals become very complicated to understand. Once proposals that are submitted in simple terms are analyzed, professional language makes it sound like what is being proposed is intended for commercial enterprise that makes proponents frustrated.

- Raymond Oney thanked the community of Mountain Village for allowing the Council meeting to occur in Mountain Village. He was hoping the community is aware that the Council meeting is here to hear some public comments and concerns. He welcomed Mr. Gene Virden, Director of BIA and he was hoping Mr. Virden would listen to the concerns the Council may have and forward them to those he is involved with.

Chair's Report

Chair Lester Wilde asked Alex Nick, Council Coordinator to read the 805 (c) letter into the record. The 805 (c) report was read into record and can be found starting on page 45 of meeting transcripts, line 43 to page 52, line 3. Mr. Robert Aloysius asked how the Federal Subsistence Board is going to ensure there's a $750 limit for salmon customary trade. Another question he asked was how customary trade is going to be enforced. Will there be any penalty for going over limit? Chair Wilde responded that the proposal submitted did require a form to be filled out showing the amount of sale and that is going to be a tool for enforcement personnel. Tri-council customary trade subcommittee established will be coming up with its recommendations that can be an answer for Mr. Aloysius' and other Council's questions.

Public Comments on Bycatch

Mr. Michael James, City Administrator of Alakanuk spoke about salmon bycatch in the ground fisheries. He believes that all Chinook and chum salmon bycatch in the Bering Sea Pollock fishery is totally accountable for a decrease in salmon fisheries. Significant revenue is important for commercial participants in the Pollock fishery. Commercial and subsistence fisherman of the Norton Sound, Yukon River, and Kuskokwim are paying a steep price for the salmon decline at this time. Commercial fishery prices of Chinook and chum salmon have dropped as a result of

salmon bycatch issues. He believes the five-year moratorium on the Pollock fishery in the Bering Sea will help to rebuild the salmon stocks and meet future escapement goals. He also believes the Federal Subsistence Management Program is not meeting the subsistence mandates found in Title VIII of ANILCA. The program is not serving the rural subsistence users as envisioned when program begin in 1990s. Interception of salmon is not only going to affect the Yukon River, it is going to affect Norton Sound, and Kuskokwim River villages. Mr. James hopes the letters will be written to the North Pacific Fishery Management Council, and the National Marine Fisheries. Mr. James encouraged all concerned to unite and fight for the salmon fishery resources.

Mr. Francis Hess welcomed everyone to Mountain Village. Mr. Hess shared how Mountain Village got its name when a first steamer went upriver on Yukon. Mr. Hess commented that in the future should fishery proposals are submitted to restrict salmon fishery in District Y-1, Y-2, and Y-3, proposals should be intended for the entire Yukon River. Mr. Hess said the reason why this needs to be done is because people tend to believe that Y-1 and Y-2 subsistence fishers catch all of the fish. That is incorrect because in Y-1 and Y2, the average limit per family for Chinook salmon is between 30-40 Chinooks. The information distributed during the Federal Subsistence Board meeting indicated that for the upriver Yukon their average is about 100 Chinooks. Mr. Hess was attending the Federal Subsistence Board meeting when this information was distributed with information tables and graphs. Mr. Hess said there is approximately 50,000 - 60,000 bycatch limit in the Pollock fishery that could provide subsistence needs for the entire Yukon River for a year. "Neqa" in Yup'ik language means food and that's what we call fish in Yup'ik language. In the old days fish came in abundance and successful fishing occurred even with short nets those days. As soon as fish arrives, people would fish and start drying fish in drying racks. Fish arrival is governed by the winds at the mouth of the Yukon River and people knew what areas to fish as a result of that. A few years back, there were bad continuous south winds and fall chums didn't enter the Yukon River in abundance. Mr. Hess share more knowledge and information about the fishery in the lower Yukon River.

Mr. Alexie Walters from Mountain Village commented that Mr. Harry Wilde, Sr. had been a big influence all of Mr. Walters' life. Mr. Wilde got him interested in what he is doing these days and Mr. Wilde acted as a guide in everything Mr. Walters does. Mr. Wilde has gone through some rough times in the past, especially while he attended some of the meetings, he attended representing his community. Mr. Wilde asked his community to assist him while he prepared for the meetings those days. There were others that gave some good examples worth recognizing. Late John Hanson of Alakanuk and late John Thompson of St. Mary's used to be affiliated with his parents in the past. Mr. Walters didn't know how to prepare for his testimony about 12 years ago when he provided some comments during the North Pacific Fishery Management Council meeting. With assistance from Mr. Wilde he informed NPFMC members that the word "subsistence" does not affect only Alaska, it affects global subsistence activities. Mr. Walters believes that everything have its own abundance and low number cycles. Example he gave is in the past there were abundant numbers of migratory birds and hunters always came home with harvested birds. Now, it is not like before, bird hunters don't harvest birds as much as in the past. There are increased harvest regulations in place now to the point that regulations affects harvests for food and those involved with adopting harvest regulations do not know how living a subsistence way of life is. The word "subsistence sale" is an uncomfortable word because just a handful of people make it difficult for others by participating on the customary trade of fish. The maximum of $750.00 maybe allowed but local people make $300 - 500 when they sell fish to other Federally qualified users. He is noticing that the new Yup'ik generation is changing because of how they are taught in school and how weather is acting these days. This generation, Yup'ik people are not like that of his age groups. The Yup'ik way of life is in turmoil in some areas because elders who counseled local people are gone from this world. Yup'ik people are

losing their culture as fish numbers declines. Local people are facing a repeat of the cycle; instead of dealing with it, local people are allowing others to handle that as everything has to be written on a paper nowadays. Mr. Waters went on to provide much more information on other issues.

Mr. Stanslaus Sheppard provided his comments stating the number one dependence is subsistence harvest of fish and wildlife resources, gathering edible plants, berries, and living a subsistence way of life. Mr. Sheppard has been fortunate to be involved with the salmon fisheries issues. One thing he realized is that in the entire Yukon River, the lower Yukon is more targeted then other regions. Three years ago when he went to a fisheries meeting in Fairbanks, he provided some historical salmon harvest information because he did a harvest surveys on his own. To date he has not seen any changes made on historical fisheries harvest data for the lower Yukon. When he compared harvest information for Districts Y-1, Y-2, and Y-3, his figures indicated that totals are just equivalent to three quarters of the District 5 salmon harvest. Annual subsistence harvest combined for Y-1, Y-2, and Y-3 was about 14,000 salmon while District 5 annual harvest is 16,000 salmon. 3 years ago Mr. Sheppard brought this up to the Department of Fish and Game and to date it has nor been mentioned at anytime. During the Board of Fish meeting in Fairbanks, one of the ladies wanted operation of fish wheels regulated. Fish wheels in District 5 run 24/7. Lower Yukon River as far upriver as far as community of Holy Cross was affected by a windowed fishing schedule which was two 36 hour windowed schedule per week. This windowed salmon fishing schedule that was cut down to two 18 hour windowed schedules to protect the first pulse of salmon two years ago. During the last Federal Subsistence Board meeting in Anchorage, it was mentioned that District 5, because of its size needs to be subdivided into subdistricts for the purpose of protecting first pulse of Chinook salmon. In the community of Mountain Village, a local salmon working group was established combining local organizations consisting of 9-10 local individual participants. Another issue is bycatch of salmon in the Bering Sea Pollock fishery. Salmon caught as a bycatch is affecting the Kuskokwim River, Yukon River, and Norton Sound salmon stocks. Local hunters were told in the past by Alaska Department of Fish and Game, and it is known by hunters themselves that hunters are not to harass animals while they are at growing up stage. Same thing applies to salmon species that are in the Ocean while salmon are growing up.

Raphael Jimmy commented and shared when he was about 4 or 5 years old he became aware and saw a net being set by a canoe. A fish would be caught and start to jump out of the water because it was a strong fish and it would jump up to about 6 feet in the air. Then a fish caught in the net would be picked up as soon as fisherman could. About 1998, Mr. Jimmy stopped fishing at his fish camp in 30 mile slough. At that time when he would fish; he would apparently catch a fish but unlike in the past, a float would just tug a little here and there. When they pull in the net, a Chinook salmon would be caught in the net and it was already dead in just about half an hour. Mr. Jimmy is 86 years old now. When he was young man, salmon harvested those days used to be very strong and healthy. In this day and age, salmon are getting weaker and weaker for some reason. When a salmon is gutted, its liver would look pretty bad sometimes. This is because there is lot of contamination in the water where a salmon eats its food. In the old days the Chinook salmon were so big they used to be too heavy to lift up by a person. Nowadays Chinook salmon are getting smaller and smaller because they are being intercepted by trawl fishery with large nets and have not had a chance to grow to be a mature salmon. Elders used to warn not to fight over salmon resources in the past. Instead, they were advised to share salmon such as eating together or share harvested fish. Salmon berries are affected by contamination presence and it becomes black as it ripens because there is some trash all over the tundra and also propane gas contamination on the tundra as well. Another thing is, in the old days white men came and went house to house and they forced elderly people in those days to place an X on the document. What for he asked? Nobody had an idea in those days. On a later date when an elderly person like Mr.

Jimmy's mother received their first public assistance checks, they could not sign their name so they were asked to place an X as their signature.

Ms. Maria Koutchak commented stating her husband, the late Teddy Landlord was a founder of Mountain Village. He had a big family, their family moved on to elsewhere, but only two are now living. Mr. Landlord used to advise his children that they should absorb and store all his verbal instructions in their minds and that they would do okay in the future. Ms. Koutchak talked about her children who attended high school and graduated from school, two of which came home and two of her sons ended up working as weather forecasters. One day those who work for living came home and one day they prepared to go out subsistence fishing. But they didn't know what to do or how to prepare for fishing because they were in school for four years in training to become weatherman. In the winter time, four winds indicate how salmon return to the river will look like in the summertime. Let's take an example she said, of mostly north winds in winter time. Mostly north winds in winter would bring in to the Yukon River abundant numbers of premature Chinook salmon. Mostly south winds in the winter time would bring in large and mature Chinook salmon and salmon usually are not abundant in numbers. Mr. Landlord knew before salmon arrives what mesh size gillnets he would prepare by observance of the winter wind directions. West and east winds in winter time don't bring in very much fish into the Yukon River. Ms. Koutchak shared her knowledge about length of grasses and how elders would know what snow cover would look like in the upcoming winter season. In the 1980s, she personally experienced when some tall grasses grew one summer and she took a measuring tape and measured a grass. It was about 64 inches long. In the following winter, there was a lot of snow cover. Again in 1990s, tall grasses grew and she measured another tall grass and it was about 62 inches long. Like in the 1980s, there was a lot of snow cover. Lots of snow indicates high water in the springtime. Men knows where to set their set gillnets when there is high water because high water creates eddies elsewhere and good eddies are suitable spots to set gillnets.

Wildlife Closure and Council Recommendations

Spencer Rearden, wildlife biologist introduced himself and said that Office of Subsistence Management reviews wildlife closures every three years to determine if the justification for the closure is still consistent with the federal Subsistence Board's closure policy. He explained under ANILCA Section 15 (3) of ANILCA allows closure when necessary for the conservation of a healthy population of fish and wildlife or to continue subsistence uses of fish and wildlife populations. The distributions and abundance of fish and wildlife change and fluctuate along with subsistence patterns. The Council is asked to consider OSM preliminary recommendation and share their views on the issue. The eastern portion of Unit 19A has been closed to moose hunting since 2007 due to low numbers of moose. Moose population in the area is estimated between 1,225 – 2,181 or 0.44 moose per square mile. Moose twinning rates were near 64 percent and calf/cow ratio was 45 calves per 100 cows in 2007. Currently, the moose population is still low and for that reason the Office of Subsistence Management preliminary conclusion is to maintain the closure because the moose population has not reached the management objectives. Management objectives are higher than the current moose population and are estimated at about .7 per square mile. The last moose population survey was done in 2008. Management agencies need more data on moose populations when they consider reopening moose season on a limited scale.

Mr. George Pappas with the Alaska Department of Fish and Game said the Department's position is to support OSM conclusion to maintain closure until moose population rebound.

Motion

Robert Aloysius moved, seconded by Greg J. Roczicka to maintain Unit 19A moose closure.

Motion carried.

Large Land Mammal Subsistence Harvest Survey Report
George Weekley with SWC reported that his organization had contracted with the U.S. Fish and Wildlife Service to study large mammal subsistence harvests in 10 villages in the lower Yukon River and one coastal village. The species they studied were moose, caribou, black bear, brown bear, muskox, wolverine, and wolf. Mr. Weekley gave his presentations with a PowerPoint projector. He reported between February 2009 and January 2010, 401 households in 9 communities were interviewed out of an estimated 896 households within survey area. The number of samples totaled to about 2,000 residents in 9 communities. About 89 households declined to participate. Between February 2009 and January 2010, an estimated 549 moose were harvested for subsistence use. Households in the communities that used moose primarily for consumption ranged between 28 percent in Chevak to 100 percent in one of the communities, probably Nunam Iqua. Households hunting moose ranged from 28 percent to 89 percent. Pounds of moose harvested ranged from 24 pounds to 128 pounds of meat. Estimated harvest of caribou was 25 animals in 9 communities and Marshall harvested more caribou. There was an estimated 28 black bear harvested and Russian Mission harvested more black bear than other communities. There was no brown bear harvest reported in the study area. Hunters from Russian Mission, Marshall, and Mountain Village hunted brown bear but were unsuccessful. Two hunters from Marshall hunted Muskox and were both successful. Two hunters from Marshall hunted wolverine and harvested two wolverines. 35 wolves were harvested amongst an estimated 44 hunters. Russian Mission had the highest harvest of wolves.

The Council was concerned about this information being used as subsistence use amounts (SUA) or under the State management amounts necessary for subsistence (ANS). In the past there was a study done by the Department of Fish and Game and they came up with just 100 ANS for moose for the entire Unit 18. Due to economic situations in the lower Yukon River, there are potential higher harvests of moose that could bring percentage higher in the future. A Council member asked if wolves might be driving moose into unfamiliar habitat such as tundra or residential area because there were wolves and moose reported within residential boundaries. Another Council member was confused because the estimated figures of harvested were given. Yet when a Council member asked a question about a certain number of harvests, a solid number is given.

Call for Proposals
Ms. Helen Armstrong wanted to make sure the Council does not overlook its important part of agenda,;submitting Federal wildlife proposals because Federal wildlife proposals are received every two years. This is the opportunity for the Council to submit Federal wildlife proposals.

Salmon Bycatch in Ground Fisheries
Ms. Helen Armstrong presented chum salmon bycatch update and referred the Council to page 42 of their workbook. North Pacific Fishery Management Council (NPFMC) is currently evaluating measures to limit chum salmon by catch in the Bering Sea pollock fishery. During its meeting in early February 2011 in Seattle, the NPFMC was scheduled to conduct a preliminary review of an impact analysis by Staff and it included several management alternatives. NPFMC's recent and upcoming actions are listed there. From February to March 2011, NPFMC members and staff will be attending four council meetings. In June 2011 there will be a NPFMC meeting in Nome; the NPFMC is scheduled to select a preferred alternative after hearing public comments. Ms Armstrong read into the record the Seward Peninsula Subsistence Regional Advisory Council (SPSRAC) position on the bycatch issues. The SPSRAC requested that NPFMC establish a bycatch limit of 30,000 chum salmon for the Bering Sea/Aleutian Island Pollock Fishery. The Council voted to request that the Federal Subsistence Board address this issue before the North

Pacific Fishery Management Council meets in Nome. The Council voted to send a letter to the Norton Sound Economic Development Corporation to clarify their position on chum salmon bycatch before NPFMC meets in June.

Duncan Fields, North Pacific Fishery Management Council (NPFMC) member introduced himself stating that he appreciate Mr. Mike James', Alexie Walters', and Francis Hess' comments. Mr. Fields has been a NPFMC member for four years and is from Kodiak Island. Mr. Fields lives five month of the year in remote fish camp on the west side of Kodiak Island. He hunts and fishes for subsistence primarily salmon, halibut, cod, and deer. This is because Kodiak Island is within a maritime area and most subsistence harvests are marine resources. Professionally he works with Native villages on Kodiak Island specifically with Old Harbor and Ouzinkie trying to preserve fishing opportunities. He informed the council that since the NPFMC was left to catch their airline in St. Mary's, he would be referring to the documents in the Council's workbook. The NPFMC process takes a year and a half to two years to work on an issue. When a proposal is submitted to the NPFMC, it is analyzed and brought before the NPFMC. A proposal analysis is usually revised and brought back to the Council. The Council does a preliminary review process, after the preliminary review additional analysis is requested. A couple of years later Council takes action on the proposal. Council's final action is simply one step in a long process. North Pacific Fishery Council action is a recommendation to the Secretary of Commerce. The National Marine Fisheries Service takes NPFMC's recommendations and then creates regulatory language. The regulatory language is reviewed by the legal counsel in Washington D.C. The regulatory language is sent back to Secretary of Commerce for his signature when regulatory language is approved then it is put in Federal Register. In response to question brought up by one of the Council members, Mr. Fields said that in the longline fisheries, fisherman can discard certain numbers of other species as a bycatch according to the regulations. In the crab fishery, bycatch of halibut is limited. In the Gulf of Alaska beyond Bering Sea NPFMC is dealing with salmon bycatch issues for each of the year's gear types. Much of Pollock fishery occur long distance from the Yukon and Kuskokwim Rivers and when bycatch issue is thought of, stocks of origins needs to be considered. NPFMC has fairly accurate information about Chinook salmon and generalized information about chum bycatch. 20 to 25 percent of Chinook salmon caught as bycatch are of Western Alaska origin and 20 percent of chum salmon caught as bycatch are of Western Alaska origin. Approximately 60 percent of chum salmon caught as bycatch is of Asian origin; either Russian or Japanese hatchery stock. The NPFMC's targeted cap for Chinook bycatch was 47,591. Council imposed a Chinook cap of 60,000 which is way too high in his opinion. Mr. Fields provided much more information on the Pollock fishery in the Bering Sea including how The NPFMC handles Bering Seas Pollock fishery issues. He answered Council and audience questions about Pollock fishery by catch issues.

Review and Finalize Draft 2010 Annual Report

Alex Nick informed the Council that as directed he drafted 2011 annual report. As the Council may notice he put a tentative date on the document assuming Council would adopt its annual report. Mr. Nick worked with Mr. Greg J. Roczicka by communicating with him on Issue 1. At the request of the Chair the draft annual report was read. A Council member did not agree with the word "rural" in the document stating that villages are situated in the remote areas not rural area which is connected to a road system. There was clarification of word "rural" that, in ANILCA legislation that word is used so subsistence program use it. Mr. Greg Roczicka informed the Council that he rewrote 2010 Annual Report Issue 1 but because he was rushing to the Airport to catch his flight he forgot copies at his desk. He put careful thinking in while he rewrote issue 1. Mr. Roczicka provided much information about management agency's stating the Council's recommendations should be followed by the management agencies if it's not

detrimental to subsistence based on sound biological management principles. Mr. Roczicka was asked to rewrite Issue 1 the next day before it was included in the draft annual report.

Motion
Mr. Robert Aloysius moved seconded by Mr. Aloysius Unok the word ”rural” should be removed from the annual report and replaced by the word “remote”.

Roll call vote results were 6 yes, 4 no, o abstain, and 1 excused absence.

Note: Vote was recorded wrong according to court report (See meeting transcripts page 294, line 18 through page 300, line 4).

Council Charter Review
Alex Nick referred to page 55 on Council workbook and informed the Council that every two years the Council reviews its charter and provide any recommended changes. Upon request, the Charter was read into record. A Council member asked why the word “administrative” is included in number 2. Ms. Helen Armstrong answered and said in part that administrative in general means to provide structure for the Council. The Charter tells the Council how many members it has and when new members are appointed or their terms end. It involves lot of paperwork. The Council does not have to worry about paperwork because its staff takes care of that. The Council does not have ability to change words that are included in all ten Council charters. A Council member asked where in the charter is a requirement to represent applicant interests such as sports, subsistence or commercial. Ms. Armstrong explained the Council represented subsistence interests until there was a lawsuit when it was determined the program needed to have representation of all users who might be affected by regulatory changes. Because of the lawsuit, 70/30 representation on the Council membership was required in the past. 70 percent represented subsistence and 30 percent represented sport and commercial interests.

Fisheries
Gene Sandone sent and provided hard copies of his PowerPoint presentations with help from Staff. He worked for the Yukon Delta Fisheries Development Association, and worked for the Department of Fish and Game for 26 years. Mr. Sandone gave a PowerPoint presentation online and he compiled Yukon Area Chinook Salmon Subsistence and Personal Use Harvest for the Yukon Area for three reasons. He said first, he thinks there’s lot of misconceptions about the harvest patterns within the Yukon area. Secondly, he thought it would be helpful to have customary trade discussions on what harvest patterns are. Thirdly, with the runs being so low and continuing to decrease, especially the female component he thought that it might serve as information for more intensive management. He went on with the slide presentations and his presentations can be found by looking up the council meeting transcripts from 242, line 44 through 258, line 4. Mr. Sandone answered Council’s questions after the slide presentation. One of the important questions was, about community with the least amount of people per household caught most of the fish in District 5. Mr. Sandone didn’t have an answer for that but he indicated fish caught by fishwheels could be smaller.

Public Comments on Sport Hunting
Mr. Rephael Beans, a lifetime resident of Mountain Village brought up his concerns on Sport moose hunters hunting on subsistence hunting areas and he said sport hunters are filtering slowly and said he is aware sporting hunters will increase. He said local subsistence hunters hunt moose which is their main source of meat and they store the meat for a long winter and none is wasted. Areas where sport hunting occurred might belongs to local people passed on to them by their

forefathers. Sport hunters are not welcome in his area because if allowed, sport hunters will slowly wipe out moose numbers in the area like they did in the Paimute Slough area upriver Yukon. He said a lot of sport hunters took away a lot of moose from Paimute Slough area in the past. Mr. Beans said that he doesn't mind Native subsistence hunters but he doesn't like the idea of sport hunting in the area.

Mr. Paul Beans also from Mountain Village said Ray did a good job providing comments on sport hunting. He said what he is about to comment on was also provided as a public comment during the Federal Subsistence Board meeting. This comment is regarding an incident that happened in 30 Mile Slough approximately 25 miles downriver from Mountain Village on about September 20th. The airplane landed in Horseshoe Lake and he went to it with his family. There were two persons in a DeHavelland Beaver Aircraft from Bethel. Paul's brother at that time knew there was a big bull moose in that area and the two probably spotted a bull moose in the area. Mr. Beans' brother talked with those two in the aircraft and informed them the area is family's traditional hunting area and inform them that they were trespassing on traditional hunting area. Mr. Beans' brother was also told that he was trespassing as well. Mr. Beans said a proposal should go forward to prohibit sport hunting on local people's traditional hunting areas. Another idea is that, tribes should be consulted on this kind of issues.

Mr. Sky Starkey thanked the Council for adopting the resolutions brought forward by the Association of Village Council Presidents for Council's consideration. Mr. Starkey advised the Council and tribes to contact him at any point and time to discuss the upcoming tribal round table discussions in June in regards to starting a consensus and recommendations from the tribal leaders during the North Pacific Fishery Management Council meeting in Nome. This is about direction the tribes need to start moving forward as part of the fishery and natural resource decisions.

A note from Mr. Mathew J. Waskey, Sr. was read into record by Lester Wilde, Chair.

Main points of Mr. Waskey's note are:

- Moose is staple diet and will continue into the next generation
- No part of the animal is wasted
- Skin is used for clothing
- Antlers are made into various tools and this is how it should be everywhere
- Guided sport hunting should not be allowed in Unit 18; sport hunters should first register with private landowners before they hunt on private lands and be taken out to hunting areas with a local skiff; sport hunt camping should not occur on traditional subsistence hunting areas including tributaries

Agency and Organization Reports

Office of Subsistence Management

Alex Nick referred to page 58 of the Council workbook. Mr. Nick wanted to make certain when a Council member is going to make changes on their travel to contact him first. Council members and their coordinator will have to work together closely when travel issues occur. Mr. Nick provided the Council his contact numbers. Mr. Nick read into record the entire update on the travel policy. A Council member asked about what would be done in case of emergency situations such as illness of family or dying family member. The answer is that when Staff are contacted they would do something about it. In case of weather factors, Council members would need to keep in contact with Mr. Nick or other Staff and Staff would relay messages to the appropriate person. When Council member gets sick while on travel, he or she needs to let the Coordinator know and he would take care of it. A couple of Council members experienced

weather hold and missed their morning flights. In that situation, Council members need to contact the Coordinator or other Staff and they would take care of it. Switching to another airline is not possible anymore and Council member needs to travel with airline reservations were made for them. Any travel changes Council want to make, Staff needs to know. Travel is tracked by the travel agency when traveler leaves home and returns back home. Council members did not have their airline travel itinerary because Office of Subsistence Management travel clerk was out of the office on family emergency leave. As a result, airline reservations were not received by the Coordinator a week before travel. Mr. Nick contacted most of the Council members and informed them what day, via which airline, and what time they are scheduled to travel on the day of travel. Helen Armstrong and Alex Nick answered travel, reimbursement and/or related questions. Council members were informed that cash travel advances will no longer be provided in the future meetings. Travel reimbursements will no longer sent electronically to Council member's financial institution. Council travel reimbursements will be sent to the Office of Subsistence Management (OSM) then sent directly from OSM to Council member's address they provided.

Ms. Helen Armstrong referred to page 59 on Council's workbook, the Secretarial review update. A letter from the Secretary was received addressed to Tim Towarak. What's going to be done is to develop proposed Federal regulations to increase the Federal Subsistence Board membership and the Council may provide some comments on the proposed rule which has been developed before it becomes final rule. Public comments could be provided during this meeting with a comment sheet provided until April 12th. There's an email address and website for the public access to provide comments. The proposed regulations didn't mention anything about the selection process for the new members. It only adds the language that there will be two additional members. There was a Chair on the Southeast Regional Advisory Council for many years who was from Ketchikan and he was a Tlingit and he was a subsistence user. Ketchikan is nonrural community which doesn't fall under the Federal Subsistence Management Program. The Council may comment on things like this. Timothy Andrew with the Association of Village Council Presidents (AVCP) said AVCP submitted a resolution addressing the selection process. AVCP recommends that the Federal Subsistence Board select two public members for membership. This resolution was drafted for the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council to consider. Mr. Andrew explained the Alaska Natives have the greatest to lose when things go wrong. Natives would like to be heard in this forum through representatives addressing interests, culture, and way of life. Mr. Andrew used an example of the Yukon River's dwindling salmon return. Subsistence users are not processing Chinook as much as they used to because of severe restrictions imposed on the subsistence fishing. AVCP feel the two additional members of the Federal Subsistence Board should be tribal representatives.

Ms. Helen Armstrong updated Council on deference to the Regional Advisory Councils (RAC): she referred to page 76 of Council's workbook. Deference is described in ANILCA, there's deference to the Councils that the Federal Subsistence Board has to defer to the Council's recommendation in making decisions. Deference is supported by substantial information. The only time the FSB disagree with RAC recommendations is when there is a conservation concern. This is just informational update and is not an action item. Part of deference to the Councils is customary and traditional use determination, the FSB is supportive of expanding customary and traditional use determination. At this point there is no deference and the FSB doesn't know if policy or rulemaking will be done yet but it is being explored. Next step would be to develop policy or rulemaking. What's drafted will be presented to the Councils in the fall 2011 Council meeting. There is no Council deference for rural determinations because the courts found that rural is an absolute term meaning sparsely populated. A process for developing process and criteria for rural and nonrual determinations will be developed in the future. There will be a work

session on rural determinations on April 6, 2011 and Council Chairs are invited to participate. Inseason management is status quo. There's Council deference as time and conservation allow on inseason management.

Ms. Armstrong updated the Council stating the Memorandum of Understanding (MOU) is based on what was called Memorandum of Agreement (MOA) that evolved into MOU. During its meeting in November 2010, the FSB wanted to know what the Regional Advisory Council feels about MOU. Because of close coordination between the State and Federal agencies on fish and wildlife resource management issues the MOU was developed based on MOA that was signed in December 2008. There were three protocols that are targeted at specific issues developed under the guidance of the MOA and MOU is subsistence management information protocol created in 2002; Yukon River drainage subsistence salmon fishery management protocol created in 2002; and memorandum of understanding on the review and development of scientifically based salmon escapement goals created in 2005. MOU asks that the State and Federal agencies toward close coordination on resource management issues and this is defined in ANILCA. In ANILCA .802 (3), .805 (a), .810 (a), .812, and .816 (b), these sections discuss communications between the State and Federal agencies. The MOU contains references to the State law and some people had some concerns about that. The Board's authority, charge, and obligation only come from Title VIII of ANILCA to provide for subsistence priority for rural Alaska residents and MOU cannot change that. Guiding principles of the MOU are to avoid duplication of research projects, monitoring and management involving subsistence and other uses. The Council is asked to review the MOU and provide specific comments and recommended changes by May 1st. Ms. Armstrong was asked by the Council to go over the entire MOU to avoid confusion on the document. One of the Council member's concerns was to involve all of the user groups when salmon conservation issues are taken up and dealt with all the way from spawning grounds to the High Seas. This is because salmon bycatch issues are of everyone else's concern in the entire Yukon River. Another Council member suggest to insert under Section 4, number 10 in the last sentence, for conservation of the resource or continuation of subsistence use is of immediate concern, the review shall not delay timely management actions, and possibly insert that into number 5 of the guiding principles. Number 5 would read:
As it is up to promote stability in fish and wildlife management and minimize unnecessary disruption to subsistence and other uses of fish and wildlife resources, active management and for conservation of the resources or continuation of subsistence usesof immediate concern, review shall not delay timely action.

A Council member was concerned that in the villages, written resources to refer to when dealing with documents such as this are not available. There was much information and discussions about the MOU. George Pappas with ADF&G said he's on the liaison team. His supervisor Ms. Jennifer Yuhas, Policy Coordinator could be contacted for any policy matters. Mr. Pappas is the fisheries liaison for fisheries data and fisheries data comes through Mr. Pappas. Council members suggested some additional minor changes relating to the local organizations and suggested changes were noted by the Staff. Inseason delegation of authority letters will be revised as needed and copies will be provided to the Councils within a year or two. Approximately 300 customary and traditional use determinations have been approved in the entire State and a few have been challenged by the courts.

The Board wants to know is the current customary and traditional use determination working in the Regional Advisory Council region. If not, what would need to be changed? In the letter it is mentioned that are Federal Subsistence Board executive session at which nobody is allowed to attend except lawyers and there are no Board actions. Summary of the Board's executive sessions are provided.

Ms. Armstrong updated the Council summarizing tribal consultation update. Title VIII of the Alaska National Interests Lands Conservation Act (ANILCA) provides that there is a foundational role for the 10 Regional Advisory Councils in development of regulations guiding the taking of fish and wildlife on Federal public lands in Alaska. Deference to the Councils ensures that rural residents have a meaningful role in the management of fish and wildlife subsistence uses. Because of this role of the Councils and requirements in ANILCA, the Board defer to the Council's recommendations. Prior to the Obama administration, The Board consulted with the Regional Advisory Councils because that is an ANILCA mandate. With the new Obama Administration, the President has ordered the importance of tribal consultation across the government. The invitation was sent out to all of the tribes in the State to attend the Federal Board meeting on January 18-21, 2011. All Federally recognized including Alaska Native Claims Settlement Act corporations were invited. Mr. Lester Wilde, Chair of the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council attended January 2011 Board meeting. The Board's goal is to have a tribal consultation policy for the Subsistence Management Program.

U.S. Fish and Wildlife Service
Mr. Fred Bue with the U.S. Fish and Wildlife Service presented an update on spring fisheries preparedness meeting packet put together by Steve Hayes with the Alaska Department of Fish and Game. This unofficial meeting is not to develop regulations because there is an official process for the State and Federal. This meeting is intended to provide a communication process with people from throughout the Yukon River drainage to talk about status of the fishery and what can be done to adjust in season fishery. This type of meeting gives people an expectation of what is to come forward. There are some management options that could be used without changing existing regulations. This meeting is funded by the U.S./Canada Panel. Mr. Bue read the prepared update into record and the information he provided can be found on the meeting transcripts page 225, line 27 through page 227 line 15. There was missing information on salmon escapements in table two in the Council books. Mr. Bue responded he spoke with someone at the Office of Subsistence Management (OSM) that there was an error in the table. The correct number was not entered before book production. Mr. Bue answered and discussed questions relating to the Yukon River Chinook fishery. He also answered questions relating to research projects in the entire Yukon River drainage including Canadian salmon stock. He had a long discussion about salmon fishery management, research, and subsistence harvest information.

Yukon Delta National Wildlife Refuge
Alex Nick informed the Council before he travelled to Mountain Village he spoke with Mr. Tom Doolittle with the Yukon Delta National Wildlife Refuge. Mr. Doolittle informed Mr. Nick that the refuge is doing moose census surveys and if some time allows, he and others would stop by and give an update on refuge activities.

Togiak Refuge
Alex Nick informed the Council the Togiak Refuge did not provide a bulletin this time.

Bureau of Land Management
No report

Overview of the Alaska Migratory Bird Co-Management Council
No report

Alaska Department of fish and Game

No report

Association of Village Council Presidents (AVCP)
Mr. Timothy Andrew Director of AVCP Natural Resources stated that AVCP has several resolutions they would like the Council to consider these resolutions as its resolutions. One resolution is twofold in nature, first part of the resolution is regarding Federal Subsistence Board tribal consultation and the next part is the Federal Subsistence Board membership. Mr. Andrew read into the record portions of the resolution.

Motion
Greg Roczicka moved, seconded by Mr. Raymond Oney to adopt YKDSRAC resolution 11-01.

This resolution reflects one of the Council's concerns which it brought up in the context of the FSB letter that was put forward in Council's packet. The Council would like an opportunity to review the final draft which may reflect the concerns of tribal entities.

Motion carried with 11 yes, 0 abstain, and 1 excused.

Mr. Timothy Andrew brought up another resolution for Council's consideration. This resolution is regarding chum bycatch in the Bering Sea. Mr. Andrew read a portion of the resolution into record. This resolution requests the Council recommend that the Federal Subsistence Board work with affected Councils, tribes and communities to develop a position from among the alternatives before the North Pacific Fishery Management Council to regulate chum bycatch.

Motion
Mr. Raymond Oney moved, seconded by Mr. William F. Brown, to adopt YKDSRAC resolution 11-02.

For years, the Lower Yukon River commercial fisherman have not done fall chum fishing. The fisherman needs the money earned from chum commercial fishing when they don't have Chinook commercial fishing. During the presentation, it was reported 700,000 fish were caught as bycatch and this is lot of fish caught as a bycatch.

Motion passed unanimously.

Timothy Andrew, Director of AVCP Natural Resources gave a brief report. Throughout the years he saw quite of bit changes on the subsistence resources within the Yukon-Kuskokwim Delta. The biggest changes he saw is since about 1998, salmon decline in the Yukon River and problem's moveed toward the Kuskokwim River. He appreciated thanked Mr. Mike James, Mr. Francis Hess, Mr. Alexie Walters, Mr. Stan Sheppard, Mr. Raphael Jimmy, and his anaan (aunt) Ms. Marie Koutchak for their eloquent public comments. In 2008, the Yukon River was like a dead river in observance of people. Nobody was in the fish camps and no one was fishing. Mr. Andrew hopes this is not indicative of what's going to happen in the future to salmon subsistence resources. Gene Sandone touched the customary trade issue in his earlier report. And one of the questions that kept coming up in his mind is that ANILCA was adopted with a rural priority provision which allowed for anyone and everyone that lives in the rural areas to subsistence fish. Customary Trade has been a long held Alaska Native tradition in various areas for trading purposes between various villages and probably various regions, but has not become a commercial enterprise. Customary Trade appears to become commercial enterprise and people think it is a God given right to harvest without regard to harvest regulations and no fish numbers to consider. A number of years ago, decreased numbers of salmon were reported in the Nome

area in the 1970s or in 1980s. Now it is being experiences in the Yukon River and it is starting to be experienced in the Kuskokwim River. The other concern Mr. Andrew is the Mulchatna Caribou Herd. In 1996, there were 220,000 animals and population has gone down to about 30,000. Moose is doing okay in lowest Yukon River subregion and in Unit 18 remainder the population has some increase. In the Kuskokwim River in Unit 18 and in Unit 19A moose populations are increasing. He said let everyone learn from mistakes people have made in the past and keep animals populations healthy. Why was there population decline on the Mulchatna Caribou Herd and moose in Unit 19, he asked. Mr. Andrew urged the Council, by working together between all involved, that there needs to be some kind of management solutions to address resource declines and resource crises in the region.

Orutsararmiut Tribal Council (ONC)
Greg J. Roczicka, Orutsararmiut Native Council (ONC) gave an update on ONC research projects. ONC has several projects mainly dealing with fisheries projects funded by the State and Federal Governments. Last year ONC wrapped up a cooperative project with the genetics lab on Coho salmon gathering fin clips and studies to get that done working with the U.S. Fish and Wildlife Service in Region 7. ONC is continuing inseason harvest monitoring collecting ASL data. Last year, the postseason project had a great crew. Information on this project is reported on a weekly basis to the Kuskokwim River Salmon working group and is being used for inseason management decisions. This project has been authorized funding next year to continue inseason and postseason projects. Household salmon harvest survey was done this summer with approximately 2,600 household participating in Bethel. ONC is proposing to continue its Partners biologist program and ONC will not know whether or not this project is going to be funded until August or September. ONC has an environmental program that is fairly comprehensive. ONC has agriculture program. An additional project is being put together, that is a tribal wildlife grant which is a national program and is competitive. ONC in partnership with Emmonak Tribal Council has a program which allows young people in Emmonak to harvest moose as designated hunters. Grant Aviation transports moose meat for the Senior Center in Bethel.

Kuskokwim Native Association
No report from KNA. Mr. Robert Aloysius had some comments about KNA. He said that KNA is very fortunate it has several joint programs with the State and Federal agencies. It has fisheries monitoring programs on four rivers. There is a sonar project in Aniak River, a weir project on the George River, and a weir project on the Tuluksak River. KNA is very active and has an inservice program for high school and college students. KNA also has elementary and high school fisheries programs with Kuspuk School District, funded by the State and OSM. Mr. Aloysius is proud of KNA because it has dedicated Staff and KNA research funding resources so young people can get involved in natural resources.

Municipal Governments
Ms. Anita Andrews, City Manager with City of Mountain Village thanked the Council for holding its meeting in Mountain Village and she thanked tribal members for providing their comments on subsistence issues. She wanted to bring up salmon bycatch issues which were brought up by Harry Wilde quite a few times hoping the State and Federal agency staff listen to what Mr. Wilde has to say. Ms. Andrews was raised to believe when elders speak up and makes a request, so elders can make their request only once. Seeing Mr. Harry Wilde and other elders from the entire State of Alaska repeating them selvess over and over again offends Ms. Andrews. When elders speak and makes requests, the State and Federal agencies should listen and take

action on their behalf. They are speaking up on behalf of their children, grandchildren, local residents, and the future residents and tribal members.

ANCSA Village Corporations
No report

Bering Sea Fisheries Association
No report

Next Meeting Date and Place
Motion
Raymond Oney moved, seconded by Mr. Aloysius B. Unok, to confirm the fall 2011 meeting on September 29-30, 2011.

Motion carried.

There was a discussion about fall 2011 meeting place and several villages were suggested.

Motion

Robert Aloysius moved, seconded by William Brown, to hold the fall 2011 meeting in Bethel, Alaska.

Roll call vote results are 10 yes, 1 no, 1 excused absence, and 0 abstaining.

Motion
Mr. Aloysius B. Unok, moved seconded by Robert Aloysius, to choose Kalskag as an alternate meeting place.

Motion carried.

Winter 2012 Meeting Date and Place
Council discussed and selected its winter 2012 meeting to be held on February 23-24, 2012 in Emmonak, Alaska.

Closing Comments

- Mr. Raymond Oney would like to acknowledge a couple of former Council members now both deceased, Mr. John Thompson from St. Mary's and Joseph Mike from Kotlik. The late Mr. Thompson and the late Mr. Mike have served on the Council membership for number of years. Even a thank you letter could be sent to their family to show appreciation of their contribution. Mr. Oney is concerned about his appointment to this Council membership. He was appointed to just a one year term instead of three year term and he would like to know why he was appointed to just a one year term on Council membership. Mr. Oney thanked Mr. Duncan Fields member, North Pacific Fishery Management Council. He also thanked BIA Director Gene Virden for attending Council meeting. R. Oney would like to see cooperation up and down the Yukon River in re-building Chinook salmon stocks by putting the issue on the table and discuss Chinook salmon conservation solutions. And if this is his last year as a Council member, he would

like to thank the Council, Staff, and everyone for what he shared and learned. Mr. Oney encouraged everyone to apply for Council membership.

- Mr. John W. Andrew thanked the community and people of Mountain village for their hospitality. He commented on the salmon issues not only on the Yukon River but also on the Kuskokwim River stating that there are less reds, chums, pinks, and coho salmon returning every year. Kuskokwim River mirror the Yukon River in terms of salmon returns. For example in Kethluk River where he comes from there were not adequate Chinook salmon escapements. More and more every year local people sees sport fisherman going up the Kwethluk River. During good weather 40-50 boats go up the Kwehtluk River daily transporting people and rafters that would come back downriver. Mr. Andrew thinks these people are being transported by a couple of transporters based out of Bethel. Since there are problems with Chinook salmon returns, he would like to see more restrictions or closures imposed. Last few years, the Tuluksak was experiencing the same problems with sport and recreation. There are a couple of abandoned mining sites. One is in Platinum and another is in NYAC. In NYAC alone, U.S. Fish and Wildlife Service reported that 35-40 miles of spawning grounds are torn by mining activities. Also in the old Red Devil mine, the reclamation work has not been done to restore the area. The area is a Chinook and chum spawning stream.

- Mr. Noah M. Andrew commented that the Council is facing a lot of problems as mentioned by other Council members. The Council and Staff needs to look at the long-term issues such as the main rivers becoming shallow. The main problem is that beavers are damming tributaries. Salmon spawning streams need to be visited to see the problems are occurring as a result of beaver issues. Other problems are mining effects on the spawning grounds such as Tuluksak River. A possibility is that the Kuskokwim River could be dammed by beavers when its channel gets shallow. Staff and the Council needs to cooperate and work together on issues of concern and Council's Staff needs to listen to the Council's concerns. Salmon spawning grounds needs to be preserved by working together to get problems solved. He said this is his very first meeting he attended and he saw that problems have started.

- Mr. Greg Roczicka thanked Ms. Anita Andrews for lending him her office and people of Mountain Village for hosting Council meeting.

- Mr. Lester Wilde thank the staff for their preparations for this meeting as it would probably be longer meeting trying to resolve problems and issues if Staff were was not prepared. He appreciate their work and their assistance. He appreciates the Council members for showing a lot of patience at times.

- Mr. Aloysius B. Unok thanked the Staff and especially the City of Mountain for hosting him a couple of weeks in a row. He said it must have been kind of hard for Ms. Anita Andrews. He thanked all members of the Council for showing up at this meeting leaving their families behind to participate to take care of issues. He especially appreciates Mr. Lester Wilde for doing a hard job as a Chair.

- Mr. Harry Wilde, Sr. thanked everyone for coming to Mountain Village. He said every time there is meeting being planned, he meets with three local organizations

in the community, municipal government, ANCSA corporation and tribal entity making certain what will be on the agenda. For many years he's been participating in these local organizations including State and Federal agencies.

- Mr. Evan K. Polty, Sr. thanked community of Mountain Village for their hospitality. He thanked those who provided public comments and bringing up concerns about subsistence way of life on behalf of future generations including those who came from other villages and attended this meeting as part of Council meeting audience listening to Council's concerns. The information needs to be brought back to their communities along with the information that the Council is concerned about their subsistence ay of life. He thanked local organizations for their assistance and the Council for their support and the opportunity while he learned how the Council meeting is being conducted.

- Mr. James Charles thanked everyone for attending this meeting. He said he was surprised that this meeting was going to be held in Mountain Village because he thought the meeting was going to be in St. Mary's as he had his calendar marked the meeting was going to be in St. Mary's. He thanked everyone who was involved preparing lodging and the nice meeting location. He also thanked Council Coordinator for preparations and logistics for this meeting. He thanked the Staff and people of Mountain Village for hosting this meeting.

- Mr. Robert Aloysius commented that he sincerely thank village of Mountain Village and its illustrious City Manager. He also wanted someone to relay a thank you to the assigned driver who transported guests to elsewhere in the village. He appreciated those who provided testimony during Council meeting. He encouraged all Yukon-Kuskokwim Delta fishermen to start writing strongly worded fisheries proposals, some calling for a five year moratorium on the Bering Sea Pollock fishery. An example he used was the lower Yukon River moose moratorium which was extended to an eight year moose moratorium and moose populations increased in the area. He also encouraged Lower Yukon hunters to get after the sport moose hunting activities that are being done against the local people's wishes. The Yukon-Kuskokwim Delta Subsistence Regional Advisory Council was also against opening area for sport hunting opportunities mainly because local people were against it. He doesn't know if it's possible to do that, but he thinks that it doesn't make sense after local people sacrificed for years to build up moose populations to open up moose hunting for all users. His frustration is that all are supposed to start at a grassroots level like everybody else. The Council voices its opinion, ADF&F Local Advisory Committees held their meetings and gather information and proposals are brought forward. When all of the information is sent to the highest level of decision making process to supposedly benefit subsistence users, it stops there. What also is upsetting is that the prices in every commodity for everyone's needs is increasing while fish and wildlife resource populations are decreasing. The Yukon-Kuskokwim Delta is one of the richest in terms of natural resources but the area is security poor. Local people have no means of defense against big business enterprises that are emerging as money talks and money buys. Every westernized person looks at everything as money and that is what's hurting local people's lands. Local people don't have the resources to stop removal of the renewable resources that naturally rejuvenate their populations. The influx of people from villages to urban areas is horrendous because of the prices being

increased in the villages. He provided more comments relating to the salmon resources that can be found in the meeting transcripts.

- William F. Brown thanked the community of Mountain Village for their hospitality.

Benediction

The benediction was by Mr. Harry Wilde, Sr.

Adjourn

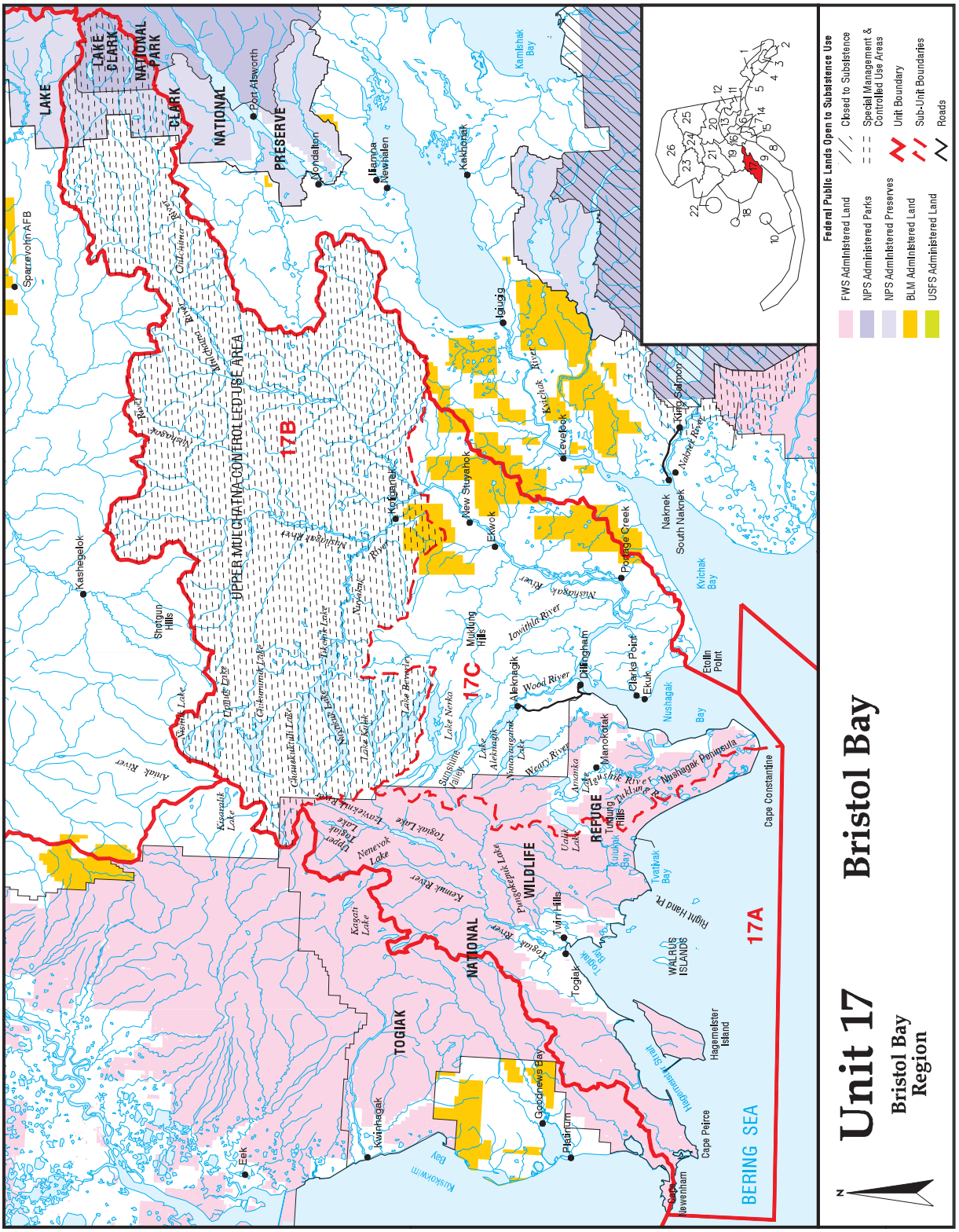
Motion

Mr. Greg J. Roczicka moved to adjourn the meeting.

No one seconded the motion.

The meeting was adjourned at 6:19 p.m.

Draft minutes from February 23-24, 2011 were drafted by Alex Nick, Council Coordinator.


Unit 17
Bristol Bay Region
Bristol Bay
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads
17A
17B
17C
UPPER MULCHATNA CONTROLLED USE AREA
TOGIAK NATIONAL WILDLIFE REFUGE
LAKE CLARK NATIONAL PARK PRESERVE
BERING SEA
Sparrevohn AFB
Port Alsworth
Iliamna
Newhalen
Kakhonak
Igiugig
Kokhanok
New Stuyahok
Ekwok
Koliganek
Levelock
King Salmon
Naknek
South Naknek
Pedro Creek
Dillingham
Clarks Point
Ekuk
Aleknagik
Manokotak
Togiak
Goodnews Bay
Platinum
Quinhagak
Eek
Kasigluk
Nunapitchuk
Tuntutuliak
Chefornak
Kongiganak
Tununak
Newtok
Mekoryuk
Hooper Bay
Scammon Bay
Chevak
Kotlik
Emmonak
Alakanuk
Nunam Iqua
Sheldon Point
Marshall
Mountain Village
Russian Mission
Pilot Station
Shageluk
Anvik
Grayling
Holy Cross
Lake Clark
Iliamna Lake
Naknek Lake
Bristol Bay
Kuskokwim Bay
Nushagak Bay
Kvichak Bay
Togiak Bay
Cape Constantine
Cape Peirce
Cape Newenham
Hagemeister Island
Walrus Islands
Nushagak Peninsula
Togiak Lake
Nenevok Lake
Kagati Lake
Kisaralik Lake
Tikchik Lake
Nushagak River
Mulchatna River
Chulitna River
Tonzona River
Kuskokwim River
Yukon River
Kamishak Bay
Naknek River
Kvichak River
Wood River
Nushagak Bay
Togiak Bay
Hagemeister Strait
Kuskokwim Bay
Kamishak Bay
Kvichak Bay
Nushagak Bay
Togiak Bay
Cape Constantine
Cape Peirce
Cape Newenham
Hagemeister Island
Walrus Islands
Nushagak Peninsula
Togiak Lake
Nenevok Lake
Kagati Lake
Kisaralik Lake
Tikchik Lake
Nushagak River
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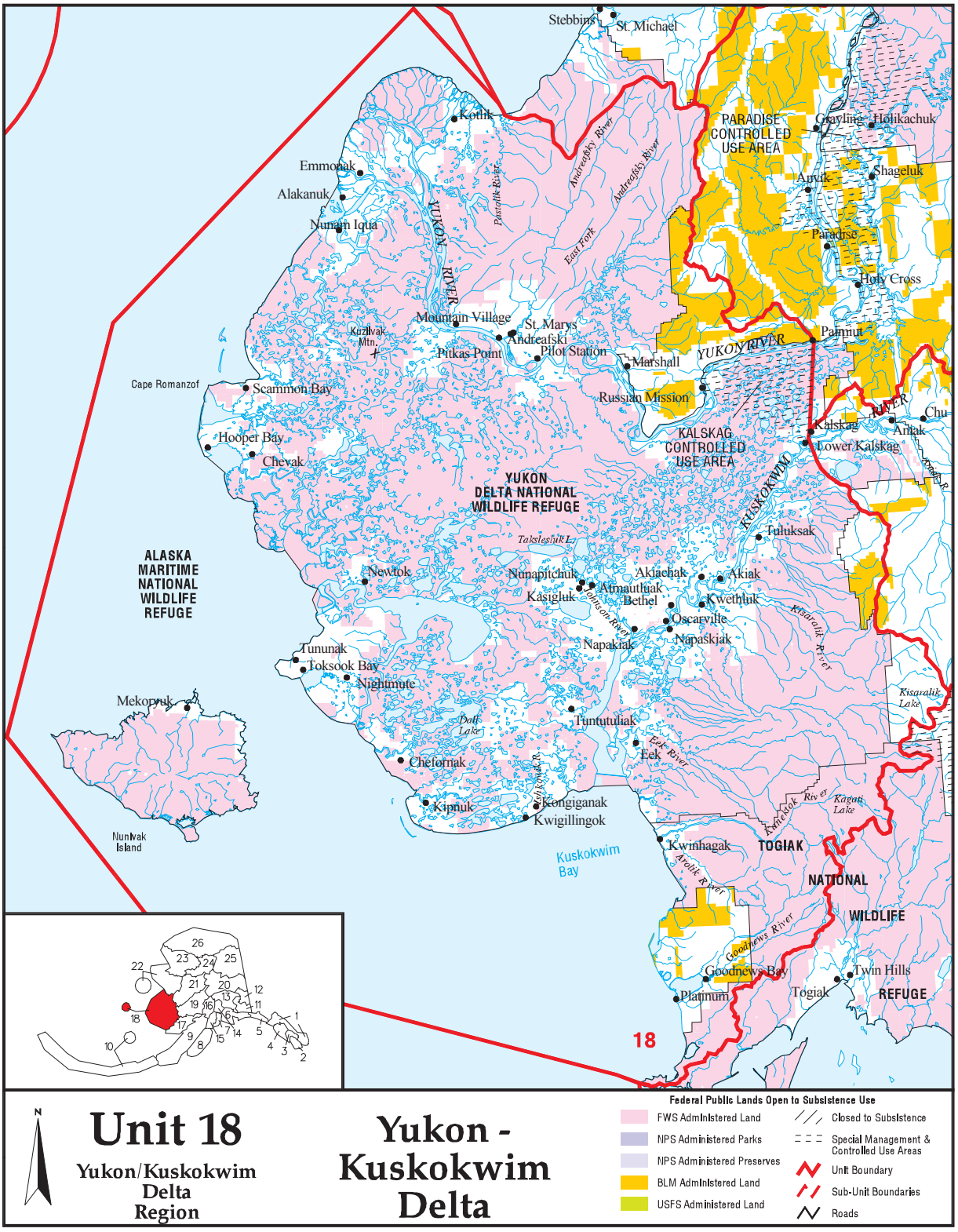
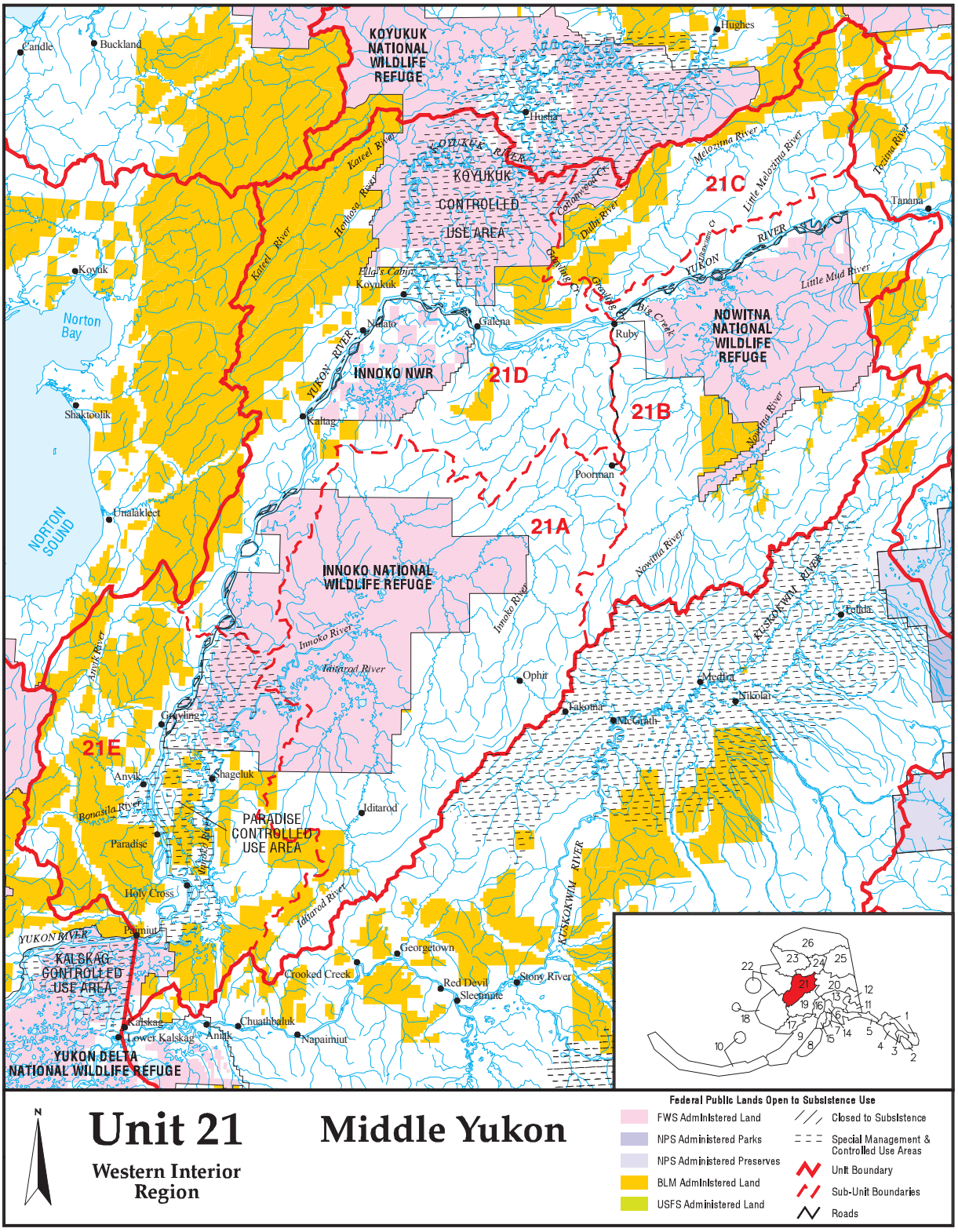
Tonzona River
Kuskokwim River
Yukon River
Kamishak Bay
Naknek River
Kvichak River
Wood River


Stebbins
St. Michael
Koyuk
Emmonak
Alakanuk
Nunam Iqua
YUKON RIVER
Paotsalik River
Andreafsky River
East Fork
PARADISE CONTROLLED USE AREA
Grayling
Holikachuk
Anvik
Shageluk
Paradise
Holy Cross
Mountain Village
St. Marys
Andreafski
Pilot Station
Pitkas Point
Kuzilvak Mtn.
Marshall
YUKON RIVER
Pamiut
Russian Mission
Cape Romanzof
Scammon Bay
Hooper Bay
Chevak
KALSKAG CONTROLLED USE AREA
Kalskag
Lower Kalskag
Chu
Anlak
KUSKOKWIM RIVER
YUKON DELTA NATIONAL WILDLIFE REFUGE
Tuluksak
Taksleshlik L.
ALASKA MARITIME NATIONAL WILDLIFE REFUGE
Newtok
Nunapitchuk
Atmautluak
Akiachak
Akiak
Kasigluk
Bethel
Kwethluk
Oscarville
Napakiak
Napaskiak
Kisaralik River
Tununak
Toksook Bay
Nightmute
Mekoryuk
Kisaralik Lake
Tuntutuliak
Eek
Eek River
Chefornak
Kongiganak
Kipnuk
Kwigillingok
Kuinerrak River
Kagati Lake
Nunivak Island
Kuskokwim Bay
Kwinhagak
TOGIAK NATIONAL WILDLIFE REFUGE
Arolik River
Goodnews River
Goodnews Bay
Platinum
Togiak
Twin Hills
18
N
Unit 18
Yukon/Kuskokwim Delta Region
Yukon - Kuskokwim Delta
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads



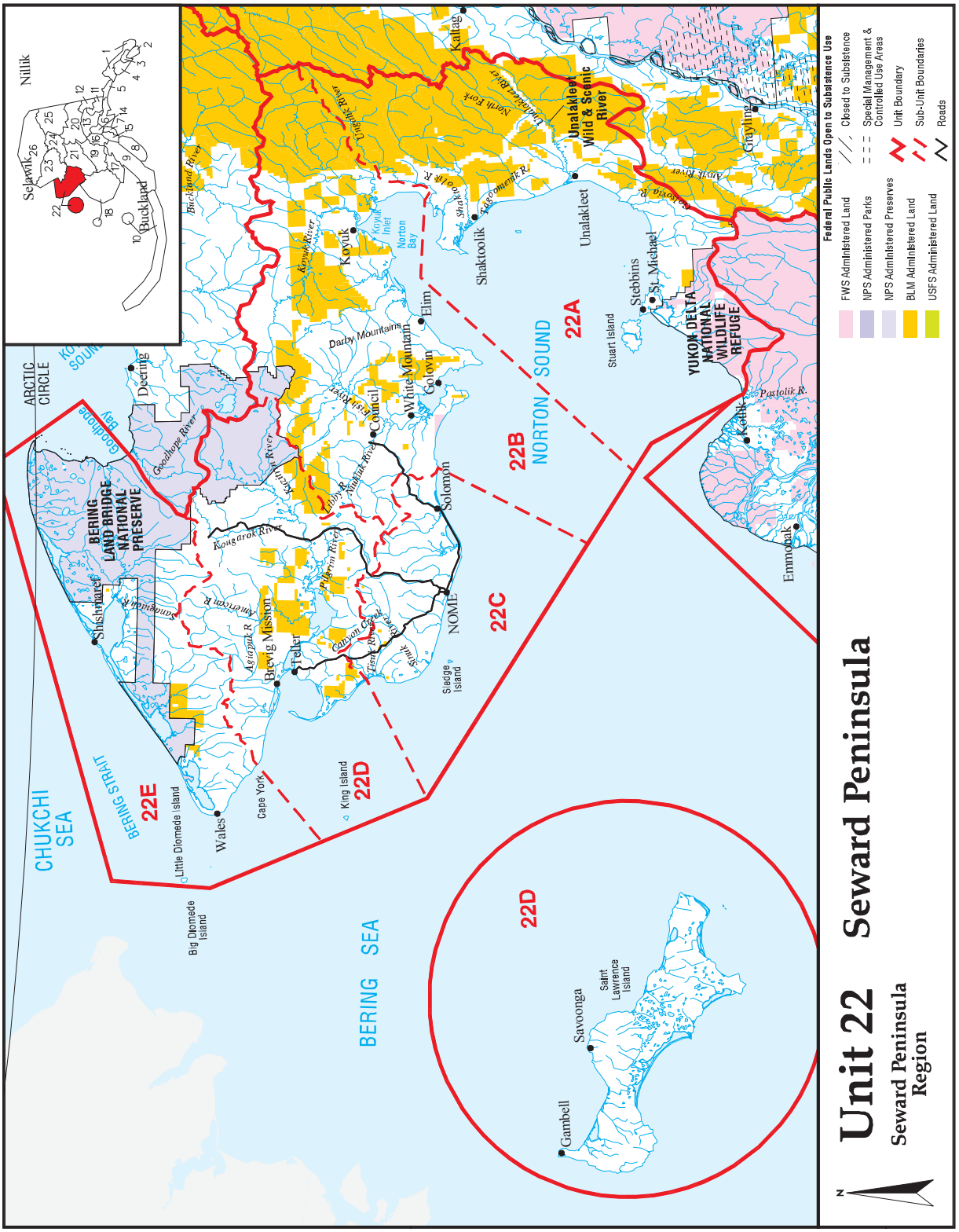
Unit 21

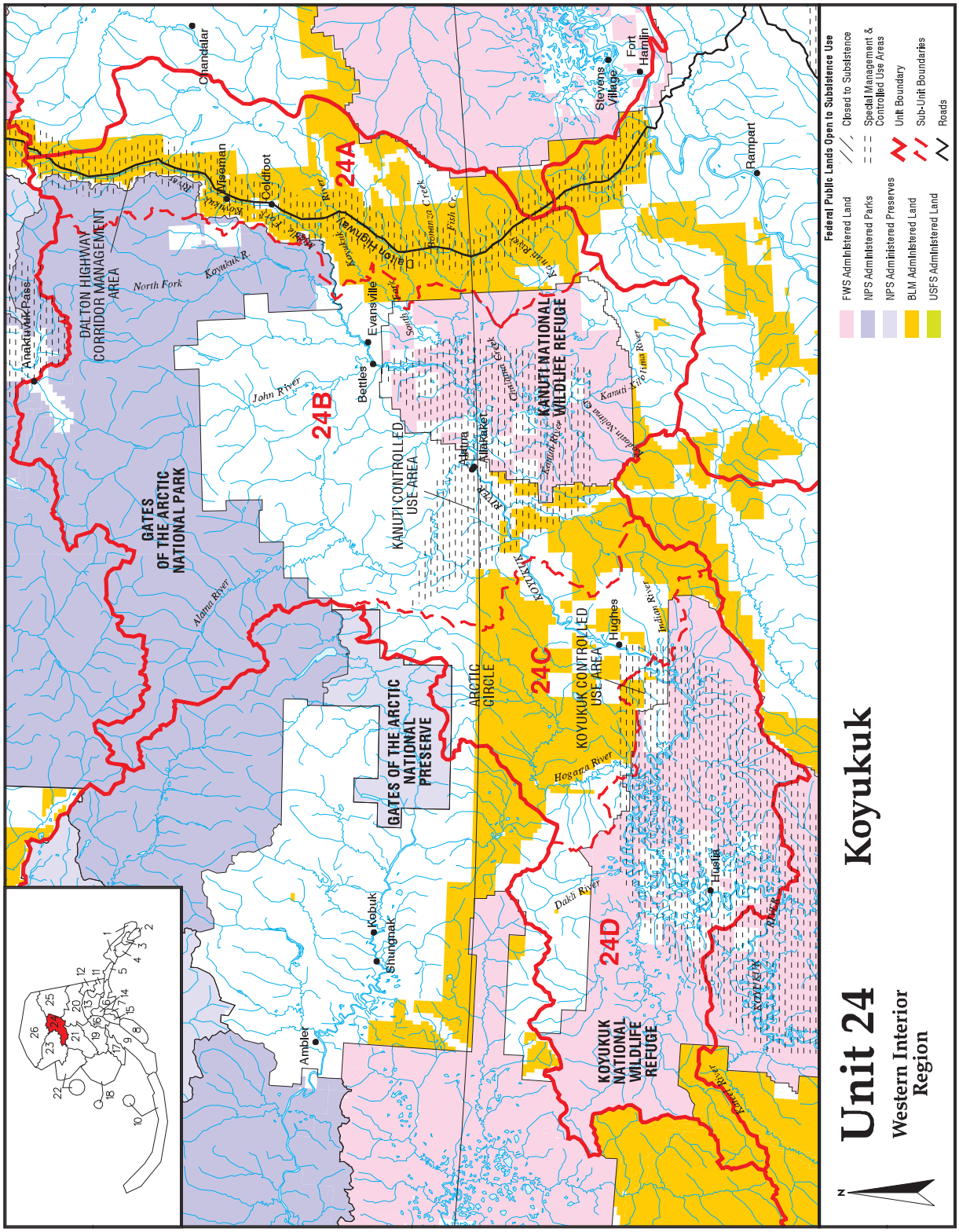
Western Interior Region

Middle Yukon

Federal Public Lands Open to Subsistence Use

- FWS Administered Land
- NPS Administered Parks
- NPS Administered Preserves
- BLM Administered Land
- USFS Administered Land
- Closed to Subsistence
- Special Management & Controlled Use Areas
- Unit Boundary
- Sub-Unit Boundaries
- Roads


Unit 22
Seward Peninsula
Seward Peninsula Region
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads
CHUKCHI SEA
BERING SEA
BERING STRAIT
NORTON SOUND
ARCTIC CIRCLE
BERING LAND BRIDGE NATIONAL PRESERVE
YUKON DELTA NATIONAL WILDLIFE REFUGE
Unalakleet Wild & Scenic River
22A
22B
22C
22D
22E
Nilik
Selawik
Buckland
Deering
Shishmaref
Wales
Little Diomede Island
Big Diomede Island
Cape York
King Island
Brevig Mission
Teller
NOME
Sledge Island
Solomon
Elim
Koyuk
Shaktoolik
Kaltag
Unalakleet
Stebbins
St. Michael
Stuart Island
Grayling
Kotlik
Emmonak
Gambell
Savoonga
Saint Lawrence Island
Darby Mountains
White Mountain
Golovin
Council
Koyuk Inlet
Norton Bay
Buckland River
Goodhope River
Kougarok River
Pilgrim River
Fish River
Canyon Creek
Tisuk River
Kuzitrin River
Shaktoolik River
Unalakleet River
North Fork
Yukon River
Pastolik R.
Stuart Island


Unit 24
Western Interior Region
Koyukuk
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads
24A
24B
24C
24D
GATES OF THE ARCTIC NATIONAL PARK
GATES OF THE ARCTIC NATIONAL PRESERVE
DALTON HIGHWAY CORRIDOR MANAGEMENT AREA
KANUTI CONTROLLED USE AREA
KANUTI NATIONAL WILDLIFE REFUGE
KOYUKUK CONTROLLED USE AREA
KOYUKUK NATIONAL WILDLIFE REFUGE
ARCTIC CIRCLE
Anaktuvuk Pass
Chandalar
Wiseman
Coldfoot
Evansville
Bettles
Allakaket
Alatna
Hughes
Stevens Village
Fort Hamlin
Rampart
Ambler
Shungnak
Kobuk
Huslia
Aldrin River
John River
North Fork
Koyukuk R.
Dalton Highway
Kanuti River
Hogatza River
Dakli River
Indian River
Kanuti Flat
Alatna River

WP12-01 Executive Summary	
General Description	Proposal WP12-01, submitted by the Brown Bear Claw Handicraft Working Group, requests that prior to selling a handicraft incorporating a brown bear claw(s), the hide or claw(s) not attached to a hide, must be sealed by an authorized Alaska Department of Fish and Game (ADF&G) representative and that a copy of the ADF&G sealing certificate would then accompany the handicraft when sold.
Proposed Regulation	**Definitions and Utilization of Wildlife** *§___.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a brown bear 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, or 26.* *(i) In Units 1, 2, 3, 4, and 5, you may sell handicraft articles made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of a brown bear taken from Units 1, 4, or 5.* *(ii) ~~[Reserved]~~* ***Prior to selling a handicraft incorporating a brown bear claw(s), the hide or claw(s) not attached to a hide, must be sealed by an authorized ADF&G representative.*** *(A)* ***A copy of the ADF&G sealing certificate must accompany the handicraft when sold.***
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	

continued on next page

WP12-01 Executive Summary *(continued)*	
Northwest Arctic Regional Council Recommendation	
Eastern Interior Regional Council Recommendation	
North Slope Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**1 Support**

DRAFT STAFF ANALYSIS
WP12-01

ISSUES

Proposal WP12-01, submitted by the Brown Bear Claw Handicraft Working Group, requests that prior to selling a handicraft incorporating a brown bear claw(s), the hide or claw(s) not attached to a hide, must be sealed by an authorized Alaska Department of Fish and Game (ADF&G) representative and that a copy of the ADF&G sealing certificate would then accompany the handicraft when sold.

DISCUSSION

This proposal is a compromise reached by the members of the Brown Bear Claw Handicraft Working Group (Working Group). The proposal addresses concerns originally raised by the State of Alaska with Federal regulations that allow the sale of handicrafts that include brown bear claws from bears that are taken under Federal subsistence regulations. The Working Group suggested that deferred Proposals WP08-05 and WP10-02 be opposed (see deferred Proposal WP10-02), and that Proposal WP12-01 be submitted. The intent of the proposal is to protect subsistence users who incorporate brown bear claws into handicrafts for sale by providing proof that the claws are from brown bears that were harvested by Federally qualified subsistence users. Having proof that the claws are from subsistence-harvested brown bears could provide added value to a handicraft, as it would clearly identify that the claws are from a legally harvested brown bear. Requiring that a copy of the sealing certificate accompany the handicraft would provide a method of tracking legally harvested brown bears, but also would require modification to the sealing certificate, which is managed by the State of Alaska, to include a place on the certificate indicating that the bear was harvested by a Federally qualified subsistence user.

Existing Federal Regulation

Definitions and Utilization of Wildlife

§___.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a brown bear 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, or 26.

(i) In Units 1, 2, 3, 4, and 5, you may sell handicraft articles made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of a brown bear taken from Units 1, 4, or 5.

(ii) [Reserved].

Proposed Federal Regulation

Definitions and Utilization of Wildlife

§___.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a brown bear 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, or 26.

(i) In Units 1, 2, 3, 4, and 5, you may sell handicraft articles made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of a brown bear taken from Units 1, 4, or 5.

(ii) ~~[Reserved]~~ ***Prior to selling a handicraft incorporating a brown bear claw(s), the hide or claw(s) not attached to a hide, must be sealed by an authorized ADF&G representative.***

(A) ***A copy of the ADF&G sealing certificate must accompany the handicraft when sold.***

Existing State Regulations

5AAC 92.200. Purchase and sale of game

In accordance with AS 16.05.920(a) and 16.05.930(e), the purchase, sale, or barter of game or any part of game is permitted except as provided in this section.

Except as provided in 5AAC 92.031, a person may not purchase, sell, barter, advertise or otherwise offer for sale or barter:

(1) any part of a bear, except an article of handicraft made from the fur of a bear;

In 2005, the State of Alaska, Board of Game began to allow the sale of raw bear hides, with claws attached, harvested in specific predator control management areas under a State permit.

5 AAC 92.031. Permit for selling skins, skulls, and trophies

(c) After the skin and skull is sealed as required under 5 AAC 92.165(a) , a person may sell the untanned skin, with claws attached, and skull of a black bear taken in an active predator control area listed in 5 AAC 92.125 only under a permit issued by the department.

(d) After the skin and skull is sealed as required under 5 AAC 92.165(a) , a person may sell the untanned skin, with claws attached, and skull of a brown bear taken in an active brown bear predator control area listed in 5 AAC 92.125 only under a permit issued by the department.

(e) In this section, "active" means that predator control permits have been issued for the referenced predator control area during the current year.

Extent of Federal Public Lands

Proposed regulations would apply to all Federal public lands in Units 1-5, 9A-C, 12, 17, 20, 23, 24B (only that portion within Gates of the Arctic National Park), 25, or 26, as defined by Federal subsistence hunting regulations.

Customary and Traditional Use Determinations

The customary and traditional use determinations for brown bear for all units in the State are included in **Appendix A**.

Regulatory History

The Board has consistently rejected attempts to remove brown bear claws as a legal item with which Federally qualified users can make handicrafts for sale. Retaining the use of claws in handicrafts for sale is consistent with previous Board action, and is not expected to significantly increase harvests, as described in previous analyses.

The Board has provided for the sale of handicrafts made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of brown bears by Federally qualified subsistence users where required. The intent of the Board has been to allow Federally qualified subsistence users to fully utilize the above-listed parts of bears legally harvested under Federal subsistence regulations. It has not been the intent of the Board to create a commercial incentive to harvest bears based on the sale of bear handicrafts.

The following is a brief summary of regulatory actions taken by the Board regarding the sale of handicrafts made from bear parts.

May 2002 — The Board adopted regulations allowing the sale of handicrafts made from the "fur" of black bear (statewide regulation).

May 2004 — The Board adopted regulations allowing the sale of handicrafts made from the "fur" of brown bear taken in Eastern Interior, Bristol Bay, and Southeast regions. The Board also clarified its intent to maintain the Federal definition of "fur," which includes claws.

May 2005 — The Board adopted regulations that:

- Modified the definition of the term *handicraft*.
- Modified the definition of the terms *skin, hide, pelt, and fur*.
- Modified regulatory language to clarify that bear claws can be used in handicrafts for sale. (The previous language allowing the sale of handicrafts made with bear claws specifically referred to bear fur, with the reference to claws contained in the definition of fur. With the old language it was not obvious to most readers that the use of claws was permitted. This action by the Board did not authorize any new uses.)
- Allowed the sale of handicrafts in Units 1–5 made from bones, teeth, sinew, or skulls of bears taken in those units.

May 2006 — The Board rejected proposed regulations to prohibit the sales of handicrafts made from bear claws to businesses. However, the Board did adopt regulatory language that prohibits handicraft sales that constitute a "significant commercial enterprise."

May 2007 — The Board rejected proposed regulations that claws be removed from the Federal definition of fur and that sales of handicraft articles made from claws, bones, teeth, sinew, or skulls of black and brown bears be allowed for sale only between Federally qualified subsistence users statewide.

May 2008 — The Board deferred a proposed regulation governing the use of brown bear claws in handicrafts for sale. The proposal 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. The proposal also stated that sales of brown bear handicrafts made of claws, bones, teeth, sinew, or skulls should occur only between Federally qualified subsistence users. The deferment pended on the formation of a working group to address the issue of developing a method of tracking brown bear claws made into handicrafts for sale. The working group would include representatives from all interested Subsistence Regional Advisory Councils (Councils) and State and Federal staff (FSB 2008:102-119).

May 2010 — The Board was presented with an update of the working group.

Brown Bear Claw Handicraft Working Group

The Brown Bear Claw Handicraft Working Group was composed of representatives from nine of the ten Councils, staff from ADF&G, and staff of Federal agencies. The working group met over several occasions between 2009 and 2011 to discuss a range of issues relating to brown bear claws including their uses in handicrafts, the feasibility of tracking, and potential changes to regulations. An initial scoping meeting between Federal and State staff was held in January 2009; at that meeting a draft charge was developed[1]. A briefing was provided to the Councils during the Winter 2009 meeting cycle on the status of the working group, and Councils selected representatives to participate in the working group. The first working group meeting occurred in June 2009. Federal and State staff conducted further research and met twice in the summer of 2009 to discuss research questions and issues. Staff provided another briefing to the Councils on the status of the working group at the Fall 2009 Council meetings.

The working group met again in July 2010 and discussed changing the Federal subsistence regulations over the sale of handicrafts incorporating brown bear claws. The group posed that if these regulations were to change, that the new regulations not be burdensome to subsistence users. The working group also discussed the Convention on International Trade in Endangered Species agreement and sealing requirements, which affect subsistence users who wish to sell handicrafts that incorporate brown bear claws.

The working group came to consensus in July 2010 to recommend that the Board reject deferred Proposal WP10-02 that had been submitted in 2008 (numbered in 2008 as WP08-05) and submit a new proposal. The working group suggested the new proposal require sealing a brown bear only if the subsistence user intends to sell a handicraft incorporating brown bear claw(s). The results of the July 2010 meeting, including the working group's suggested proposal language, were taken to nine of the ten Councils during the Fall 2010 meeting cycle to seek input from the Councils. The Councils also were notified that a new proposal would come before them in the fall of 2011 and before the Board in January of 2012. The working group had requested that the Councils' comments and suggestions be brought back to the working group for their consideration prior to finalizing a proposal. The working group held a teleconference March 2011 to hear the comments and suggestions from the Councils. At its March 2011 meeting, the working group developed a new proposal, WP12-01, requesting that prior to selling a handicraft incorporating a brown bear claw, the hide or claws not attached to a hide, must be sealed by an authorized ADF&G representative. To assure that the handicraft came from a brown bear hide that had been harvested by a Federally qualified subsistence user, a copy of the ADF&G sealing certificate would be required to accompany the handicraft when sold.

Biological Background

Brown bears range throughout most of Alaska, except the islands of the Aleutian Chain west of Unimak and the southeast Alaska islands south of Frederick Sound. Brown bear populations throughout most of Alaska are generally stable and occupy all of their historic range (Miller 1993). Throughout the State, brown bear population densities are diverse and vary according to food availability. On the North Slope where food is scarce, bear densities can be as low as one bear every 300 miles. Brown bear densities as high as one brown bear per mile have been recorded in coastal areas with healthy salmon runs. Brown

1 Draft charge for working group: 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.

bear density is moderate in interior Alaska where the average is one bear per 15–23 miles (Eide et al. 2008).

The following quote from *Ursus* (2002) may provide a clearer picture of the status of brown and other bears:

> Despite our rapidly increasing knowledge of bears, there are few places in the world where we really know how bear populations are faring…Assessments of bear populations often are based on records of dead animals and trends in habitat availability. These data produce dubious indications of population trends. Case studies relating to the trade in bear parts, sport harvests, and nuisance kills indicate that records of human-killed bears may not be accurate and may not necessarily reflect changes in population size. Increasing bear populations may continue to rise with increased levels of human exploitation (as long as it is below the maximum sustainable take), whereas declining populations may continue to plummet despite reduced exploitation. Ironically, bear populations that have been managed for sustained harvests have generally fared better than populations in which hunting has been prohibited, mainly because the former better controls illicit hunting than the latter (Garshelis 2002: 321–334).

There is no evidence to indicate that Federal subsistence regulations have led to an increased legal or illegal harvest of brown bears or that current Federal subsistence regulations adversely affect brown bear populations.

Effects of the Proposal

Adopting the proposal would provide some protection to subsistence users who incorporate brown bear claws into handicrafts for sale by providing proof that the claws are from brown bears that were harvested by Federally qualified subsistence users. By requiring that a copy of the sealing certificate accompany the handicraft, it would clearly identify that the claws are from a legally harvested brown bear. It is possible that having proof that the claws are from a subsistence-harvested brown bear could provide added value to a handicraft, as it would identify that the claws are from a legally-harvested brown bear. Adopting the proposal would only add an additional requirement of sealing the brown bear hide for those who are selling a handicraft incorporating a brown bear claw. In those units where sealing is already required (see **Table 1**), this proposal would have no substantial effect on subsistence users. If adopted, the proposal would require additional paperwork requirements to some subsistence users, which could be a burden to those users.

The sealing certificate would require modification so that there would be a space for indicating that the bear was harvested by a Federally qualified subsistence user. Sealing certificates are managed by the State of Alaska.

There is no known evidence to indicate that current Federal subsistence regulations adversely affect brown bear populations, nor that Federal subsistence regulations have led to an increased legal or illegal harvest of brown bears.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-01.

Table 1. Handicraft, salvage, and sealing requirements for brown bears harvested under Federal Subsistence Management Regulations*

	Unit																			
Regulation	1	2	3	4	5	6–8	9	10–11	12	13–16	17	18	19	20	21	22	23	24	25	26
__.25(j)(7) Authorized to sell handicrafts made from skin, hide, pelt, or fur, including claws, of a brown bear taken from the below units:	X	X	X	X	X		A, B, C, E		X		X			X		X	X	B[1]	X	X
__.25(j)(7)(i) In Units 1-5, authorized to sell handicrafts made from skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of a brown bear taken from the below units:	X			X	X															
__.25(j)(2)(ii) The hide of brown bears need not be salvaged in units:					X		B				X	X	A[2], B		D	X	X	X		A
__.26(j)(2) You may not possess or transport from Alaska the untanned skin or skull of a bear unless both have been sealed; sealing is not required for bears taken in the below units unless removed from the area.					X		B, E				X	X	A, B[3]		D	X	X	X		A
__.26(j)(3) You must keep a bear skin and skull together until both are sealed; this provision and sealing is not required for bears taken in the below units unless removed from the area. If sealed, ADF&G will remove a rudimentary premolar tooth.					X		B, E				X	X	A, B[3]		D	X	X	X		A
__.26(j)(3)(ii) If the skin or skull of a bear taken in the below units are removed from the area, you must have it sealed in Bethel, Dillingham, or McGrath; ADF&G will retain the skin of the skull and front claws.							B				X	X	A, B[3]							
__.26(j)(3)(iii) If the skin or skull of a bear taken in the below units are removed from the area or taken for commercial tanning within the area, you must first have it sealed in Barrow, Galena, Nome, or Kotzebue; ADF&G will retain the skin of the skull and front claws.															D	X	X	X		A
__.26(j)(3)(iv) If the skin or skull of a bear taken in the below units are removed from the area, you must first have it sealed in Yakutat.					X															
__.26(j)(3)(v) If the skin or skull of a bear taken in the below units are removed from the unit, you must first have it sealed; ADF&G will retain the skin of the skull and front claws.							E													

* See 50 CFR 100 for exact regulatory text.
[1] only in that portion within Gates of the Arctic National Park; [2] portions of; [3] downstream of and including the Aniak River drainage.

Justification

Previous action of the Board has been consistent with Section 803 of ANILCA, which includes the "making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption." This proposal would provide some protection to subsistence users who incorporate brown bear claws into handicrafts for sale by providing proof that the claws are from brown bears that were harvested by Federally qualified subsistence users. Requiring a copy of the sealing certificate to accompany the handicraft would clearly identify that the claws are from a legally-harvested brown bear. Value could be added to the handicraft, because the sealing certificate would identify that the claws are from a legally-harvested brown bear. Those subsistence users who harvest brown bears from units where sealing is already required would not be affected by this proposal. It is not anticipated that this proposal would adversely affect brown bear populations.

There is no known evidence to indicate that current Federal subsistence regulations adversely affect brown bear populations and there is no evidence to indicate that Federal subsistence regulations have led to an increased legal or illegal harvest of brown bears.

Requiring that a copy of the sealing certificate accompany the handicraft would provide a method of tracking legally-harvested brown bears, but also would require modification to the sealing certificate, which is managed by the State of Alaska, to include a place on the certificate indicating that the bear was harvested by a Federally qualified subsistence user.

LITERATURE CITED

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FWS. 1982. Brown bear (Ursus arctos). Pages 247–248 in FWS. Initial report baseline study of fish, wildlife and their habitats. Anchorage, AK.

Garshelis, D. 2002. Misconceptions, Ironies, and Uncertainties Regarding Trends in Bear Populations. Ursus 13:321–334.

Miller, S. D. 1993. Brown bears in Alaska: a statewide management overview. Wildlife Tech. Bull. #11. ADF&G, Division of Wildlife Conservation. 40 pages.

APPENDIX A

The customary and traditional use determinations for brown bear for all units in the State are included below.

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
1	Unit 1A—Rural residents of Unit 1A, except no Federal subsistence priority for residents of Hyder Unit 1B—Rural residents of Unit 1A, Petersburg and Wrangell, except no Federal subsistence priority for residents of Hyder Unit 1C—Rural residents of Unit 1C, Haines, Hoonah, Kake, Klukwan, Skagway, and Wrangell, except no Federal subsistence priority for residents of Gustavus Unit 1D—Rural residents of Unit 1D	1 bear every four regulatory years by State registration permit only
2		
3		
4	Rural residents of Unit 4 and Kake	1 bear every four regulatory years by State registration permit only
5	Rural residents of Yakutat	1 bear by Federal registration permit only
6	No Federal subsistence priority	No Federal open season
7	No Federal subsistence priority	No Federal open season
8	Rural residents of Old Harbor, Akhiok, Larsen Bay, Karluk, Ouzinkie, and Port Lions	1 bear by Federal registration permit only. Up to 1 permit may be issued in Akhiok; up to 1 permit may be issued in Karluk; up to 3 permits may be issued in Larsen Bay; up to 2 permits may be issued in Old Harbor; up to 2 permits may be issued in Ouzinkie; and up to 2 permits may be issued in Port Lions.

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
9	Unit 9A—Residents of Pedro Bay Unit 9B—Rural residents of Unit 9B Unit 9C—Rural residents of Unit 9C Unit 9D—Rural residents of Units 9D and 10 (Unimak Island) Unit 9E—Residents of Chignik, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point, Ugashik, and Port Heiden/Meshik	Units 9A, 9C, and 9D: *see Special Provisions* for the communities of False Pass, King Cove, Cold Bay, Sand Point, and Nelson Lagoon. Unit 9B, Lake Clark National Park and Preserve—Residents of Nondalton, Illiamna, Newhalen, Pedro Bay, and Port Alsworth only—1 bear by Federal registration permit only. The season will be closed when 4 females or 4 bears have been taken, whichever occurs first. Unit 9B remainder—1 bear by State registration permit only Unit 9E—1 bear by Federal registration permit only
10	Unit 10—Rural residents of Units 9D and 10 (Unimak Island)	No Federal open season. *See Special Provisions for the communities of False Pass, King Cove, Cold Bay, Sand Point, and Nelson Lagoon for Unit 10.*
11	Unit 11, north of the Sanford River—Residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Slana, Tazlina, Tonsina, and Units 11 and 12 Unit 11 remainder—Residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Slana, Tazlina, Tonsina, and Unit 11	1 bear
12	Rural residents of Unit 12, Dot Lake, Chistochina, Gakona, Mentasta Lake, and Slana	1 bear
13	Rural residents of Unit 13 and Slana	1 bear—Bears taken within Denali National Park must be sealed within 5 days of harvest. That portion within Denali National Park will be closed by announcement of the superintendent after 4 bears have been harvested
14	Unit 14A—All rural residents Units 14B and 14C—No Federal subsistence priority	No Federal open season
15	No Federal Subsistence priority	
16	No Federal subsistence priority	

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
17	Unit 17A—Rural residents of Unit 17, and rural residents of Akiak, Akiachak, Goodnews Bay and Platinum Units 17A and 17B, those portions north and west of a line beginning from the Unit 18 boundary at the northwest end of Nenevok Lake, to the southern point of Upper Togiak Lake, and northeast to the northern point of Nukakuk Lake, northeast to the point where the Unit 17 boundary intersects the Shotgun Hills—Rural residents of Kwethluk Unit 17B, that portion draining into Nuyakuk Lake and Tikchik Lake—Rural residents of Akiak and Akiachak Units 17B and 17C—Rural residents of Unit 17	1 bear by State registration permit only *Contact ADF&G for permit details*
18	Residents of Akiachak, Akiak, Eek, Goodnews Bay, Kwethluk, Mountain Village, Napaskiak, Platinum, Quinhagak, St. Marys and Tuluksak	1 bear by State registration permit only
19	Units 19A and 19B—Rural residents of Units 19 and 18 within the Kuskokwim River drainage upstream from and including) the Johnson River Unit 19C—No Federal subsistence priority Unit 19D—Rural residents of Units 19A and 19D, Tuluksak, and Lower Kalskag	Units 19A and 19B, those portions which are downstream of and including the Aniak River drainage—1 bear by State Registration permit only Unit 19A remainder; Unit 19B remainder; and Unit 19D—1 bear Unit 19C—No Federal open season
20	Unit 20E—Rural residents of Unit 12 and Dot Lake Unit 20F—Rural residents of Unit 20F, Stevens Village and Manley Unit 20 remainder—All rural residents	Unit 20A—1 bear Unit 20E—1 bear Unit 20 remainder—1 bear
21	Rural residents of Units 21 and 23	Unit 21D—1 bear by State registration permit only Unit 21 remainder—1 bear
22	Unit 22—Rural residents of Unit 22	Units 22A, 22B, 22D, and 22E—1 bear by State registration permit only Unit 22C—1 bear by State registration permit only
23	Rural residents of Units 21 and 23	Unit 23, except the Baldwin Peninsula north of the Arctic Circle—1 bear by State registration permit only Unit 23 remainder—1 bear every four years

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
24	Unit 24, that portion south of caribou mountain and on public lands within and adjacent to the Dalton Highway Corridor Management Area—Rural Residents of Unit 24 and Stevens Village Unit 24 remainder—Rural residents of Unit 24	1 bear by State registration permit
25	Unit 25D—Rural residents of Unit 25D Unit 25 remainder—Residents of Unit 25 and Eagle	Units 25A and 25B—1 bear Unit 25C—1 bear Unit 25D—1 bear
26	Rural residents of Unit 26, except the Prudhoe Bay-Deadhorse Industrial Complex), Anaktuvuk Pass, and Point Hope	Unit 26A—1 bear by State registration permit only Unit 26B—1 bear Unit 26C—1 bear

WRITTEN PUBLIC COMMENTS

Support. No justification was provided.

Gates of the Arctic Subsistence Resource Commission

WP10-02 (Deferred) Executive Summary	
General Description	Proposal WP10-02 (deferred proposal WP08-05) requested clarification of the existing Federal Subsistence management regulation governing the use of brown bear claws in handicrafts for sale. The proposal 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. *Submitted by the Alaska Department of Fish and Game*
Proposed Regulation	*§___.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur,* ***not*** *including claws, of a brown bear ~~taken from Units 1–5, 9A–C, 9E, 12, 17, 20, or 25~~.* *(i) ~~In Units 1, 2, 3, 4, and 5~~,* ***If you are a Federally qualified subsistence user,*** *you may sell handicraft articles made from the ~~skin, hide, pelt, fur~~, claws, bones, teeth, sinew, or skulls of a brown bear* ***to another Federally qualified subsistence user*** *~~taken from Units 1, 4, or 5~~.* *(ii) [Reserved].*
OSM Preliminary Conclusion	**Take no action**
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

WP10-02 (Deferred) Executive Summary *(continued)*	
North Slope Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP10-02 *(DEFERRED WP08-05)*

Proposal WP10-02 (deferred proposal WP08-05), submitted by the Alaska Department of Fish and Game (ADF&G), requested clarification of the existing Federal Subsistence management regulation governing the use of brown bear claws in handicrafts for sale. The proposal 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 ADF&G. The original deferment pended on the formation of a working group to address the issue of developing a method of tracking brown bear claws made into handicrafts for sale. In 2008, the Board voted unanimously to defer the proposal. 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). In 2010, the Board was presented with an update of the working group. The Board agreed to continue to defer WP10-02 until the working group could meet again and come to a consensus on a future plan or proposal.

The Brown Bear Claw Handicraft Working Group (Working Group) was composed of representatives from nine of the ten Councils, staff from ADF&G, and staff of Federal agencies. The Working Group met several times between 2009 and 2011 to discuss a range of issues relating to brown bear claws including their uses in handicrafts, the feasibility of tracking, and potential changes to regulations. An initial scoping meeting between Federal and State staff was held in January 2009; at that meeting a draft charge was developed[1]. A briefing was provided to the Councils (except Western) during the Winter 2009 meeting cycle on the status of the Working Group, and the Councils selected representatives to participate in the Working Group. The first Working Group meeting occurred in June 2009. Federal and State staff conducted further research and met twice in the summer of 2009 to discuss research questions and issues. Staff provided another briefing to the Councils (except Western) on the status of the Working Group at the Fall 2009 Council meetings.

The Working Group met again in July 2010 and discussed changing the Federal subsistence regulations concerning the sale of handicrafts incorporating brown bear claws. The group posed that if these regulations were to change, that the new regulations not be burdensome to subsistence users. The Working Group also discussed the Convention on International Trade in Endangered Species agreement and sealing requirements, which affect subsistence users who wish to sell handicrafts that incorporate brown bear claws.

The Working Group came to consensus in July 2010 to recommend that the Board reject deferred Proposal WP10-02 that had been submitted in 2008 (numbered in 2008 as WP08-05) and that a new proposal should be submitted. The Working Group suggested the new proposal (WP12-01) require sealing a brown bear only if the subsistence user intends to sell a handicraft incorporating brown bear claw(s). The results of the July 2010 meeting, including the Working Group's suggested proposal, were taken to nine of the ten Councils during the Fall 2010 meeting cycle to seek input from the Councils. The Councils also were notified that a new proposal would come before them in the fall of 2011 and before the Board

1 Draft charge for working group: 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.

in January of 2012. The Working Group had requested that the Councils' comments and suggestions be brought back to the Working Group for their consideration prior to finalizing a proposal. The Working Group held a teleconference March 2011 to hear the comments and suggestions from the Councils. At its March 2011 meeting, the Working Group developed a new proposal, WP12-01, requesting that prior to selling a handicraft incorporating a brown bear claw, the hide or claws not attached to a hide, must be sealed by an authorized ADF&G representative. To assure that the handicraft came from a brown bear hide that had been harvested by a Federally qualified subsistence user, a copy of the ADF&G sealing certificate would be required to accompany the handicraft when sold.

No analysis was written regarding deferred Proposal WP08-05 (WP10-02). Nothing has changed since the analysis of Proposal WP08-05 was presented to the Board in May of 2008 (see Appendix A).

Analysis of Proposal WP12-01 is presented separately.

OSM PRELIMINARY CONCLUSION

Take no action on Proposal WP10-02 (deferred proposal WP08-05).

Justification

Proposal WP08-05 (and subsequently WP10-02) was deferred by the Board pending the recommendations of the Brown Bear Claw Handicraft Working Group. The Working Group compromised on a proposed regulation that would address concerns originally raised by the State of Alaska with Federal regulations that allow the sale of handicrafts that include brown bear claws from bears that are taken under Federal Subsistence regulations. The recommendation of the Working Group is to oppose Proposals WP08-05/WP10-02 and for the Board to consider Proposal WP12-01 in place of Proposals WP08-05/WP10-02. Proposal WP12-01, submitted by the Working Group, would continue to allow selling a handicraft incorporating brown bear claws in specific units, while requiring sealing the brown bear hide only when the handicraft incorporating the claw(s) is sold. Analysis of Proposal WP12-01 is presented separately. The State of Alaska intends to request that the Board withdraw deferred proposals WP10-02 (WP08-05) at the January 2012 Board meeting (Yuhas 2011, pers. comm.).

LITERATURE CITED

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

Yuhas. 2011. State-Federal Subsistence Liaison Team Leader. Alaska Department of Fish and Game, State of Alaska. Anchorage, AK.

APPENDIX A

STAFF ANALYSIS
WP08-05

ISSUES

Proposal WP08-05, submitted by the Alaska Department of Fish and Game (ADF&G), requests 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.

It should be noted that within the Proposed Federal Regulation, the regulatory language, as presented, would preclude all sales of brown bear claws unless amended. This language is found in §___.25(j)(7) and includes "not including claws" which would supersede the language in the next passage which, as written, is intended to allow the sale of handicrafts that include brown bear claws only between Federally qualified subsistence users.

DISCUSSION

The proponent submitted this proposal in order to refine Federal regulations, which, in its view, allow for "unconstrained commercial sale of handicrafts made from brown bear parts" and create "market incentives for poaching." Between 2002 and 2007, the Federal Subsistence Board (Board) considered seven proposals regarding the sale of handicrafts made from some of the nonedible parts of bears. Throughout this period, the Board has consistently provided for the sale of handicrafts made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, and skulls of brown bear taken by Federally qualified subsistence users from units where these practices are considered appropriate.

The proponent's description of persons eligible to sell handicrafts made with these parts would increase the types of bear parts eligible for sale in much of the State, but would narrow sales only to those between Federally qualified rural residents.

Many of the proponent's requests are based on conservation concerns (ADF&G 2008). There are many well documented conservation concerns connected to the illegal trade of bear parts such as gall bladders, bile, and paws. These concerns exist because of the lucrative markets for what is referred to as the "traditional Chinese medicine" trade and Asian "wildlife cuisine" which includes the meat of bear paws (not including claws) (HSUS 2008, Garshelis and McLellan 2008, Garshelis 2002, Williamson and Phipps 1999). These types of illegal trade are a threat to bears in North America and around the world. On the other hand, there appears to be an absence of documentation regarding conservation concerns related to bear claws and bear claw handicrafts. This absence seems to indicate that the effects of the trade or sale of bear claws is not comparable to the trade and sale of bear gall bladders and paws.

Existing Federal Regulation

Definitions & Utilization of Wildlife

§___.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, including claws, of a brown bear taken from Units 1–5, 9A–C, 9E, 12, 17, 20, or 25.

(i) In Units 1, 2, 3, 4, and 5, you may sell handicraft articles made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of a brown bear taken from Units 1, 4, or 5.

(ii) [Reserved].

Proposed Federal Regulation

Definitions & Utilization of Wildlife

§___.25(j)(7) If you are a Federally qualified subsistence user, you may sell handicraft articles made from the skin, hide, pelt, or fur, ***not*** *including claws, of a brown bear ~~taken from Units 1–5, 9A–C, 9E, 12, 17, 20, or 25~~.*

(i) ~~In Units 1, 2, 3, 4, and 5~~, ***If you are a Federally qualified subsistence user,*** *you may sell handicraft articles made from the ~~skin, hide, pelt, fur~~, claws, bones, teeth, sinew, or skulls of a brown bear* ***to another Federally qualified subsistence user*** *~~taken from Units 1, 4, or 5~~.*

(ii) [Reserved].

Existing State Regulations

5AAC 92.200. Purchase and sale of game

In accordance with AS 16.05.920(a) and 16.05.930(e), the purchase, sale, or barter of game or any part of game is permitted except as provided in this section.

Except as provided in 5AAC 92.031, a person may not purchase, sell, barter, advertise or otherwise offer for sale or barter:

(1) any part of a bear, except an article of handicraft made from the fur of a bear;

In 2005, the State of Alaska, Board of Game began to allow the sale of raw bear hides, with claws attached, harvested in specific predator control management areas under a State permit.

5 AAC 92.031. Permit for selling skins, skulls, and trophies

(c) After the skin and skull is sealed as required under 5 AAC 92.165(a) , a person may sell the untanned skin, with claws attached, and skull of a black bear taken in an active predator control area listed in 5 AAC 92.125 only under a permit issued by the department.

(d) After the skin and skull is sealed as required under 5 AAC 92.165(a) , a person may sell the untanned skin, with claws attached, and skull of a brown bear taken in an active brown bear predator control area listed in 5 AAC 92.125 only under a permit issued by the department.

(e) In this section, "active" means that predator control permits have been issued for the referenced predator control area during the current year.

Extent of Federal Public Lands

Proposed regulations would apply to all Federal public lands in Alaska, as defined by Federal Subsistence hunting regulations. Federal public lands represent approximately 60% of Alaska or 380,000 square miles.

Customary and Traditional Use Determinations

The customary and traditional use determinations for brown bear for all units in the State are included in **Appendix A**.

Regulatory History

The following is a brief summary of regulatory actions taken by the Board regarding the sale of handicrafts made from bear parts.

May 2002 — The Board adopted regulations allowing the sale of handicrafts made from the "fur" of black bear (statewide regulation).

May 2004 — The Board adopted regulations allowing the sale of handicrafts made from the "fur" of brown bear taken in Eastern Interior, Bristol Bay, and Southeast regions. The Board also clarified its intent to maintain the Federal definition of "fur," which includes claws.

May 2005 — The Board adopted regulations that:

- Modified the definition of the term *handicraft*.
- Modified the definition of the terms *skin, hide, pelt, and fur*.
- Modified regulatory language to clarify that bear claws can be used in handicrafts for sale. (The previous language allowing the sale of handicrafts made with bear claws specifically referred to bear fur, with the reference to claws contained in the definition of fur. With the old language it was not obvious to most readers that the use of claws was permitted. This action by the Board did not authorize any new uses.)
- Allowed the sale of handicrafts in Units 1–5 made from bones, teeth, sinew, or skulls of bears taken in those units.

May 2006 — The Board rejected proposed regulations to prohibit the sales of handicrafts made from bear claws to businesses. However, the Board did adopt regulatory language that prohibits handicraft sales that constitute a "significant commercial enterprise."

May 2007 — The Board rejected proposed regulations that claws be removed from the Federal definition of fur and that sales of handicraft articles made from claws, bones, teeth, sinew, or skulls of black and brown bears be allowed for sale only between Federally qualified subsistence users statewide.

Biological Background

Brown bears range throughout most of Alaska, except the islands of the Aleutian Chain west of Unimak and the southeast Alaska islands south of Frederick Sound. Brown bear populations throughout most of Alaska are generally stable and occupy all of their historic range (Miller 1993). Throughout the State, brown bear population densities are diverse and vary according to food availability. On the North Slope

where food is scarce, bear densities can be as low as one bear every 300 miles. Brown bear densities as high as one brown bear per mile have been recorded in coastal areas with healthy salmon runs. Brown bear density is moderate in interior Alaska where the average is one bear per 15–23 miles (Eide and Miller 1994 and 2003).

The following quote from *Ursus* (2002) may provide a clearer picture of the biological status of brown and other bears:

> Despite our rapidly increasing knowledge of bears, there are few places in the world where we really know how bear populations are faring…Assessments of bear populations often are based on records of dead animals and trends in habitat availability. These data produce dubious indications of population trends. Case studies relating to the trade in bear parts, sport harvests, and nuisance kills indicate that records of human-killed bears may not be accurate and may not necessarily reflect changes in population size. Increasing bear populations may continue to rise with increased levels of human exploitation (as long as it is below the maximum sustainable take), whereas declining populations may continue to plummet despite reduced exploitation. Ironically, bear populations that have been managed for sustained harvests have generally fared better than populations in which hunting has been prohibited, mainly because the former better controls illicit hunting than the latter (Garshelis 2002: 321–334).

Effects of the Proposal

Under current Federal subsistence regulations, brown bear fur with claws can only be used to make handicrafts for sale if the bears were harvested from units in Eastern Interior, Bristol Bay and Southeast Alaska. Other parts, such as bones teeth, sinew, or skulls can only be used in handicrafts for sale from brown bear taken in Southeast Alaska. The proponent's description of persons eligible to sell handicrafts made with these parts would increase the types of bear parts eligible for sale in much of the State, but would narrow all sales only to those between Federally qualified rural residents. The removal of unit-specific restrictions would negate the intent of the Board and the Regional Advisory Councils in recognizing the diverse customary and traditional uses of bears and bear parts throughout the State. These diverse customary and traditional uses are reflected in Regional Advisory Council recommendations. Three proposals (WP08-12, WP08-52 and WP08-53) which request the inclusion of Units 11, 23, 24B and 26 for eligibility to sell brown bear handicrafts with claws have been submitted for the 2008–2010 wildlife regulatory cycle and are analyzed separately.

Previous Board action provided for the sale of handicrafts made from bear claws by Federally qualified subsistence users to consumers including and other than Federally qualified subsistence users. Restricting sales solely to other Federally qualified rural residents, as proposed, will satisfy the need to use these products for regalia and cultural events in rural areas; however, the proposed regulatory language will not allow for handicraft sales to a variety of consumers, which is desired by subsistence users to support themselves and their families in a contemporary cash-subsistence economy.

The Board has also consistently rejected attempts to remove brown bear claws as a legal item with which Federally qualified users can make handicrafts for sale. Retaining the use of claws in handicrafts for sale is consistent with previous Board action, and is not expected to significantly increase harvests, as described in previous analyses.

The Board has provided for the sale of handicrafts made from the skin, hide, pelt, fur, claws, bones, teeth, sinew, or skulls of brown bears by Federally qualified subsistence users where appropriate. The intent of

the Board has been to allow Federally qualified subsistence users to fully utilize the above-listed parts of bears legally harvested under Federal subsistence regulations. It has not been the intent of the Board to create a commercial incentive to harvest bears based on the sale of bear handicrafts.

There is no known evidence to indicate that current Federal subsistence regulations adversely affect brown bear populations, nor that Federal subsistence regulations have led to an increased legal or illegal harvest of brown bears.

OSM CONCLUSION

Oppose proposal WP08-05.

Justification

Previous action of the Board has been consistent with Section 803 of ANILCA, which includes the "making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption." This proposal would unnecessarily restrict the subsistence uses of Federally qualified subsistence users as specified in ANILCA Section 803. There is no evidence to indicate that current Federal regulations adversely affect bear populations, nor has any been provided. Further, there has been no evidence provided to indicate that current Federal regulations have led to an increased legal or illegal harvest of bears. If adopted, this proposal would broaden the use of some of the nonedible parts of brown bear into regions where use is not allowed under current Federal regulations. The residents of a number of these regions have stated, through their Regional Subsistence Advisory Councils, they are opposed to inclusion in these regulations.

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WP08-05
APPENDIX A

The customary and traditional use determinations for brown bear for all units in the State are included below.

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
1	*Unit 1A—Rural residents of Unit 1A, except no Federal subsistence priority for residents of Hyder* *Unit 1B—Rural residents of Unit 1A, Petersburg and Wrangell, except no Federal subsistence priority for residents of Hyder* *Unit 1C—Rural residents of Unit 1C, Haines, Hoonah, Kake, Klukwan, Skagway, and Wrangell, except no Federal subsistence priority for residents of Gustavus* *Unit 1D—Rural residents of Unit 1D*	1 bear every four regulatory years by State registration permit only
2		
3		
4	*Rural residents of Unit 4 and Kake*	Unit 4, Chichagof Island south and west of a line that follows the crest of the island from Rock Point to Rodgers Point, including Yakobi and other adjacent islands; Baranof Island south and west of a line which follows the crest of the island from Nisnemi Point to the entrance of Gut Bay and including Kruzof and other adjacent islands—One bear every four regulatory years by State permit only
5	*Rural residents of Yakutat*	1 bear by Federal registration permit only
6	*No Federal subsistence priority*	No Federal open season
7	*No Federal subsistence priority*	No Federal open season

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
8	*Rural residents of Old Harbor, Akhiok, Larsen Bay, Karluk, Ouzinkie, and Port Lions*	1 bear by Federal registration permit only. Up to 1 permit may be issued in Akhiok; up to 1 permit may be issued in Karluk; up to 3 permits may be issued in Larsen Bay; up to 2 permits may be issued in Old Harbor; up to 2 permits may be issued in Ouzinkie; and up to 2 permits may be issued in Port Lions.
9	*Unit 9A—Residents of Pedro Bay* *Unit 9B—Rural residents of Unit 9B* *Unit 9C—Rural residents of Unit 9C* *Unit 9D—Rural residents of Units 9D and 10 (Unimak Island)* *Unit 9E—Residents of Chignik, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point, Ugashik, and Port Heiden/Meshik*	Units 9A, 9C, and 9D: *see Special Provisions* for the communities of False Pass, King Cove, Cold Bay, Sand Point, and Nelson Lagoon. Unit 9B, Lake Clark National Park and Preserve—Residents of Nondalton, Illiamna, Newhalen, Pedro Bay, and Port Alsworth only—1 bear by Federal registration permit only. The season will be closed when 4 females or 4 bears have been taken, whichever occurs first. Unit 9B remainder—1 bear by State registration permit only Unit 9E—1 bear by Federal registration permit only
10	*Unit 10—Rural residents of Units 9D and 10 (Unimak Island)*	No Federal open season. *See Special Provisions for the communities of False Pass, King Cove, Cold Bay, Sand Point, and Nelson Lagoon for Unit 10.*
11	*Unit 11, north of the Sanford River—Residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Slana, Tazlina, Tonsina, and Units 11 and 12* *Unit 11 remainder—Residents of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Slana, Tazlina, Tonsina, and Unit 11*	1 bear
12	*Rural residents of Unit 12, Dot Lake, Chistochina, Gakona, Mentasta Lake, and Slana*	1 bear

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
13	*Rural residents of Unit 13 and Slana*	1 bear—Bears taken within Denali National Park must be sealed within 5 days of harvest. That portion within Denali National Park will be closed by announcement of the superintendent after 4 bears have been harvested
14	*Unit 14A—All rural residents* *Units 14B and 14C—No Federal subsistence priority*	No Federal open season
15	*No Federal Subsistence priority*	
16	*No Federal subsistence priority*	
17	*Unit 17A—Rural residents of Unit 17, and rural residents of Akiak, Akiachak, Goodnews Bay and Platinum* *Units 17A and 17B, those portions north and west of a line beginning from the Unit 18 boundary at the northwest end of Nenevok Lake, to the southern point of Upper Togiak Lake, and northeast to the northern point of Nukakuk Lake, northeast to the point where the Unit 17 boundary intersects the Shotgun Hills—Rural residents of Kwethluk* *Unit 17B, that portion draining into Nuyakuk Lake and Tikchik Lake—Rural residents of Akiak and Akiachak* *Units 17B and 17C—Rural residents of Unit 17*	1 bear by State registration permit only *Contact ADF&G for permit details*
18	*Residents of Akiachak, Akiak, Eek, Goodnews Bay, Kwethluk, Mountain Village, Napaskiak, Platinum, Quinhagak, St. Marys and Tuluksak*	1 bear by State registration permit only
19	*Units 19A and 19B—Rural residents of Units 19 and 18 within the Kuskokwim River drainage upstream from and including) the Johnson River* *Unit 19C—No Federal subsistence priority* *Unit 19D—Rural residents of Units 19A and 19D, Tuluksak, and Lower Kalskag*	Units 19A and 19B, those portions which are downstream of and including the Aniak River drainage—1 bear by State Registration permit only Unit 19A remainder; Unit 19B remainder; and Unit 19D—1 bear Unit 19C—No Federal open season
20	*Unit 20E—Rural residents of Unit 12 and Dot Lake* *Unit 20F—Rural residents of Unit 20F, Stevens Village and Manley* *Unit 20 remainder—All rural residents*	Unit 20A—1 bear Unit 20E—1 bear Unit 20 remainder—1 bear

Unit	C & T determination for Brown Bear	Harvest Limits for Brown Bear
21	*Rural residents of Units 21 and 23*	Unit 21D—1 bear by State registration permit only Unit 21 remainder—1 bear
22	*Unit 22—Rural residents of Unit 22*	Units 22A, 22B, 22D, and 22E—1 bear by State registration permit only Unit 22C—1 bear by State registration permit only
23	*Rural residents of Units 21 and 23*	Unit 23, except the Baldwin Peninsula north of the Arctic Circle—1 bear by State registration permit only Unit 23 remainder—1 bear every four years
24	*Unit 24, that portion south of caribou mountain and on public lands within and adjacent to the Dalton Highway Corridor Management Area—Rural Residents of Unit 24 and Stevens Village* *Unit 24 remainder—Rural residents of Unit 24*	1 bear by State registration permit
25	*Unit 25D—Rural residents of Unit 25D* *Unit 25 remainder—Residents of Unit 25 and Eagle*	Units 25A and 25B—1 bear Unit 25C—1 bear Unit 25D—1 bear
26	*Rural residents of Unit 26, except the Prudhoe Bay-Deadhorse Industrial Complex), Anaktuvuk Pass, and Point Hope*	Unit 26A—1 bear by State registration permit only Unit 26B—1 bear Unit 26C—1 bear

WP12-02 Executive Summary	
General Description	Proposal WP12-02 requests that only people 60 years of age or older, or disabled, be allowed to designate their harvest limit to another person. *Submitted by Michael Cronk of Tok*
Proposed Regulation	**§___.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.** *(e) Hunting by designated harvest permit.* *If you are a Federally qualified subsistence user (recipient)* ***who is 60 years of age or older, or disabled****, you may designate another Federally qualified subsistence user to take deer, moose and caribou on your behalf unless you are a member of a community operating under a community harvest system or unless unit-specific regulations in §___.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time, unless otherwise specified in unit-specific regulations in §___.26.*
OSM Preliminary Conclusion	**Oppose**
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	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**1 support with modification** to include windows.

DRAFT STAFF ANALYSIS
WP12-02

ISSUES

Proposal WP12-02, submitted by Michael Cronk of Tok, Alaska, requests that only people 60 years of age or older, or disabled, be allowed to designate their harvest limit to another person.

DISCUSSION

The proponent claims that statewide regulations allow a person to harvest an unlimited number of animals per hunting season as long as he or she first obtains a designated hunter permit. The proponent explains that he supported the adoption of a designated hunter regulation to allow hunters to harvest animals for elders and others unable to hunt for themselves. The proponent further describes the problems that now exist with the designated hunter system: increasing numbers of people that formerly did not hunt are now getting designated hunter permits and hunting; hunters gathering designated hunter permits in order to continue hunting after harvesting their individual harvest limit; and hunters receiving designated hunter permits for their children but not hunting with their children and thereby not passing on knowledge of how to hunt. The proponent declares that these uses were not the intent of the Federal Subsistence Board when adopting the regulation, the abuses will continue, and wildlife populations could suffer unless limits are added to the designated hunter system.

Existing Federal Regulation

§___.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.

(e) Hunting by designated harvest permit.

If you are a Federally qualified subsistence user (recipient), you may designate another Federally qualified subsistence user to take deer, moose and caribou on your behalf unless you are a member of a community operating under a community harvest system or unless unit-specific regulations in §___.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time, unless otherwise specified in unit specific regulations in §___.26.

Proposed Federal Regulation

§___.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.

(e) Hunting by designated harvest permit.

If you are a Federally qualified subsistence user (recipient) ***who is 60 years of age or older, or disabled****, you may designate another Federally qualified subsistence user to take deer, moose and caribou on your behalf unless you are a member of a community operating under a community harvest system or unless unit-specific regulations in §___.26 preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. The designated hunter must obtain a designated hunter permit and must return a completed harvest*

report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time, unless otherwise specified in unit-specific regulations in §___.26.

Relevant Federal Regulation

Unit-specific regulations that preclude or modify the designated hunter system exist for five management units. They are Units 6, 9, 22, 23, and 26 (see **Appendix A**).

Existing State Regulation

The State of Alaska provides for the transfer of harvest limits from one person to another through its proxy hunting program (5 AAC 92.011; see Appendix B). **Table 1** is a side-by-side comparison of the State's proxy system to the Federal designated hunter system.

Table 1. State Proxy System compared to Federal Designated Hunter System.

State of Alaska Proxy System	Federal Subsistence Management Program Designated Hunter System
Applies where there is an open State harvest season.	Applies to Federal public lands when there is an open Federal harvest season.
Applies to caribou, deer, and moose.	Applies to caribou, deer, and moose.
Available to a hunter who is blind, physically disabled, or 65 years of age or older.	Available to Federally qualified subsistence users.
Either the recipient or the hunter may apply for the authorization.	Recipient may designate another Federally qualified subsistence user on his/her behalf.
No person may be a proxy for more than one recipient at a time.	A person may hunt for any number of recipients, but may have no more than two harvest limits in his/her possession at any one time.
Antler destruction is required for all species.	No antler destruction.

Extent of Federal Public Land

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% Fish and Wildlife Service, and 6% Forest Service lands.

Regulatory History

Prior to 2003, the Board adopted designated hunter regulations for 21 unit-specific hunts, and there were differences in how the regulations addressed the designated hunter system (see FSB 2003). In 2003, the Board established the statewide designated hunter system for deer, caribou, and moose, leaving the option for unit-specific regulations to include other species and special provisions (68 FR 38466. June 27, 2003). The Board was supported by the majority of Regional Advisory Councils and the Interagency Staff Committee (FSB 2003).

As mentioned earlier, instances exist in unit-specific regulations that preclude or modify the use of the designated hunter system or allow the harvest of additional species by a designated hunter. For example, in Unit 6 special provisions exist for moose, deer, black bear, beaver, and goat; in Unit 9 for caribou; in Unit 10 for caribou; in Unit 22 for muskoxen; in Unit 23 for sheep and muskoxen; and in Unit 26 for sheep and muskoxen (**Appendix A)**.

Customary and Traditional Uses

Designated hunter provisions provide recognition of the customary and traditional practices of sharing and redistribution of harvests. A plethora of research supports a need for a designated hunter system in Federal subsistence regulations to harmonize fundamental harvesting characteristics of rural Alaska communities with the Federal Subsistence Management Program. Sahlins (1972) observed that 20% to 30% of households in "family-based production" could be expected to fail to produce enough food to feed themselves. Family-based production is the foundation of the mixed subsistence-cash economy found in most rural Alaskan communities (cf. Wolfe 1981, 1987; Wolfe and Walker 1987; Wolfe et al. 1984). Family-based production is when households linked by kinship distribute the responsibility to harvest, process, and store wild resources based on factors such as skills and abilities, availability of able workers, sufficient income to purchase harvesting and processing technology, and other factors. Sahlins' (1972) observation has been repeated in subsistence studies conducted in rural Alaska communities (cf. Andrews 1988; Magdanz, Utermohle, and Wolfe 2002; Sumida 1989; Sumida and Andersen 1990). While predominantly-Native communities differ somewhat concerning family-based food production patterns, Wolfe et al. (2007) showed that some of the characteristics apply to culturally-mixed rural communities in Southeast Alaska as well. The common variables that affected household food production in rural Alaska in the late 20th century were: commercial fishing involvement, males over 15 years, age of elders, and single person households. Commercial fishing involvement and three or more males over 15 years correlated with households with relatively high wild food production. Older elders and single person households correlated with households with relatively low wild food production. Wolfe et al. (2007) observed that on a statewide basis it was not uncommon for about 30% of the households in a community to produce about 70% or more of the community's wild food harvest. Households in the higher harvesting third of households were called "super-households" based on Wolfe's (1987) research in rural Alaska communities.

The analysis of Proposal WP95-04, concerning a transferable moose harvest limit in Unit 5, described the rationale for the adoption of the proposal. The passage is repeated here because it continues to be relevant, describes the "super-household" phenomenon described above, and provides the primary rationale for the structure of the statewide designated hunter system in regulation today.

> [The designated hunter system] legalizes a traditional practice that is already going on. Within the individual harvest limits, some hunters cannot fulfill both the requirements of their own household and those of the people with whom they share. The proposal would permit hunters to harvest moose expressly for sharing.
>
> In every society, the ratio of producers to dependents is strongly influenced by the ecological setting and dominant mode of production. In societies with hunting and gathering economies (termed "subsistence" in Alaska), the proportion of producers ranges from approximately 50 to 70 percent. However, not all producers are hunters; some are engaged in processing foods. Consequently, it is common for a single hunter, in the northern context, to harvest resources for four or more individuals.

> Domestic units may pass through several developmental stages with widely varying ratios of producers to dependents. For example, a household in its early stages of development, with infants and small children, is different from a domestic unit headed by a middle-aged couple with several unmarried adult children. During later stages a household may be composed exclusively of elderly post-productive people. In any stage of development, households may contain members who are unable to or do not choose to harvest for themselves. Single-parent families are another category of households, which may rely on others to supply them with resources.
>
> Like households, individual producers also pass through developmental stages with distinctive productive capacities. A considerable amount of an apprentice harvester or processor's effort is consumed in learning. Conversely, individuals in their final productive years are primarily engaged with education and supervisory tasks rather than the direct procurement and processing of resources. Hence, the majority of production is accomplished by that segment of a population that, while having mastered requisite skills, is free of the responsibilities and physical impairments acquired with advancing adulthood. Finally, regardless of stage of development, all producers do not possess equal skills, abilities, and aptitudes. Each community has a minority of good hunters, trappers, and fishers.
>
> Inequalities in individual and household productive capacities are equalized via processes of distribution (sharing and feasting) and exchange (trade and barter). The nature, magnitude, and geographic extent of distributive processes are highly variable across households, communities, societies, and time periods (FSB 1995:31–32).

It is due to the variable nature of the distribution process, mentioned in the final paragraph of the passage above, that the Federal Subsistence Board, based on the recommendations of the majority of Regional Advisory Councils and the Interagency Staff Committee (FSB 2003), adopted the statewide designated hunter provisions that are in current Federal regulations (§___.25(e)). The Board considered, but did not adopt, a statewide provision that would restrict designators to only elderly or disabled subsistence users. However, based on a review of past analyses from 1993 to 2003, it is clear that the Board anticipated receiving requests to adopt unit-specific regulations that would preclude or modify the designated hunter system.

Harvest History

The designated hunter permit database is maintained at the Office of Subsistence Management (FWS 2011). Table 2 describes the use of the designated hunter system since 2003 when the statewide system was instituted by the Federal Subsistence Board. The data show the cumulative use for the 2003–2009 regulatory years. Designated hunters hunted for caribou, deer, moose, and sheep only. Based on Table 2, it is clear that a large majority of the harvest by designated hunter was deer, and the majority of permits were used in Southeast Alaska (Units 1–5). The portion of the total harvest taken by designated hunters for any one species was highest in Unit 3 for deer (8.9% of the harvest was taken by designated hunters), Unit 12 for caribou (7.0%), and Unit 5 for deer (5.7%); however, designated hunters generally harvested less than 2% of the total harvest for any one species in any single unit (**Table 2**).

People requesting to designate another hunter are not asked to indicate a disability, and therefore, data concerning the number of people with disabilities that designate a hunter could not be presented in the analysis.

Table 2. Use of designated hunter system based on completed harvest reports, 2003-2009 cumulative (ADF&G 2011, FWS 2011).

	Designated Hunters Only		All Hunters[a]	
Management Unit	Number of Permits Used (Hunted)	Number of Animals Harvested	Number of Animals Harvested	Percentage Harvested by Designated Hunters
Caribou				
9	6	4	2,376	0.2%
12	23	14	199	7.0%
13	100	43	11,600	0.4%
17	11	10	4,819	0.2%
18	2	1	2,894	0.0%
20	14	6	5,007	0.1%
Total (2003-2009)	156	78	26,895	0.3%
Moose				
1	1	1	1,122	0.1%
3	1	1	315	0.3%
5	4	4	314	1.3%
6	33	18	848	2.1%
11	4	4	356	1.1%
13	12	12	4,757	0.3%
15	1	1	3,193	0.0%
19	7	7	1,938	0.4%
24	8	1	1,164	0.1%
25	2	2	1,215	0.2%
26	1	1	96	1.0%
Total (2003-2009)	74	52	15,318	0.3%
Deer				
1	11	18	4,166	0.4%
2	92	105	13,697	0.8%
3	211	314	3,537	8.9%
4	224	407	30,366	1.3%
5	2	7	122	5.7%
6	1	3	14,653	<0.1%
8	134	225	31,894	0.7%
Total (2003-2007)[b]	675	1,079	98,435	1.1%
Sheep				
23	3	2	123	1.6%
Total (2003-2009)	3	2	123	1.6%

[a] All hunters including Federally qualified, non-Federally qualified, and nonresidents of the state.

[b] Harvest by all hunters available to 2007 only.

Some age data is available for the 2009 and 2010 regulatory years. For the 2009 and 2010 regulatory years combined, of the 1,108 people who designated another hunter, age data is available for only 80 people. Of the 80 people, 3 (4%) were 18-years of age or younger, 59 (74%) were age 19 to 59, and 18 (23%) were 60 or older (**Table 3**).

Table 3. The age of designators, based on the age of 80 out of a total of 1,108 people who designated another hunter during the 2009 and 2010 regulatory years (FWS 2011).

	Permits issued		Permits used		Animals taken	
Age of designators	Number	Percentage	Number	Percentage	Number	Percentage
18 years and younger	3	4%	3	4%	1	3%
19-59 years	59	74%	50	75%	28	70%
60 years and older	18	23%	14	21%	11	28%
Total	80	100%	67	100%	40	100%

Note: percentages may not equal 100 due to rounding.

The designated hunter database at the Office of Subsistence Management compiles limited data on the age of designated hunters because age is not a requirement for designating another hunter (except in Unit 6, see Appendix A). Applications for Federal registration permits request each hunter's age. When a person designates his or her harvest limit to another, the age of the designator is available on the Federal registration permit application; however, some hunts do not require a Federal registration permit. For hunts that do not require a Federal permit, the age of a designator is available on the State hunting license and not readily retrievable. Additionally, Federal registration permit applications ask each hunter to check a box if he or she is designating another hunter; however, this box is usually not checked by those using a designated hunter. Currently, age data is available for people who obtained a Federal registration permit and checked the box indicating they were using a designated hunter for the 2009 and 2010 regulatory years (FWS 2011).

Other Relevant Proposals

Action on this proposal may affect decisions on other wildlife proposals currently under consideration, WP12-10, WP12-11, and WP12-13. All three concern designated hunter provisions in Federal regulations, but none propose restrictions on the designator as does the proposal under consideration in this analysis, WP12-02.

Effects of the Proposal

If this proposal is adopted, only Federally qualified subsistence users who are 60 years of age or older, or disabled, would be allowed to designate another person to take their harvest limit of deer, caribou, and moose—except in Unit 6 where unit-specific regulations allow only those who are either blind, 65 years of age or older, at least 70% disabled, or temporarily disabled to designate a hunter (see **Appendix A**). The extent of impacts on the subsistence users cannot be measured exactly because statistics were only partially gathered to describe the age of those designating a hunter and not whether the user was disabled, noted above. From the information in Table 3, about 77% of the users designating a hunter were under 60 years old and would be prohibited from designating a hunter if this proposal is adopted.

The effect on wildlife populations would depend on the region. In regions where designated hunter use is more common, hunting effort may be eased, but no information has been systematically collected concerning this issue. No effects on other users are anticipated.

If this proposal is not adopted, Federally qualified subsistence users would continue to be allowed to designate another hunter to take their harvest limit of deer, caribou, and moose (except in Unit 6 where additional restrictions are in place, see above). No effects on wildlife populations are anticipated, and no effects on other users are anticipated.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-02.

Justification

Federal subsistence wildlife regulations allow any Federally qualified subsistence user to designate another subsistence user to take his or her harvest limit of deer, caribou, and moose. The designated hunter system supports a valid practice of communal sharing of resources and skills in rural Alaska. While in some regions the designated hunter system is lightly used, nonetheless it provides important regulatory flexibility to accommodate customary and traditional practices.

The proponent raises issues regarding the designated hunter system for the entire state. It is clear that in some regions people are not aware of the permit and their use of the system has not developed but is anticipated to develop as more participate in the formal harvest reporting systems available to them. Additionally, the harvest by designated hunters generally has been a small portion (less than 2%) of the total harvest by all hunters (including Federally qualified users, non-Federally qualified users, and nonresidents of the state, combined). Therefore, a statewide provision restricting the use of the designated hunter system is not supported. In circumstances where evidence is available to clearly warrant, region or unit-specific restrictions could be proposed.

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APPENDIX A

FEDERAL DESIGNATED HUNTER—UNIT SPECIFIC REGULATIONS

§___.26(n) Unit regulations

Unit 6

(ii)(D) A Federally qualified subsistence user (recipient) who is either blind, 65 years of age or older, at least 70 percent disabled, or temporarily disabled may designate another Federally qualified subsistence user to take any moose, deer, black bear, and beaver on his or her behalf in Unit 6, and goat in Unit 6D, unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but may have no more than one harvest limit in his or her possession at any one time;

(E) A hunter younger than 10 years old at the start of the hunt may not be issued a Federal subsistence permit to harvest black bear, deer, goat, moose, wolf, and wolverine;

(F) A hunter younger than 10 years old may harvest black bear, deer, goat, moose, wolf, and wolverine under the direct, immediate supervision of a licensed adult, at least 18 years old. The animal taken is counted against the adult's harvest limit. The adult is responsible for ensuring that all legal requirements are met.

Unit 9

(iii)(E) For Units 9C and 9E only, a Federally qualified subsistence user (recipient) of Units 9C and 9E may designate another Federally qualified subsistence user of Units 9C and 9E to take bull caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report and turn over all meat to the recipient. There is no restriction on the number of possession limits the designated hunter may have in his/her possession at any one time;

(iii)(F) For Unit 9D, a Federally qualified subsistence user (recipient) may designate another Federally qualified subsistence user to take caribou on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than four harvest limits in his/her possession at any one time;

Unit 22

(iii)(E) A Federally qualified subsistence user (recipient) may designate another Federally qualified subsistence user to take musk oxen on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must get a designated hunter permit and must return a completed harvest report. 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 his/her possession at any one time, except in Unit 22E where a resident of Wales or Shishmaref acting as a designated hunter may hunt for any number of recipients, but have no more than four harvest limits in his/her possession at any one time.

Unit 23

(iv)(D) For the Baird and DeLong Mountain sheep hunts—A Federally qualified subsistence user (recipient) may designate another Federally qualified subsistence user to take sheep on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipients' harvest limits in his/her possession at the same time;

(iv)(F) A Federally qualified subsistence user (recipient) may designate another Federally qualified subsistence user to take musk oxen on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must get a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients, but have no more than two harvest limits in his/her possession at any one time.

Unit 26

(iv)(C) In Kaktovik, a Federally qualified subsistence user (recipient) may designate another Federally qualified subsistence user to take sheep or musk ox on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for any number of recipients but may have no more than two harvest limits in his/her possession at any one time;

(iv)(D) For the DeLong Mountain sheep hunts—A Federally qualified subsistence user (recipient) may designate another Federally qualified subsistence user to take sheep on his or her behalf unless the recipient is a member of a community operating under a community harvest system. The designated hunter must obtain a designated hunter permit and must return a completed harvest report. The designated hunter may hunt for only one recipient in the course of a season and may have both his and the recipient's harvest limits in his/her possession at the same time.

APPENDIX B
STATE PROXY HUNTER REGULATIONS

5 AAC 92.011. Taking of game by proxy

(a) A resident hunter (the proxy) holding a valid resident hunting license may take specified game for another resident (the beneficiary) who is blind, physically disabled, or 65 years of age or older, as authorized by AS 16.05.405 and this section.

(d) A person may not be a proxy
(1) for more than one beneficiary at a time;
(2) more than once per season per species in Unit 13;
(3) for Tier II Caribou in Unit 13, unless the proxy is a Tier II permittee.

(j) A proxy participating in a proxy hunt must remove at least one antler from the skull plate or cut the skull plate in half, on an antlered animal, for both the proxy's animal and the beneficiary's animal before leaving the kill site, unless the department has established a requirement that complete antlers and skull plates must be submitted to the department.

(k) Proxy hunting under this section is only allowed for
(1) caribou;
(2) deer; and
(3) moose in Tier II hunts, any-bull hunts, and antlerless moose hunts.

(l) Notwithstanding (k) of this section, proxy hunting is prohibited in the following hunts where the board has determined that the use of the proxy would allow circumvention of harvest restrictions specified by the board:
(1) Unit 20(E) moose and caribou registration hunts;
(2) Units 21(B), 21(C), 21(D), and 24 moose hunts if either the proxy or the beneficiary holds a drawing permit for Units 21(B), 21(C), 21(D), or 24 moose hunts;
(3) Units 9(A) and 9(B), unit 9(C), that portion within the Alagnak River drainage, and units 17(B), 17(C), 18, 19(A), and 19(B) caribou hunts from August 1 through October 31.

WRITTEN PUBLIC COMMENTS

Support with modification to include windows. The designated hunter option is important to traditional subsistence practices and ensuring that animals are harvested correctly.

Gates of the Arctic National Park Subsistence Resource Commission

WP12-03 Executive Summary	
General Description	Proposal WP12-03 would require trappers to move a trap that incidentally harvests a moose, caribou, or deer at least 300 feet for the remainder of the regulatory year. The animal would become the property of the regional management agency. The proposed regulation asks trappers to salvage the edible meat and turn it over to the appropriate agency, but this would not be required. *Submitted by the Orutsararmiut Native Council*
Proposed Regulation	**§____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.** *(a) Definitions.* *Salvage means to transport the edible meat, skull, or hide, as required by regulation, of a regulated fish, wildlife, or shellfish to the location where the edible meat will be consumed by humans or processed for human consumption in a manner which saves or prevents the edible meat from waste, and preserves the skull or hide for human use.* *(j) Utilization of fish, wildlife, or shellfish.* *(1) You may not use wildlife as food for a dog or furbearer, or as bait . . . except for the following:* *(i) The hide, skin, viscera, head, or bones of wildlife.* *(3) You must salvage the edible meat of ungulates, bear, grouse, and ptarmigan.* **§___.26 Subsistence taking of wildlife.** *(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:* *(10) Using a trap to take ungulates or bear.* ***Continuing to take, or attempting to take, furbearers at a site where a moose, caribou, or deer has been taken incidentally is a violation. Any moose, caribou or deer that dies as a result of being caught in a trap or snare, whether found dead or euthanized, becomes the property of the regional management agency. The trapper should salvage edible meat and surrender it to the appropriate agency. A person who salvages and surrenders the edible meat in accordance with this regulation will not be subject to citation. If such an incidental take occurs, the trapper must move all active traps and snares at least 300 feet from the site for the remainder of the regulatory year (July 1 through June 30), and after the ending of the July 1 – June 30 regulatory year, may reset again in the same place or area during subsequent trapping seasons.***

continued on next page

WP12-03 Executive Summary *(continued)*	
OSM Preliminary Conclusion	**Oppose**
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	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-03

ISSUES

Proposal WP12-03, submitted by the Orutsararmiut Native Council, would require trappers to move a trap that incidentally harvests a moose, caribou, or deer at least 300 feet for the remainder of the regulatory year. The animal would become the property of the regional management agency. The proposed regulation asks trappers to salvage the edible meat and turn it over to the appropriate agency, but this would not be required.

DISCUSSION

The proponent intends to protect trappers from enforcement action by more clearly writing a provision into Federal wildlife regulations that is currently only in State wildlife regulations. The proponent indicates that State enforcement officers do not always understand the State regulations concerning the actions trappers must undertake when they take a moose, caribou, or deer incidental to trapping furbearers. The proponent states that trappers have been bothered by State enforcement officers with citations that were later dismissed. Specifically, a trapper was cited for locating a trap at the same location where the trap had incidentally harvested a moose the previous regulatory year. As described below, the activity is allowed in State trapping regulations (5 AAC 92.095(a)(12)). The trapper was freed from having to pay the fine, but had to pay the legal costs of defending himself. It appears the State officer interpreted one year to mean one calendar year (January 1–December 31), while the State regulation indicates one regulatory year (July 1–June 30).

By making this proposal, the Fish and Wildlife Committee of the Orutsararmiut Native Council is responding to concerns brought by tribal members (Roczicka 2011, pers. comm.). The Orutsararmiut Native Council is the Federally recognized Indian Reorganization Act (IRA) Council representing the community of Bethel.

Existing Federal Regulation

§____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.

(a) Definitions.

Salvage means to transport the edible meat, skull, or hide, as required by regulation, of a regulated fish, wildlife, or shellfish to the location where the edible meat will be consumed by humans or processed for human consumption in a manner which saves or prevents the edible meat from waste, and preserves the skull or hide for human use.

(j) Utilization of fish, wildlife, or shellfish.

(1) You may not use wildlife as food for a dog or furbearer, or as bait . . . except for the following:

(i) The hide, skin, viscera, head, or bones of wildlife.

(3) You must salvage the edible meat of ungulates, bear, grouse, and ptarmigan.

§___.26 Subsistence taking of wildlife.

(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

(10) Using a trap to take ungulates or bear.

Proposed Federal Regulation

§____.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.

(a) Definitions.

Salvage means to transport the edible meat, skull, or hide, as required by regulation, of a regulated fish, wildlife, or shellfish to the location where the edible meat will be consumed by humans or processed for human consumption in a manner which saves or prevents the edible meat from waste, and preserves the skull or hide for human use.

(j) Utilization of fish, wildlife, or shellfish.

(1) You may not use wildlife as food for a dog or furbearer, or as bait . . . except for the following:

(i) The hide, skin, viscera, head, or bones of wildlife.

(3) You must salvage the edible meat of ungulates, bear, grouse, and ptarmigan.

§___.26 Subsistence taking of wildlife.

(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

(10) Using a trap to take ungulates or bear. ***Continuing to take, or attempting to take, furbearers at a site where a moose, caribou, or deer has been taken incidentally is a violation. Any moose, caribou or deer that dies as a result of being caught in a trap or snare, whether found dead or euthanized, becomes the property of the regional management agency. The trapper should salvage edible meat and surrender it to the appropriate agency. A person who salvages and surrenders the edible meat in accordance with this regulation will not be subject to citation. If such an incidental take occurs, the trapper must move all active traps and snares at least 300 feet from the site for the remainder of the regulatory year (July 1 through June 30), and after the ending of the July 1 – June 30 regulatory year, may reset again in the same place or area during subsequent trapping seasons.***

Existing State Regulation

5 AAC 92.085. Unlawful methods of taking big game; exceptions

The following methods and means of taking big game are prohibited . . . :

(6) with the use of a trap or snare . . . .

5 AAC 92.095. Unlawful methods of taking furbearers; exceptions

a) The following methods and means of taking furbearers under a trapping license are prohibited . . . :

(12) by placing or leaving an active trap or snare set on land that is within 300 feet of the site at which a moose, caribou, or deer was taken using a trap or snare; this prohibition applies for the duration of the regulatory year in which the moose, caribou, or deer was taken using the trap or snare.

5 AAC 92.210. Game as animal food or bait

A person may not use game as food for a dog or furbearer, or as bait . . . .

5 AAC 92.220. Salvage of game meat, furs, and hides

(d) A person taking game not listed in (a) of this section shall salvage for human consumption all edible meat, as defined in 5 AAC 92.990.

(h) A game animal taken in violation of AS 16 or a regulation adopted under AS 16 is the property of the state.

5 AAC 92.990. Definitions

(49) "salvage" means to transport the edible meat, skull, or hide, as required by statute or regulation, of a game animal or wild fowl to the location where the edible meat will be consumed by humans or processed for human consumption in order to save or prevent the edible meat from waste, and the skull or hide will be put to human use.

16.30.010. Wanton waste of big game animals and wild fowl

(a) It is a class A misdemeanor for a person who kills a big game animal or a species of wild fowl to fail intentionally, knowingly, recklessly, or with criminal negligence to salvage for human consumption the edible meat of the animal or fowl.

Extent of Federal Public Land

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% Fish and Wildlife Service, and 6% Forest Service lands.

Regulatory History

The use of traps to harvest caribou, moose, and deer is prohibited in State and Federal wildlife regulations primarily because traps set for moose, caribou, and deer do not discriminate between animals, such as, cows, bulls, and fawns.

A good estimate of how often moose, caribou, or deer are caught in traps set for furbearers statewide, or by region, is not known at this time (Ardizzone 2011, pers. comm.; Seavoy 2011, pers. comm). State and Federal staff generally assume that low levels of incidental harvests occur and are ongoing. Snare

height above ground, trap location, bait type, location of trail snares, et cetera, are effective techniques to select for targeted furbearers and against non-targeted animals. Occasionally, non-targeted animals are caught, but trappers use techniques to avoid them, and that is one reason there are low levels of incidental harvests (Seavoy 2011, pers. comm.).

Federal regulations require that wildlife caught incidental to trapping furbearers be salvaged (§__.25(j)(3)), and only the hide, skin, viscera, head, or bones may be used for bait (§__.25 (j)(1)(i)).

In 1998, the Alaska Board of Game adopted a proposal (Proposal 103) submitted by ADF&G describing the actions trappers must take when they incidentally harvest a moose, caribou, or deer in a trap; for the remainder of the regulatory year (until June 30), a trapper must move the trap at least 300 feet from the site the animal was taken (5 AAC 92.095(a)(12)). Additionally, the animal must be salvaged (5 AAC 92.220(d)) and its parts cannot be used for bait (5 AAC 92.210). Moving the trap from the site of the incidental harvest denies trappers the benefit of continuing to set a trap at a kill site, which may attract furbearers (ADF&G 1998; Rearden 2011, pers. comm.).

Effects of the Proposal

If this proposal is adopted, Federal subsistence users would be required to move a trap for the remainder of the regulatory year when it has taken a moose, caribou, or deer incidental to trapping furbearers. This would be required if the incidental harvest occurred on Federal public lands using Federal trapping regulations. The use of traps to harvest caribou, moose, and deer is prohibited in Federal and State regulations primarily because traps do not discriminate between animals, such as, cows, bulls, and fawns. However, these animals are occasionally caught in traps set for furbearers. The regulations prohibiting the use of traps and snares are not directed at trappers and are enforced because of the nondiscriminatory nature of the method, just described. Requiring a trapper to move a trap would be a hardship that would not conserve caribou, moose or deer.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-03.

Justification

The clear intent of the proponent is to import State wildlife regulations into Federal wildlife regulations and to clarify their intent to law enforcement officers so that other trappers who comply with State regulations are not cited. However, benefits to Federal subsistence users or resource conservation cannot be demonstrated. The State's concern is ungulate's being used as bait, and it is not in the interest of Federal subsistence users for the Federal Subsistence Management Program to impose this regulation on them.

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Ardizzone, C. 2011. Chief, Wildlife Division. Personal communication: in person. FWS, Office of Subsistence Management, Anchorage, AK.

Rearden, S. 2011. Wildlife biologist. Personal communications: by telephone. FWS, Yukon Delta National Wildlife Refuge, Bethel, AK.

Roczicka, G. 2011. Director, Natural Resources Department. Personal communication: by telephone. Orutsararmiut Native Council, Bethel, AK.

Seavoy, R. 2011. Wildlife biologist. Personal communication: by telephone. ADF&G, Division of Wildlife Conservation, McGrath, AK.

WP12-42 Executive Summary	
General Description	Proposal WP12-42 requests a reduction in the harvest limit and season for caribou in Unit 18. The proposal would reduce the allowable harvest limit from two to one caribou and reduce the season by approximately three months. *Submitted by the Yukon Delta National Wildlife Refuge*
Proposed Regulation	**Unit 18 — Caribou** *Unit 18 — ~~2~~* ***1*** *caribou~~; no more than 1caribou may be a bull; no more than 1 caribou may be taken Aug.1 – Jan. 31~~* ~~*Aug.1 – Mar. 15*~~ ***Aug. 1 – Sept. 30 Dec. 20 – the last day of February***
OSM Preliminary Conclusion	**Oppose**
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-42

ISSUES

Proposal WP12-42, submitted by the Yukon Delta National Wildlife Refuge, requests a reduction in the harvest limit and season for caribou in Unit 18. The proposal would reduce the allowable harvest limit from two to one caribou and reduce the season by approximately three months.

DISCUSSION

The proponent requests to reduce the season and harvest limit for caribou in Unit 18. This request is in response to the declining population of the Mulchatna Caribou Herd (MCH) over the last several years. Reduction of the harvest limit and season length could aid in the recovery of the local caribou population.

Note: The proponent original proposed the winter hunt ending date as February 29th. Since this date is only relevant during leap years, the Office of Subsistence Management changed this portion of the proposed regulation to read as "Dec. 20 – the last day of February."

Existing Federal Regulation

Unit 18 — Caribou

Unit 18 — 2 caribou; no more than 1 caribou may be a bull; no more than 1 caribou may be taken from Aug. 1 – Jan. 31	*Aug. 1 – Mar. 15*

Proposed Federal Regulation

Unit 18 — Caribou

*Unit 18 — ~~2~~ **1** caribou~~; no more than 1caribou may be a bull; no more than 1 caribou may be taken Aug.1 – Jan. 31~~*	*~~Aug.1 – Mar. 15~~* ***Aug. 1 – Sept. 30*** ***Dec. 20 – the last day of February***

Existing State Regulation

Unit 18 — Caribou

Residents — two caribou, no more than 1 bull may be taken, and only one caribou may be taken from Aug. 1 – Jan. 31	*Aug. 1 – Mar 15*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18 and consist of 62% US Fish and Wildlife Service managed lands and 2% Bureau of Land Management managed lands (**See Unit 18 Map**).

Customary and Traditional Use Determinations

Rural residents of Unit 18, St. Michael, Stebbins, Togiak, Twin Hills, Upper Kalskag, and Manokotak have a positive customary and traditional determination for caribou in Unit 18.

Regulatory History

State and Federal regulations for the MCH were liberalized during the dramatic population increase that occurred in the 1990s. These regulations allowed hunters the opportunity to harvest surplus animals. Numerous modifications were made to the Federal regulations for various management units as the MCH population increased and as it expanded into new range. Following the population decline, regulations became more restrictive in 2006 and 2007.

In March 2006, the Alaska Board of Game adopted new state regulations to reduce harvest limits within the range of the MCH from five to two caribou. In March 2007, the Alaska Board of Game further restricted the caribou harvest to allow no more than one bull to be taken, and no more than one caribou to be taken Aug. 1–Jan. 31. In 2007, the Federal Subsistence Board followed suit and adopted Proposal WP07-23 with modification to reduce the harvest limits in Unit 9B, a portion of Unit17A, Unit 17B, a portion of Unit 17C, Unit 18, a portion of Unit 19A, and Unit 19B, from five caribou to three due to a large population decline. In March 2009, the Alaska Board of Game eliminated nonresident harvest on the MCH due to the harvestable surplus being lower than the amount necessary for subsistence.

In 2010, Proposal WP10-51 was submitted by the Bristol Bay Subsistence Regional Advisory Council. This proposal requested that the caribou season in Units 9A, 9B, 17B, a portion of 17C, 18, 19A, and 19B be Aug. 1 – Mar. 31, extending the existing season by 16 days. The Federal Subsistence Board supported the proposal with modification to make the season ending date March 15 for all units. In addition, Proposal WP10-60 was submitted by the Yukon Delta National Wildlife Refuge, requesting that the harvest limit for caribou in Unit 18 be reduced from three to two. The Federal Subsistence Board supported the proposal with modification to include a 1-bull restriction and extend the 1-caribou restriction from Aug. 1 – Nov. 30 to Aug. 1 – Jan. 31.

Biological Background

The ADF&G's management objectives for the MCH were to maintain a population of 100,000–150,000 with a minimum bull:cow ratio of 35:100 and to maximize opportunity to hunt caribou (Woolington 2007). However, at the Feb. 27 – Mar. 9, 2009 southcentral/southeast meeting in Anchorage, the Alaska Board of Game reduced the population objective to 30,000–80,000 caribou, citing that these numbers are more realistic for this herd (ADF&G 2009). The Alaska Board of Game also reduced harvest objectives from 6,000–15,000 to 2,400–8,000 during this meeting (ADF&G 2009). The latest photocensus provided a minimum estimate of 30,000 caribou, near the minimum population objective (**Table 1**) (Woolington 2009). Since 2001, bull:cow ratios have been estimated at less than 35 bulls:100 cows which is below the management objective for the herd (**Table 1**).

The MCH increased at an average annual rate of 17% between 1981 and 1996 and approximately 28% from 1992–1994. Overall herd size peaked in 1996, at approximately 200,000 animals with a peak bull:cow ratio of 42:100 (Woolington 2007). The dramatic population growth is attributed to mild winters, movements onto new unexploited range, low predation, and an estimated annual harvest of less than 5% of the population since the late 1970s (Woolington 2007). Since 1996, the population, bull:cow ratio, and calf:cow ratio have significantly declined (**Table 1**). Possible signs of stress in the MCH include an outbreak of hoof rot in 1998 and low calf:cow ratios in fall 1999 (Woolington 2001).

Table 1. Mulchatna Caribou Herd composition counts and population estimates, 1974-2011 (Woolington 2011).

Regulatory Year	Total bulls: 100 cows	Calves: 100 cows	Calves (%)	Cows (%)	Small bulls (% of bulls)	Medium bulls (% of bulls)	Large Bulls (% of bulls)	Total bulls (%)	Composition sample size	Minimum estimate of herd size
1974/75	55.0	34.9	18.4	---	---	---	---	---	1,846	
1978/79	50.3	64.5	27.6	---	---	---	---	---	758	
1980/81	31.3	57.1	30.0	---	---	---	---	---	2,250	
1981/82	52.5	45.1	22.8	---	---	---	---	---	1,235	
1986/87	55.9	36.9	19.2	---	---	---	---	---	2,172	
1987/88	68.2	60.1	26.3	---	---	---	---	---	1,858	
1988/89	66.0	53.7	24.4	---	---	---	---	---	536	
1993/94	42.1	44.1	23.7	53.7	---	---	---	22.6	5,907	150,000[a]
1996/97	42.4	34.4	19.5	56.6	49.8	28.5	21.7	24.0	1,727	200,000[a]
1998/99	40.6	33.6	19.3	57.4	27.8	43.7	28.5	23.3	3,086	---[b]
1999/00	30.3	14.1	9.8	69.3	59.9	26.3	13.8	21.0	4,731	175,000[c]
2000/01[e]	37.6	24.3	15.0	61.8	46.6	32.9	20.4	23.2	3,894	---[b]
2001/02	25.2	19.9	13.7	68.9	31.7	50.1	18.3	17.7	5,728	---[b]
2002/03	25.7	28.1	18.3	65.0	57.8	29.7	12.5	16.7	5,734	147,000[d]
2003/04[f]	17.4	25.6	17.9	69.9	36.2	45.3	18.5	12.2	7,821	---[b]
2004/05[g]	21.0	20.0	14.2	71.0	64.2	28.9	6.9	14.9	4,608	85,000[h]
2005/06[i]	13.9	18.1	13.7	75.8	55.3	33.3	11.5	10.6	5,211	---[b]
2006/07[j]	14.9	25.5	18.1	71.3	57.5	33.7	8.9	10.6	2,971	45,000[k]
2007/08[l]	23.0	15.8	11.4	72.1	52.7	36.0	11.3	16.6	3,943	---[b]
2008/09[m]	19.3	23.4	16.4	70.1	46.8	36.1	17.1	13.5	3,728	30,000[n]
2009/10[o]	18.5	31.0	20.7	66.9	39.7	43.9	16.3	12.4	4,595	---[b]
2010/11[p]	16.8	19.5	14.3	73.3	30.0	43.7	26.3	12.4	4,592	---[b]

[a] Estimate derived from photo-counts, corrected estimates, subjective estimate of the number of caribou in areas not surveyed, and interpolation between years when aerial photo surveys not conducted.
[b] No current population estimate based on surveys.
[c] Estimate based on photocensus conducted July 8, 1999.
[d] Estimate based on photocensus conducted June 30, 2002.
[e] NOTE: Fall 2000 bull:cow ratio and bull percentages corrected from previous table.
[f] Based on pooling data from surveys conducted 10/11/2003 and 10/14/2003.
[g] Based on pooling data from surveys conducted 10/12/2004 and 10/30/2004.
[h] Estimate based on photocensus conducted July 7, 2004.
[i] Based on pooling data from surveys conducted 10/10/2005 and 10/14/2005.
[j] Based on pooling data from surveys conducted 10/13-14/2006 and 10/22/2006.
[k] Based on photocensus conducted July 11,2006.
[l] Based on pooling data from surveys conducted 10/7-8/2007 and 10/11/2007.
[m] Based on pooling data from surveys conducted 10/7/2008 and 10/8/2008.
[n] Based on photocensus conducted July 7, 2008.
[o] Based on pooling dated from surveys conducted 10/12/2009 and 10/16/2009.
[p] Based on pooling data from surveys conducted 10/10-11/2010 and 10/13/2010.

The MCH ranges across approximately 60,000 square miles, primarily within Units 9B, 9C, 17, 18, and 19. Wintering areas during the 1980s and early 1990s were along the north and west side of Iliamna Lake, north of Kvichak River, but telemetry data indicated the MCH had been moving to the south and west for wintering (Van Daele and Boudreau 1992 *cited* in Woolington 2007). Starting in the mid-1990s, caribou from the MCH began wintering in Unit 18 south of the Kuskokwim River and in southwestern Unit 19B in increasing numbers. During the winter of 2004/05, much of the herd wintered in Unit 18, south of the Kuskokwim River, and another large part of the herd wintered in the middle Mulchatna drainage. During 2005/06, large numbers wintered near the lower Kvichak River (Woolington 2009).

Habitat

There has been no assessment of habitat by ADF&G for the MCH. Taylor (1989) reported that the carrying capacity of traditional winter areas of the herd had been exceeded by the mid to late 1980s and that the herd was having to utilize other areas to continue its growth. It appears that the MCH has been using these non-traditional winter ranges at an ever increasing rate over the last 25 years.

Portions of the herds range are showing signs of heaving use with extensive trailing evident along major travel routes. Woolington (2007) reported that some of the summer and fall range of the MCH in the Nushagak Hills and elsewhere was trampled and showing signs of heavy grazing, while traditional winter ranges on the north and west sides of Iliamna Lake also showed signs of heavy use despite the fact that few caribou appear to continue to utilize these areas.

Harvest History

Harvest on the MCH continues to decline (Woolington 2007). Total reported MCH harvest was 2,171 in 2005, but had declined to 516 by 2008 (ADF&G 2009). The harvest of males was as high as 86% in 1991/92, but decreased to 48% of the reported harvest in 2005/06 (Woolington 2007).

Most of the harvest occurs in August and September (66% in 2004/05 and 47% in 2005/06) (Woolington 2007), with the majority of harvest occurring close to villages on State lands. Additionally, March also accounts for a relatively high amount of the harvest: 10% in 2004/05 increasing to 23% in 2005/06. Data indicates an increase in the proportion of caribou taken during late winter when compared to the harvest chronology for previous years (Woolington 2007).

Reported harvest during the other nine months has always been relatively low. Between 1991–2006, harvest in July accounted for less than 0.2% of the total annual harvest; October, November, December, January, and February accounted for less than 6%; and April accounted for less than 9% (Woolington 2007). It should be noted, however, that these data only account for the reported harvest and some harvest may be occurring that is unreported.

In Unit 18, harvest by both Federally and non-Federally qualified subsistence users has generally declined since 2003, when the reported harvest for the unit was at the highest (**Table 2)**.

Effects of Proposal

If adopted, this proposal would lower the harvest limit to one caribou and reduce the season by approximately three months for Federally qualified subsistence users hunting on Federal lands of Unit 18 under Federal subsistence regulations. These restrictions may help reduce the harvest and help stabilize the MCH population. If adopted, this proposal would result in a misalignment between State and Federal regulations. The proposed one caribou limit would be more restrictive than the States two caribou harvest

Table 2. Unit 18 reported caribou harvest, 2000-2009 (USFWS 2011).

Year	Federally qualified hunters	Non-Federally qualified hunters	Total
2000	121	17	138
2001	309	81	390
2002	145	113	258
2003	435	309	744
2004	295	179	474
2005	372	160	532
2006	234	90	324
2007	329	51	380
2008	210	40	250
2009	192	27	219

limit and hunters could simply choose to hunt under State regulations, thereby limiting the effectiveness of this proposal. At this time, there is no companion State proposal before the Alaska Board of Game to align State and Federal regulations should this proposal pass.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-42.

Justification

This proposal would make the Federal harvest limit and season more restrictive than the State regulations. Even if this proposal is adopted by the Federal Subsistence Board, hunters will still be able to take caribou under State regulations on USFWS and BLM lands in Unit 18 and most local users would still be harvesting close to village communities that are primarily on State and private lands. Therefore, adoption of this proposal by the Federal Subsistence Board will not have the effect sought by the proponent of reducing the harvest. Without alignment with State regulations, the effectiveness of this proposal would be limited, and Federally qualified users would have less opportunity than non-Federally qualified users.

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WP12-43 Executive Summary	
General Description	Proposal WP12-43 requests an extension of the season and an increased harvest limit for lynx under Federal hunting regulations in Unit 18. *Submitted by the Yukon Delta National Wildlife Refuge*
Proposed Regulation	**Unit 18 — Lynx Hunting** ~~*2*~~ ***5*** *lynx* ~~*Nov. 10–Mar. 31*~~ ***Aug. 10–Apr. 30*** **Unit 18 — Lynx Trapping** *No limit* *Nov. 10–Mar. 31*
OSM Preliminary Conclusion	**Support**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	**Support/Neutral.** Dependant upon Board of Game
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-43

ISSUES

Proposal WP12-43, submitted by the Yukon Delta National Wildlife Refuge, requests an extension of the season and an increased harvest limit for lynx under Federal hunting regulations in Unit 18.

DISCUSSION

The proponent states that in addition to being a furbearer, lynx are also a subsistence food resource. Additionally, there is a perception among Federally qualified subsistence users, who harvest a finite number of lynx for food, that they are second tier to commercial trappers who are allowed to harvest an unlimited number of lynx in a trapping season.

Existing Federal Regulation

Unit 18 — Lynx Hunting

2 lynx	*Nov. 10–Mar. 31*

Unit 18 — Lynx Trapping

No limit	*Nov. 10–Mar. 31*

Proposed Federal Regulation

Unit 18 — Lynx Hunting

*~~2~~ **5** lynx*	*~~Nov. 10–Mar. 31~~* ***Aug. 10–Apr. 30***

Unit 18 — Lynx Trapping

No limit	*Nov. 10–Mar. 31*

Current State Regulation

Unit 18 — Lynx Hunting

2 lynx	*Nov. 10–Mar. 31*

Unit 18 — Lynx Trapping

No limit	*Nov. 10–Mar. 31*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18, and consist of 62% FWS and 2% BLM managed lands (Unit Map 18).

Customary and Traditional Use Determinations

All rural residents have a positive customary and traditional use determination for lynx in Unit 18.

Regulatory History

In 1990, the Federal Subsistence Board adopted temporary subsistence regulations for lynx hunting and trapping that aligned with State regulations. Since inception, the Federal lynx hunting regulations in Unit 18 consisted of a Nov. 10–Mar. 31 season with a harvest limit of two lynx.

Current Events Involving Species

The proponent states that a similar proposal for lynx in Unit 18 will go before the Board of Game during the November 2011 through March 2012 meeting schedule (Sundown 2011, pers. comm.).

Biological Background

Lynx populations are cyclic throughout the northern portion of their range, with highs and lows occurring approximately every 8 to 11 years (Koehler and Aubry 1994, Quinn and Parker 1999). Population cycles are closely tied to fluctuations in snowshoe hare abundance. Lynx have a high population growth potential and when hare populations are high, lynx populations are associated with high kitten survival, increased reproductive rates for yearlings, and increased litter sizes (Koehler and Aubry 1994). Likewise, when hare numbers are low, these population parameters are low and lynx populations decline.

Lynx are associated with boreal forests and their distribution is tied to that of the snowshoe hare (Koehler and Aubry 1994). Most lynx habitat in Unit 18 is around the Kusilvak, Kilbuck, and Andreafsky mountains and along the Yukon and Kuskokwim rivers and larger tributaries (Perry 2007). When hare numbers are low, lynx may disperse and congregate in areas of hare activity (Koehler and Aubry 1994, Perry 2007).

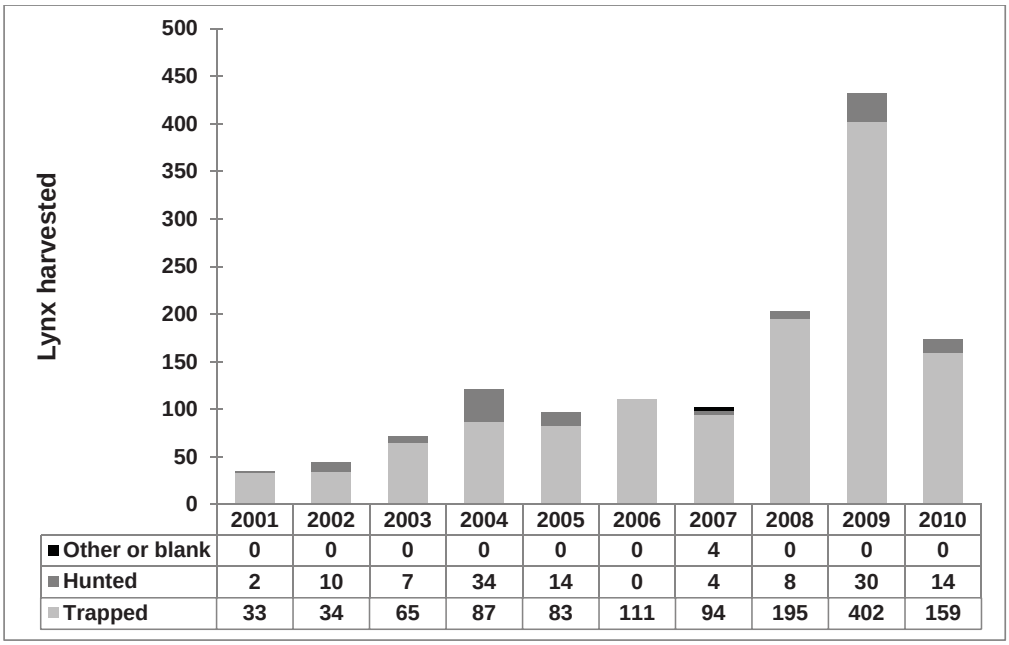
Currently, there are no means of estimating the population size, but sealing records can provide an index of the relative abundance of lynx in Unit 18.

Harvest History

Harvest information for lynx in Unit 18 is based on sealing records, which should be treated as minimum harvest levels. Some user categories may be underrepresented in sealing records due to underreporting, including those that tan their own hides, harvest lynx for meat, opportunistically harvest, and have limited access to fur sealers (Perry 2007).

The majority of lynx harvested in Unit 18 are under trapping regulations (**Figure 1**). Sealing records indicate that an average of 9% (range: 0% to 28%) of harvested lynx were taken by hunting methods (Perry 2011, pers. comm.). It should be noted that sealing records may not differentiate those lynx shot under trapping permits and hunting permits (Perry 2011, pers. comm.; Sundown 2011, pers. comm.). Most lynx taken under hunting regulations are likely opportunistically harvested, whereas those taken under trapping regulations are targeted (Sundown 2011, pers. comm.). Users hunting caribou are said to opportunistically harvest lynx and other furbearers (Perry 2007).

Overall harvest numbers and proportion of age classes in the sealing records provide evidence for the position of the population within the cycle. In Unit 18, lynx were near their cyclic peak at the end of the



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Other or blank	0	0	0	0	0	0	4	0	0	0
Hunted	2	10	7	34	14	0	4	8	30	14
Trapped	33	34	65	87	83	111	94	195	402	159

Figure 1. Sealing records of lynx harvested in Unit 18 from 2001 to 2010 (Perry 2011, pers. comm.). Hunted lynx were categorized as being shot by users. Trapped lynx were categorized as being trapped or snared by users.

1997–2000 reporting period (Seavoy 2000) and declined to a low in 2001 (**Figure 1**). Sealing records increased after 2001 and the number of sealed kittens increased between 2003 and 2006 (Perry 2007). The proportion of kittens in the harvest increases as the population grows (Koehler and Aubry 1994). With declining lynx populations, sealing records were mostly, or exclusively, comprised of adults (Seavoy 2004).

The lynx harvest is affected by snow pack, as snowmachines are the primary means of transportation (Perry 2007). Snow levels that are conducive to travel usually disappear by April 15 (Sundown 2011, pers. comm.).

Effects of the Proposal

If the proposal were adopted, the lynx harvest limit and the season length would be changed under Federal hunting regulations. The harvest limit would increase from two to five lynx and the season would be extended from Nov. 10–Mar. 31 to Aug. 10–Apr. 30. Both regulation changes would provide additional opportunity for Federally qualified subsistence users to harvest lynx under Federal hunting regulations. Under hunting regulations, lynx are often harvested opportunistically and are used as a source of food (Perry 2007; Sundown 2011, pers. comm.).

The proposed harvest limit increase would likely have a minimal effect on the lynx population in Unit 18. The proportion of users who harvest lynx under hunting regulations is low compared to trapping regulations, which have an unlimited harvest limit. Lynx are said to be easily trapped (Quinn and Parker 1999), and trapping can be a significant source of mortality for lynx (Koehler and Aubry 1994, Quinn and Parker 1999). Lynx have been eliminated or temporally reduced in some areas of Alaska and Canada by intense trapping pressure (Koehler and Aubry 1994). Opportunistic harvest is less efficient due to the elusive behavior of lynx and because users are usually targeting other species. For example, lynx are sometimes harvested opportunistically while caribou hunting (Perry 2007).

Lynx populations in the northern portions of the range, including the affected area, are limited by the abundance of their primary food source, the snowshoe hare (Koehler and Aubry 1994, Quinn and Parker 1999). While harvesting lynx affects the population by removing individuals, the effect does not appear to be as limiting as snowshoe hare abundance; especially the low level of harvest by opportunistic users (Sundown 2011, pers. comm.).

The proposed season extension on Federal public land would likely have a minimal impact on the lynx population in Unit 18. The opportunistic harvest of lynx may be limited by snow pack, which is typically absent in the affected area by April 15 (Sundown 2011, pers. comm.). Additional lynx may be harvested while Federally qualified subsistence users pursue other resources, such as caribou, but the impact will likely continue to be small compared to the trapping harvest.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-43.

Justification

The increased Federal harvest limit and extended season for lynx in Unit 18 should have a minimal effect on the population. The harvest under hunting regulations has been low and is often opportunistic. Trapping is a more targeted harvest, which has a greater potential to affect lynx populations. The lynx population has continued to support an unlimited harvest limit under State and Federal trapping regulations, and should be able to support a relatively small increase in harvest associated with the proposed changes.

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ADF&G Comments on WP12-43
August 29, 2011; Page 1 of 2

Alaska Department of Fish and Game
Comments to Regional Advisory Council

Wildlife Proposal WP12-43: This proposal requests liberalizing the federal subsistence Unit 18 lynx hunting season and bag limit from November 10 through April 30 and a bag limit of 2 lynx to August 10 through April 30 with a bag limit of 5 lynx per year.

Introduction: The proponent requests the federal subsistence lynx hunting season be liberalized by opening the federal subsistence lynx hunting season 92 days earlier in Unit 18. Additionally the proponent requests raising the current federal subsistence hunting bag limit by 150%. The proponent indicates some federal subsistence hunters feel they are second tier to commercial trappers due to regulatory restrictions

Impact on Subsistence Users: If adopted, federal subsistence hunters targeting lynx in Unit 18 may opportunistically harvest additional lynx with a longer season and higher annual bag limit. . The proposed liberalizations will provide federal subsistence hunters the option to opportunistically harvest additional lynx while in the field.

Opportunity Provided by State: In Unit 18, the state lynx hunting season is November 10 through March 31 with an annual bag limit of 2.

Conservation Issues: Are undetermined at this time as the vast majority of Lynx harvest is reported though trapping.

FROM 2007 WC division furbearer management report 2000-2006 harvests:
2000-2001 = 84
01-02= 53
02-03=41
03-04 = 73
04-05 = 121
05-06 = 121
2006/2007 trapper furbearer harvest report from 18Z = 81 lynx
2007/2008 trapper furbearer harvest report from 18Z = 50 lynx
2008/2009 trapper furbearer harvest report from Unit 18Z = 123 lynx trapped

Other Comments: The proponent indicates this proposal will also be submitted to the Alaska Board of Game. The department has concerns with setting federal subsistence bag limits during times of peak population abundance cycles. Establishing federal subsistence bat limits during temporary times of peak abundance sets an artificially high federal subsistence priority.

Enforcement Issues: Differences in federal and state regulations resulting from adoption of this proposal create enforcement problems in areas with mixed land ownership. The boundaries between federal and state lands are not marked and often difficult to locate on the ground. However, a similar proposal is slated to be heard by the Alaska Board of Game March 2012.

Recommendation: Support/Neutral: Dependent upon Board of Game

WP12-44/48 Executive Summary		
General Description	Proposal WP12-44 requests that the harvest limit for moose in Unit 18 remainder be changed from one antlered bull to one antlered bull or one cow without a calf. *Submitted by Zechariah C. Chaliak Sr. of Nunapithcuk* Proposal WP12-48 requests a change to the harvest limit from 1 antlered bull to 1 moose during the winter season as well as an extension of the winter season in Unit 18 remainder from January 10 to the last day of February. *Submitted by the Yukon Delta National Wildlife Refuge*	
Proposed Regulation	**WP12-44**	
	Unit 18 remainder — 1 antlered bull ***or 1 cow without a calf***	*Aug. 10 – Sept. 30* *Dec. 20 – Jan. 10*
	WP12-48	
	Unit 18 remainder — 1 antlered bull	*Aug. 10 – Sept. 30*
	Unit 18 remainder — 1 ~~antlered bull~~ moose	*Dec. 20 – ~~Jan. 10~~* ***the last day of February***
OSM Preliminary Conclusion	**Oppose** Proposal WP12-44. **Support** Proposal WP12-48.	
Yukon/Kuskokwim Delta Regional Council Recommendation		
Western Interior Regional Council Recommendation		
Interagency Staff Committee Comments		
ADF&G Comments	**Oppose** Proposal WP12-44 **Support** Proposal WP12-48 dependent upon Board of Game adoption	
Written Public Comments	**None**	

DRAFT STAFF ANALYSIS
WP12-44/48

ISSUES

Proposal WP12-44, submitted by Zechariah C. Chaliak Sr. of Nunapithcuk, AK, requests that the harvest limit for moose in Unit 18 remainder be changed from one antlered bull to one antlered bull or one cow without a calf.

Proposal WP12-48, submitted by the Yukon Delta National Wildlife Refuge, requests a change to the harvest limit from 1 antlered bull to 1 moose during the winter season as well as an extension of the winter season in Unit 18 remainder from January 10 to the last day of February.

DISCUSSION

The proponent for Proposal WP12-44 states that cow moose are becoming too abundant in Unit 18 remainder and that a cow hunt should be allowed for the Aug. 10–Sept. 30 fall season for one calendar year, after which the hunt would go back to the 1 antlered bull requirement.

The proponent for Proposal WP12-48 states that both ADF&G and the USFWS are proposing to liberalize regulations for the winter moose season in Unit 18 remainder. The proponent believes healthy populations combined with a low harvest during the winter season justify liberalization of the season length and removal of the antlered requirement.

Note: During a phone discussion, the proponent requested that the winter hunt end on the last day of February, regardless of whether the year in question was a leap year or not. To satisfy this request, the OSM concluded that the regulation would read as "Dec. 20 – the last day of February."

Existing Federal Regulation

Unit 18 remainder — Moose

Unit 18 remainder — 1 antlered bull	*Aug. 10 – Sept. 30* *Dec. 20 – Jan. 10*

Proposed Federal Regulations

WP12-44

Unit 18 remainder — 1 antlered bull ***or 1 cow without a calf***	*Aug. 10 – Sept. 30* *Dec. 20 – Jan. 10*

WP12-48

Unit 18 remainder — 1 antlered bull	*Aug. 10 – Sept. 30*
Unit 18 remainder — 1 ~~antlered bull~~ moose	*Dec. 20 – ~~Jan. 10~~* ***the last day of February***

Existing State Regulations

Unit 18 remainder — Moose

Residents, one antlered bull	*Aug. 10 – Sept. 30*
Or	*Dec. 20 – Jan. 10*
One antlered bull for nonresidents	*Sept. 1 – Sept. 30*

Extent of Federal Public Lands

Federal public lands comprise approximately 65% of the remainder area of Unit 18, approximately 90% of which is managed by the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service managed lands are located within the Yukon Delta National Wildlife Refuge. The other 10% of Federal public lands is managed by the Bureau of Land Management (**Map 1**).

Customary and Traditional Use Determinations

The customary and traditional use determination for moose in Unit 18 remainder includes all residents of Unit 18. Additionally, residents of St. Michael, Stebbins, Aniak, and Chuathbaluk can hunt in portions of of Unit 18 remainder under Federal moose regulations.

Regulatory History

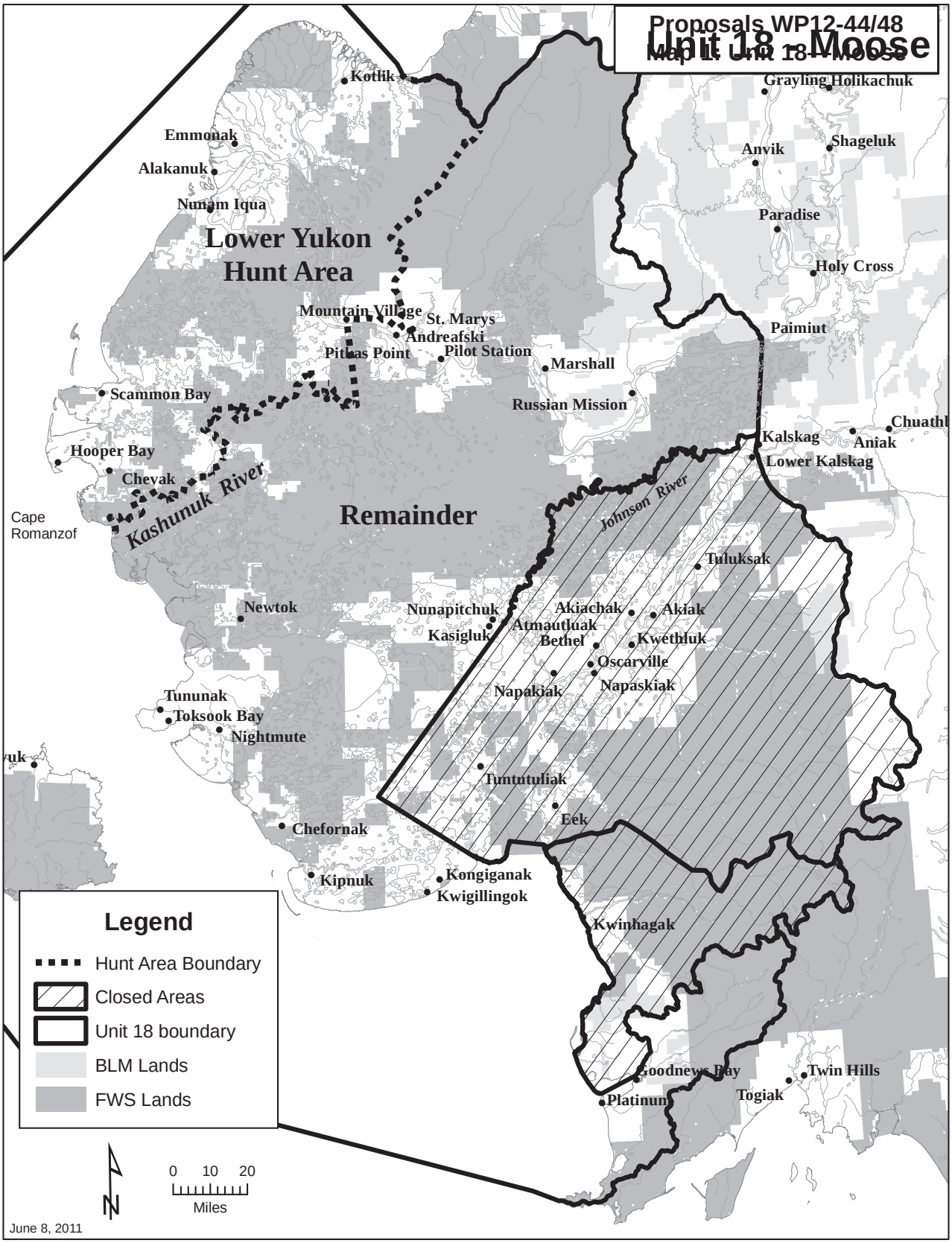
Moose harvest season dates in Unit 18 have varied over the past 10 years, however harvest limits have remained constant at one bull. As the moose population in the area grew, the closure of Federal public lands to non-Federally qualified users was lifted and the seasons were extended.

In 2006, proposal WP06-30 requested the removal of the Federal closure to non-Federally qualified users for the Unit 18 remainder fall moose season (Sept. 1–Sept 30). The biological information presented in the WP06-30 analysis supported the removal of the closure for not only Unit 18 remainder, but also that portion of Unit 18 downstream from Mountain Village. However, the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council opposed the proposal because of local concerns over increased competition. At its May 2006 meeting, the Federal Subsistence Board (Board) deferred action on the proposal for one year with a commitment to revisit the proposed regulation change at its May 2007 meeting. The intent for the deferral was to allow time for Yukon Delta National Wildlife Refuge (YDNWR) staff to conduct information outreach on the status of the moose population in communities before making a decision.

The rapid growth and current size of the moose population along with local concerns over increased competition created disagreement over the appropriateness of the Federal closure, which lead to several proposals in October 2006:

- Proposal WP07-26 requested a positive customary and traditional use determination for moose in Unit 18 for the residents of St. Michaels and Stebbins. The Board adopted the proposed regulatory change in May 2007.

- Proposal WP07-27 requested an Aug. 10–Aug. 19 families-only moose season in Unit 18 remainder. The Board did not adopt the proposal at its May 2007 meeting because it cannot adopt regulations that favor families only.


Proposals WP12-44/48
Unit 18 Moose
Map 1: Unit 18 - Moose
Kotlik
Grayling
Holikachuk
Emmonak
Alakanuk
Nunam Iqua
Anvik
Shageluk
Paradise
Holy Cross
Lower Yukon
Hunt Area
Mountain Village
St. Marys
Andreafski
Pitmas Point
Pilot Station
Marshall
Paimiut
Scammon Bay
Russian Mission
Chuathl
Kalskag
Aniak
Lower Kalskag
Hooper Bay
Chevak
Kashunuk River
Johnson River
Cape
Romanzof
Remainder
Tuluksak
Newtok
Nunapitchuk
Akiachak
Akiak
Atmautluak
Kasigluk
Bethel
Kwethluk
Oscarville
Napaskiak
Napakiak
Tununak
Toksook Bay
Nightmute
Tuntutuliak
Eek
Chefornak
Kipnuk
Kongiganak
Kwigillingok
Kwinhagak
Goodnews Bay
Twin Hills
Togiak
Platinum
Legend
Hunt Area Boundary
Closed Areas
Unit 18 boundary
BLM Lands
FWS Lands
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June 8, 2011

- Proposal WP07-28 requested an earlier season in Unit 18 remainder beginning on Aug. 20 instead of September 1. The Board adopted a modified recommendation of an August 10 season open date for the Yukon River drainage portion of Unit 18 and Unit 18 remainder at its 2007 meeting.

- Proposal WP07-29 requested a liberalization of the harvest limit from one antlered bull to one moose in Unit 18 remainder with a winter season extension to January 20, instead of January 10. The Board adopted the season extension with the modification of one moose for the Yukon River drainage below and including Mt. Village only, due to the very high calf composition and concerns of the population size and growth rate may be adversely affecting the habitat's carrying capacity in that area.

- Proposal WP07-30 requested a continuous one bull harvest limit from September 1 to March 31. Because such liberalizations in harvest limit should be adopted gradually to allow for close monitoring of harvest effects on the population, the Board did not adopt the proposed regulatory change.

- Proposal WP07-31 requested an August 20–31 moose season with a one antlered bull harvest limit for residents of Andreafsky and St. Mary's within the Andreafsky River drainage of Unit 18 remainder; and Proposal WP07-64 requested the Board extend the fall moose season by adopting the proposed 12-day, August 20–31 extension with a one antlered bull or cow moose harvest limit for residents of Marshall. If a proposal seeks a prioritization for use of a subsistence resource among rural residents having customary and traditional use of that resource, as was the case with these two proposals, an analysis must be done in accordance with Section 804 of ANILCA if the population necessitates such prioritization. Because the moose population in this area could support harvest by all Federally qualified subsistence users, an "804" analysis was not conducted, and the Board did not adopt these proposals.

- At its May 2007 meeting, the Board adopted Proposal WP07-32 (deferred proposal WP06-30) to open Federal public lands to non-Federally qualified subsistence users. The Board stated that the closure was no longer warranted as the moose population had increased to the point where additional harvest could occur. The Refuge Manager of the YDNWR made extensive outreach efforts with local residents and committed to lessen competition by prohibiting transporters access to local subsistence use areas (Rearden 2007, pers. comm.).

Proposal WP08-33, submitted by the Association of Village Council Presidents, requested a closure of Federal public lands to non-Federally qualified users during the fall and winter moose seasons in Unit 18, that portion of the Yukon River drainage and Unit 18 remainder. The proponent requested this closure until three related tasks were accomplished: 1) an accurate assessment of moose harvest needed by residents of Unit 18; 2) an accurate assessment of the moose population in Unit 18; and 3) development of a regionally acceptable moose management plan. The proposal was rejected by the Federal Subsistence Board at its May 2008 meeting.

In 2009, Special Actions WSA09-12/13/14 requested a season extension to February 28 and a change in the harvest limit from one antlered bull to one moose in Unit 18 remainder. The special action requests were submitted due to the lack of snow that limited travel and hunting opportunity within an area where the moose population appeared to be increasing and was considered healthy. The Board approved the requests to extend the season and change the harvest limit to one moose.

In 2010, Special Action WSA10-04 requested that the Unit 18 remainder winter moose season be extended to February 28th and the harvest limit be changed from one antlered bull to one moose. This

Special Action request was submitted due to adverse travelling conditions in the area as a result of unusually warm weather which made travel by snowmachine difficult for local hunters. The proposal was approved by the Federal Subsistence Board.

Biological Background

Moose began to immigrate into the Yukon-Kuskokwim (Y-K) Delta during the mid-to-late 1940s. The Yukon River population occupies most of the available riparian habitat and is growing, while the Kuskokwim population is still small and in the process of colonizing all available riparian habitats. Most of the Y-K Delta is lowland treeless tundra and is therefore not suitable as winter moose habitat (Perry 2008).

Hunting pressure from communities along the Kuskokwim River has limited the growth of moose populations along the riparian corridors, while moose populations along the Yukon River have been similarly slowed, though compliance with hunting regulations has improved moose populations in this area (Perry 2008). There is a large amount of available habitat for moose along the Kuskokwim River drainage and its tributaries, allowing for colonization and population expansion.

The Paimiut survey area in Unit 18 covers the Yukon River immediately downriver of Marshall to Paimiut. Although this survey unit does not cover the entire Unit 18 remainder, it covers the densest population of moose in the Unit 18 remainder area. The most recent survey for this area was conducted in 2006. The mid-point of the 2006 survey estimate was 3,614 moose with a density of 2.3 moose per square mile (Sundown 2009, pers. comm.), which was an increase from the 1992 density estimate of 0.64 moose per square mile (Perry 2008). Based on the 2006 survey data the population growth rate was estimated at 11% per year. Using the estimated growth rate, the current density in the area may be near 3 moose per square mile (Wald 2010, pers. comm.). However, Federal and State managers are hesitant to support liberalizing the fall hunt (as proposed in WP12-44) without more recent density data (Rearden 2011, pers. comm.).

The moose population down river of Mountain Village and adjacent to Unit 18 remainder increased significantly from 1994 to 2008. The lower Yukon area has experienced rapid population growth since 1994 with an average growth rate of 27% (1994–2009) (USFWS 2008). The 2008 estimate along the main stem of the Yukon River corridor from Mountain Village to Kotlik was 3,320 moose. From Mountain Village to Emmonak, the moose density estimate was 2.8 moose per square mile.

The ADF&G management objective for the Yukon-Kuskokwim Delta and Yukon River moose populations in Unit 18 are to maintain the current age and sex structure, with a minimum of 30 bulls:100 cows. Moose composition surveys from 2005 showed a ratio of 36.9 bulls per hundred cows and 23.9 bulls per hundred cows for the Lowest Yukon and Paimiut survey areas respectively (Perry 2008). In addition, calf survival was much higher in the Lowest Yukon survey area and almost 40% of cows were found to have twins with them in early winter (Perry 2008). More recent moose composition data for Unit 18 remainder showed a ratio of 42 bulls per 100 cows and 61 calves per 100 cows while 28% of cows had twins with them (Rearden 2011, pers. comm.). These numbers indicate that the moose population has exceeded the management objective for sex structure in the unit.

Habitat

A minimum of 8,000 square miles of moose habitat exists in Unit 18 (Perry 2008). Of this, approximately 4,500 square miles of habitat occurs along the riparian zone of the Yukon River. The most productive moose habitat in Unit 18 is found on the islands and adjacent sloughs from Paimuit to Mountain Village.

Several tributaries within the Yukon Delta contain suitable moose habitat. Despite this, the area has fewer moose than could be supported by the available forage (Perry 2008).

Harvest History

In Unit 18 remainder, during the 2008/2009 season, 189 moose were reported harvested, with 48 of that total being harvested in the winter season (Sundown 2010, pers. comm.). In 2007/2008, 248 moose were harvested with 50 harvested in the winter and in 2006/2007, 166 moose were harvested with 39 in the winter (Sundown 2010, pers. comm.). Most local residents living within the Kuskokwim River drainage area hunt the Yukon River drainage area during winter, when they can travel via snowmachine (Rearden 2011, pers. comm.).

As a result of extending the winter season till February 28 and allowing the harvest of any moose for the last two years during the extension (WSA09-12/13/14 and WSA10-04), 66 (45 cows and 21 bulls) and 50 additional moose (39 cows and 11 bulls) were harvested in 2009 and 2010 respectively (Rearden 2011, pers. comm.). **Table 1** gives a summary of winter moose harvest for Unit 18 remainder (Perry 2011, pers. comm.). Overall harvest in Unit 18 remainder more than doubled between 2005 and 2010, with the majority of harvest coming from residents of Unit 18.

Table 1. Winter moose harvest data for Unit 18 remainder, 2005-2011 (Perry pers. comm. 2011).

Year	Local Resident Harvest	Nonlocal Resident Harvest	Total Winter Harvest
2005-2006	46	1	47
2006-2007	38	1	39
2007-2008	49	1	50
2008-2009	58	3	61
2009-2010	67	2	69
2010-2011	96	4	100

Effects of Proposal

If adopted, Proposal WP12-44 would revise current hunting regulations to allow for the harvest of one cow moose without a calf for the Aug. 10–Sept. 30 fall season for one calendar year, however, the regulations would revert to the current one antlered bull requirement after one year. This action would allow for more hunting opportunities for Federally qualified subsistence users by expanding the segment of the moose population available for harvest, but would only be in effect for one year. There would be some reduction to the moose population under this proposal, but the overall extent of the effects are unknown since the most recent density estimates for the area are five years old.

If adopted, Proposal WP12-48 would add an additional month and a half of harvest opportunity for Federally qualified users and would liberalize the harvest limit by allowing any moose to be harvested instead of 1 antlered bull during the winter season only. Impacts on the moose population in Unit 18 remainder should be minimal as the population is healthy and is believed to be increasing. A companion proposal is expected to be submitted before the Alaska Board of Game for Unit 18 remainder by ADF&G. WP12-48 would align Federal and State regulations if the State proposal is adopted, thereby reducing the regulatory complexity for Federally qualified subsistence users in this area.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-44.

Support Proposal WP12-48.

Justification

Adopting Proposal WP12-48 would add an additional month and a half of harvest opportunity during the winter season for Federally qualified users and liberalize the harvest from one bull to one moose in Unit 18 remainder. Although moose populations appear to be healthy and increasing in Unit 18 remainder, the most recent density estimates for the unit are five years old and as a result, Federal and State managers are hesitant to allow for an even more liberal harvest during the fall hunting season as requested in WP12-44. Harvest of moose has almost doubled between 2005 and 2009, with most of this harvest coming from residents of Unit18. In addition, Proposal WP12-48 may satisfy the proponent of Proposal WP12-44 because most local residents living within the Kuskokwim River drainage area are more likely to hunt the Yukon River drainage area during winter, when hunters can travel via snowmachine (Rearden 2011, pers. comm.).

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Alaska Department of Fish and Game
Comments to Regional Advisory Council

Wildlife Proposal WP12-44: This proposal requests eliminating the Unit 18 Remainder federal subsistence antlered bull moose harvest requirement for both the fall and winter hunts for one season.

Wildlife Proposal WP12-48: This proposal requests liberalization of the Unit 18 "Remainder" segment of the federal subsistence moose winter hunting season. The proposal also requests eliminating the antlered bull federal subsistence moose harvest requirement.

Introduction: The proponent of WP12-44 request authorization to harvest cow moose without calves in both the fall and winter federal subsistence moose hunts in Unit 18 remainder for one year. The proponent indicates the numbers of cow moose in the area are becoming too abundant and need to be temporarily reduced through harvesting.

The proponent of WP12-48 requests the federal subsistence moose hunting winter season in Unit 18 Remainder be liberalized from December 20 through January 10 to December 20 through February 29. The proponent also requests changing the bag limit to any moose. The proponent indicates the moose population health combined with a low harvest rate during the winter justifies this proposal.

The proponents of these proposals indicate adoption of this proposal will result in greater opportunity and higher success rates for federal subsistence users.

Impact on Subsistence Users: If WP12-44 is adopted, federal subsistence users participating in the Unit 18 Remainder federal subsistence moose hunts will have greater opportunities to harvest a moose, with or without antlers, for the requested one year. If WP12-48 is adopted, federal subsistence moose hunters participating in the in Unit 18 Remainder winter moose hunt will have approximately 49 more days (245% increase on leap years) to harvest any moose with or without antlers. If adopted, federal subsistence moose hunter success rates are expected to climb.

Opportunity Provided by State: In Unit 18 Remainder, the state moose winter hunting season is from December 20 through January 10 with a bag limit of one antlered bull. Meat-on-the-bone salvage is required thus meat taken prior to October 1 must remain on the bones of the front and hindquarters until removed from the field or processed for human consumption.

In Unit 18 Remainder, the state moose fall hunting season is from August 10 through September 30 for residents of Alaska with a bag limit of one antlered bull. The nonresident state moose hunting season is September 1 through September 30 with a bag limit of one antlered bull. The state winter hunting season for Unit 18 Remainder is from December 20 through January 10 with a bag limit of one antlered bull. Meat-on-the-bone salvage is required thus meat taken prior to October 1 must remain on the bones of the front and hindquarters until removed from the field or processed for human consumption. Residents may not harvest more than one moose per year between the fall and winter seasons.

ADF&G Comments on WP12-44 and WP12-48
August 29, 2011; Page 1 of 2

Conservation Issues: The Lower Yukon River moose population is growing rapidly and currently is not a conservation concern. If the moose population continues at a high rate of growth, over-browsing may result in future management and conservation considerations. Moose are abundant in areas of Unit 18 currently open for hunting, thanks to the success of the moratoria. Information presented to the Federal Subsistence Board in 2007 indicated that the moose population in areas targeted in this proposal is highly productive and is continuing to grow.

Enforcement Issues: Differences in federal and state regulations resulting from adoption of this proposal create enforcement problems in areas with mixed land ownership. The boundaries between federal and state lands are not marked and often difficult to locate on the ground.

Other Comments: The proponent indicates that ADF&G is expected to submit a similar proposal to the Alaska Board of Game. The department will submit similar if not more liberal proposals to the Alaska Board of Game requesting liberalization of harvest regulations for portions of Unit 18

Recommendation:
WP12-44: Oppose
WP12-48: Support dependent upon Board of Game adoption

WP12-45/49 Executive Summary	
General Description	Proposal WP12-45 requests that for a portion of Unit 18, the start of the fall hunting season be moved from Aug. 10 to Sept. 1, and that the harvest limit be modified from one antlered bull to one moose, except that a cow with a calf may not be taken. *Submitted by Aloysius Unok of Kotlik* Proposal WP12-49 requests the moose hunting season in Unit 18, that portion north and west of the Kashunak River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village be revised from fall and winter dates (Aug. 10 – Sept.30 and Dec. 20 – Feb. 28) to Aug. 1 through the last day of February. The harvest limit would be two moose, only one of which may be antlered. The harvest of an antlered bull would be limited to the dates of Sept. 1 – 30. *Submitted by the Yukon Delta National Wildlife Refuge*
Proposed Regulation	**WP-45** **Unit 18 — Moose** *Unit 18 — that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – ~~1 antlered bull~~* ***1 moose except a cow with calf may not be taken.*** — ***Sept. 1*** *~~Aug. 10~~ – Sept. 30* *Unit 18 — that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – 1 moose. If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.* — *Dec. 20 – Feb. 28*

continued on next page

WP12-45/49 Executive Summary *(continued)*		
Proposed Regulation	**WP-49** **Unit 18 — Moose**	
	*Unit 18 – that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – ~~1 antlered bull~~**2 moose, only one of which may be antlered. Antlered bulls may only be harvested from Sept 1 – Sept 30.***	~~*Aug. 10 – Sept. 30*~~ ***Aug. 1 – the last day of February***
	Unit 18 – ~~that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – 1 moose. If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.~~	*Dec. 20 – Feb. 28*
OSM Preliminary Conclusion	**Support** Proposal WP12-49. **Take no action** on Proposal WP12-45.	
Yukon/Kuskokwim Delta Regional Council Recommendation		
Western Interior Regional Council Recommendation		
Seward Peninsula Regional Council Recommendation		
Interagency Staff Committee Comments		
ADF&G Comments		
Written Public Comments	**None**	

DRAFT STAFF ANALYSIS
WP12-45/49

ISSUES

Proposal WP12-45, submitted by Aloysius Unok of Kotlik, requests that for a portion of Unit 18, the start of the fall hunting season be moved from Aug. 10 to Sept. 1, and that the harvest limit be modified from one antlered bull to one moose, except that a cow with a calf may not be taken.

Proposal WP12-49, submitted by the Yukon Delta National Wildlife Refuge, requests the moose hunting season in Unit 18, that portion north and west of the Kashunak River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village be revised from fall and winter dates (Aug. 10 – Sept.30 and Dec. 20 – Feb. 28) to Aug. 1 through the last day of February. The harvest limit would be two moose, only one of which may be antlered. The harvest of an antlered bull would be limited to the dates of Sept. 1 – 30.

DISCUSSION

The proponent for Proposal WP12-45 states that hunting opportunities for local users are limited in Unit 18 by the antlered bull restriction during the fall hunting season. The proponent states that hunters have to spend a long time in the field searching for a legal animal to harvest and by allowing a 1 moose harvest limit, there would be more harvest opportunities.

The proponent for Proposal WP12-49 states that the moose population of the lower Yukon has grown dramatically and the season and harvest limit for this portion of Unit 18 can be liberalized. This proposal would increase hunting opportunities for Federally qualified subsistence users by increasing the opportunity to harvest cows and harvest two moose during the fall. Reducing the number of cows may help slow the increase in the population, thereby reducing habitat damage that could lead to a population crash.

Existing Federal Regulation

Unit 18 — Moose

Unit 18 — that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – 1 antlered bull	*Aug. 10 – Sept. 30*

Unit 18 — that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village– 1 moose. If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.	*Dec. 20 – Feb. 28*

Proposed Federal Regulation

WP-45

Unit 18 — Moose

*Unit 18 — that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – ~~1 antlered bull~~**1 moose except a cow with calf may not be taken.***	***Sept. 1*** *~~Aug. 10~~ – Sept. 30*
Unit 18 — that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – 1 moose. If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.	*Dec. 20 – Feb. 28*

WP-49

Unit 18 — Moose

*Unit 18 – that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – ~~1 antlered bull~~**2 moose, only one of which may be antlered. Antlered bulls may only be harvested from Sept 1 – Sept 30.***	*~~Aug. 10 – Sept. 30~~* ***Aug. 1 – the last day of February***
Unit 18 – ~~that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village – 1 moose. If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.~~	*Dec. 20 – Feb. 28*

Existing State Regulation

Unit 18 — Moose

Residents, one antlered bull	*Aug. 10 – Sept. 30*
OR	
One moose	*Dec. 20 – Feb. 28*
One antlered bull for nonresidents	*Sept. 1 – Sept. 30*

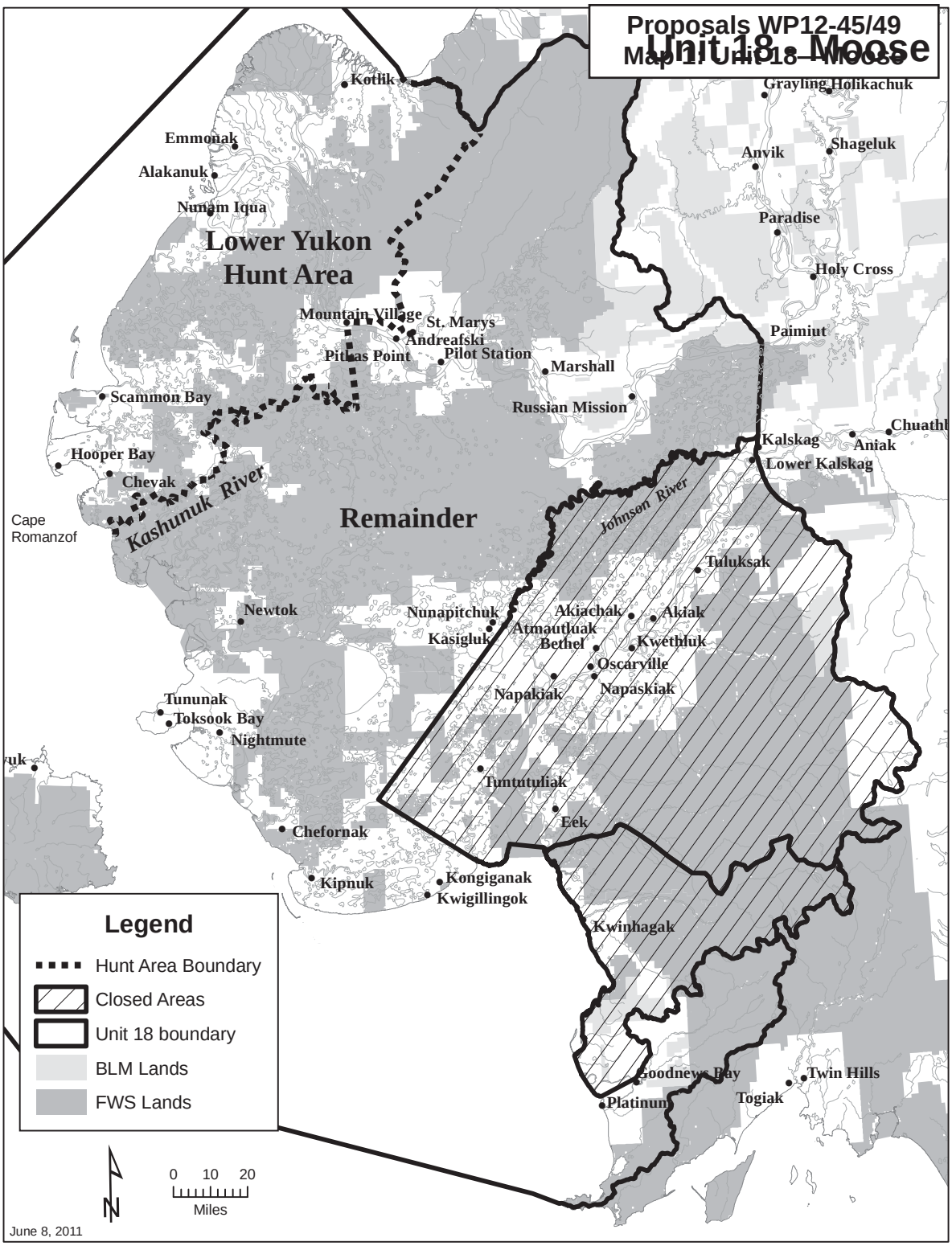
Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18 and consist of 62% US Fish and Wildlife Service managed lands and 2% Bureau of Land Management managed lands (**Map 1**).

Customary and Traditional Use Determinations

Rural residents of Unit 18, Upper Kalskag, Aniak and Chuathbaluk have a positive customary and traditional determination for moose in Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and that portion of the Kuskokwim River drainage upstream (but excluding) the Tuluksak drainage.

Rural residents of Unit 18, St. Michael, Stebbins, and Upper Kalskag have a positive customary and traditional determination for moose in Unit 18, that portion north of a line from Cape Romanzof to


Proposals WP12-45/49
Unit 18 - Moose
Map 1: Unit 18 – Moose
Kotlik
Emmonak
Alakanuk
Nunam Iqua
Lower Yukon
Hunt Area
Mountain Village
St. Marys
Andreafski
Pitkas Point
Pilot Station
Marshall
Russian Mission
Scammon Bay
Hooper Bay
Chevak
Kashunuk River
Cape
Romanzof
Remainder
Newtok
Tununak
Toksook Bay
Nightmute
Chefornak
Kipnuk
Kongiganak
Kwigillingok
Grayling
Holikachuk
Anvik
Shageluk
Paradise
Holy Cross
Paimiut
Kalskag
Aniak
Lower Kalskag
Johnson River
Tuluksak
Nunapitchuk
Kasigluk
Akiachak
Akiak
Atmautluak
Bethel
Kwethluk
Oscarville
Napakiak
Napaskiak
Tuntutuliak
Eek
Kwinhagak
Goodnews Bay
Platinum
Togiak
Twin Hills
Legend
Hunt Area Boundary
Closed Areas
Unit 18 boundary
BLM Lands
FWS Lands
0 10 20
Miles
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June 8, 2011

Kuzilvak Mountain to Mountain Village, and all drainages north of the Yukon River downstream from Marshall.

Rural residents of Unit 18 and Upper Kalskag have a positive customary and traditional determination for moose in Unit 18 remainder.

Regulatory History

In November 2005, the Alaska Board of Game adopted State Proposal 04 in response to the rapid growth of the lower Yukon moose population. Action taken on the proposal modified the State harvest limit by allowing the harvest of antlered bulls only and established a winter season for antlered bulls and calves. During its November 2007 meeting, the Alaska Board of Game lengthened the fall moose season for the lower Yukon and remainder areas of Unit 18 by 21 days and the winter season in the lower Yukon by 10 days through the adoption of State Proposal 06.

At its March 2009 meeting, the Alaska Board of Game adopted Proposal 228, which liberalized the State harvest limit from antlered bulls to any moose for the Dec. 20–Jan. 20 season in the lower Yukon area of Unit 18. The State believed that the affected moose population has increased to a size that can support the harvest of cows.

At its November 12, 2009 work session, the Federal Subsistence Board adopted Special Action WSA08-13, submitted by Scammon Bay Traditional Council, which requested the harvest limit in the lower Yukon area of Unit 18 be increased to two moose per regulatory year, with one allowed in the fall and one in the winter.

The Alaska Board of Game, at its November 13−16, 2009 meeting, adopted new regulations to extend the winter season from Jan. 20 to Feb. 28 and move the boundary between the lower Yukon and the remainder areas, south to a more discernible geographic land mark.

State Management Objectives for Unit 18 (Perry 2008) are as follows:

- Allow the lower Yukon River moose population to increase above its estimated size of 2500–3500 moose. Allow the lower Kuskokwim River moose population to increase above its estimated size of 75–250 moose to at least 2000 moose.
- Maintain the current age and sex structure for both populations, with a minimum of 30 bulls:100 cows.
- Conduct seasonal sex and age composition surveys as weather allows.
- Conduct winter censuses and recruitment surveys in the established survey areas on a rotating basis.
- Conduct fall and/or winter trend counts to determine population trends.
- Conduct hunts consistent with population goals.
- Improve knowledge of and compliance with harvest reporting requirements and hunting regulations through education and incentives.
- Address user conflicts through education and hunter contacts.

WP10-56, submitted by the Yukon Delta National Wildlife Refuge, requested that the harvest limit in the lower Yukon area of Unit 18 (that portion north and west of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village) be changed to two moose per regulatory year. Hunters would be allowed to harvest one antlered bull in the fall season and one moose in the winter season. Hunters that did not harvest a moose in the fall would

be allowed to harvest two moose during the winter season. The proposal also delegated authority to the Yukon Delta National Wildlife Refuge manager to restrict the season, if needed, after consultation with the Alaska Department of Fish and Game. The proposal was supported by the Federal Subsistence Board with modification to extend the winter season to February 28.

WP10-57, submitted by the Yukon Delta National Wildlife Refuge, requested a change in a portion of the regulatory boundary description for Unit 18, north and west of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, and excluding all Yukon River drainages upriver from Mountain Village. This area is referred to as the lower Yukon hunt area. The proposal was supported by the Federal Subsistence Board with modification to remove the Cape Romanzof to Kusilvak Mountain section and replace with a descriptor for the Kashunuk River drainage.

Biological Background

In February 2008, the Yukon Delta National Wildlife Refuge and Alaska Department of Fish and Game conducted cooperative moose surveys in portions of Unit 18, including the furthest down river survey unit along the main stem of the Yukon River corridor from Mountain Village to Kotlik. The mid-point of the moose population estimate for this area was 2,828 moose when using traditional survey methods and 3,320 moose when a Sightability Correction Factor (SCF) was incorporated in the 2008 analysis (USFWS 2008). Using the SCF population estimate on the lower Yukon River (from Mountain Village to Emmonak), the resulting moose density estimate was 2.8 moose/mi.^{2}. The affected area has experienced rapid population growth since the end of the moratorium in 1994 (**Figure 1)** with an average annual growth rate of 27% for the period of 1994–2008. Based on the 2008 survey results, it appears that the affected population could support additional harvest with the current population size, density, and productivity (Doolittle 2009, pers. comm.). The most recent population composition data for lower Yukon moose shows 30 bulls per 100 cows and 69 calves per 100 cows, with 55% of cows having calves (Rearden 2011, pers. comm.). This data most likely reflects a growing population since the 2008 surveys.

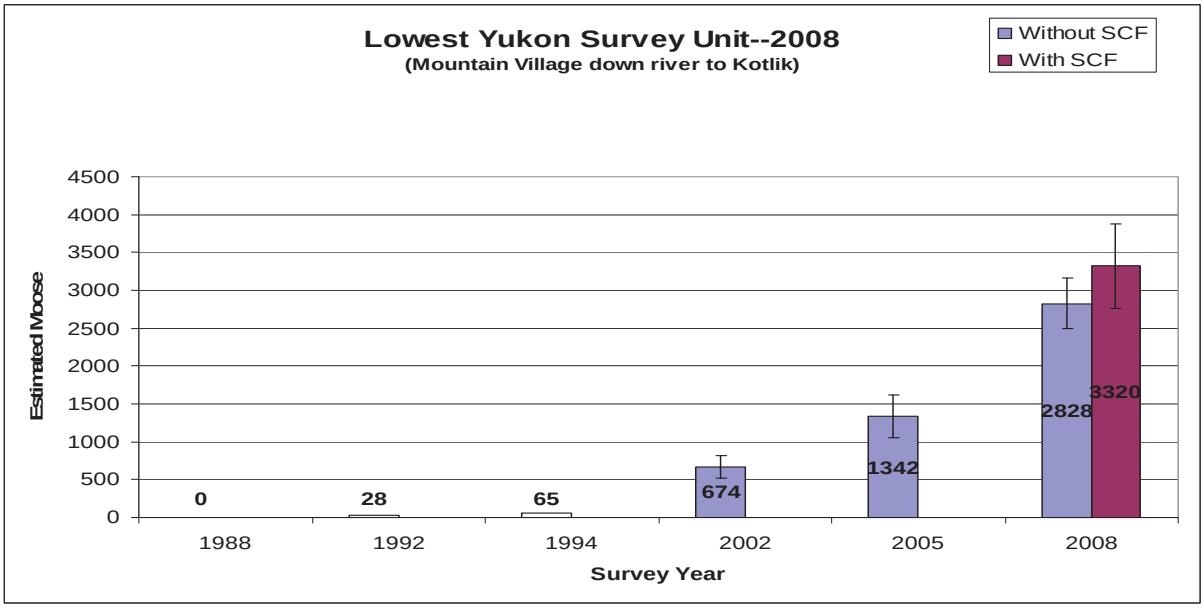

Figure 1. Moose population survey results from the lowest survey unit along the main stem of the Yukon River, 1988-2008 (UFWS 2008).

Habitat

Moose browse surveys have not been conducted within the affected area, thus there are no habitat data. Browse surveys would facilitate analysis of the impacts this moose population is having on its habitat, which could provide some insight into the carrying capacity of the habitat and the nutritional quality of the standing browse.

At the Federal Subsistence Board work session in November 2009, Mr. Gene Peltola, Refuge Manager of Yukon Delta National Wildlife Refuge, testified that if moose density continues to increase in the lower Yukon area of Unit 18, there is a risk that the population will exceed the carrying capacity of the habitat and experience a decline. Mr. Peltola stated that over the last three years there have been reports of localized calf and yearling die offs and this past winter reports of dead adult moose on the Yukon main stem. In addition, he stated that the refuge would prefer a proactive management approach because of the significance of the moose population to lower Yukon residents (FSB 2009).

Harvest History

Reported harvest totals from the fall (2005-2007) and winter seasons (2005–2009) are provided in **Table 1**. There appears to have been an increase in hunter success for the fall and winter seasons since 2005. From 2007 through 2009, the average annual reported winter moose harvest was 29. Even with the "any-moose" harvest limit provided in the 2009 winter season, the total reported winter harvest remains lower than anticipated. It should be noted that harvest information is typically collected through harvest ticket or registration permit reports submitted by users, which may undercount harvest (cf. Andersen and Alexander 1992). However, the reported moose harvest does show an increasing trend. Overall harvest continues to be lower than expected in Unit 18 relative to the moose population.

Effects of Proposal

If adopted, Proposal WP12-45 would shorten the fall season by 21 days from Aug. 10 – Sept. 30 to Sept. 1 – Sept. 30, and would change the harvest limit for the fall season from one antlered bull to one moose during the fall season, excluding a cow moose with a calf in a portion of Unit 18. This action would reduce the amount of hunting time during the fall season for Federally qualified subsistence users. In addition, changing the harvest limit to one moose would expand the segment of the moose population available for harvest. Allowing for harvest of cow moose could help slow the recruitment rate, thereby minimizing habitat degradation for the fast growing moose population on the lower Yukon.

If adopted, Proposal WP12-49 would lengthen the hunting season by approximately three months and modify the harvest limit to allow for the harvest of up to two moose during this time period, however, antlered bulls could only be taken from Sept. 1 to Sept. 30. This action would allow for increased subsistence harvest opportunities during the fall. This proposal would also help limit the growth of this quickly expanding moose population by reducing recruitment rates through a harvest at least partially directed at cows. This reduction may help prevent habitat degradation along the lower Yukon that could lead to a population crash if left unchecked.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-49.

Take no action on Proposal WP12-45.

Table 1. Total fall (ADF&G 2009) and winter (Perry 2011, pers. comm.) moose harvest reported by year for the lower Yukon area of Unit 18, 2005–2010.

Year	Reported fall moose harvest	Reported winter moose harvest
2005	97	14
2006	121	31
2007	162	29
2008	193	24
2009	178	51
2010	162	52
Total	913	201

Justification

The Federal Subsistence Board recently adopted Proposal WP10-56 to increase the harvest limit in the lower Yukon area of Unit 18 to two moose per regulatory year. Proposal WP12-49, if adopted, would provide additional opportunity for Federal subsistence users to harvest moose in the lower Yukon area of Unit 18 by lengthening the season and liberalizing harvest requirements from 1 antlered bull to 2 moose, except that antlered bulls could be taken only between Sept. 1 and Sept. 30. Moose densities along the lower Yukon are high and additional harvest should not have any negative impacts on the moose population. Proposal WP12-49 should help to reduce moose densities in this area, which would prevent or help to reduce negative impacts to habitat that could eventually lead to a crash in the population. The increased season length and hunting opportunities proposed in WP12-49 should meet the needs set forth by the proponent in WP12-45, as well as reducing the regulatory complexity between Federal and State lands in the area.

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WP12-46 Executive Summary	
General Description	Proposal WP12-46 requests that the Federal moose season in portions of Unit 18 be changed from Aug 25 – Sept 20 to Sept 1 – Sept 30. This same action was submitted and approved as Special Actions (WSA10-01 and WSA11-05) in August 2010 and July 2011. *Submitted by Togiak National Wildlife Refuge*
Proposed Regulation	*Unit 18—Goodnews River drainage, and south to the Unit 18 boundary—1 antlered bull by State registration permit. Any needed closures will be announced by the Togiak National Wildlife Refuge Manager after consultation with BLM, ADF&G, and the Chair of the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council.* ~~*Aug. 25*~~ ***Sept. 1***–*Sept.* ~~*20*~~ ***30***
OSM Preliminary Conclusion	**Support**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	**Support**
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-46

ISSUES

Proposal WP12-46 was submitted by Togiak National Wildlife Refuge (NWR) requesting that the Federal moose season in portions of Unit 18 be changed from Aug 25 – Sept 20 to Sept 1 – Sept 30. This same action was submitted and approved as Special Actions (WSA10-01 and WSA11-05) in August 2010 and July 2011.

DISCUSSION

The proponent states that this change should be made to align the Federal season with the State season as the hunt is administered through the State registration permit process and, historically, the moose season was September 1–30. The proponent states that in the Goodnews River drainage, moose numbers increased from 2 in 2002 to 196 in 2011, and residents of Goodnews Bay and Platinum have worked cooperatively with the Togiak NWR and Alaska Department of Fish and Game (ADF&G) in building and managing this moose population.

Existing Federal Hunting Regulation

Unit 18—Moose

Unit 18—Goodnews River drainage, and south to the Unit 18 boundary—1 antlered bull by State registration permit. Any needed closures will be announced by the Togiak National Wildlife Refuge Manager after consultation with BLM, ADF&G, and the Chair of the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council.	*Aug. 25–Sept. 20*

Proposed Federal Hunting Regulation

Unit 18—Moose

Unit 18—Goodnews River drainage, and south to the Unit 18 boundary—1 antlered bull by State registration permit. Any needed closures will be announced by the Togiak National Wildlife Refuge Manager after consultation with BLM, ADF&G, and the Chair of the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council.	*~~Aug. 25~~* ***Sept. 1****–Sept. ~~20~~* ***30***

Existing State Hunting Regulation

Unit 18—Moose (that portion south of and including the Goodnews River drainage)

Residents: One antlered bull by registration permit available in person in Goodnews Bay and Platinum Aug 1–20. Season will be closed by emergency order when 10 bulls are taken.	*Sept. 1–Sept. 30*
Nonresidents:	*No open season*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18, and consist of 62% U.S. Fish and Wildlife Service managed lands and 2% Bureau of Land Management administered lands. Federal public lands associated with WP12-46 consist of a portion of the Togiak National Wildlife Refuge and Bureau of Land Management administered lands (**Map 1**). Drainages affected by the proposal include the Goodnews, Salmon, Kinegnak, and Unaluk Rivers and a number of coastal tributaries with undocumented place names.

Customary and Traditional Use Determinations

Rural residents of Unit 18 and Upper Kalskag have a positive customary and traditional use determination for moose in the hunt area relevant to this request.

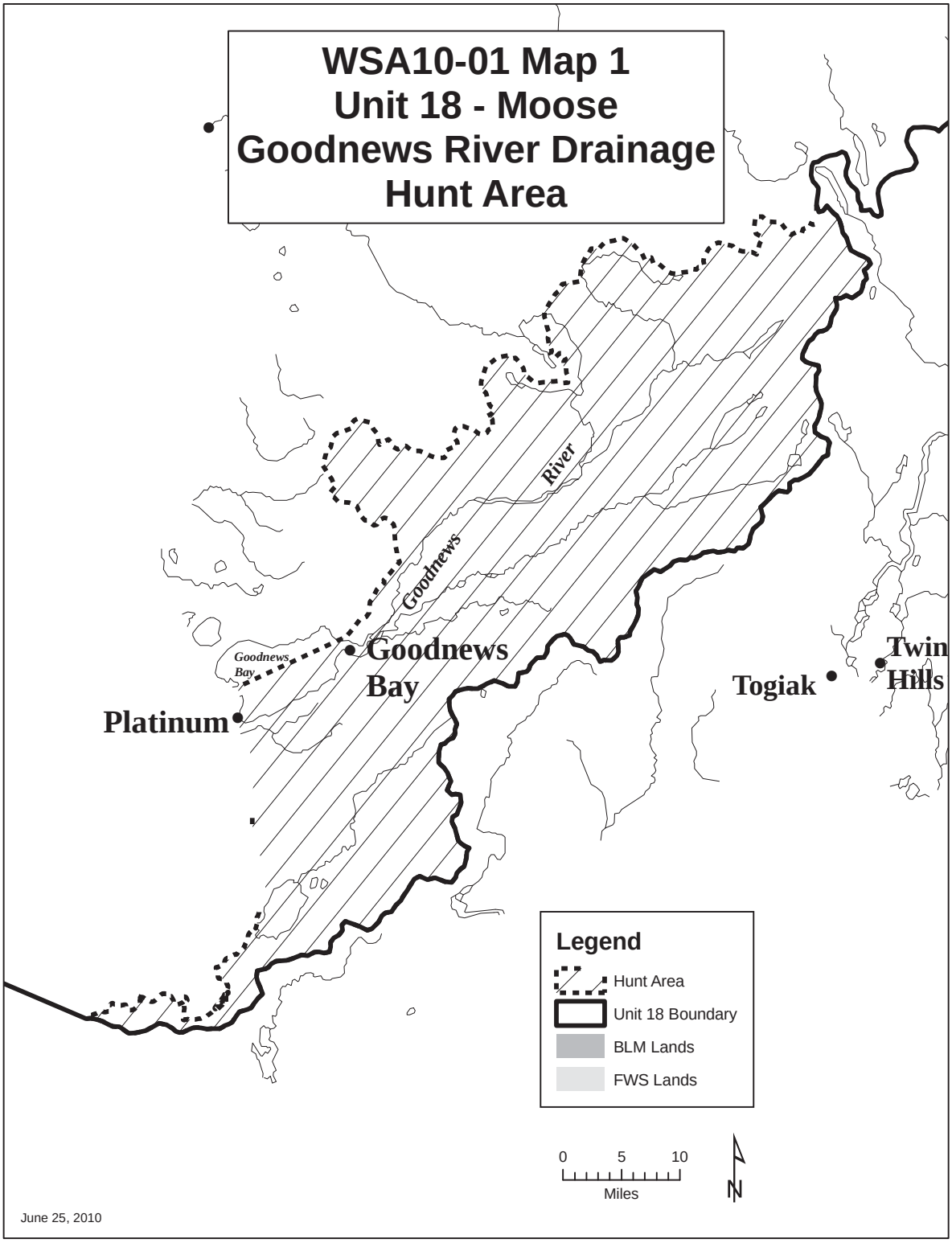
Regulatory History

Federal public lands in the Goodnews River drainage area were closed to all moose hunting between 1991–2008, but under State regulations, moose hunting remained open until 2004 on those lands outside Federal jurisdiction. The State closed the moose hunting season by emergency orders in 2004 and 2005 due to a continuous small moose population. In 2006, the Alaska Department of Fish and Game (ADF&G), U.S. Fish and Wildlife Service, and the villages of Goodnews Bay and Platinum agreed to a moratorium on hunting, with the understanding that once the population reached 100 moose, or after three years elapsed, hunting would resume (Liedberg 2008, pers. comm.). In 2008, Proposal WP08-34 was adopted with modification by the Federal Subsistence Board to establish a Federal moose hunting season in the Goodnews River drainage area as the population exceeded 100 animals. The State also re-established a moose hunting season and both Federal and State seasons were set for August 25–September 20 for one bull moose.

The Native Village of Goodnews Bay (also called Mumtraq Traditional Council) submitted a proposal to the Alaska Board of Game in 2009, to change the season dates to September 1–30 and to implement a harvest quota, due to the small moose population. The Board of Game adopted the proposal.

Biological Background

Surveys conducted in the Goodnews drainage area indicate that while the moose population has experienced substantial growth (**Figure 1**), it is considered a small population at a medium density (Aderman 2010, pers. comm.). In the Goodnews drainage area, no moose were observed during surveys in 1991, 1992 and 1994. However, population surveys between 2004–2011, indicated significant growth in the population (**Figure 1**). A minimum of 196 moose were counted in this area in March 2011 (Aderman 2011, pers. comm.).). Biologists believe the initial population growth was due to moose emigrating from adjacent Unit 17A and subsequent growth is thought to be due to high calf recruitment rates among established cows (Aderman 2008). This pattern is similar to the growth of the moose herd that occurred in adjacent Unit 17A during the 1990s (Aderman 2008).


WSA10-01 Map 1
Unit 18 - Moose
Goodnews River Drainage
Hunt Area
Goodnews
River
Goodnews Bay
Goodnews Bay
Platinum
Togiak
Twin Hills
Legend
Hunt Area
Unit 18 Boundary
BLM Lands
FWS Lands
0 5 10
Miles
N
June 25, 2010

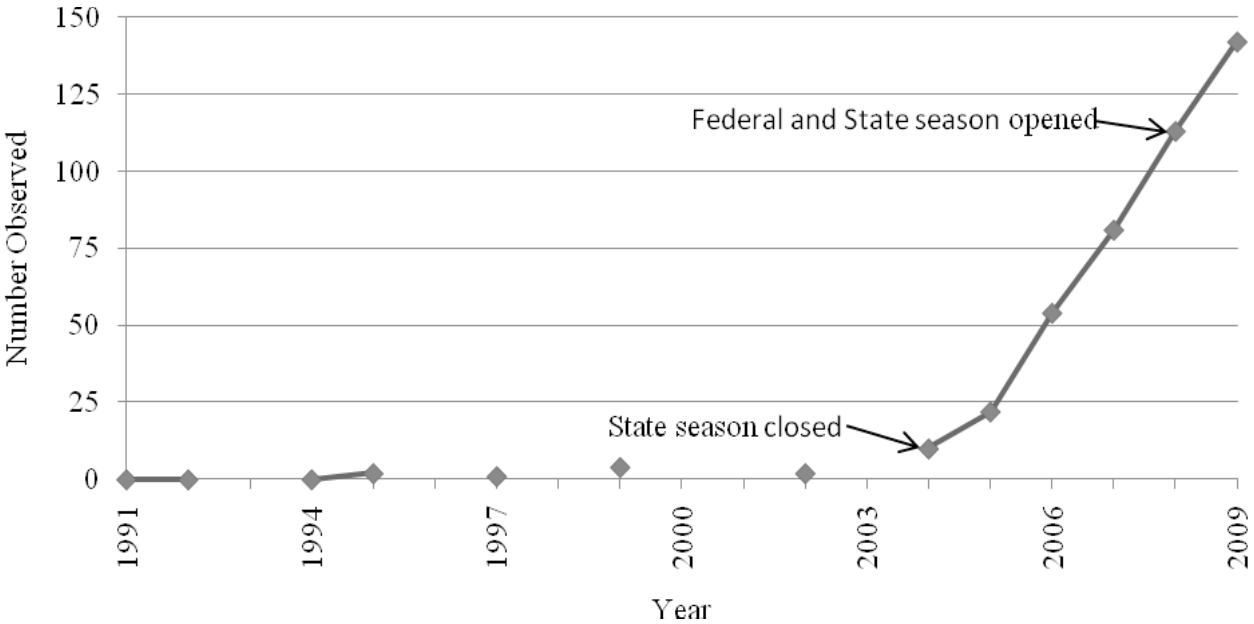


Figure 1. Number of moose observed in the Goodnews River drainage area, 1991–2011 (ADF&G 2009 and FWS 2009). Moose surveys were not conducted in years 1993, 1996, 1998, 2000, 2001, 2003, and 2010.

Harvest History

Between 1996–2003, the reported harvest was 0–2 moose per year for the Goodnews River area (ADF&G 2010). The harvest was significantly lower for years 1996–2003 because Federal public lands were closed and the moose population was small. No hunting seasons were in place for years 2004–2007.

In 2008, 40 permits were issued. Of these, 35 individuals reported hunting with a harvest of 13 bulls. In 2009, 45 permits were issued; of which 32 hunters reported hunting and 10 bulls were harvested (ADF&G 2010). In 2010, 48 permits were issued; of which 44 hunters reported hunting and 12 moose (11 bulls and 1 unknown) harvested (Perry 2011 pers. comm.). Of the 23 moose harvested in 2008 and 2009, only one was harvested in August and 22 were harvested in September (ADF&G 2010).

Effects of the Proposal

If this proposal is adopted, the moose season would shift from August 25–September 20 to September 1–30 and align with the State season, which was adopted by the Board of Game in 2009. This proposed change would lengthen the season by three days, shift the season into a time when bull moose are nearing peak rut (Schwartz and Hundertmark 1993) and tend to aggregate in lower elevations (Hundertmark 2007). Conservation concerns are minimized due to the establishment of a harvest quota and a registration permit system.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-46

Justification

Adopting this proposal would align Federal regulations with State regulations and would benefit Federally qualified subsistence hunters by avoiding potential confusion in determining Federal land boundaries .

In addition this would allow Federally qualified subsistence users to use a single permit to hunt on lands under both State and Federal jurisdiction during the same season. The requested change would add three days to the season and shift it later, when bulls may be more vulnerable. Conservation is provided for through a harvest quota.

The Native Village of Goodnews Bay supports adoption of this proposal. In addition, the Native Village of Goodnews Bay/Mumtraq Traditional Council's proposal to the Alaska Board of Game requesting a change to the moose season dates demonstrated a preference for a later season.

Residents of Goodnews Bay and Platinum have worked cooperatively with the Togiak NWR and the Alaska Department of Fish and Game in building and managing this moose population. Aligning Federal and State regulations would help continue cooperative management.

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ADF&G Comments WP12-46
August 29, 2011; Page 1 of 2

Alaska Department of Fish and Game
Comments to Regional Advisory Council

Wildlife Proposal WP12-46: This proposal requests changing the season dates for the federal subsistence moose hunt in a portion of Unit 18 from August 25 through September 20 to September 1 through September 30.

Introduction: This proposal was submitted to change the federal subsistence moose hunting season in the Good News River drainage and south to the Unit 18 boundary by delaying the opening date by five days and liberalizing the hunting season by three additional days. The proposal is a product of a working group in which the department participated, and was submitted upon working group recommendations. The intent of this proposal is to align state and federal subsistence hunting seasons and is in response to changes the Alaska Board of Game made to the state season in 2009. The proponent indicates if the proposal is adopted, hunter success may improve because the season would be delayed and lengthened into the rut.

Impact on Subsistence Users: Adoption of this proposal may result in increased success for federal subsistence moose hunters in the identified area.

Opportunity Provided by State: State regulations for that portion south of and including the Good News Bay drainage are as follows:

> One antlered bull by permit available in person in Goodnews Bay and Platinum August 1 through 25. Season will be closed by emergency order when 10 bulls are taken. Season dates are September 1 through September 30.

Conservation Issues: The current moose populations in Unit 9 are considered stable with low density (Butler 2008). Moose population estimates by subunits are: Unit 9A, about 300 moose; Unit 9B, approximately 2000 moose; Unit 9C outside of Katmai National Park, approximately 800 moose; Unit 9D approximately 600, and Unit 9E approximately 2,500 (Butler 2008)

Enforcement Issues: Adoption of this proposal will re-align the federal and state moose hunting season dates which will reduce or enforcement issues in areas with mixed land ownership.

Other Comments: Previous proposals submitted by this proposer were withdrawn upon recommendations from the working group which supported this proposal

Recommendation: Support.

WP12-47 Executive Summary	
General Description	Proposal WP12-47 requests the addition of a special provision to limit aircraft use for the moose season in a portion of Unit 18. *Submitted by Stanley Sheppard of the Mountain Village Working Group*
Proposed Regulation	See the analysis for the regulatory language.
OSM Preliminary Conclusion	**Oppose**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-47

ISSUES

Proposal WP12-47, submitted by Stanley Sheppard of the Mountain Village Working Group, requests the addition of a special provision to limit aircraft use for the moose season in a portion of Unit 18.

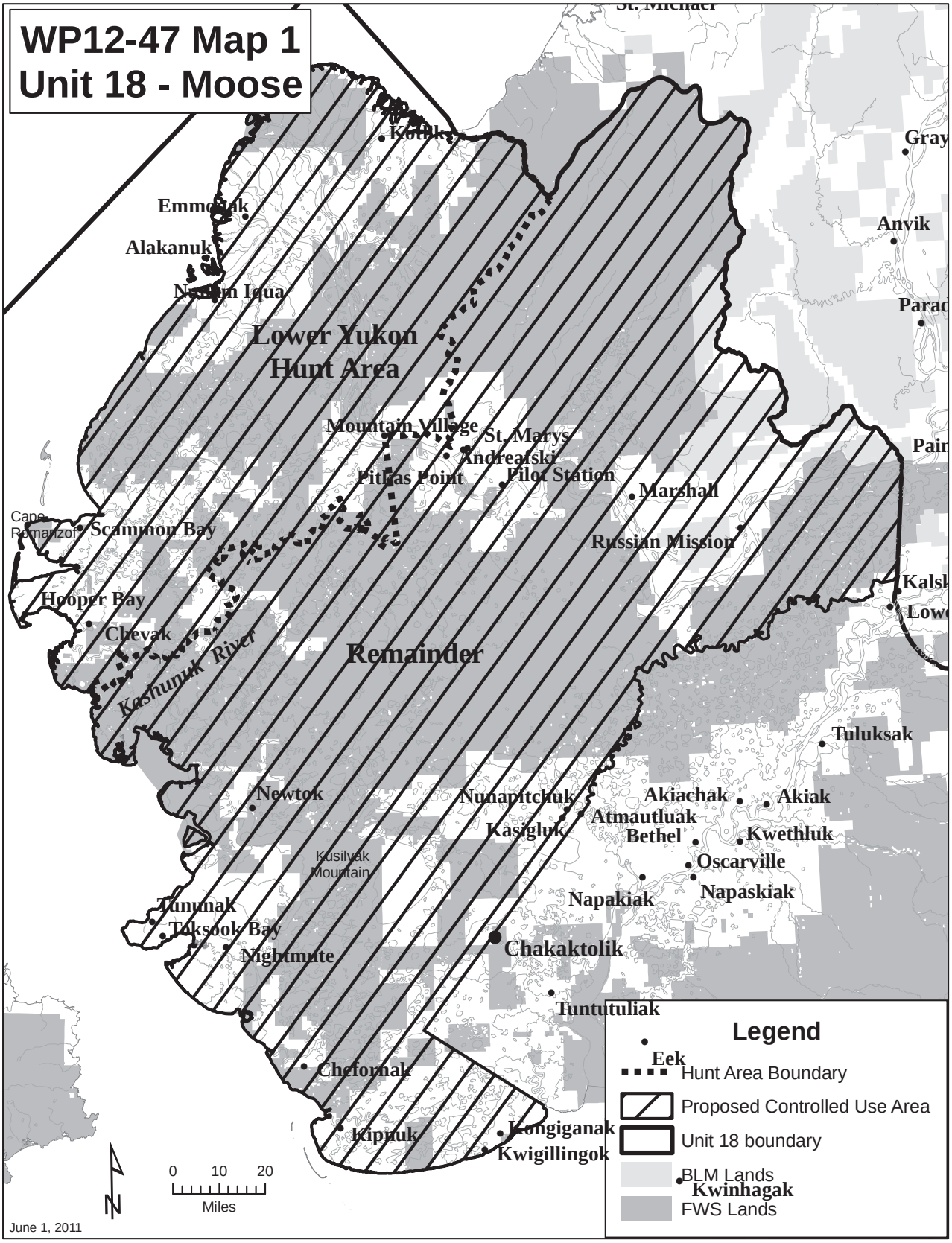
DISCUSSION

The proponent states there are concerns among Unit 18 residents regarding nonlocal users flying in to refuge lands to harvest moose. The proponent states there have been reports of nonlocal "fly-in" moose hunters claiming areas of Unit 18 for their exclusive use, and have asked local Asa'carsarmiut (Mountain Village) tribal members to leave hunting areas. The proposal requests a special provision to create a Unit 18 Federal Controlled Use Area to restrict the use of aircraft during moose seasons for users harvesting moose, including transportation of any moose hunter or moose part. The controlled use area would encompass the Lower Yukon and remainder areas of Unit 18 (**Map 1**). The controlled use area would not apply to transportation of a moose hunter or moose part by aircraft between publicly owned airports.

Existing Federal Regulations

Unit 18—Moose

Unit 18—that portion east of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W 162°22.14' Longitude), continuing upriver along a line ½ mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage.	*No open season*
Federal public lands are closed to the harvest of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmautlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag.	
Unit 18—that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—1 antlered bull.	*Aug. 10–Sept. 30*


WP12-47 Map 1
Unit 18 - Moose
Kotlik
Emmonak
Alakanuk
Nunam Iqua
Lower Yukon
Hunt Area
Mountain Village
St. Marys
Andreafski
Pitkas Point
Pilot Station
Marshall
Russian Mission
Cape Romanzof
Scammon Bay
Hooper Bay
Chevak
Kashunuk River
Remainder
Newtok
Nunapitchuk
Kasigluk
Akiachak
Akiak
Atmautluak
Bethel
Kwethluk
Oscarville
Napaskiak
Napakiak
Kusilvak Mountain
Tununak
Toksook Bay
Nightmute
Chakaktolik
Tuntutuliak
Chefornak
Kipnuk
Kongiganak
Kwigillingok
Tuluksak
Anvik
Gray
Legend
Eek
Hunt Area Boundary
Proposed Controlled Use Area
Unit 18 boundary
BLM Lands
Kwinhagak
FWS Lands
0 10 20
Miles
N
June 1, 2011

1 moose—If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.	*Dec. 20–Feb. 28*
Unit 18—south of and including the Kanektok River drainages to the Goodnews River drainage.	*No open season*
Federal public lands area closed to the harvest of moose.	
Unit 18—Goodnews River drainage, and south to the Unit 18 boundary—1 antlered bull by State registration permit. Any needed closures will be announced by the Togiak National Wildlife Refuge Manager after consultation with BLM, ADF&G, and the Chair of the Yukon–Kuskokwim Delta Subsistence Regional Advisory Council.	*Aug. 25–Sept. 20*
Unit 18 remainder—1 antlered bull	*Aug. 10–Sept. 30* *Dec. 20–Jan. 10*

Proposed Federal Regulations

Unit 18—Moose

Unit 18—that portion east of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the east bank of the Johnson River at its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W 162°22.14' Longitude), continuing upriver along a line ½ mile south and east of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake, then following the south bank east of the Unit 18 border and then north of and including the Eek River drainage.	*No open season*
Federal public lands are closed to the harvest of moose except by residents of Tuntutuliak, Eek, Napakiak, Napaskiak, Kasigluk, Nunapitchuk, Atmautlauk, Oscarville, Bethel, Kwethluk, Akiachak, Akiak, Tuluksak, Lower Kalskag, and Kalskag.	
Unit 18—that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—1 antlered bull.	*Aug. 10–Sept. 30*

1 moose—If 1 antlered bull is taken during the fall season in this area, 1 additional moose may be taken during the winter season. If no moose are taken in the fall season, 2 moose may be taken in the winter season. No more than 2 moose may be harvested in this area in a regulatory year. A Federal registration permit is required. The Yukon Delta NWR Manager may restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year after consultation with the ADF&G and the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council chair.	*Dec. 20–Feb. 28*
The Western Unit 18 Controlled Use Area is closed during moose hunting seasons to the use of aircraft for hunting moose, including transportation of any moose hunter or moose part. However, this does not apply to transportation of a moose hunter or moose part by aircraft between publicly owned airports in the controlled use area, or between a publicly owned airport within the area and points outside of the area. The controlled use area consists of that portion of Unit 18 west of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the west bank of the Johnson River and its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W 162°22.14' Longitude), continuing upriver along a line 1/2 mile north and west of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake.	
Unit 18—south of and including the Kanektok River drainages to the Goodnews River drainage.	*No open season*
Federal public lands area closed to the harvest of moose.	
Unit 18—Goodnews River drainage, and south to the Unit 18 boundary—1 antlered bull by State registration permit. Any needed closures will be announced by the Togiak National Wildlife Refuge Manager after consultation with BLM, ADF&G, and the Chair of the Yukon–Kuskokwim Delta Subsistence Regional Advisory Council.	*Aug. 25–Sept. 20*
Unit 18 remainder—1 antlered bull	*Aug. 10–Sept. 30* *Dec. 20–Jan. 10*

The Western Unit 18 Controlled Use Area is closed during moose hunting seasons to the use of aircraft for hunting moose, including transportation of any moose hunter or moose part. However, this does not apply to transportation of a moose hunter or moose part by aircraft between publicly owned airports in the controlled use area, or between a publicly owned airport within the area and points outside of the area. The controlled use area consists of that portion of Unit 18 west of a line running from the mouth of the Ishkowik River to the closest point of Dall Lake, then to the west bank of the Johnson River and its entrance into Nunavakanukakslak Lake (N 60°59.41' Latitude; W 162°22.14' Longitude), continuing upriver along a line 1/2 mile north and west of, and paralleling a line along the southerly bank of the Johnson River to the confluence of the east bank of Crooked Creek, then continuing upriver to the outlet at Arhymot Lake.

Existing State Regulations

Unit 18 Kuskokwim Area, east of a line from the mouth of the Ishkowik River to Dall Lake, then to the Johnson River at its entrance to Nunavakanukakslak Lake (N 60° 59.41' Lat; W 162° 22.14' Lon), then upstream 1/2 mile south of the south bank of the Johnson River to Crooked Creek, then upstream along the creek to Arhymot Lake to the Unit 18 boundary, and north of and including the Eek River drainage.	*Resident: One antlered bull by permit available in person at ADF&G in Bethel and villages within the hunt area from Aug. 1–Aug. 25. (Harvest quota to be announced).*	*RM615*	*Sept. 1–Sept. 10*
	Nonresident:		*No open season*
Unit 18 that portion south of the Eek River drainage and north of the Goodnews River drainage	*Resident: One antlered bull*		*Sept. 1–Sept. 30*
	Nonresident:		*No open season*
Unit 18 that portion south of and including the Goodnews River drainage	*Resident: One antlered bull by permit available in person in Goodnews Bay and Platinum Aug. 1–25. Season will be closed by emergency order when 10 bull are taken.*	*RM620*	*Sept. 1–Sept. 30*
	Nonresident:		*No open season*

Unit 18 Lower Yukon Area, that portion north and west of the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of a line from Chakaktolik to Mountain Village, excluding all Yukon River drainages upriver from Mountain Village.	*Resident: One antlered bull*	*Aug. 10–Sept. 30*
	Or	
	One moose	*Dec. 20–Feb. 28*
	Nonresident: One antlered bull	*Sept. 1–Sept. 30*
Unit 18 remainder	*Resident: One antlered bull*	*Aug. 10–Sept. .30*
	Or	
	One antlered bull	*Dec. 20–Jan. 10*
	Nonresident: One antlered bull	*Sept. 1–Sept. 30*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18 and consist of 62% FWS and 2% BLM managed lands (**Unit 18 Map**).

Customary and Traditional Use Determinations

Residents of Unit 18, Upper Kalskag, Aniak, and Chuathbaluk have a customary and traditional use determination for moose in Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and that portion of the Kuskokwim River drainage upstream, but excluding the Tuluksak River drainage.

Residents of Unit 18, St. Michael, Stebbins, and Upper Kalskag have a customary and traditional use determination for moose in Unit 18, that portion north of a line from Cape Romanzof to Kuzilvak Mountain to Mountain Village, and all drainages north of the Yukon River downstream from Marshall.

Residents of Unit 18 and Upper Kalskag have a customary and traditional use determination for harvesting moose in the remainder of Unit 18.

Regulatory History

Proposals WP05-11 and WP06-27 were submitted by the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council and also requested the establishment of a Federal Controlled Use Area for all moose seasons in the lower Yukon River drainage within Unit 18. Proposal WP05-11 was deferred by the Federal Subsistence Board (Board) in 2005 based on its limited jurisdiction to implement effective controlled use areas because of mixed land jurisdictions in the affected area (FSB 2006). The request was resubmitted as Proposal WP06-27 and a companion proposal to the Alaska Board of Game (State Proposal 9). The Board rejected WP06-27 in 2006 because there were no conservation concerns with the moose population and the Board's limited jurisdiction to implement effective controlled use areas. Likewise, the Alaska Board of Game rejected State Proposal 9 at its November 2005 meeting based on their conclusion that the current level of fly-in hunter impacts on the resource and affected users was insignificant.

The areas of Unit 18 covered by the proposed controlled use area (Lower Yukon Area and remainder) were closed to non-Federally qualified users from 1991 to 2007. The closure was important given low moose numbers at that time. Proposal WP06-30 requested the removal of the Federal closure for the Unit 18 remainder fall moose season (September 1–30). The biological information presented in the WP06-30 analysis supported removal of the closure for not only the Unit 18 remainder, but also that portion of Unit 18 downstream from Mountain Village (Lower Yukon Area). The Yukon-Kuskokwim Delta Subsistence Regional Advisory Council opposed the proposal because of local concerns. At its May 2006 meeting, the Board deferred action on the proposal for one year with a commitment to revisit the proposed regulation change in May 2007. The Board's intent for the deferral was to allow time for refuge staff to conduct information outreach on the status of the existing moose population in communities before making a decision. The Board's May 2006 deferral, along with the rapid growth and size of the lower Yukon River moose population, created disagreement over the appropriateness of the Federal closure. Because of local concerns of increased competition and hunting pressure that would follow after the elimination of the Federal closure, the Board received several proposals in October 2006 concerning the moose regulations for the affected area, including:

- Proposal WP07-26 requested a positive customary and traditional use determination for moose in Unit 18 for the residents of St. Michaels and Stebbins. The Board adopted the proposed regulatory change in May 2007.

- Proposal WP07-27 requested an August 10–August 19 families-only moose season in Unit 18 remainder. The Board did not adopt the proposed change at its May 2007 meeting because it cannot adopt regulations that favor families only.

- Proposal WP07-28 requested an earlier season in Unit 18 remainder beginning on August 20, instead of September 1. The Board adopted a modified recommendation of an August 10 season open date for the Yukon River drainage portion of Unit 18 and Unit 18 remainder at its May 2007 meeting.

- Proposal WP07-29 requested a liberalization of the harvest limit from one antlered bull to one moose in Unit 18 remainder with a winter season extension to January 20, instead of January 10. The Board adopted the season extension with the modification of one moose for the Yukon River drainage below and including Mt. Village only, due to the very high calf composition and concerns of the population size and growth rate may be adversely affecting the habitat's carrying capacity in that area.

- Proposal WP07-30 requested a continuous one bull harvest limit from September 1 to March 31. Because such liberalizations in harvest limit should be adopted gradually to allow for close monitoring of harvest effects on the population, the Board did not adopt the proposed regulatory change.

- Proposal WP07-31 requested an August 20–31 moose season with a one antlered bull harvest limit for residents of Andreafsky and St. Mary's within the Andreafsky River drainage of Unit 18 remainder; and Proposal WP07-64 requested the Board extend the fall moose season by adopting the proposed 12-day, August 20–31 extension with a one antlered bull or cow moose harvest limit for residents of Marshall. If a proposal seeks a prioritization for use of a subsistence resource among rural residents having customary and traditional use of that resource, as was the case with these two proposals, an analysis must be done in accordance with Section 804 of ANILCA if the population necessitates such prioritization. Because the moose population in this area could

support harvest by all Federally qualified subsistence users, an "804" analysis was not conducted, and the Board did not adopt these proposals.

- At its May 2007 meeting, the Board adopted Proposal WP07-32 (deferred proposal WP06-30) to open Federal public lands to non-Federally qualified subsistence users. The Board stated that the closure was no longer warranted as the moose population had increased to the point where additional harvest could occur. The Refuge Manager of the Yukon Delta National Wildlife Refuge made extensive outreach efforts with local residents and committed to lessen competition by prohibiting transporters access to local subsistence use areas (Rearden 2007, pers. comm.).

Special Action WSA06-04, submitted by the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council in the fall 2006, was approved by the Board in December 2006. The special action expanded the 2006/07 harvest limit from "one bull or one calf" to "one moose" and extended the winter season 10 days in the lower area of the Yukon River drainage in Unit 18 downstream from Mountain Village. Local wildlife managers and representatives of the Council testified at the October 2006 meeting that a combination of factors, including mild fall weather conditions, a late rut, low water levels, and high fuel prices, resulted in a harvest shortfall during the 2006 fall season. These changes, implemented through the special action, provided local users additional opportunity to harvest any moose from this rapidly expanding moose population during the December 20–January 20 season.

Proposal WP10-56, submitted by the Yukon Delta National Wildlife Refuge, requested an increase in the harvest limit in the lower Yukon area of Unit 18 from one to two moose per regulatory year. Under the proposed actions, Federally qualified subsistence users who harvested a bull moose in the fall season, would be allowed to harvest an additional moose during the winter season. Federally qualified subsistence users who did not harvest a moose during the fall season could harvest two moose during the winter season. In 2010, the Board adopted proposal WP10-56 with modification to increase the harvest limit to two moose during a regulatory year and increased the length of the Federal winter season from Dec. 20–Jan. 20 to Dec. 20–Feb. 28.

Current Events Involving Species

A companion proposal has been submitted to the Alaska Board of Game (Kenner 2011, pers. comm.). However, the Alaska Board of Game has not published its proposal book, and no date has been set to consider the proposal during the November 2011 to March 2012 meeting schedule.

Biological Background

A general summary, based on analysis of existing survey results for the moose population along the Yukon River in Unit 18, is that the population is highly productive, continues to grow, and is capable of supporting an increased harvest. Moose populations have steadily increased among the Lowest Yukon, Andreafsky, and Paimiut survey areas since the early to mid-1990s (Perry 2008). The Lower Yukon survey area has seen a dramatic increase in moose numbers from zero in 1988 to 2,828 moose [3,320 when including a sightability correction factor (SCF) to the estimate] in 2008 (**Figure 1**). The density of moose in the Lower Yukon area was estimated between 2.4 and 2.8 moose/mi^2 in 2008. Moose density estimates increased from 0.04 in 1995 to 0.26 moose/mi^2 in 2002 in the Andeafsky survey area (**Figure 1**). Moose density estimates increased from 0.64 in 1992 to 2.3 moose/mi2 in 2006 in the Paimiut survey area (**Figure 1**).

Yukon Delta National Wildlife Refuge biologists conducted moose composition counts along the Lower and Middle Yukon survey areas in 2010 (Rearden 2011, pers. comm.). The Middle Yukon survey area

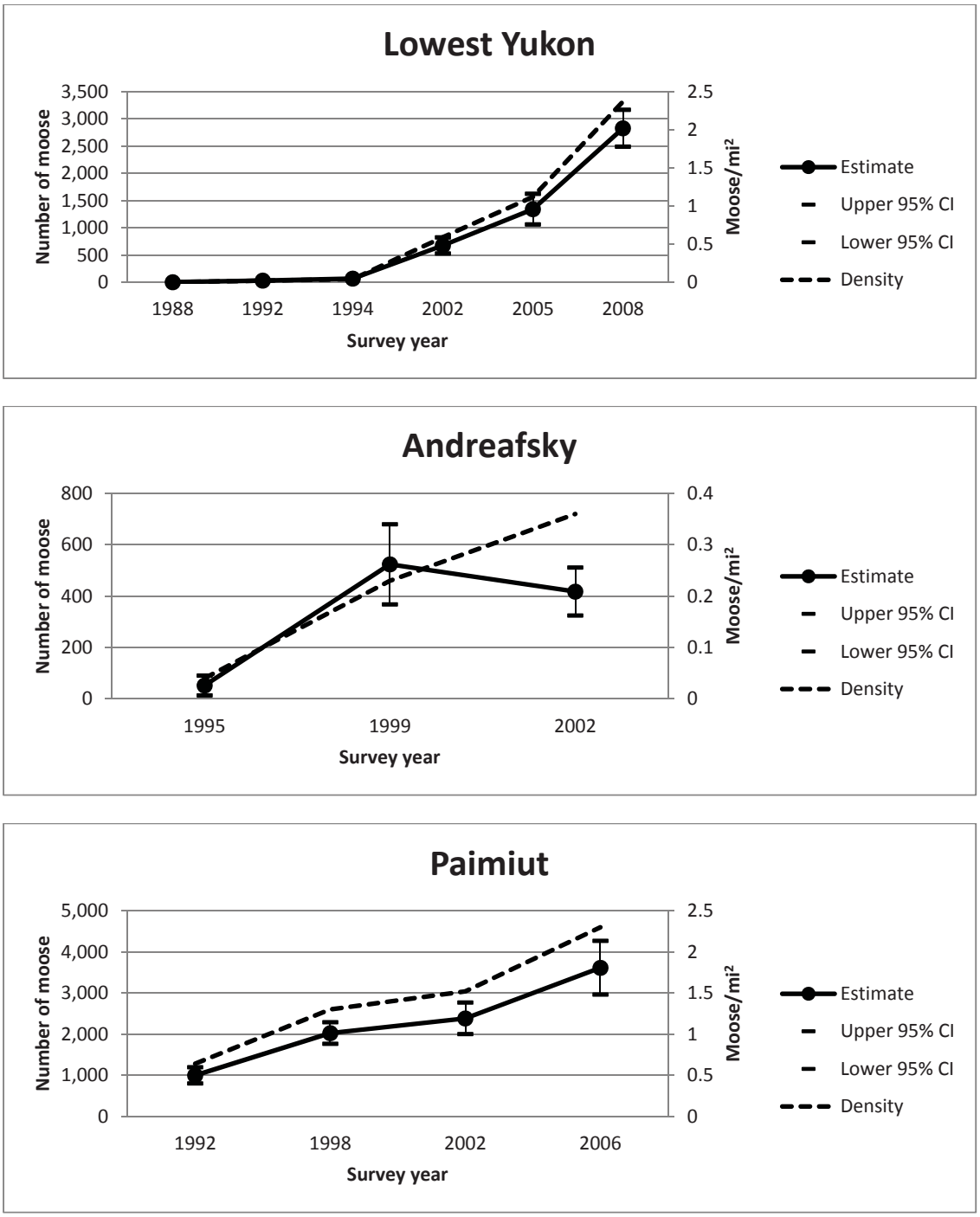


Figure 1. Moose population and density estimates for the Lowest Yukon, Andreafsky, and Paimut survey areas of Unit 18 between 1988 and 2006 (adapted from Table 1 in Perry 2008). Survey methods varied between minimum counts, the spatial method, and the Gasaway method (see Perry 2008).

includes the Andreafsky and Paimiut survey areas mentioned above. The Lower Yukon composition survey was conducted on November 8, 2010 and a total of 845 moose were observed (**Table 1**). Bull:cow ratios were 30 bulls:100 cows and calf:cow ratios were 69 calves:100 cows. Of the observed cows, 55% had calves and 26% had twins. Moose numbers also increased in the Middle Yukon survey area. A total of 619 moose were observed during the Middle Yukon composition survey (**Table 1**). Bull:cow ratios

Table 1. Sex and age composition data of moose populations in the Lower Yukon and Middle Yukon survey areas of Unit 18. Aerial surveys were flown in the fall of 2010.

		Survey area	
Class	**Subclass**	**Lower Yukon**	**Middle Yukon**
Cows	**Total**	**424**	**305**
Calves	Single	171	103
	Twins	61	40
	Triplets	0	1
	Total[a]	**293**	**186**
Bulls	Small	58	46
	Medium	58	51
	Large	12	31
	Total[a]	**128**	**128**
Adults	**Total**	**552**	**433**
All moose	**Total**	**845**	**619**

[a] Not all individuals could be positively placed into subclasses, but were counted their respective class totals.

were 42 bulls:100 cows and calf:cow ratios were 61 calves:100 cows. Of the observed cows, 47% had calves and 28% had twins. The calf:cow ratios on the Middle Yukon increased from 2002 (22 calves:100 cows) and 2005 (42 calves:100 cows). Bull:cow ratios for both of these survey areas are at or above management objectives. The calf:cow ratios are high for both survey areas suggesting that populations are still growing.

State Management Objectives for Unit 18 (Perry 2008) are as follows:

- Allow the lower Yukon River moose population to increase above its estimated size of 2500–3500 moose. Allow the lower Kuskokwim River moose population to increase above its estimated size of 75–250 moose to at least 2000 moose.
- Maintain the current age and sex structure for both populations, with a minimum of 30 bulls:100 cows.
- Conduct seasonal sex and age composition surveys as weather allows.
- Conduct winter censuses and recruitment surveys in the established survey areas on a rotating basis.
- Conduct fall and/or winter trend counts to determine population trends.
- Conduct hunts consistent with population goals.
- Improve knowledge of and compliance with harvest reporting requirements and hunting regulations through education and incentives.
- Address user conflicts through education and hunter contacts.

Harvest History

The customary and traditional use determination for caribou in Unit 18 encompasses about 26,000 people living in about 50 communities of which about 6,000 live in Bethel (ADLWD 2011). Culturally, residents of these communities are primarily Yup'ik Eskimos sharing a common language. It should be noted that many rural Alaska areas have low compliance with harvest ticket systems (Andersen and Alexander 1992), and western Alaska is no exception. The harvest report rate to ADF&G as compared to estimates from household harvest surveys during the same or similar years ranges from none to 97% (compare ADF&G 2011, FWS 2011), which means the residents of some communities do not report their moose hunting activities to ADF&G. Because of the potential for underreporting, conventional ADF&G harvest reporting systems do not always reflect the true level of harvest.

Airplanes are used to access moose hunting areas by Federally qualified subsistence users and non-Federally qualified users in Unit 18 (**Table 2**). Between 2007 and 2009, 3% to 7% of all users who returned harvest reports listed airplanes as their primary method of transportation. While the overall use of airplanes has been low compared to overall effort, non-Federally qualified users used airplanes as transportation proportionately more than Federally qualified subsistence users. Non-Federally qualified users comprised 5% to 12% of the hunting effort in which residency was identified, but comprised 64% to 72% of airplane use. The overall harvest of moose by all users utilizing airplane transportation to hunting areas has been low (less than 4% of total harvest) in Unit 18 (**Table 3**). Both the use of airplanes and the number of moose harvested by those users utilizing airplanes dropped in the 2009/2010 regulatory year (**Table 2, Table 3**).

Table 2. Total moose hunting effort and effort in which airplanes were listed as the primary method of transportation by Federally qualified subsistence users and non-Federally qualified user in Unit 18, 2007–2009. Hunting effort data was based on Federal and State reporting systems (FWS 2011).

	Regulatory year					
	2007		2008		2009	
User status	Number hunting	Number using airplanes	Number hunting	Number using airplanes	Number hunting	Number using airplanes
Federally qualified	727	15	622	17	1,054	6
Non-Federally qualified	53	27	83	44	59	20
Unknown	47	0	133	0	38	4
Total	**827**	**42**	**838**	**61**	**1,151**	**30**

Table 3. Total moose harvest and harvest in which airplanes were the primary method of transportation by Federally qualified subsistence users and non-Federally qualified user in Unit 18, 2007–2009. Harvest data was based on Federal and State reporting systems (FWS 2011).

	Regulatory year					
	2007		2008		2009	
User status	Total moose harvest	Moose harvest with airplane	Total moose harvest	Moose harvest with airplane	Total moose harvest	Moose harvest with airplane
Federally qualified	405	9	320	5	538	2
Non-Federally qualified	19	9	37	15	29	4
Unknown	34	0	107	0	27	3
Total	**458**	**18**	**464**	**20**	**594**	**9**

Moose harvest by nonresidents is minimal compared to that of residents in Unit 18. The number of moose harvested by Alaska residents (Federally qualified subsistence users and non-Federally qualified residents) has been steadily increasing in Unit 18 (**Figure 2**). Nonresident harvest has remained low throughout the unit, and the mean nonresident harvest was six moose between 1998 and 2009. In 2007, the closure to non-Federally qualified users was lifted in the Lower Yukon and remainder areas of Unit 18. For nonresidents, between 2007 and 2009, the mean harvest of moose increased slightly to 10 moose per year for all of Unit 18. During the same period, the mean resident harvest was 398 moose for all of Unit 18. The number of moose harvested by nonresidents using airplanes is likely very low. Between regulatory years 1998 and 2004, one moose was reportedly taken in the Lower Yukon area of Unit 18 by fly-in hunters from outside Alaska (FSB 2006).

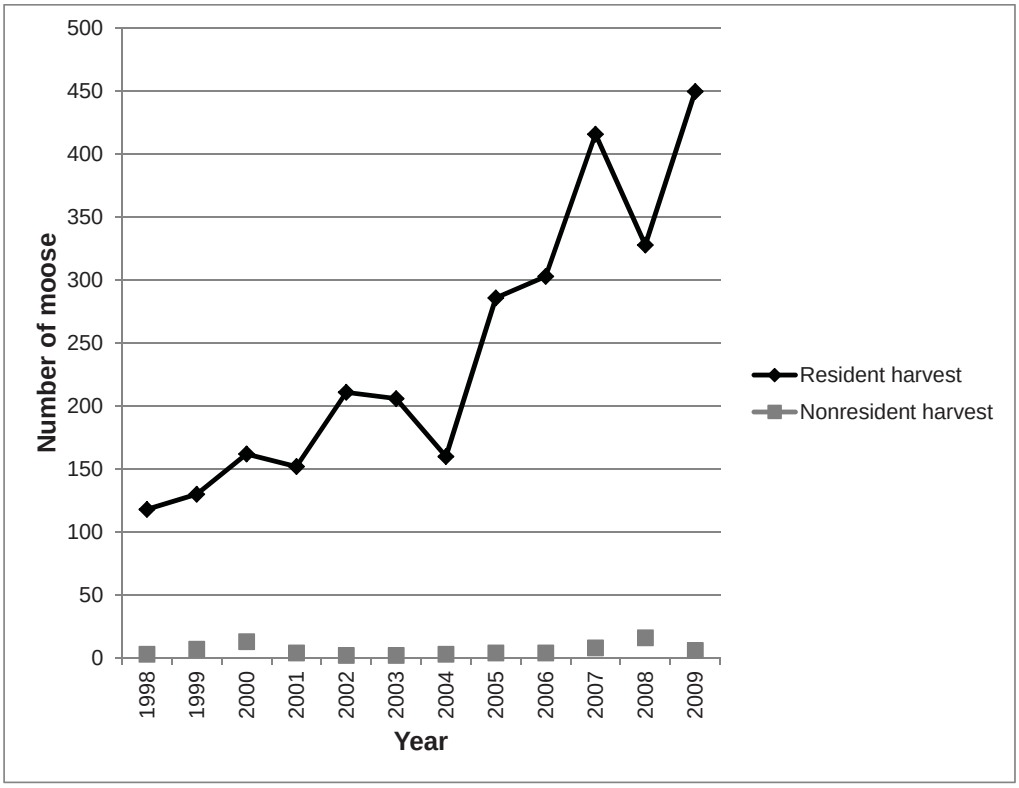


Figure 2. Total annual harvest of moose in Unit 18 by residents and nonresident using a State harvest ticket between 1998 and 2009. The Lower Yukon and remainder areas of Unit 18 were opened to non-Federally qualified users in 2007.

Effects of the Proposal

If the proposal were adopted, the use of aircraft would be restricted for hunting moose, including transportation of any moose hunter or moose part, on Federal public lands within the Unit 18 Lower Yukon and remainder areas. The proposal would affect all nonlocal and local users who access Federal public lands by aircraft to harvest moose in this portion of Unit 18, including Federally qualified subsistence users who access traditional hunt areas in the lower Yukon River drainage with privately-owned aircraft. Between 2007 and 2009, 6 to 17 Federally qualified subsistence users reported using airplanes as the primary method of transportation while hunting moose in Unit 18 (**Table 2**). Those subsistence users utilizing airplanes reportedly harvested 2 to 9 moose.

Local hunters have complained about non-local fly-in hunters interfering with their opportunities to harvest moose. Reports have consisted of non-local hunters flying in and excluding locals by claiming hunting areas (YKDSRAC 2011) and transporters dropping off hunters in close proximity to native allotments or established camps (YKDSRAC 2010). The proposed controlled use area would fail to adequately address the proponent's concerns about non-Federally qualified hunters flying in to harvest moose in Unit 18. The Federal Subsistence Board does not have the jurisdiction to restrict access methods on State and private lands, or to restrict spotting of moose from aircraft. Current State and Federal regulations already prohibit the assisting or taking of ungulates before 3:00 a.m. following the day in which airborne travel occurs, except for flights in regularly scheduled commercial aircraft.

The proposed controlled use area would likely have minimal impacts on the moose population in the Lower Yukon and remainder areas. Airplanes were reportedly used by less than 7% of all users during the 2007–2009 moose seasons in Unit 18 and these users accounted for less than 4% of the total moose harvest.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-47.

Justification

The Federal Subsistence Board does not have jurisdiction to restrict access methods on State and private lands, or to restrict spotting moose from aircraft. Because of the mixed land ownership and State jurisdiction on navigable waters within the affected area, the establishment of a Federal-only controlled use area would not effectively restrict aircraft access as requested by the proponent. Both Federal and State regulations currently prohibit taking moose the same day the hunter is airborne. If illegal use of aircraft for hunting moose in the area is occurring or if moose hunters are illegally displacing local tribal hunters, such incidents should be called to the attention of State and Federal law enforcement personnel.

There are no conservation concerns for the affected moose population that would require regulatory restrictions. Moose populations in these areas are highly productive, continue to expand, and can support increased harvest. In fact, Federal and State managers are concerned with the rate of increase for moose in the Lower Yukon area and are looking to reduce the population growth (Rearden 2011, pers. comm.).

Finally, although Federal subsistence management regulations parallel controlled use area restrictions established by the State, the Board has not established any Federal-only controlled use areas during its tenure. To be effective in areas of mixed jurisdiction, both State and Federal controlled use area provisions need to be in place.

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WP12-50 Executive Summary	
General Description	Proposal WP12-50 would allow moose to be taken from a motor-driven boat that is moving under power. The request addresses the remainder area of Unit 18 only. The remainder area of Unit 18 is defined in **Map 1**. *Submitted by the Association of Village Council Presidents*
Proposed Regulation	**Unit 18—Caribou and Moose** *§__.26 (n)(18) (iii)(C) You may take caribou from a boat moving under power in Unit 18;* *§__.26 (n)(18) (iii)(D) You may take moose from a boat moving under power in ~~that portion~~* ***the following portions*** *of Unit 18:* *(1) North and west of a line from the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village;* ***(2) And in the remainder area of Unit 18****.*
OSM Preliminary Conclusion	**Support**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	**Oppose**
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-50

ISSUES

Proposal WP12-50, submitted by the Association of Village Council Presidents, would allow moose to be taken from a motor-driven boat that is moving under power. The request addresses the remainder area of Unit 18 only. The remainder area of Unit 18 is defined in **Map 1**.

DISCUSSION

The proponent states that the proposed regulation change reflects the current method of harvesting moose in the region, and that the practice has been on-going since motorized boats became available in the area. It is a common practice of subsistence users in the area to hunt moose from a motor-driven boat under slow power in the early morning and evening hours when animals frequent the river banks (Sundown 2011, pers. comm.). A slow speed is used to avoid scaring moose from river banks by keeping motor noise to a minimum. A motor-driven boat under slow power provides a relatively stable platform for shot placement. No accidents have been reported as a result of this activity.

While statewide Federal subsistence regulations do not allow the harvest of wildlife from a boat under power, exceptions are allowed under special provisions. For example, caribou may be taken from a boat moving under power in Units 18, 23, 25, and 26. Additionally, moose may be taken from a boat moving under power in a portion of Unit 18 (the lower Yukon River drainage below Mountain Village) and in Unit 25.

Existing Federal Regulation

Unit 18—Caribou and Moose

§__.26 (n)(18) (iii)(C) You may take caribou from a boat moving under power in Unit 18;

§__.26 (n)(18) (iii)(D) You may take moose from a boat moving under power in that portion of Unit 18, north and west of a line from the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village.

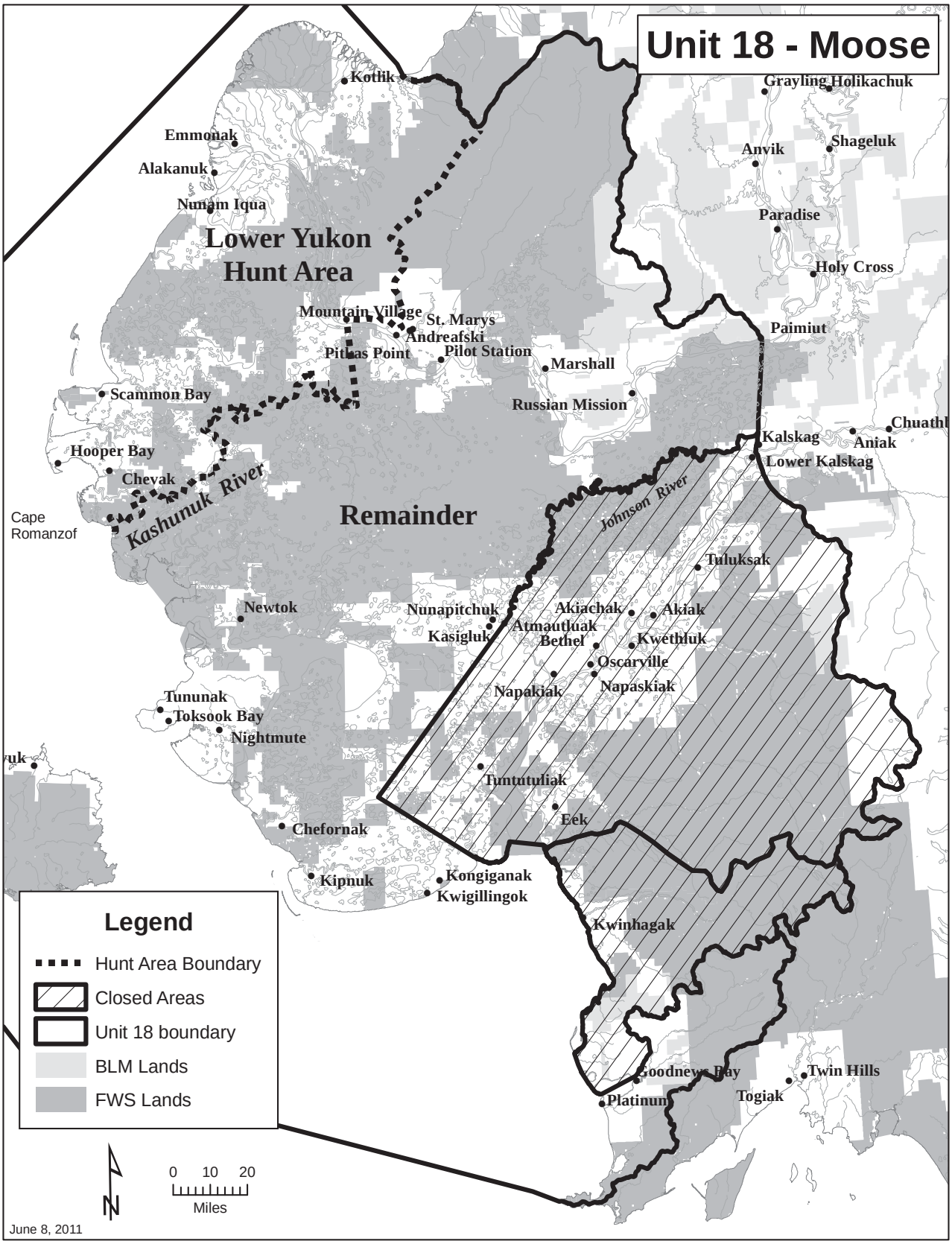
Proposed Federal Regulation

Unit 18—Caribou and Moose

§__.26 (n)(18) (iii)(C) You may take caribou from a boat moving under power in Unit 18;

§__.26 (n)(18) (iii)(D) You may take moose from a boat moving under power in ~~that portion~~ ***the following portions*** *of Unit 18:*

(1) North and west of a line from the Kashunuk River including the north bank from the mouth of the river upstream to the old village of Chakaktolik, west of line from Chakaktolik to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village;


Unit 18 - Moose
Kotlik
Grayling
Holikachuk
Emmonak
Alakanuk
Nunam Iqua
Anvik
Shageluk
Paradise
Holy Cross
Lower Yukon
Hunt Area
Mountain Village
St. Marys
Andreafski
Pitmas Point
Pilot Station
Marshall
Paimiut
Scammon Bay
Russian Mission
Chuathl
Kalskag
Aniak
Lower Kalskag
Hooper Bay
Chevak
Kashunuk River
Cape
Romanzof
Remainder
Johnson River
Tuluksak
Newtok
Nunapitchuk
Akiachak
Akiak
Atmautluak
Kasigluk
Bethel
Kwethluk
Oscarville
Napaskiak
Napakiak
Tununak
Toksook Bay
Nightmute
Tuntutuliak
Eek
Chefornak
Kipnuk
Kongiganak
Kwigillingok
Kwinhagak
Goodnews Bay
Twin Hills
Platinum
Togiak
Legend
Hunt Area Boundary
Closed Areas
Unit 18 boundary
BLM Lands
FWS Lands
N
0 10 20
Miles
June 8, 2011

(2) And in the remainder area of Unit 18.

Other Relevant Federal Regulations

Subsistence taking of wildlife

§__.26(b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased;

(15) Taking swimming ungulates, bears, wolves, or wolverine.

Unit 23—Caribou

§__.26(n)(23)(iii)(A) You may take a caribou from a boat moving under power in Unit 23;

Unit 25—Caribou and Moose

§__.26(n)(25)(iii)(B) You may take caribou and moose from a boat moving under power in Unit 25.

Unit 26—Caribou

§__.26(n)(26)(iii)(A) You may take caribou from a boat moving under power in Unit 26.

Existing State Regulation

5 AAC 92.080. Unlawful methods of taking game; exceptions

The following methods of taking game are prohibited:

(4) unless otherwise provided in this chapter, from a motor-driven boat or a motorized land vehicle, unless the motor has been completely shut off and the progress from the motor's power has ceased, EXCEPT that a

(A) motor-driven boat may be used as follows:

(i) in Units 23 and 26 to take caribou;
(ii) notwithstanding any other provision in this section, in Unit 22 to position hunters to select individual wolves for harvest;
(iii) under the authority of a permit issued by the department.

Extent of Federal Public Land

Federal public lands comprise approximately 65% of the remainder area of Unit 18, approximately 90% of which is managed by the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service lands are located within the Yukon Delta National Wildlife Refuge. The other 10% of Federal public lands is managed by the Bureau of Land Management.

Customary and Traditional Use Determination

The customary and traditional use determinations for moose in Unit 18 include all residents of Unit 18 and Upper Kalskag. Additionally, residents of St. Michael, Stebbins, Aniak, and Chuathbaluk can hunt in portions of the remainder area of Unit 18 under Federal moose regulations.

Regulatory History

In 1991, the regulation for Unit 23 allowing the harvest of caribou from a boat under power, described above, was adopted at the inception of the Federal Subsistence Management Program from State regulations (72 FR 29314; June 26, 1991). In 1994, the Board adopted Proposal WP94-82 thereby allowing the harvest of caribou from a boat under power in Unit 26 (59 FR 29035; June 3, 1994). In 1995, the Board adopted Proposal WP95-52 allowing the harvest of caribou and moose from a boat under power in Unit 25 "to accommodate local customary and traditional use patterns" (60 FR 31545; June 15, 1995), as recommended by the Eastern Interior and Southcentral Subsistence Regional Advisory Councils (FSB 1995: 444–447). The Eastern Interior Council's recommendation stated that the proposal "supports subsistence needs and reflects current practices" (FWS 1995:343). In 2000, the Board adopted Proposal WP00-41 allowing the harvest of caribou from a boat under power in Unit 18 (65 FR 40760; June 30, 2000).

In 2010, the Board adopted Proposal WP10-59 with modification to allow the harvest of moose, in addition to caribou, from a boat under power in a portion of Unit 18 (the Yukon River drainage below Mountain Village) (75 FR 37921; June 30, 2010). According to the proposal analysis, the modification removed the words "under low or idle power" from the proposal to eliminate potential confusion on the part of hunters and law enforcement concerning what exactly "under low or idle power" meant. Additionally, the proposal analysis noted that regulations existing at the time that also concerned hunting from a boat under power (in Units 18, 23, 25, and 26, mentioned above), did not contain the words "under low or idle power" either (FWS 2010: 630). The modification to the proposal would therefore make the language in the regulation consistent with existing regulations.

Based on its written recommendation to the Board, the Council also supported the modified proposal and stated:

> There have been no reported accidents caused by hunting from moving boats. Resources in the area can sustain the additional harvest of moose . . . . Some people do this as a practical activity while hunting. Keeping the boat under power while hunting in the area is important for safety (to avoid sweepers, rocks, etc.) (FWS 2010: 631).

Board members commented on the modified proposal by saying that: 1) the moose population in the area was healthy; 2) the proposed hunting method was already in use by Federal subsistence users; and 3) the proposed method was allowed in other management units for caribou and moose and resulted in hunters being more successful and safer. The distinction between State and Federally-managed lands was considered one that Federal subsistence users were already making in order to hunt under Federal wildlife regulations, which differed from State wildlife regulations in the area (FSB 2011: 253, 261). Additional testimony from Council chairs during Board deliberations noted that privately-owned, State-managed lands in the area were primarily village corporation lands, owned by local residents who were aware of the boundaries (FSB 2011:260).

Effects of the Proposal

If this proposal is adopted, a Federal subsistence user, in a boat under power, could take moose from Federal public lands in the remainder portion of Unit 18, and this common practice would be legal. There would be little effect on Federal subsistence users because the proposed regulation change legalizes what is a common practice. The harvest of a swimming moose would remain prohibited by §__.26(b)(15). Adoption of this proposal would result in differences between the State and Federal regulations in the remainder area of Unit 18. No effects on wildlife populations are anticipated, and no effects on other users are anticipated.

If this proposal is not adopted, law enforcement could cite Federal subsistence users for taking a moose from a boat under power from Federal public lands of the remainder area of Unit 18.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-50.

Justification

Adoption of this proposal would allow the current practice of Federal subsistence users in the remainder area to harvest moose from a motor-driven boat that is moving under power. Additionally, the practice is not anticipated to affect the moose population in the remainder area of Unit 18. Finally, the proposal uses regulatory language consistent with current regulations allowing this practice in Unit 18 and other management units.

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ADF&G Comments on WP12-50
August 29, 2011; Page 1 of 2

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

Wildlife Proposal WP12-50: This proposal modifies federal subsistence methods and means of taking game to allow moose to be taken while under power in a boat being operated within Unit 18 remainder.

Introduction: Under federal regulations § 100.26 (4) and (15), taking swimming wildlife from a moving boat is illegal unless authorized by the Federal Subsistence Board. Moose population in portions of Unit 18 has increased dramatically in recent years. The populations for Unit 18 Remainder contains the full spectrum of bull:cow ratios and productivity depending upon population, and encompasses areas which support a variety of scenarios from both fall and winter seasons in areas with healthy population to areas closed to all moose hunting due to depressed populations. Current federal subsistence methods of take in Unit 18 Reminder prohibit taking a moose while under power in a boat or while moose are swimming. Traditional method of harvesting moose in both Unit 18 and 18 Remainder hunt areas have not included pursuit and take of swimming game.

Impacts on Subsistence Users: Adoption of this proposal may increase federal subsistence hunter success rates. Additionally, adoption of WP10-50 is not required to ensure continuation of subsistence uses by federally-qualified subsistence users on federal public lands in Unit 18 Remainder.

Opportunity Provided by State: State regulations prohibit the take of game from boats under power in 5 AAC 92.080 (4), as follows:

> **92.080. Unlawful method of taking game; exceptions.** The following methods of taking game are prohibited: … (4) unless otherwise provided in this chapter, from a motor-driven boat or a motorized land vehicle, unless the motor has been completely shut off and the progress from the motor's power has ceased, except that a

State regulations prohibit the taking big game while swimming in 5 AAC 92.085 (7), as follows:

> **92.085. Unlawful method of taking big game; exceptions.** The following methods and means of taking big game are prohibited in addition to the prohibitions in 5 AAC 92.080:
>
> …(7) while a big game animal is swimming, except that a swimming caribou may be taken in Unit 23;

Conservation Issues: INSERT any conservation issues here. I believe we have serious issues with depressed populations in some areas of Unit 18 Remainder.

Enforcement Issues: Changing the federal subsistence method of take to include boats under power would contribute to enforcement issues related to take of big game while swimming and take of other game (e.g., waterfowl hunting). Adopting methods of take regulations that are divergent from the state hunting regulations will increase user confusion and increase

enforcement problems across a vast area encompassing two dozen communities with mixed land ownership patterns.

Federal subsistence hunting regulations only apply on federal public lands; federal subsistence hunting regulations do not apply on nonfederal lands and waters (unlike federal subsistence fishing regulations). The boat accessible waters of Unit 18 Remainder cover thousands of square miles and encompass multiple moose populations of varying status. Much of the Kuskoquim River and most shorelines surrounding communities are not federal public lands and are not subject to federal subsistence wildlife regulations.

Recommendation: Oppose.

WP12-51 Executive Summary	
General Description	Proposal WP12-51 requests an extension of the season and an increased harvest limit for ptarmigan in Unit 18. *Submitted by the Yukon Delta National Wildlife Refuge*
Proposed Regulation	**Unit 18 — Ptarmigan** ~~*20 ptarmigan per day, 40 in possession*~~ ~~*Aug. 10 – May 30*~~ *No limit* ***Aug. 10 – Jun. 15***
OSM Preliminary Conclusion	**Oppose**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	**Support** Proposal WP12-51 **with modification**. The department supports extending the Federal subsistence Ptarmigan hunting season in Unit 18 and recommends changing the harvest limits to 50 per day with 100 in possession.
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-51

ISSUES

Proposal WP12-51, submitted by the Yukon Delta National Wildlife Refuge, requests an extension of the season and an increased harvest limit for ptarmigan in Unit 18.

DISCUSSION

The proponent states that ptarmigan migrate westward from interior portions of the Yukon-Kuskokwim Delta (Y-K Delta) as spring progresses, but the current season closes as ptarmigan arrive in coastal areas, thereby precluding Federally qualified subsistence users from harvesting ptarmigan. The proponent also states the daily harvest and possession limits restrict the total number of ptarmigan Federally qualified subsistence users can harvest.

Existing Federal Regulation

Unit 18 — Ptarmigan

20 ptarmigan per day, 40 in possession	*Aug. 10 – May 30*

Proposed Federal Regulation

Unit 18 — Ptarmigan

~~*20 ptarmigan per day, 40 in possession*~~	~~*Aug. 10 – May 30*~~
No limit	***Aug. 10 – Jun. 15***

Existing State Regulation

Unit 18 — Ptarmigan

20 per day, 40 in possession	*Aug. 10 – Apr. 30*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18, and consist of 62% FWS and 2% BLM managed lands (**Unit Map 18**).

Customary and Traditional Use Determinations

All rural residents have a positive customary and traditional use determination for ptarmigan in Unit 18.

Regulatory History

In 1990, the Federal Subsistence Board (Board) adopted temporary subsistence regulations for ptarmigan that aligned with State regulations. The Federal regulations set the harvest limit for 20 ptarmigan per day with 40 ptarmigan in possession and a season from Aug. 10–Apr. 30.

WP93-47, submitted by the Paimiut Corporation, requested the ptarmigan season in Unit 18 be extended from Aug. 10–Apr. 30 to Aug. 10–May 30 to allow Federally qualified subsistence users more harvest opportunity in the spring. The Federal Subsistence Board adopted the proposal and the season extension went into effect on July 1, 1993.

Current Events Involving Species

The proponent states that a similar proposal addressing the season length and harvest limit for Unit 18 ptarmigan will be before the Board of Game during the November 2011 through March 2012 meeting schedule (Sundown 2011, pers. comm.).

Biological Background

Population data are lacking for ptarmigan in Unit 18, but they are reportedly seasonally abundant throughout the unit in the fall and late spring (Perry 2011, pers. comm.). Ptarmigan abundance may fluctuate along with snowshoe hare populations, as predators use alternative food sources when hare abundance is low (Hannon et al. 1998).

Willow (*Lagopus lagopus*) and rock (*L. muta*) ptarmigan are found in Unit 18. Both species are grouped as "ptarmigan" under State and Federal regulations. Willow ptarmigan are considered locally migratory and typically move short distances from breeding to wintering areas (Hannon et al. 1998). Wintering areas include interior portions of Unit 18 where more willows occur (Sundown 2011, pers. comm.). Rock ptarmigan may remain within breeding areas or migrate (Montgomerie and Holder 2008). Both species may form large flocks during winter and migration periods (Hannon et al. 1998, Montgomerie and Holder 2008).

Ptarmigan begin arriving in coastal areas of the Y-K Delta around the third week of April or beginning of May, after wintering in more interior portions of Unit 18 (Sundown 2011, pers. comm.). Males of both species return to breeding areas approximately two weeks earlier than females (Hannon et al. 1998, Montgomerie and Holder 2008). Territories are established prior to the arrival of females.

Pairs are formed on the breeding grounds shortly after females arrive at breeding areas (late May–early June) (Montgomerie and Holder 2008, references therein). Both species of ptarmigan are monogamous, but male willow ptarmigan remain paired with females throughout the breeding season (Hannon et al. 1998). Nest initiation ranged from 27 May to 12 June in Canada for willow ptarmigan (Hannon et al. 1998). Ptarmigan have adapted to high nest predation and will often renest if clutches are lost; however, clutch sizes decrease in subsequent attempts (Hannon et al. 1998, Cotter 1999, Montgomerie and Holder 2008). The timing of nest predation may be important as female rock ptarmigan were much less likely to renest if clutches are lost during incubation rather than laying (Cotter 1999). Only one brood is raised each year by ptarmigan (Hannon et al. 1998; Montgomerie and Holder 2008).

Harvest History

The number of ptarmigan harvested in Unit 18 each year is variable, but the majority of the harvest takes place in the spring. Harvest estimates, based on household surveys between 1986 and 2001, averaged 15,901 (range 8,923 to 30,685) ptarmigan in Unit 18, and 90% of the harvest took place between April 8 and May 20 (Wentworth 2007) (**Table 1**). More recent surveys from 2002 to 2009 (excluding 2003 when no surveys were conducted) were similar with an average estimated harvest of 15,976 (range 4,667 to 22,946) ptarmigan (Wentworth 2007; Naves 2009, 2010, 2011) (**Table 2**). From 2002 to 2009, 91% of the

Table 1. Estimated seasonal ptarmigan harvest by Federally qualified subsistence users on the Yukon-Kuskokwim Delta, Alaska, 1986 – 2001 (Wentworth 2007). Harvest estimates were based on household surveys among a random sample of villages. Seasons were classified as: spring (April 8–May 20), early summer (May 21–June 24), mid-summer (June 25–July 29), late summer (July 30–August 31), and fall (September 1–October 15).

	Harvest season					
Year	Spring	Early summer	Mid-summer	Late summer	Fall	Total
1986	6,771	1,579	174	60	339	8,923
1987	12,553	1,016	8	505	1,011	15,093
1988	-	-	-	-	-	-
1989	11,785	617	12	5	952	13,371
1990	11,222	98	11	350	898	12,579
1991	27,748	1,355	428	490	664	30,685
1992	14,929	359	37	85	238	15,648
1993	18,748	639	12	27	130	19,556
1994	8,176	685	4	92	501	9,458
1995	15,416	535	56	57	31	16,095
1996	13,198	1,310	0	150	136	14,794
1997	11,873	607	3	119	419	13,021
1998	14,840	601	27	142	635	16,245
1999	18,938	1,842	0	440	282	21,502
2000	14,335	490	0	6	124	14,955
2001[a]	16,165	212	84	36	97	16,594

[a] The household sampling method was changed in 2001 from a random sample to a activity stratification sample (Wentworth 2007).

annual harvest took place between April 1 and June 30 (**Table 2**). Note the season definitions are different between **Tables 1 and 2**.

The ptarmigan harvest was not equal among regions of Unit 18 from 2004 to 2009 (**Table 3**). On average, most of the annual ptarmigan harvest took place in the mid-coast and lower Kuskokwim areas (Naves 2009, 2010, 2011). Yearly harvest estimates were variable within regions, especially for the mid coast area where harvest estimates ranged from 1,099 to 10,754 ptarmigan during the spring harvest season. Portions of the south coast and areas near Bethel were associated with relatively moderate mean harvest levels,

Table 2. Estimated seasonal ptarmigan harvest, with 95% confidence intervals, by Federally qualified subsistence users on the Yukon-Kuskokwim Delta, Alaska, 2002–2009 (Wentworth 2007; Naves 2009, 2010, 2011). Harvest estimates were based on household surveys among a random sample of villages. Seasons were classified as spring (April 1–June 30), summer (July 1–August 31), and fall (September 1–October 31).

Year	Harvest season			Total (95% CI)
	Spring (95% CI)	Summer (95% CI)	Fall (95% CI)	
2002	18,756[a]	159[a]	108[a]	19,023 (13,500–24,546)
2003[b]	-	-	-	-
2004	9,750 (8,385–11,115)	46 (0–109)	2,111 (1,351–2,871)	11,907 (10,389–13,424)
2005	16,162 (11,152–21,172)	110 (0–255)	611 (244–978)	16,883 (13,506–20,260)
2006	17,780 (15,113–20,447)	1,538 (600–2,476)	1,115 (401–1,829)	20,433 (18,005–22,861)
2007	5,291 (4,127–6,455)	104 (30–178)	-[c]	-[c]
2008	4,355 (2,700–6,010)	120 (0–292)	192 (15–369)	4,667 (3,006–6,327)
2009	20,033 (17,429–22,637)	1,474 (811–2,137)	1,440 (648–2,232)	22,946 (20,329–25,564)

[a] Confidence intervals not available.
[b] No surveys conducted in 2003.
[c] No fall surveys were conducted.

although an estimated 6,010 ptarmigan were harvested in 2005 (all during the spring season). Relatively, few ptarmigan were harvested in the north coast, lower Yukon, and central Kuskokwim areas (**Table 3**). Ptarmigan were primarily harvested during the spring season in most regions, but some relatively large harvests occurred during summer (1,482 ptarmigan harvested in the lower Kuskokwim area in 2006) and fall (1,782 ptarmigan harvested in the south coast in 2005; 1,356 ptarmigan harvested in the mid coast in 2009).

Current harvest estimates for ptarmigan in Unit 18 have a limited utility for assessing impacts of management decisions such as effects of season lengths or harvest limits. Harvest estimates from the Alaska Migratory Bird Subsistence Harvest Estimates household survey may have high levels of variation because of (1) annual changes in ptarmigan abundance, (2) hunter access (e.g., snow conditions), (3) annual variation in hunting effort due to the availability of other resources (e.g., salmon, caribou), (4) inappropriate sampling coverage, and (5) heterogeneity of harvest patterns within villages (Naves 2009). Snow cover that lasts later in the spring is more conducive for users to travel and more ptarmigan are likely harvested under these conditions (Perry 2011, pers. comm.). Ptarmigan are often harvested opportunistically as they are encountered in Unit 18 (Sundown 2011, pers. comm.), so higher harvest

Table 3. The range of ptarmigan harvest estimates among regions of the Unit 18 between 2004 and 2009. Harvest information was collected during household surveys for the Alaska Migratory Bird Subsistence Harvest Estimates surveys (Naves 2009, 2010, 2011). Harvest seasons were classified as spring (April 1–June 30), summer (July 1–August 31), and fall (September 1–October 31).

	Harvest season		
Region	**Spring**	**Summer**	**Fall**
South coast	132–2,625	0–514	0–1,782
Mid coast	1,099–10,754	0–41	0–1,356
North coast	0–610	0–16	0–107
Lower Yukon	0–519	0–41	0–173
Lower Kuskokwim	997–5,852	0–1,482	0–336
Central Kuskokwim[a]	0–0	0–0	0–0
Bethel[b]	0–6,010	0–0	0–0

[a] Central Kuskokwim region was not surveyed in 2005, 2008–2009.
[b] Bethel was not surveyed during the fall season in 2007.

levels may be associated with higher ptarmigan abundance or due to travel conditions. In addition, the harvest seasons defined in the survey were designed for migratory birds and do not align with the current Federal ptarmigan season in Unit 18 (Aug. 10 – May 30).

During house to house harvest surveys conducted in ten Unit 18 communities in the 1980s and 1990s, at least 48% of households in each community reported harvesting ptarmigan during a 12-month study period (ADF&G 2011) (**Table 4**). The range was a low of 48% in Kwethluk in 1986 to a high of 93% in Kotlik in 1980. Estimated harvests ranged from a high of 5,450 ptarmigan in Akiachak in 1998 to a low of 578 ptarmigan in Nunam Iqua (formally Sheldon's Point) in 1980 (**Table 5**).

Table 4. Summary of household participation in harvest surveys, Unit 18 communities (ADF&G 2011).

Community	Study Year	Type of Sample	Total Identified Households	Surveyed Households	Percentage of Total	Estimated Human Population
Akiachak	1998	Census	118	81	69%	523
Quinhagak	1982	Random	98	12	12%	474
Tununak	1986	Random	64	33	52%	328

[a] Households were selected to represent the range of ages and incomes in the community.

Table 5. The use and harvest of ptarmigan based on household surveys, Unit 18 communities (ADF&G 2011).

		Percentage of Households					Ptarmigan Harvest				
Community	**Study Year**	**Using Ptarm (%)**	**Hunting Ptarm (%)**	**Harvesting Ptarm (%)**	**Giving Ptarm (%)**	**Receiving Ptarm (%)**	**Reported (Number)**	**Expanded to House-holds Not Surveyed (Number)**	**Lower Estimate (Number)**	**Higher Estimate (Number)**	**95% Confidence Interval (+/- %)**
Akiachak	1998	93	84	84	54	35	3741	5450	4825	6074	11
Alakanuk	1980			81			1078	4620			
Emmonak	1980			56			194	1078			
Kotlik	1980			93			384	1536			
Kwethluk	1986		55	48	35	25		3712			
Mountain Village	1980			81			451	2706			
Nunam Iqua	1980			86			176	578			
Nunapitchuk	1983			88			770	3171	1827	4515	42
Quinhagak	1982			58			226	1846	568	3124	69
Tununak	1986	97	82	82	30	33	994	1928	1434	2422	25

The villages in Unit 18 are situated in various environments affecting the ptarmigan season of harvest and harvesting methods. For example, coastal areas such as the area between Kwigillingok and Hooper Bay have sparse willow patches and ptarmigan migrate inland in winter to take advantage of more abundant food in large clusters of willow trees. Inland and along rivers, ptarmigan may be abundant during winter months. Coastal areas experience an influx of flocks of ptarmigan in spring as ptarmigan migrate to the coast to forage in newly-exposed tundra (Stickney 1983:137, 257).

Subsistence users distinguish between the two species of ptarmigan found in the area: willow ptarmigan *aqesgiq* (Yukon delta), *qangqiiq* (coastal and lower Kuskokwim areas), and rock ptarmigan *ellciayuli* (Andrews 1989:495, Andrews and Peterson 1983:22, Pete 1986:113). Residents of inland communities, such as Russian Mission, Kwethluk, Akiachak, and Tuluksak, harvest both subspecies throughout winter (Andrews and Peterson 1983, Coffing 1991, Coffing et al. 1998, Pete 1986). For residents of coastal communities, such as Kwigillingok, Hooper Bay, Nunam Iqua, Scammon Bay, and Alakanuk, willow ptarmigan are scarce near the villages for most of the winter (Stickney 1983, Fienup-Riodan 1986). Then in late winter or spring, willow ptarmigan flock up and large numbers return to coastal areas to forage in newly-exposed tundra. The timing of return is variable depending on snow cover and weather and is expected any time in late winter or spring.

Before 1930, .22-caliber rifles were not in common use in the Yukon Kuskokwim delta area. Residents herded molting, flightless migratory waterfowl and took them with specially-designed, pronged spears. Upland birds, such as ptarmigan, were harvested with snares, bow and arrow, and spears. Snares were set by older women and boys and girls. For the majority of villages, ptarmigan figured prominently in the spring as food stores were running low and animals such as ptarmigan and hares became available in large numbers. Of the smaller wildlife, ptarmigan were most likely to be dried. Ptarmigan were eaten fresh in soups or dried for later consumption. The birds were skinned and the breasts and wings removed and hung outside on horizontal poles where the meat dried. Once dried, the meat was eaten without further preparation and was a favorite food at summer fish camps.

Once seasonally nomadic, by about 1950 most people were living in permanent communities while visiting seasonal camps. Shotguns and .22-caliber rifles had become more common and the majority of ptarmigan were now harvested with these methods. Some people continue to snare ptarmigan. In the 1980s, based on research mentioned above, ptarmigan were sometimes preserved in freezers, but many continued to dry ptarmigan for later consumption.

Other Alternatives Considered

Two alternatives to the proposed regulatory changes were considered: (1) increase the harvest limit and (2) extend the season while retaining the current harvest limit. Both of the alternatives would provide Federally qualified subsistence users more harvest opportunity.

Increased harvest limit

The first alternative is to increase the harvest limit, but retain a daily and possession limit for ptarmigan in Unit 18. Federally qualified subsistence users are said to harvest ptarmigan opportunistically (Sundown 2011, pers. comm.), and the increase harvest limit would allow them to harvest more ptarmigan when groups of birds are encountered. Harvest limits of 30 ptarmigan daily/60 in possession, 40 ptarmigan daily/80 in possession, or 50 ptarmigan daily/100 in possession were considered.

The majority of units have a Federal harvest limit of 20 ptarmigan per day, 40 ptarmigan in possession, but there are some exceptions. Units 22A and 22B have a Federal harvest limit of 40 ptarmigan per

day, 80 in possession. Other units have more restrictive limits, including Units 14C (10 per day/ 20 in possession) and 15C (5 per day/10 in possession between Jan. 1 – Mar. 31). Under State regulations, all units are at or below a harvest limit of 20 ptarmigan per day/40 in possession, except for Units 23 and 26 (excluding portions of Unit 26B) which have harvest limits of 50 ptarmigan per day/100 in possession. However, estimated harvest levels in Unit 18 (**Tables 1 and 2**) are much higher than units with more liberal harvest limits. Annual harvest estimates were between 123 and 3,671 ptarmigan in Units 22A, 22B, 23, and 26 (**Table 6**).

Table 6. Estimated season ptarmigan harvest, with 95% confidence intervals, by Federally qualified subsistence users in Units 22, 23, and 26, 2004–2009. Harvest estimates were based on household surveys among a random sample of villages. Seasons were classified as spring (April 1–June 30), summer (July 1–August 31), and fall (September 1–October 31).

Unit	Year	Harvest season			Total (95% CI)
		Spring (95% CI)	Summer (95% CI)	Fall (95% CI)	
22[a]	2004	1,274 (752–1,796)	323 (162–485)	1,500 (720–2,280)	3,097 (2,112–4,083)
	2005	2,616 (1,360–3,872)	7 (0–18)	1,048 (555–1,541)	3,671 (2,293–5,048)
	2007	434 (217–651)	10 (0–25)	340 (184–496)	784 (517–1,050)
23[b]	2006	114 (39–189)	0 (0–0)	9 (0–22)	123 (51–194)
26[c]	2005	750 (518–983)	10 (3–17)	-	760 (524–996)
	2007	2,597 (1,818–3,376)	235 (0–486)	-	2,832 (1,968–3,697)
	2008	1,323 (807–1,839)	233 (61–405)	-	1,556 (1,006–2,106)
	2009	1,267 (849–1,685)	0 (0–0)	-	1,267 (847–1,687)

[a] Surveys included all three subregions of Unit 22(St. Lawrence-Diomede Island, Bering Strait Mainland Villages, and Nome).
[b] Surveys included the Northwest Arctic Villages subregion, but did not include the Kotzebue subregion.
[c] Surveys included both subregions of Unit 26 (North Slope Villages and Barrow).

Season extension

Extending the Federal ptarmigan season to June 15 would provide an additional 16 days of harvest opportunity for Federally qualified subsistence users. Outside of Unit 18, no other Federal ptarmigan regulations extend past May 15. State ptarmigan seasons do not extend beyond May 15 except for Units 23 and 26 (excluding Unit 26B), which extend to June 15. However, Units 23 and 26 have much lower harvest than Unit 18 (**Tables 1, 2, and 6**). The season extension would coincide with the breeding season of ptarmigan which could have impacts on the population (see Effects of the Proposal).

Effects of the Proposal

If the proposal were adopted, the ptarmigan season in Unit 18 would be extended from Aug. 10–May 30 to Aug. 10–Jun. 15, which would provide Federally qualified subsistence users more harvest opportunity after ptarmigan have migrated back to breeding areas, especially those living in coastal areas of Unit 18. Ptarmigan begin arriving in coastal areas of the Y-K Delta around the third week of April or beginning of May (Sundown 2011, pers. comm.). However, the proposed regulatory changes would affect all areas of Unit 18, not just coastal areas.

The proposed Federal ptarmigan season extension would overlap with the breeding period, which could impact the ptarmigan population in Unit 18. Federally qualified subsistence users may experience greater harvest efficiencies due to the behavior of breeding ptarmigan. Male ptarmigan hold and defend territories while on the breeding grounds and are often very tolerant of humans during this period (Hannon et al. 1998). In addition, female ptarmigan may be directly or indirectly affected by harvest pressure during the breeding season. Females may be harvested during this period; however, female ptarmigan have a highly cryptic plumage and would be less conspicuous than males. Females may be disturbed by users and the nests of flushed females may be at a higher risk of nest predations (Weeden 1965). Nests may be abandoned if females are disturbed during the laying period (Hannon et al. 1998), but females may renest. However, females may not renest if clutches are lost during incubation (Cotter 1999).

The proposed harvest limit change would allow Federally qualified subsistence users to harvest an unlimited number of ptarmigan, rather than the current 20 daily and 40 in possession limits, throughout the Federal season. The ptarmigan population may be more susceptible to increased harvest levels during certain periods of the season. Harvest is more likely to be additive during or after periods of higher natural mortality. Sandercock et al. (2011) found higher natural mortality rates during fall (juvenile dispersal and male territoriality) and spring (increased predation from the onset of gyrfalcon breeding period). Increased harvest may occur when groups of ptarmigan are encountered, including during fall or spring movements, or as males establish and defend territories during the spring. The timing of harvest has been shown to have significant effects on populations. For example, Kokko and Lindstrom (1998) found populations could sustain much higher harvest rates during fall compared to spring.

It is difficult to predict how an unlimited harvest would affect the population dynamics of ptarmigan in Unit 18. Studies have shown variable responses to harvest across the ptarmigan's distribution. Ptarmigan have high reproductive potential and dispersal abilities (Hammond et al. 1998, Montgomerie and Holder 2008) and have been shown to sustain high harvest levels in some regions. High proportional harvests were thought to be sustainable in Sweden (50%; Aanes et al. 2002) and Alaska (40%, McGowan 1975). However, McGowan (1975) did not account for changes in the abundance of females, which may be a larger limiting factor for reproductive output. For example, in the Northwest Territories all resident female rock ptarmigan were paired, but there were excess numbers of males (Cotter 1999). Sandercock et al. (2011) found willow ptarmigan in Norway to be partially compensatory to harvest of less than 15% of the fall abundance, additive with harvest levels above 20%, and also found evidence of superadditive mortality with a 30% harvest level. Superadditive (or depensatory) mortality occurs when harvest rates can cause additional natural mortality (e.g., higher natural mortality with 30% harvest rate compared to 15% harvest rate) (Kokko 2001, Sandercock et al. 2011). The cyclic nature of some ptarmigan populations add complexity to harvest management, as effects can differ during cyclic highs and lows in abundance.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-51.

Justification

There is currently not enough information on the ptarmigan population in Unit 18 to support an unlimited harvest. In order to make an informed management decision regarding a sustainable harvest, managers should have some knowledge on whether harvest would be additive or compensatory (Pedersen et al. 2003, Sandercock et al. 2011). The ptarmigan population in Unit 18 may well be able to sustain a higher harvest level, especially as portions of the unit likely receive little harvest pressure and may be sources of immigration to harvested areas. However, it should not be assumed that the harvest would be compensated for and local populations would not be adversely affected. Total compensatory mortality is probably rare and the timing of harvest can be important (Kokko and Lindstrom 1998). Most of the ptarmigan harvest in Unit 18 takes place in the spring, which can have a much higher impact than fall harvest, regardless of additive or compensatory mortality (Kokko and Lindstrom 1998).

The proposed Federal ptarmigan season (Aug. 10–Jun. 15) would extend into the breeding season, which could have adverse effects on the ptarmigan population in Unit 18. Male ptarmigan set up and defend territories during this period and may be vulnerable to high harvest levels because of high tolerance to disturbance. In addition, female nesting is initiated during this time period and nesting may be interrupted. Female ptarmigan have adapted to high nest predation rates by having high rates of renesting. However, rock ptarmigan were found to have low rates of renesting once they began incubating. Additive harvest is more likely to occur when it overlaps or proceeds periods of high natural mortality. Previous research has found peaks in natural mortality during periods when ptarmigan were defending territories and participating in courtship displays (Sandercock et al. 2011).

Currently, there are no means to monitor the effects of the proposed harvest limit increase. Household harvest surveys are conducted, but these serve only as a limited index to the relative abundance of ptarmigan, and the harvest estimates do not adequately account for variation in ptarmigan abundance and harvest effort.

The two alternatives considered were not supported based on the same justifications as the original proposed regulatory changes, but an increased harvest limit (Alternative 1) would be preferable to the season extension (Alternative 2). The ptarmigan population may be able to support an increased harvest limit; however, there are no means of monitoring the effects of the regulatory change in Unit 18. If an increase harvest limit were to be supported, a smaller, incremental change, such as 30 ptarmigan daily/60 in possession, would be preferable to larger increases (more than 40 ptarmigan daily/80 in possession) due to potential overharvest in some areas of the unit. The season extension would be less favorable due to impacts associated with harvesting during the breeding season.

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ADF&G Comments on WP51
August 29, 2011; Page 1 of 2

Alaska Department of Fish and Game
Comments to Regional Advisory Council

Wildlife Proposal WP12-51: This proposal requests liberalizing the federal subsistence Unit 18 Ptarmigan hunting season from August 10 through May 30 to August 10 through June 15 and requests eliminating daily bag and possession limits.

Introduction: The proponent requests the federal subsistence Ptarmigan hunting season be liberalized by adding the first two weeks of June onto the end of the existing season and eliminating the current bag and possession limit of 20 per day with 40 on possession. The proponent indicates the timing of Ptarmigan arriving on the coastal part of the Yukon Kuskoquim delta is about when the hunting season closes and migration timing might not allow for legal federal subsistence harvest in that area. The proponent also indicates "set harvest goals" would prevent federal subsistence hunters from cumulatively overharvesting the resources if the federal subsistence bag limit is liberalized to "no limit."

Impact on Subsistence Users: If adopted, federal subsistence hunters targeting Ptarmigan near the coast in Unit 18 may harvest additional birds during the first two weeks of June. If adopted, federal subsistence hunter Ptarmigan harvest and possession would be unlimited.

Opportunity Provided by State: In Unit 18, the state ptarmigan hunting season is August 10 through May 30 with a daily bag limit of 20 ptarmigan per day with a possession limit of 40.

Conservation Issues: A change to unlimited federal subsistence harvest of Ptarmigan in Unit 18 may lead to conservation concerns due to the lack of federal inseason management tools. The average annual Ptarmigan harvest for all users in Unit 18 has been reported as high as 6,100.

Other Comments: The proponent indicates this proposal will also be submitted to the Alaska Board of Game. The department has concerns with removing both bag and possession limits and recommends an incremental approach to liberalizing the federal subsistence hunt if information can be provided which proves eliminating current harvest limits is necessary for continuance of subsistence uses. Additionally, the department is unaware of any management tools used to determine if federal subsistence users have exceeded "set harvest goals."

Recommendation: Support with modification. The department supports extending the federal subsistence Ptarmigan hunting season in Unit 18 and recommends changing the harvest limits to 50 per day with 100 in possession.

WP12-52 Executive Summary	
General Description	Proposal WP12-52 of Alakanuk Native Corporation, requests a change in regulations to ban hunting by non-Federally qualified subsistence users along the Yukon River and into Canada. *Submitted by Brian L. Williams*
Proposed Regulation	No regulation language was proposed.
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	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-52

ISSUES

Proposal WP12-52, submitted by Brian L. Williams, of Alakanuk Native Corporation, requests a change in regulations to ban hunting by non-Federally qualified subsistence users along the Yukon River and into Canada.

DISCUSSION

The proponent states that subsistence practices need to have priority over sport hunting, in order to preserve wildlife for future generations and their subsistence needs. The proponent also states that sport hunters (i.e., non-Federally qualified users) should not "hunt up and down the Yukon River," and should be fined "for trespassing on our lands." The proponent additionally states that banning sport hunters will result in increased wildlife populations.

For subsistence management purposes, Native Corporation lands are under State management. Neither State nor Federal regulations have jurisdiction in Canada.

Title VIII of the 1980 Alaska National Interest Lands Claim Act (ANILCA) specifically prioritizes subsistence uses over any other consumptive uses such as commercial or sport hunting on Federal public lands. When a conservation concern exists for any resource, commercial and sport uses are restricted before subsistence uses are restricted.

Existing Federal Regulation

In implementing ANILCA, the Federal Subsistence Board was empowered to administer the subsistence taking of fish and wildlife on Federal public lands, while the Secretary of the Interior and the Secretary of Agriculture retained the authority to restrict commercial and sport uses in Alaska on lands other than public lands, as follows:

> *§100.10(a)The Secretary of the Interior and the Secretary of Agriculture hereby establish a Federal Subsistence Board, and assign it responsibility for administering the subsistence taking and uses of fish and wildlife on public lands, and the related promulgation and signature authority for regulations of subparts C and D of this part. The Secretaries, however, retain their existing authority to restrict or eliminate hunting, fishing, or trapping activities which occur on lands or waters in Alaska other than public lands when such activities interfere with subsistence hunting, fishing, or trapping on the public lands to such an extent as to result in a failure to provide the subsistence priority.*

The Federal Subsistence Board was also empowered to implement ANILCA to:

> *§100.10(iv) Allocate subsistence uses of fish and wildlife populations on public lands; (v) Ensure that the taking on public lands of fish and wildlife for nonwasteful subsistence purposes shall be accorded priority over the taking on such lands of fish and wildlife for other purposes; (vi) Close public lands to the non-subsistence taking of fish and wildlife; (vii) Establish priorities for the subsistence taking of fish and wildlife on public lands among rural Alaska residents; (viii) Restrict or eliminate taking of fish and wildlife on public lands.*

Proposed Federal Regulation

The proponent did not propose a regulation.

Extent of Federal Public Lands

Federal public lands affected by this proposal include Yukon Delta National Wildlife Refuge, Innoko National Wildlife Refuge, Nowitna National Wildlife Refuge, Yukon Flats National Wildlife Refuge, Yukon Charley Rivers National Preserve, and Bureau of Land Management lands (see unit maps for Units 18, 20, 21, 25).

Effects of the Proposal

If adopted, the proposal would ban hunting by non-Federally qualified users along the Yukon River on both Federal public lands and other lands. The proposal would affect non-Federally qualified users by not allowing harvests in places where there may not be a conservation issue. The result could be an increase in wildlife populations which would otherwise be taken by non-Federally qualified users. The proposal would not affect large portions of land along the Yukon River that are managed by the State of Alaska; a large percentage of State-managed lands are surrounding villages. There would be no effect in Canada as the Board has no jurisdiction in Canada.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-52.

Justification

Because the proponent's concerns are addressed in Federal Subsistence Management regulations, the proposed regulatory changes are unnecessary and should be opposed. Subsistence uses, including hunting, already have priority over other consumptive uses, including sport hunting. Moreover, the Secretary of the Interior and the Secretary of Agriculture have the authority to restrict hunting, fishing or trapping in Alaska on other than Federal public lands "when such activities interfere with subsistence" activities. In addition, sport hunting along the Yukon River in Canada is outside the purview of the Federal Subsistence Board.

WP12-53 Executive Summary	
General Description	Proposal WP12-53 would prohibit a hunter in Unit 18 from pursuing with a motorized vehicle a caribou, moose, or muskox (an ungulate) that is fleeing. *Submitted by the Yukon Delta National Wildlife Refuge*
Proposed Regulation	**General Provisions** *§__.4 Definitions* *Take or taking as used with respect to fish or wildlife, means to pursue, hunt, shoot, trap, net, capture, collect, kill, harm, or attempt to engage in any such conduct.* **Subsistence taking of wildlife** *§__.26 (b) Except for special provisions found at paragraphs (n) (1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:* *(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased;* *(5) Using a motorized vehicle to drive, herd, or molest wildlife.* **Unit 18 (Special Provisions)** *§__.26 (n)(18)(iii)**(F)** Y**ou may not pursue with a motorized vehicle an ungulate that is fleeing.***
OSM Preliminary Conclusion	**Oppose**
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Western Interior Regional Council Recommendation	
Seward Peninsula Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-53

ISSUES

Proposal WP12-53, submitted by the Yukon Delta National Wildlife Refuge, would prohibit a hunter in Unit 18 from pursuing with a motorized vehicle a caribou, moose, or muskox (an ungulate) that is fleeing.

DISCUSSION

The proposal concerns caribou, moose, and muskox in Unit 18; however, the Federal Subsistence Board has determined no Federal subsistence priority for muskox in Unit 18 because it has not recognized customary and traditional uses of muskox in Unit 18. Thus, muskox are left out of the analysis. Further, the focus of the analysis is caribou. The proponent states that caribou are more susceptible than moose to the detrimental effects of chasing. While caribou often flee rapidly when chased, moose generally walk away when approached by a motorized vehicle.

The proponent states that law enforcement has found it necessary to cite more than one hunter during the 2010/2011 hunting season for chasing caribou that were moving at full gallop (having all four hooves off the ground in one stride) (Sundown 2011, pers. comm.; Doolittle 2011, pers. comm.). The proponent states that adoption of this proposal would protect the declining Mulchatna caribou herd by reducing wounding of animals that are chased. Chasing is biologically hard on a caribou herd, especially when animals are already weak near the end of the hunting season. The proponent's concern is not the hunter who repeatedly moves forward and stops while caribou trot off. The concern is motorized vehicles chasing caribou at a constant, high speed.

Existing Federal Regulation

General Provisions

§__.4 Definitions

Take or taking as used with respect to fish or wildlife, means to pursue, hunt, shoot, trap, net, capture, collect, kill, harm, or attempt to engage in any such conduct.

Subsistence taking of wildlife

§__.26 (b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased;

(5) Using a motorized vehicle to drive, herd, or molest wildlife.

"Drive," "herd," "molest," and "harass" have not been defined in the Code of Federal Regulations for Subsistence Management (36 CFR 242 and 50 CFR 100).

The Federal Subsistence Management Program has added a definition of "harass" to the Federal subsistence regulations booklet distributed to the public ("*Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in America*"). It states:

> *"Harass means to disturb, worry, molest, rally, concentrate, harry, chase, drive, herd or torment"* (FWS 2010:132).

Proposed Federal Regulation

General Provisions

§__.4 Definitions

Take or taking as used with respect to fish or wildlife, means to pursue, hunt, shoot, trap, net, capture, collect, kill, harm, or attempt to engage in any such conduct.

Subsistence taking of wildlife

§__.26 (b) Except for special provisions found at paragraphs (n)(1) through (26) of this section, the following methods and means of taking wildlife for subsistence uses are prohibited:

(4) Taking wildlife from a motorized land or air vehicle when that vehicle is in motion, or from a motor-driven boat when the boat's progress from the motor's power has not ceased;

(5) Using a motorized vehicle to drive, herd, or molest wildlife.

Unit 18 (Special Provisions)

*§__.26 (n)(18)(iii)**(F)** Y**ou may not pursue with a motorized vehicle an ungulate that is fleeing.***

Existing State Regulation

5 AAC 92.080. Unlawful methods of taking game; exceptions

The following methods of taking game are prohibited:

(4) unless otherwise provided in this chapter, from a motor-driven boat or a motorized land vehicle, unless the motor has been completely shut off and the progress from the motor's power has ceased . . . .

(5) except as otherwise specified, with the use of a motorized vehicle to harass game or for the purpose of driving, herding, or molesting game.

5 AAC 92.990. Definitions

(a) In addition to the definitions in AS 16.05.940 , in 5 AAC 84 – 5 AAC 92, unless the context requires otherwise,

(70) "harass" means to repeatedly approach an animal in a manner which results in the animal altering its behavior;

The State booklet distributed to the public ("*2010/2011 Alaska Hunting Regulations*"), clarifies State wildlife regulations (5 AAC 92.080) for the public by stating:

> *"You may not take game by pursuing with a vehicle an animal that is fleeing" (ADF&G 2010:18).*

Extent of Federal Public Land

Federal public lands comprise 64% of Unit 18, of which 96% is managed by the Fish and Wildlife Service and 4% is managed by the Bureau of Land Management. The Fish and Wildlife Service lands are located within the Yukon Delta National Wildlife Refuge.

Customary and Traditional Use Determination

The customary and traditional use determination for caribou in Unit 18 is residents of Unit 18, Saint Michael, Stebbins, Togiak, Twin Hills, Upper Kalskag, and Manokotak.

The customary and traditional use determination for moose in Unit 18 is: in that portion of the Yukon River drainage upstream of Russian Mission and that portion of the Kuskokwim River drainage upstream of (but excluding) the Tuluksak River drainage—residents of Unit 18, Upper Kalskag, Aniak, and Chuathbaluk; in that portion north of a line from Cape Romanzof to Kuzilvak Mountain to Mountain Village, and all drainages north of the Yukon River downstream from Marshall—residents of Unit 18, Saint Michael, Stebbins, and Upper Kalskag; and in the remainder area of Unit 18—residents of Unit 18 and Upper Kalskag.

There is no Federal subsistence priority for muskox in Unit 18.

Biological Background

Woolington (2009) noted that in western Alaska in the 1800s:

> Skoog (1968) hypothesized that the caribou population extended from Bristol Bay to Norton Sound, including the lower Yukon and Kuskokwim drainages as far inland as the Innoko River and the Taylor Mountains. This herd apparently reached peak numbers in the 1860s and began decline in the 1870s. By the 1880s, the large migrations of caribou across the Lower Kuskokwim and Yukon Rivers had ceased (Woolington 2009: 11).

Perry (2009) continues:

> By the early 1900s, there were few caribou in the lowlands of the Delta. From the 1920s to the 1930s, reindeer herds ranged throughout much of the area but declined sharply in the 1940s (Calista Professional Services and Orutsararmuit Native Council 1984). Since the decline of the reindeer herds, the abundant caribou habitat throughout Unit 18 was only lightly used until 1994, when large numbers of Mulchatna caribou herd animals began regular, seasonal use of the Kilbuck Mountains. In the more recent years, a large portion of the Mulchatna herd has spent most of the year in Unit 18 and harvest in Unit 18 has become a larger proportion of the overall harvest (Perry 2009: 99–100).
>
> Caribou from the Western Arctic herd, the largest herd in Alaska, occasionally venture into the northern part of Unit 18. Until this reporting period [2006], hunting regulations north of

> the Yukon River were liberal to allow hunters to take advantage of these infrequent hunting opportunities. However, now Mulchatna Herd caribou are as likely as Western Arctic Herd caribou to use the area north of the Yukon River, caribou management throughout Unit 18 is based on Mulchatna caribou herd considerations (Perry 2009: 99–100).

The minimum population estimates for the Mulchatna caribou herd increased from 18,599 in 1981 to 200,000 in 1996 and declined to a minimum of 30,000 by summer 2008. Distribution of the herd is widespread in areas of Units 9B, 17, 18, 19A, and 19B (Woolington 2009)

Populations of moose are increasing in many areas of Unit 18, and in the lower Yukon River drainage subsistence hunters may legally harvest up to two moose per year.

Harvest

Door to door household harvest surveys have been conducted with residents of some communities situated in Unit 18. The results regarding the harvest of caribou are located in **Table 1**.

Method and Means

The customary and traditional use determination for caribou in Unit 18 encompasses about 26,000 people living in 47 communities of which about 6,000 live in Bethel (ADLWD 2011).

Methods and means used to harvest caribou have gradually evolved since the beginning of the 20th century when accurate firearms were introduced and since snowmachines became common in the 1970s. Before the introduction of accurate firearms, caribou were harvested using an array of techniques. Single hunters stalked caribou until within bow shot. Some methods were more elaborate involving several hunters ducking, hiding, and emerging to confuse the herd into coming into bow shot (Nelson (1983[1899]). Although larger herds roamed the region, their movements were not entirely predictable. When discovered, hunts were launched quickly and caribou were sometimes corralled cooperatively by a group of hunters. Caribou most often were taken late in the fall when their meat was prime and skins best for garments and bedding and the thick layer of fat was rendered into oil (Oswalt 1990).

The introduction of firearms with firing accuracy resulted in modifications to hunting methods. Firearms were a more efficient method than bow and arrow, for example, and while harvesting caribou still required specialized skills, firearms could make harvesting easier. Caribou herds in the area of Unit 18 diminished in part due to the increased efficiency of firearms to harvest caribou and miners' reliance on caribou as food (Oswalt 1990). From 1900 to the 1930s, introduced reindeer were herded, an event with its own complicated history. Caribou were shot on sight to prevent them luring reindeer from the herd. However, after 1940, reindeer and caribou herds had mostly integrated with some notable exceptions (e.g., the herd owned by the Stebbins tribal council) (cf. Wolfe and Pete 1984).

Snowmachines were generally considered less reliable than sleds pulled by dogs, but by the early 1970s, with improvements in reliability, the snowmachine had largely replaced the dog team (Andersen et al. 2011).

Contemporary hunting methods and means have been described by hunters in the region. Hunters from some lower Yukon River villages described hunting in the Andreafsky Mountains in the 1980s. It was unclear if the group was hunting caribou or reindeer from the nearby herd at Stebbins. Caribou/reindeer roamed in small groups, difficult to approach by snowmachine. Several hunters attempted to herd a group to locations where shots could be taken, such as, up a cul-de-sac or toward a heavy brush line. In

Table 1. Levels of participation in the harvest and use of caribou in selected communities (Sources: ADF&G 2011; Krauthoefer and Koster 2007; Weekley et al. 2011).

		Percentage of Households					Estimated Harvest Levels				
		Using	Attempting to harvest	Harvesting	Receiving	Giving	Estimated	95% Confidence Limit of Estimated Total Harvest		Per	
Community	Study Year	(%)	(%)	(%)	(%)	(%)	Harvest	Low	High	Household	capita
Lower Yukon Area											
Alakanuk	2009-2010	5	0	0	5	0	**0**	0	0	0	0
Chevak	2009-2010	2	3	3	19	8	**8**	3	23	0.05	0.01
Kotlik	2009-2010	10	2	2	10	4	**2**	1	18	0.02	0
Marshall	2009-2010	16	6	4	12	6	**6**	4	16	0.08	0.02
Mountain Village	2009-2010	8	2	2	8	2	**9**	4	28	0.06	0.01
Nunam Iqua	2009-2010	0	0	0	0	0	**0**	0	0	0	0
Russian Mission	2009-2010	28	5	0	23	9	**0**	0	0	0	0
Saint Marys	2009-2010	0	0	0	0	0	**0**	0	0	0	0
Scammon Bay	2009-2010	13	0	0	13	11	**0**	0	0	0	0
Lower Kuskokwim Area											
Akiachak	1998	95	83	83	53	65	**374**	332	417	3.17	
Kwethluk	1986		5	2	28	0	**2**				
Nunapitchuk	1986	0	0	0	0	0	**0**	0	0	0	0
Middle Kuskokwim Area											
Lower Kalskag	2003-2004	35	38	29	18	21	**47**	22	78	0.60	0.15
	2004-2005	10	7	5	5	2	**7**	6	12	0.10	0.03
	2005-2006	13	7	0	13	0	**0**	0	0	0	0
Upper Kalskag	2003-2004	53	47	35	29	29	**42**	24	62	0.70	0.17
	2004-2005	53	47	35	29	29	**4**	4	5	0.10	0.02
	2005-2006	27	32	15	15	9	**16**	8	32	2.00	0.06

Note: In the Lower Yukon Area, harvest locations were not reported. In the Middle Kuskokwim Area, the only Unit 18 caribou harvest was 15 caribou harvested in 2003-2004 by Lower Kalskag, and other caribou were harvested in Units 19A, 19B. Kwethluk harvest occured primarily up the Kwethluk River in Units 17 and 18, and Akiakchak harvests occured primarily up the Kisaralik River in Unit 18

Blank cell=not available.

this description, the high speed chase was considered "a relatively risky, dare-devil technique" (Wolfe and Pete 1984:9). Kwethluk hunters in the 1980s hunting with snowmachines reported hunting in upper Kwethluk and Kisaralik River valleys. "The high hills and low mountains scattered throughout the area provided lookouts where hunters can watch for caribou" (Coffing 1991: 157).

While there may be some instances of hunters herding caribou to position them so they can be more easily shot, instances of outright chasing of caribou are probably rare. Taking into account the numerous, recently-arrived residents of Bethel, it is likely that at least a few lack the specialized skills necessary to harvest a caribou using methods commonly practiced, and resort to chasing fleeing caribou (Sundown 2011, pers. comm.). Moreover, some experienced hunters lack the resources to travel long distances to harvest caribou, and their harvest must occur when caribou are first sighted nearby, before hunting pressure causes the herd to move on. If unsuccessful, hunters may feel pressure to pursue fleeing caribou or otherwise not harvest (Nick 2011, pers. comm.).

Effects of the Proposal

If this proposal is adopted, there would be no effect on Federal subsistence users in Unit 18. The prohibition against chasing ungulates that are fleeing is encompassed in Federal subsistence general provisions and other wildlife regulations (§__.4; §__.26(b)(4) and (5)), thus there would be no effect from the proposed regulation. Similarly, if this proposal is not adopted there would be no effect on Federal subsistence users in Unit 18.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP12-53.

Justification

Federal wildlife regulations already prohibit chasing wildlife with a motorized vehicle. The intent of the proponent is to make explicit that using a motorized vehicle to pursue an ungulate that is fleeing at or near full gallop is prohibited. To this end, staff recommend that the language included in the State booklet distributed to the public (ADF&G 2010:18), mentioned above, be added to the Federal booklet distributed to the public, with modification: "You may not take ungulates by pursuing with a motorized vehicle an animal that is fleeing at or near full gallop."

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WP12-54 Executive Summary	
General Description	Proposal WP12-54 seeks to increase the wolf harvest limit for hunters in Unit 18. *Submitted by Orutsaramuit Native Council*
Proposed Regulation	**Unit 18—Wolf Hunting** *~~5~~* ***10*** *wolves* *Aug. 10–April 30*
OSM Preliminary Conclusion	**Support**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	**Neutral** dependant on Board of Game outcome
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-54

ISSUES

Proposal WP12-54, submitted by Orutsaramuit Native Council (ONC), seeks to increase the wolf harvest limit for hunters in Unit 18.

DISCUSSION

Proposal WP12-54 requests that the Unit 18 harvest limit for hunters be increased from 5 wolves per year to 10 wolves per year. The proponent observed that hunters with the ability and opportunity to harvest more than 5 wolves per year should be allowed to do so. The proponent observed that there would only be a slightly higher harvest of wolves if this proposal is adopted.

Aderman (2011 pers. comm.) noted that ONC has submitted a similar regulatory proposal to the Alaska Board of Game. That proposal should be considered by the Alaska Board of Game at its Nov. 11–14, 2011 meeting.

Existing Federal Regulation

Unit 18— Wolf Hunting	
5 wolves	*Aug. 10–April 30*
Wolf Trapping	
No limit	*Nov. 1–Mar. 31*

Proposed Federal Regulation

Unit 18—Wolf Hunting	
~~5~~ ***10*** *wolves*	*Aug. 10–April 30*

Existing State Regulation

Unit 18—Wolf Hunting	
5 wolves	*Aug. 10–April 30*
Wolf Trapping	
No Limit	*Nov. 10–Mar. 31*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18, of which 96% is managed by the U.S. Fish and Wildlife Service and 4% is managed by Bureau of Land Management (see **Unit 18 Map**).

Customary and Traditional Use Determinations

Rural residents of Units 6, 9, 10 (Unimak Island only), 11, 12, 13, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and Chickaloon have a positive customary and traditional use determination to harvest wolves in Unit 18.

Regulatory History

In 1990 the Federal Subsistence Management Program Unit 18 harvest limit for hunters was 4 wolves per year. In 1993 ADF&G submitted a proposal (Proposal 2) to change the limit to 5 wolves for hunters in Unit 18. The Yukon-Kuskokwim Subsistence Regional Advisory Council requested that Proposal 2 be amended to "no limit" for wolves in Unit 18. Based on conservation concerns, the Federal Subsistence Board adopted the 5 wolves per year limit. Since regulatory year 1994/95 the harvest limit for hunters in this unit has been 5 wolves per year.

Biological Background

Wolves (*Canis lupus)* are found throughout most of Unit 18 and are well adapted to the hills, tundra, and river valleys of the unit. 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, and these young wolves disperse from packs at high rates as yearlings and 2-year-olds (Adams et al. 2008). Meier et al. (2006) reported that 28% of the wolves leave their packs each year, and that most offspring eventually leave the pack. 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). Meier et al. (2006) reported that wolves sometimes disperse great distances. The longest documented dispersal of a Denali National Park and Preserve wolf was 435 miles. 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.

The size of the home range of a wolf pack is dependent on prey abundance, the activities of neighboring packs, and each pack's individual habits. Wolf pack territories overlap one another and change over time (Meier et al. 2006). 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). Meier et al. (2006) observed that at least 60% of the wolf deaths in Denali National Park and Preserve came from wolves being killed by other wolf packs. 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).

Wolf numbers were low throughout Unit 18 from the demise of the reindeer herding in the 1930s (Calista 1984) until the 1980s, when moose populations became established. Based on observations from trappers, hunters, fur buyers, and agency biologists, wolf numbers have increased in Unit 18, particularly along the main stem of the Yukon River and in the Kilbuck Mountains east of Bethel (Perry 2009). There have been recent increases in the wolf population along the Kuskokwim River and its tributaries from Kalskag to Bethel. The distribution and abundance of wolves in Unit 18 reflect the expanding distribution and increased abundance of moose (Perry 2009).

Perry (2009) estimated that there were approximately 250–300 wolves in 25–30 packs in Unit 18 in fall from 2001 to 2007. The estimate was revised to 200–300 wolves in 20–30 packs for 2008. These estimates were based on: recent trends and reported harvest; trapper questionnaire data; observations of animals, tracks, concentrations of activity; reported sightings; other reports by the public and anecdotal information. Packs are established within the Yukon Delta and throughout the Yukon River riparian corridor. There are at least five resident packs along the Kuskokwim River upriver of Bethel (Perry 2009). The distribution of these packs follows the distribution, population growth, and range expansion of moose, as well as the seasonal movements of Mulchatna caribou (Perry 2009). Wolves occupy the Kilbuck Mountains from the area near Whitefish Lake to the southernmost tip of Unit 18 near Cape Newenham. These wolves prey predominately on caribou and moose (Perry 2009). It appears that a large proportion of the wolves that use the eastern portion of Unit 18 are transient packs and leave the unit when the caribou migrate to Unit 17 to calve. Wolves are occasionally encountered on the tundra between the riparian corridors of the Kuskokwim and Yukon rivers and on Nelson Island; these wolves are probably transient animals (Perry 2009). Wolf numbers observations in Unit 18 have continued to increase in response to populations of moose in Unit 18. It appears that the Unit 18 wolf population is regulated more by natural factors than by the harvest of hunters and trappers.

Harvest History

The harvest of wolves, and the use, barter, and sale of pelts is important for subsistence in Unit 18 (Weekley et al. 2011, Krauthoefer and Koster 2007). Wolf ruffs are highly prized as parka trim. The local domestic demand for wolf pelts is very high (Perry 2006).

State and Federal regulations 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 concerning the date and location of take, sex, color of pelt, estimated size of the wolf pack, method of take and access used. Some of the wolves taken in Unit 18 are neither sold nor sealed (Perry 2006). Perry (2009) observed that there is a poor understanding of wolf hunting regulations by many hunters, particularly those who take wolves opportunistically and those using snowmachines to take wolves. From regulatory year 1999/2000 to 2009/10, the reported annual harvest of wolves in Unit 18 ranged from 19 to 95 wolves per year (**Table 1**). During this period, the average annual Unit 18 wolf harvest (51 wolves) was dramatically higher than it was in the decade beginning in 1985 (7 wolves). Male wolves are more vulnerable to harvest than females. From regulatory year 1985/86 to 2004/05, 62% of the wolves that were harvested in Unit 18 were males (Perry 2006). In any given year, snow conditions for snowmachine travel and weather affect the wolf harvest level. With increasing gas prices, subsistence users are unable to travel as far to harvest wolves.

Perry (2009) estimates that recent wolf harvests in Unit 18 range from 10% to 30% of the wolf population. Based on an analysis of information from North American wolf populations, Adams et al. (2008) concluded that wolf populations appear to be largely unaffected by human take of ≤29% annually. Given the limited effects of moderate levels of human take, Adams et al. (2008) concluded that the risks of reducing wolf populations through regulated harvest are quite low.

Other Alternatives Considered

Additional options were considered, which would maintain the current harvest limit or increase it to less than 10 wolves per year. There are few records of a person shooting more than 5 wolves per year in Unit 18. However there is no harvest limit under the trapping regulations, therefore there should be no real affect in the wolf population if the hunting limit is increased.

Table 1. Reported wolf harvest and method of take for Unit 18, regulatory years 1999/00 to 2009/10 (ADF&G 2011).

Regulatory year	Reported total harvest	Method of take for total harvest from Unit 18				
		Trap/snare	%	Shot	%	Unknown
1999/2000	51	31	61	18	35	2
2000/01	28	7	25	21	75	0
2001/02	95	50	53	45	47	0
2002/03	19	8	42	11	58	0
2003/04	86	32	37	53	62	1
2004/05	63	29	46	34	54	0
2005/06	85	34	40	51	60	0
2006/07	26	15	58	11	42	0
2007/08	62	25	40	37	60	0
2008/09	28	19	68	9	32	0
2009/10	19	5	26	14	74	0

Effects of the Proposal

If Proposal WP12-54 is adopted, subsistence hunters will be allowed to harvest 10 wolves per year. This regulatory change will make the Federal subsistence wolf hunting harvest limit higher than the State limit.

Robert Sundown (2011, pers. comm.) noted that this proposed regulatory change would not result in a significant increase in the Unit 18 wolf harvest. He observed that very few Unit 18 hunters take the current limit of 5 wolves. Based on ADF&G's wolf harvest records from 1997/98 to 2009/10, there are only twelve cases of one person shooting five or more wolves in a given regulatory year in Unit 18 (ADF&G 2011). Since wolves may be shot with either a hunting license or a trapping license, it is not possible to determine how many of these people took their limit of five wolves under hunting regulations. Sundown (2011, pers. comm.) noted that many subsistence users in Unit 18 purchase both a hunting and trapping license. The wolf trapping season in Unit 18 is from November 10 through March 31 with no harvest limit.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-54.

Justification

Wolves have long been an important subsistence resource in Unit 18. The proposed regulatory change would provide an additional opportunity for subsistence users. It appears that the wolf population in Units 18 is increasing. It appears that the Unit 18 wolf population is regulated more by natural factors than harvest by hunters and trappers. At this time, there is no trapping limit. This proposal would make

the Federal wolf limit more than the State for Unit 18. It is our understanding that ONC has submitted a similar regulatory proposal to the Alaska Board of Game.

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ADF&G Comments on WP12-54
August 29, 2011; Page 1 of 2

Alaska Department of Fish and Game
Comments to Regional Advisory Council

Wildlife Proposal WP12-54: This proposal liberalizes the federal subsistence wolf hunting annual bag limit in Unit 18 from 5 wolves per year to 10 wolves per year.

Introduction: This proposal was submitted by Orutsaramuit Native Council (ONC) to increase the annual wolf hunting bag limit from 5 to 10 wolves annually. Wolf populations in Unit 18 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 5 wolves in 1993 by the Alaska Board of Game. Current season (August 10 through April 30) allows for maximum opportunity within areas that do not have predator management programs. Current wolf harvests in Unit 18 approximate 10% to 30% of the population per year and are considered within sustained yield for the population. Adams et al. (2008) concluded North American wolf populations to be largely unaffected by human take of ≤29% annually. The risks of reducing wolf populations through regulated harvest are considered quite low.

Impact on Subsistence Users: Raising the limit to 10 wolves will allow for the few federal subsidence users who are presented the opportunity can to harvest more than 5 wolves when hunting in Unit 18.

Opportunity Provided by State: In Unit 18, the state wolf hunting season is from August 10 through April 30 with a bag limit of 5 wolves. The hunt is open to both residents and nonresidents; hide must be sealed within 30 days of harvest.

Conservation Issues: None.

Enforcement Issues: Different bag limits for wolves across federal public land and non-federal public lands will create enforcement problems due to differing land status in Unit 18.

Recommendation: Neutral Dependent upon Board of Game Outcome

WP12-55 Executive Summary	
General Description	Proposal WP12-55 requests an increase in the harvest limit for wolverine under Federal hunting regulations in Unit 18. *Submitted by the Orutsararmiut Native Council*
Proposed Regulation	**Unit 18 — Wolverine Hunting** *~~1~~ **2** wolverine* *Sept. 1–Mar. 31* **Unit 18 — Wolverine Trapping** *No limit* *Nov. 10–Mar. 31*
OSM Preliminary Conclusion	**Support**
Yukon/Kuskokwim Delta Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	**Support**
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-55

ISSUES

Proposal WP12-55, submitted by the Orutsararmiut Native Council, requests an increase in the harvest limit for wolverine under Federal hunting regulations in Unit 18.

DISCUSSION

The proponent states that, under Federal hunting regulations, Federally qualified subsistence users are unnecessarily restricted from harvesting more than one wolverine per year in Unit 18. The proponent states that there would be no conservation concern due to the small increase in the harvest limit.

Existing Federal Regulation

Unit 18 — Wolverine Hunting

1 wolverine	*Sept. 1–Mar. 31*

Unit 18 — Wolverine Trapping

No limit	*Nov. 10–Mar. 31*

Proposed Federal Regulation

Unit 18 — Wolverine Hunting

*~~1~~ **2** wolverine*	*Sept. 1–Mar. 31*

Unit 18 — Wolverine Trapping

No limit	*Nov. 10–Mar. 31*

Current State Hunting Regulation

Unit 18 — Wolverine

1 wolverine	*Sept. 1–Mar. 31*

Extent of Federal Public Lands

Federal public lands comprise approximately 64% of Unit 18, and consist of 62% FWS and 2% BLM managed lands (Unit Map 18).

Customary and Traditional Use Determinations

All rural residents have a positive customary and traditional use determination for wolverine in Unit 18.

Regulatory History

In 1990, the Federal Subsistence Board adopted temporary subsistence regulations for wolverine hunting and trapping that aligned with State regulations. Since inception, the Federal wolverine hunting regulations in Unit 18 consisted of a Sept. 1–Mar. 31 season with a harvest limit of one wolverine.

Under current Federal subsistence regulations in Unit 18, the wolverine hunting season begins approximately two months earlier (Sept. 1–Mar. 31) than the wolverine trapping season (Nov. 10–Mar. 31). One wolverine may be harvested under Federal hunting regulations, while there is no limit to the number of wolverines that can be harvested under trapping regulations.

Wolverine sealing became a mandatory State requirement in 1971, and it serves as the primary means of attaining harvest information. ADF&G requires anyone who harvests a wolverine to have the pelt sealed with a locking metal tag and report, when, where, and how the animal was harvested. Therefore, harvest reporting only indicates successful harvest, not harvest attempts or harvest effort. Federally qualified subsistence users must possess a State of Alaska-issued resident hunting or trapping license to hunt or trap under Federal regulations.

Biological Background

The wolverine population in Unit 18 is thought to be at moderate to low levels (Perry 2007). Wolverines are distributed among the Kilbuck and Andreafsky mountains and along riparian habitats in Unit 18 (Perry 2007). The population may have increased since the Mulchatna caribou herd began using the eastern portion of Unit 18 in 1994 (Seavoy 2000), and sealing records suggest a potential increase in Unit 18 between 2003 and 2006 (Perry 2007).

Throughout their range, the densities of wolverine are low, even in high quality habitat, compared to other carnivores or predators (Hash 1999). Wolverines have an extremely large home range that varies from about 19 to 154 mi^2 for females and 89 to 610 mi^2 for males (Hornocker and Hash 1981, Magoun 1985, Whitman et al. 1986, Banci 1987, Gardner et al. 1993). Males typically travel longer distances than females, especially lactating females which have more restricted movements (Banci 1994). Wolverines primarily scavenge carrion during winter, but will opportunistically use a variety of prey in summer (e.g., rodents, snowshoe hares, and birds) (Banci 1994, Hash 1999).

Wolverines are polygamous and exhibit delayed implantation, which means they mate in summer, but fertilized eggs remain in the blastocyst stage until early to mid-winter. The timing of birth varies between January and April (Banci and Harestad 1988), with most kits being born in Alaska from mid-February to March (Rausch and Pearson 1972). The reproductive capacity of wolverines appears to be limited by the availability of food (Banci 1994).

Human harvest was an important source of adult wolverine mortality in many North American studies (Hornocker and Hash 1981, Whitman and Ballard 1983, Magoun 1985, Banci 1987). Survival rates were higher in populations that were not exposed to trapping pressure, suggesting that harvest mortality is additive (Krebs et al. 2004). However, harvest may not affect all age-sex classes equally. Harvests may have a greater effect on subadult male survival due to their greater dispersal rates (Krebs et al. 2004). Thus, subadult male harvest may be partially compensatory, due to higher natural mortality of that sex-age class (Banci 1994). Most natural mortality is associated with starvation and predation (Banci 1994).

The State management objectives for furbearers, including wolverine, in Unit 18 (Perry 2007) include:

- Encourage trappers to become more active through liberal seasons and bag limits for all furbearers in Unit 18 and through informal means of communication. Furbearer populations in Unit 18 range from healthy to overabundant.
- Encourage trappers to target beaver and fox through broad educational efforts, as these species have great potential for adverse interactions with the public.
- Maintain fur sealing, fur buyer, and trapper programs in order to continue harvest assessment.
- Address problems of trapping regulation and harvest reporting compliance through public communication and broad educational efforts.

Harvest History

Since 1971, the State has required that wolverine be sealed and this has been the primary means for tracking harvest data. Wolverine sealing data should be considered a minimum harvest level as some harvest is not reported. Some of the unreported harvest has been attributed to users who tan their own hides because "some fur sewers prefer the stiffer hides derived from home tanning to commercial tanned" (Perry 2007). However, reporting rates may be improving (Perry 2007).

Wolverine harvest under hunting regulations likely comprises a small portion of the total wolverine harvest in Unit 18. Harvest under hunting regulations is currently limited to one wolverine and most of this harvest is opportunistic (Sundown 2011, pers. comm.). For example, wolverine may be opportunistically harvested while users are hunting caribou (Perry 2007). Trapping is a more targeted harvest and current regulations do not limit the wolverine harvest in Unit 18.

According to sealing records, the number of wolverine harvested in Unit 18 was variable between 1990 and 2010 and ranged from 4 to 61 wolverines annually (**Figure 1**). Over the same period, an average of 18 wolverines were sealed in Unit 18. After a below average harvest in 2009 (9 wolverines), an unprecedented number of wolverines were sealed in 2010 (62 wolverines). The high harvest in 2010 may be related to better than average snow conditions providing more access to users, increased trapping effort, increased incidental harvest by lynx trappers, an above normal compliance rate, and/or increased numbers of wolverine due to high abundance of prey species, such as snowshoe hare and ptarmigan (Jones 2011, personal comm.). The sealing records presented are total harvest and include wolverine harvested under hunting and trapping regulations. The wolverine harvest in Unit 18 is limited by snow conditions as most users travel by snowmachine, and lower harvest levels in 2002/2003 were due to poor travel conditions (Seavoy 2004). The use of snowmachines has changed the spatial distribution of wolverine harvests in many areas due to increased access (Krebs et al. 2004), but harvest densities remained low throughout much of western Alaska, including the Yukon-Kuskowkim Delta, between 1984 and 2003 (Golden et al. 2007).

Male wolverines may be more vulnerable to harvest than females. Male wolverines range widely throughout their home ranges most of the year (Golden 1997) and typically have territories within home-ranges of several females (Hedmark 2007). Overall sex ratios are thought to be equal (Banci 1994), but sealing records were skewed toward males by ratios of 5 males:1 female in 1997–2000 (Seavoy 2004) and 5 males:3 females in 2003–2006 (Perry 2007). The increased vulnerability of males may be due to increased dispersal rates by males, especially by younger individuals. Subadult male wolverine had lower

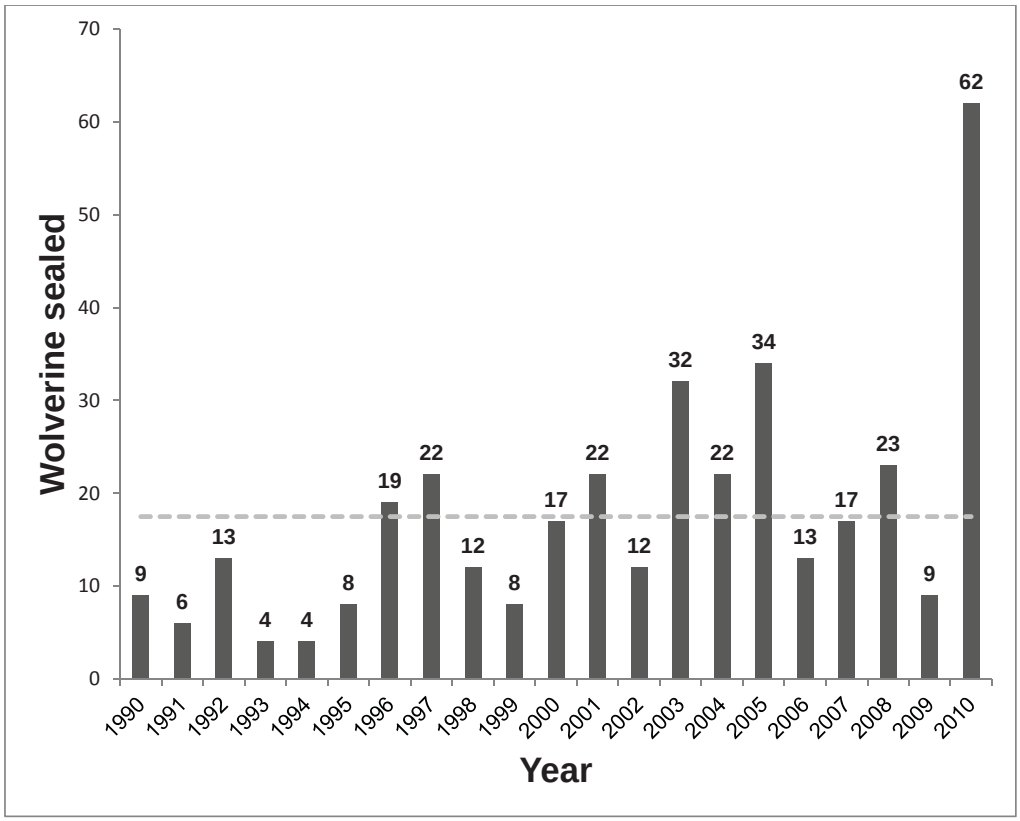

Figure 1. Wolverine harvest numbers under hunting and trapping regulations in Unit 18, according to sealing records between 1990 and 2010. The dashed line represents the long-term average of 18 wolverines sealed annually in Unit 18. Sealing data were provided by the Alaska Department of Fish and Game.

survival rates in harvested populations than other age-sex classes across 12 studies in North America (Krebs et al. 2004).

Effects of the Proposal

If the proposal were adopted, the harvest limit in Unit 18 would be raised from one to two wolverines under Federal hunting regulations, providing more opportunity for Federally qualified subsistence users hunting wolverine on Federal public lands.

The proposed harvest limit change would have a minimal impact on the wolverine population in Unit 18. Current State and Federal trapping regulations allow for an unlimited harvest of wolverines in Unit 18. The effect of increasing the harvest limit by one wolverine would most likely be insignificant, especially as wolverines are often harvested opportunistically under hunting regulations.

The effects of this proposal on non-Federally qualified users would be minimal. Under State trapping regulations, there is currently no limit on the harvest of wolverines in Unit 18 and State hunting regulations allow one wolverine to be harvested.

Adoption of this proposal would result in different Federal and State wolverine hunting regulations in Unit 18.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-55.

Justification

The overall impact of the harvest limit increase under Federal hunting regulations would be minimal to the wolverine population in Unit 18, compared to the unlimited harvest under State and Federal trapping regulations. Although limited information is available beyond sealing records, the wolverine population has supported an unlimited trapping harvest and may be increasing.

Federally qualified subsistence users that do not purchase a State trapping license would have the opportunity to harvest an additional wolverine on Federal public lands in Unit 18 under Federal hunting regulations.

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ADF&G Comments on WP12-55
August 29, 2011; Page 1 of 2

Alaska Department of Fish and Game
Comments to Regional Council

Wildlife Proposal WP12-55: This proposal liberalized the federal subsistence wolverine hunting bag limit in Unit 18 from one per year to two per year.

Introduction: This proposal was submitted to increase the federal subsistence wolverine hunting annual bag limit by 100%. The proponent indicates federal subsistence hunters are unnecessarily restricted by the current federal subsistence bag limit of one animal per year. The proponent expects little additional harvest if this proposal is adopted.

Impact on Subsistence Users: The reported wolverine harvest (harvested by both hunters and trappers) in Unit 18 between 2000 and 2006 ranged from 12 to 34 annually. These are relatively low harvest figures. Only a few local residents currently participate in wolverine trapping and even fewer hunters target wolverine. Adoption of this proposal will likely not increase overall wolverine harvest by federal subsistence hunter in Unit 18, and liberalizing the bag limit would not be expected to significantly increase hunting effort. Most wolverines harvested by hunters in Unit 18 are opportunistic events when hunters are in the field happen upon a wolverine while targeting other game. Increasing the bag limit by 100% could provide additional opportunity for federally-qualified subsistence users on federal public lands, but significantly increasing harvests could also affect productivity and, thus, reduce opportunity for subsistence harvests in the long-term. Adoption of this proposal will allow federal subsistence hunters to harvest a second wolverine prior to the beginning of the November 10 trapping season.

Opportunity Provided by State: The state provides a September 1 through March 31 hunting season with a bag limit of 1 wolverine in Unit 18.

Conservation Issues: Wolverine numbers in 18 are moderate to low and are present in low densities. The population is probably increasing in Unit 18 as greater numbers of caribou, moose, and wolves prey and carrion.

Enforcement Issues: Differences in federal and State regulations resulting from adoption of these proposals will create enforcement issues in areas with mixed land ownership. Additionally, the current bag limit for the Unit 18 wolverine hunt is one per year and federally qualified users who harvest a wolverine in the federal subsistence hunt would be prohibited in harvesting a second animal under state hunting regulations. This discrepancy may be alleviated through Board of Game adoption of a similar proposal if this proposal is adopted.

Other Comments: The large majority of wolverine harvested in Unit 18 is by trappers using a state trapping license. No annual bag limit exists for either the state or federal subsistence trapping seasons and legal trapping methods and means for wolverine in Unit 18 include firearms. Few hunters harvest wolverine with a hunting license as most possess a trapping license which allows the individual to harvest as many wolverines as opportunistically encountered. It is not possible to accurately separate harvests between the federal subsistence harvest hunts and trapping season and the state hunting and trapping seasons.

ADF&G Comments on WP12-55
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The department will also support a similar proposal that has been submitted to the Alaska Board of Game to increase the Unit 18 wolverine hunting annual limit to two animals.

Recommendation: Support

WP12-39 Executive Summary	
General Description	Proposal WP12-39 requests combining the current Units 17B and 17C regulations, which would provide an additional 31 days of harvest opportunity for moose in portions of western Unit 17C and eastern 17B, and require the use of a State registration permit during the December 1 – December 31 season. *Submitted by the Togiak National Wildlife Refuge*
Proposed Regulation	See the analysis for proposed regulation.
OSM Preliminary Conclusion	**Support**
Bristol Bay Regional Council Recommendation	
Yukon/Kuskokwim Delta Regional Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP12-39

ISSUES

Proposal WP12-39, submitted by the Togiak National Wildlife Refuge, requests combining the current Units 17B and 17C regulations, which would provide an additional 31 days of harvest opportunity for moose in portions of western Unit 17C and eastern 17B, and require the use of a State registration permit during the December 1 – December 31 season.

DISCUSSION

This proposal would simplify moose hunting regulations on Federal public lands in Units 17B and 17C. Federal subsistence regulations currently require a State registration permit during the winter hunt only in the remainder portions of Units 17B and 17C. This proposal would require a State registration permit during the period December 1 – December 31 for all of Units 17B and 17C, which would align Federal regulations with existing State regulations.

Note: The proposal as written stated December 30th as the end date for the winter season. This was a typographical error and has been corrected to read December 31st in the relevant sections of this analysis. In addition, the proposal as written also stated the State registration permit in the text. Federal subsistence regulations do not reference State permit numbers so it has been omitted in this analysis.

Existing Federal Regulation

Unit 17B — Moose

Unit 17B — That portion that includes all the Mulchatna River drainage upstream from and including the Chilchitna River drainage – 1 bull by State registration permit. During the period Sept. 1 – 15, a spike/fork bull or a bull with 50-inch antlers or with 3 or more brow tines on one side may be taken with a State harvest ticket.	*Aug. 20 – Sept. 15*

Unit 17C — Moose

Unit 17C — That portion that includes the Iowithla drainage and Sunshine Valley and all lands west of Wood River and south of Aleknagik Lake – 1 bull by State registration permit. During the period Sept. 1 – 15, a spike/fork bull or a bull with 50-inch antlers or with 3 or more brow tines on one side may be taken with a State harvest ticket.	*Aug. 20 – Sept. 15*

Units 17B and 17C remainder — Moose

Units 17B and 17C remainder — 1 bull by State registration permit. During the period Sept. 1 –15 a spike/fork bull or a bull with 50-inch antlers or with 3 or more brow tines on one side may be taken with a State harvest ticket.	*Aug. 20 – Sept. 15* *Dec. 1 – Dec. 31*

Proposed Federal Regulation

Unit 17B — Moose

~~*Unit 17B — That portion that includes all the Mulchatna River drainage upstream from and including the Chilchitna River drainage — 1 bull by State registration permit. During the period Sept. 1 – 15, a spike/fork bull or a bull with 50-inch antlers or with 3 or more brow tines on one side may be taken with a State harvest ticket.*~~	~~*Aug. 20 – Sept. 15*~~

Unit 17C — Moose

~~*Unit 17C — That portion that includes the Iowithla drainage and Sunshine Valley and all lands West of Wood River and south of Aleknagik Lake — 1 bull by State registration permit. During the period Sept.1 – 15, a spike/fork bull or a bull with 50-inch antlers or with 3 or more brow tines on one side may be taken with a State harvest ticket.*~~	~~*Aug. 20 – Sept. 15*~~

Units 17B and 17C remainder — Moose

~~*Units 17B and 17C remainder — 1 bull by State registration permit. During the period Sept. 1 –15 a spike/fork or a bull with 50-inch antlers or with 3 or more brow tines on one side may be taken with a State harvest ticket.*~~	~~*Aug. 20 – Sept. 15*~~ ~~*Dec. 1 – Dec. 31*~~

Units 17B and 17C — Moose

Units 17B and 17C – one bull.	***Aug. 20 – Sept. 15*** ***Dec. 1 – Dec. 31***

During the period Aug. 20 – Sept. 15 — one bull by State registration permit;
Or
During the period Sept. 1 – 15 — one bull with spike-fork or 50-inch antlers or antlers with 3 or more brow tines on at least one side with a State harvest ticket;
Or
During the period Dec. 1 – 31 — one antlered bull by State registration permit.

Existing State Regulation

Unit 17B — Moose

Residents, one bull by permit	*Aug. 20 – Sept. 15*
Or	
One bull with spike-fork antlers or 50-inch antlers or antlers with 3 or more brow tines on at least one side for residents only	*Sept. 1 – Sept. 15*
Or	

One antlered bull by permit for residents only	*Dec. 1 – Dec. 31*
One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit for nonresidents.	*Sept. 5 – Sept. 15*

Unit 17B Remainder — Moose

Residents, one bull by permit	*Aug. 20 – Sept. 15*
Or	
One bull with spike-fork antlers or 50-inch antlers or antlers with 3 or more brow tines on at least one side for residents only	*Sept. 1 – Sept. 15*
Or	
One antlered bull by permit for residents only	*Dec. 1 – Dec. 31*
One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side for nonresidents.	*Sept. 5 – Sept. 15*

Unit 17C — Moose

Residents, one bull by permit	*Aug. 20 – Sept. 15*
Or	
One bull with spike-fork antlers or 50-inch antlers or antlers with 3 or more brow tines on at least one side for residents only	*Sept. 1 – Sept. 15*
Or	
One antlered bull by permit for residents only	*Dec. 1 – Dec. 31*

Extent of Federal Public Lands

Federal public lands comprise approximately 8% of Unit 17B and consist of 6% National Park Service managed lands, 1% U.S. Fish and Wildlife Service managed lands and approximately 1% scattered tracts of Bureau of Land Management managed lands.

Federal public lands comprise approximately 25% of Unit 17C and consist of 15% U.S. Fish and Wildlife Service managed lands and 10% Bureau of Land Management managed lands (**See Unit 17 Map**).

Customary and Traditional Use Determinations

Residents of Kwethluk have a positive customary and traditional determination for moose in Units 17A and 17B, those portions north and west of a line beginning from the Unit 18 boundary at the northwest end of Nenevok Lake, to the southern point of upper Togiak Lake, and northeast to the northern point of Nuyakuk Lake, northeast to the point where Unit 17 boundary intersects the Shotgun Hills.

Residents of Akiak and Akiachak have a positive customary and traditional determination for moose in Units 17B, that portion within the Togiak National Wildlife Refuge.

Residents of Unit 17, Nondalton, Levelock, Goodnews Bay and Platinum have a positive customary and traditional determination for moose in Units 17B and 17C.

Regulatory History

The Bristol Bay Federal Subsistence Regional Advisory Council submitted Proposal WP97-50 in 1996 to reduce the harvest of moose in Unit 17B and 17C by shortening the season in a portion of Unit 17B and a portion of Unit 17C from Aug. 20 – Sept. 15 to Aug. 20 – 31; and the remainder of Units 17B and 17C to Aug. 20 – 31 and change antler restrictions. The Council recommended modifying their proposal to align with Alaska Board of Game Proposal 136, submitted by the Nushagak Advisory Committee. The Federal Subsistence Board (Board) adopted WP97-50 as amended in April 1997.

Proposal WP02-26, submitted by the Togiak National Wildlife Refuge in 2001, requested that the Federal permit requirements be aligned with State permit requirements; the proposal was adopted by the Board at its May 2002 meeting.

Biological Background

Much of Unit 17B and 17C is mesic and alpine tundra, which is poor moose habitat. The majority of moose in these units are found in riparian areas of the major river drainages. Moose are now common along the Nushagak/Mulchatna Rivers and all of their major tributaries. They are also found throughout the Wood/Tikchik Lakes area (Woolington 2008).

Over the past three decades moose populations throughout Unit 17 have increased substantially in both numbers and range due to moderate snowfalls over several successive winters and decreased harvest of cow moose, resulting in decreased mortality and increased recruitment rates (Woolington 2008). The reduction in the cow harvest is due in part to a positive response by unit residents to educational efforts by the Alaska Department of Fish and Game (ADF&G) and the Togiak National Wildlife Refuge, and due to residents switching harvest to an abundant alternative food source as the Mulchatna caribou herd grew and expanded its range in the 1980s and 1990s (Van Daele 1995).

The moose population in Unit 17B was estimated at 2500–3000 in 1987 (Taylor 1990). This estimate was primarily based on extrapolations from a census in the upper Mulchatna River area. ADF&G established a minimum management goal of 4900 moose for the unit. Late winter surveys conducted by ADF&G between 1992 and 1997 indicated the moose population size in the unit was stable to increasing. A moose population estimation survey was completed in the western portion of 17B and yielded an estimate of 1202 moose. This included 61 calves comprising 5.1% of the total moose observed (Woolington 2002). A moose population estimation survey was completed for the eastern portion of 17B in March 2002, yielding an estimate of 1953 moose, including 76 calves representing 3.9% of the total moose observed (Woolington 2004). In March of 2006, another moose population estimation survey was completed in the western portion of 17B, yielding an estimate of 1210 moose, including 151 calves. Based on these estimates, it appears the moose population of 17B was less than the minimum management objective (Woolington 2008). A more recent survey of the western portion of 17B in 2010 yielded an estimate of 1137 moose, while a survey of the eastern portion of 17B in 2009 yielded an estimate of 1466 moose (Woolington 2011, pers. comm.).

The moose population in Unit 17C was estimated at 1400–1700 in 1987 (Taylor 1990). This estimate was based on extrapolations from surveys conducted in Unit 17C in 1983. ADF&G established a minimum management goal of 2800 moose for the unit. In March 1999, portions of 17C were surveyed, yielding an estimate of 2955 moose, including 435 calves, representing 14.7% of the total moose observed (Woolington 2002). In March 2004, another moose population survey was conducted within portions of 17C, yielding an estimate of 3670 moose, including 410 calves, representing 11.2% of the total moose observed (Woolington 2006). These survey estimates indicate that the moose population of 17C was

above the minimum management objective (Woolington 2008). A more recent survey of 17C conducted in 2008 yielded an estimate of 3235 moose (Woolington 2011, pers. comm.).

Bull:cow ratios in all areas of Unit 17 have historically been high, but no composition data were collected during the last reporting period of 2005–2007. Aerial surveys to estimate moose in the Lake Clark National Park and Preserve boundary of Unit 17B in 1994 and 1999 yielded an estimated bull:cow ratio of 37:100 and 34:100 respectively (FWS 2002). A calf:cow ratio of 16.5:100 was estimated from surveys in 1999.

Calf production and survival have fluctuated between areas and years in Unit 17. A 1999 population estimation survey yielded a minimum calf percentage of 14.7% in Unit 17C. A 2001 survey indicated a minimum calf percentage of 5.1% in western Unit 17B, while a 2002 survey yielded a minimum calf percentage of 3.9% in eastern Unit 17B. A 2004 population survey indicated a minimum calf percentage of 11.2% in Unit 17C (Woolington 2008). More recent surveys in 2010 and 2009 yielded a minimum calf percentage of 8% for both the western and eastern portions of 17B, while a 2008 survey of 17C yielded a minimum calf percentage of 12% (Woolington 2011, pers. comm.).

Harvest History

Reported moose harvests in Unit 17 have nearly tripled since 1983–1984 from 127 to 380 in 2005–2006 as a result of a 4-fold increase in the number of moose hunters in the unit in response to the increased moose populations. The reported moose harvest from 2003–2007 in Unit 17B has ranged from 113 to 183, with an average annual harvest of 149 moose. In Unit 17C, the five year average annual harvest was 224, with a range of 193 to 251 moose (FWS 2002). Local residents have accounted for the largest numbers of moose harvested in Unit 17 during the most recent reporting period from 2000–2007, with an average of 209 moose (79% of all moose harvested) being harvested by local users during that time period (**Table 1**).

The State's general moose hunt in Units 17B and 17C is of shorter duration with a more restrictive harvest limit than the State registration hunts. Greater numbers of nonlocal Alaska residents and nonresidents participate in the general hunt (Sept. 1 – 15) than local Unit 17 Alaska residents. Longer seasons and more liberal harvest limits have encouraged many resident hunters to participate in State registration hunts (Woolington 2008).

Effects of Proposal

If adopted, this proposal would simplify moose hunting regulations and reduce the regulatory complexity on Federal public lands in Units 17B and 17C and provide increased harvest opportunities for Federally qualified subsistence users. Increased moose harvest in the area including Sunshine Valley and all lands west of Wood River and south of Aleknagik Lake may improve habitat conditions and reduce harvest pressure in other areas of Unit 17.

Federal subsistence regulations currently require a State registration permit during the winter hunt only in the remainder portions of Units 17B and 17C. If adopted, this proposal would require a State registration permit from December 1 – December 31 for all of Units 17B and 17C, which would align with existing State regulations and provide an additional 31 days of hunting opportunity for Federally qualified subsistence users in portions of western Unit 17C (Sunshine Valley and all lands west of Wood River and south of Aleknagik Lake) and in eastern Unit 17B (all of Mulchatna River drainages upstream from (and including) the Chilchitna River drainage). In addition, this alignment with State regulations will aid in minimizing law enforcement violations by Federally qualified subsistence users in areas of mixed land status designations. This change may reduce moose numbers in some areas of Unit 17C that

Table 1. Unit 17 moose hunter harvest and residency for permit hunts[a], 2000-2007 (Woolington 2008).

Regulatory Year	Local Residents[b]	Nonlocal Residents	Nonresident	Total
2000-2001	144	45	0	189
2001-2002	193	57	0	250
2002-2003	228	56	0	284
2003-2004	214	71	0	285
2004-2005	204	50	0	254
2005-2006	224	45	10	279
2006-2007	254	47	6	307

[a]Includes only permittees who reported hunting.
[b]Unit 17 residents.

have had little to no harvest during the last 20 years and may help improve habitat conditions and reduce harvest pressures in other areas of Unit 17. Under the State registration permit system, the ADF&G Area Biologist can keep selected areas closed and use Emergency Order authority to close selected areas if the harvest objective is met before the end of the open season.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-39.

Justification

Adoption of this proposal would revise the moose season in Units 17B and 17C, would provide Federally qualified subsistence users with an additional 31 days of hunting opportunity in portions of these units, and align Federal and State regulations, which will also help minimize law enforcement violations by Federally qualified subsistence users hunting in areas of mixed (Federal and State) land status designation. The moose population may be reduced in areas that have had little or no harvest in the last 20 years and may help improve habitat conditions. Longer seasons and more liberal harvest limits may encourage many resident hunters to participate in registration hunts. The use of a State registration permit for portions of this hunt will allow the managers the opportunity to keep selected areas closed and use Emergency Order authority to close areas if harvest objectives are met before the end of the season.

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WP12-40 Executive Summary		
General Description	Proposal WP12-40 requests a revision of the hunt area descriptor for Unit 17A winter moose hunt to include all of 17A. *Submitted by the Togiak National Wildlife Refuge*	
Proposed Regulation	*Unit 17A — 1 bull by state registration permit* *Unit 17A~~, that portion that includes the area east of the west shore of Nenevok Lake, east of the west bank of the Kemuk River, and east of the west bank of the Togiak River south from the confluence Togiak and Kemuk rivers~~ — 1 antlered bull by State registration permit. Up to a 14-day season during the period Dec. 1–Jan. 31 may be opened or closed by the Togiak National Wildlife Refuge Manager after consultation with ADF&G and* ***the Chair of the Bristol Bay Subsistence Regional Advisory Council*** *~~local users~~.*	*Aug. 25 – Sept. 20* *Winter season to be announced.*
OSM Preliminary Conclusion	**Support**	
Bristol Bay Regional Council Recommendation		
Interagency Staff Committee Comments		
ADF&G Comments	**Support**	
Written Public Comments	**None**	

DRAFT STAFF ANALYSIS
WP12-40

ISSUES

Proposal WP12-40, submitted by the Togiak National Wildlife Refuge, requests a revision of the hunt area descriptor for Unit 17A winter moose hunt to include all of 17A.

DISCUSSION

The proponent requests that all of Unit 17A be opened during the Federal winter moose hunt. The closures to moose hunting in portions of 17A were initiated to encourage expansion of moose populations from Unit 17A into southern Unit 18 and were supported by both subsistence users and management agencies. State and Federal managers for Unit 17A did not allow moose hunting west of the Kemuk and Togiak rivers during the first four winter hunts from 2002/2003 to 2005/2006, which allowed the moose population in the unit to increase and expand into the neighboring Goodnews River drainage (southern Unit 18) from 2002 to 2011. Under State regulations, all of Unit 17A has been open to winter moose hunting since the 2006/2007 season. However, Federal regulations have been more restrictive, allowing for a winter harvest only in smaller portions of the unit. A healthy and viable moose population with a harvestable surplus now exists in Unit 17A. This proposal aims to revise the area descriptor for the winter moose hunt to reflect these biological realities and to align Federal and State regulations.

Existing Federal Regulation

Unit 17A — Moose

Unit 17A — 1 bull by state registration permit *Unit 17A — that portion that includes the area east of the west shore of Nenevok Lake, east of the west bank of the Kemuk River, and east of the west bank of the Togiak River south from the confluence Togiak and Kemuk Rivers — 1 antlered bull by State registration permit. Up to a 14-day season during the period Dec. 1–Jan. 31 may be opened or closed by the Togiak National Wildlife Refuge Manager after consultation with ADF&G and local users.*	*Aug. 25 – Sept. 20* *Winter season to be announced.*

Proposed Federal Regulation

Unit 17A — Moose

Unit 17A — 1 bull by state registration permit *Unit 17A~~, that portion that includes the area east of the west shore of Nenevok Lake, east of the west bank of the Kemuk River, and east of the west bank of the Togiak River south from the confluence Togiak and Kemuk rivers~~ — 1 antlered bull by State registration permit. Up to a 14-day season during the period Dec. 1–Jan. 31 may be opened or closed by the Togiak National Wildlife Refuge Manager after consultation with ADF&G and* ***the Chair of the Bristol Bay Subsistence Regional Advisory Council*** *~~local users~~.*	*Aug. 25 – Sept. 20* *Winter season to be announced.*

Existing State Regulation

Unit 17A — Moose

Residents, one bull by permit	*Aug. 25 – Sept. 20*
Or	
One antlered bull by permit for residents only	*May be announced*

Extent of Federal Public Lands

Federal public lands comprise approximately 84% of Unit 17A and all of them are U.S. Fish and Wildlife Service managed lands (**See Unit 17 Map**).

Customary and Traditional Use Determinations

Residents of Akiak and Akiachak have a positive customary and traditional determination for moose in Unit 17A, that portion north of Togiak Lake that includes the Izavieknik River drainage. Residents of Kwethluk have a positive customary and traditional determination for moose in Units 17A and 17B, those portions north and west of a line beginning from the Unit 18 boundary at the northwest end of Nenevok Lake, to the southern point of upper Togiak Lake, and northeast to the northern point of Nuyakuk Lake, northeast to the point where Unit 17 boundary intersects with the Shotgun Hills.

In addition, rural residents of Unit 17, Goodnews Bay, and Platinum have a positive customary and traditional determination for moose.

Regulatory History

WSA-02-11 — A Special Action was submitted by the Togiak Traditional Council, Togiak, Alaska to establish a limited winter moose hunt in part of Unit 17(A). WSA02-11 was subsequently modified by the Togiak Traditional Council recommending that a Federal registration permit be required instead of a State registration permit. The Special Action was approved with modification by the Federal Subsistence Board (Board) on November 12, 2002. The modification stipulated that the Federal subsistence hunt will require the use of a State registration permit rather than the use of a Federal registration permit.

WP04-46 — A proposal submitted by the Bristol Bay Native Association requested that a limited moose hunt be held in Unit 17A during the period of December 1 – January 31. At its May 2004 meeting, the Board adopted the proposal with modifications consistent with the recommendation of the Bristol Bay Regional Advisory Council. The first modification implemented a winter hunt using the State registration permit process instead of a Federal permit and the second modification included language stating “up to a 14-day season” during the period of December 1 – January 31.

WP04-47 — A proposal submitted by Togiak Natives Limited, requested that a winter moose hunt be held in Unit 17A from January 1 – 31, with a harvest limit of one moose and a closure of the season once 20 cows had been harvested. The proposal was rejected by the Board at its May 2004 meeting.

Biological Background

Moose are relative newcomers to southwest Alaska and to Unit 17A, possibly migrating into the area from the middle Kuskokwim River drainages during the last century. Aerial surveys conducted in the 1980s

and 1990s often resulted in less than 10 moose being observed in the unit (Woolington 2008). Local residents harvested moose opportunistically, but other species such as caribou, bears, and beaver were the main sources of wildlife meat in the area. The Alaska Department of Fish and Game (ADF&G) began collecting data on the Unit 17 moose population in 1971. ADF&G established a minimum population objective of 300 moose and a target population of 1100–1750 moose for Unit 17A (Woolington 2008). Late winter moose count minimums for Unit 17A show an increase from 652 animals in 2002 to 1166 animals in 2011. In the neighboring Goodnews River drainage (southern Unit 18), moose numbers increased from 2 in 2002 to 196 in 2011 (Aderman 2011, pers. comm.).

A cooperative research effort between the Togiak National Wildlife Refuge and ADF&G in Unit 17A in 1998 resulted in 36 adult moose being collared. Aerial radiotracking was conducted monthly for all moose and weekly for cows during the calving period. Annual calf production during 1998–2003 averaged 136.5 calves per 100 cows with an average twinning rate of 64.6 percent. Calf survival from birth to November averaged 52.7 percent and annual adult survival during the same period averaged 85.6 percent (FWS 2004). More recent data has shown an average annual calf production between 1998 and 2010 of 129.9 calves per 100 cows with an average twinning rate of 63.8% over the same period. Calf survival from birth to November during this time averaged 47.3% with an average recruitment of 62.6 calves per 100 cows. Bull:cow ratios from 1998 to 2006 averaged 81.7 bulls per 100 cows (Aderman 2008).

Harvest History

Fall and winter hunt statistics were combined for this analysis. For the winter moose hunt period 2003–2010, hunter participation had an annual average of 98 local residents and 8 nonlocal residents. The average harvest for this time period was 27 moose for local residents and 4 moose for nonlocal residents (**Table 1**). From 2003–2010, the average annual hunter success was 29% (Range 18–39%) (Woolington 2011, pers. comm.).

Effects of Proposal

If adopted, this proposal would open up all of Unit 17A during the Federal winter moose hunt. The closure of portions of Unit 17A was supported by subsistence users and local managers in order to encourage expansion of the moose population into southern Unit 18. Moose numbers have increased in both Unit 17A and southern portions of Unit 18 as a result of these closed areas. Moose harvests have increased and reflect an increasing population trend for the species. A healthy and viable moose population with a harvestable surplus now exists in all of Unit 17A. If this proposal is adopted, it would provide for additional opportunity for Federally qualified subsistence users and would align Federal and State hunting regulations in the unit.

OSM PRELIMINARY CONCLUSION

Support Proposal WP12-40.

Justification

Adoption of this proposal would open up all of Unit 17A for the winter moose hunt and would allow for a winter season of up to 14 days during the period Dec. 1 – Jan. 31 in a larger area than currently available to local residents. Opening all of Unit 17A to a winter moose hunt would align Federal and State regulations. Past hunting closures in parts of 17A were initiated to encourage expansion of moose populations into areas of southern Unit 18. These efforts have been a success and a healthy and viable moose population with a harvestable surplus now exists in Unit 17A. Since all of Unit 17A has been open

Table 1. Unit 17A registration moose hunts (RM573 and RM575) 1997 – 2010 (Woolington 2011)

	Permits Issued				# Reported Hunting				# Moose Reported Taken		
Regulatory Year	Local Resident	Nonlocal Resident	Total Permits		Local Resident	Nonlocal Resident	Total Hunters		Local Resident	Nonlocal Resident	Total Moose
1997	44	0	44		39	0	39		15	0	15
1998	48	0	48		43	0	43		10	0	10
1999	55	2	57		39	2	41		10	0	10
2000	54	2	56		48	1	49		10	0	10
2001	55	1	56		46	1	47		6	1	7
2002	39	1	40		35	1	36		8	0	8
2003 (F)	(52)	(7)	(59)		(44)	(3)	(47)		(6)	(1)	(7)
(W)	(19)	(0)	(19)		(14)	(0)	(14)		(4)	(0)	(4)
Tot	71	7	77		58	3	61		10	1	11
2004 (F)	(52)	(1)	(53)		(48)	(0)	(48)		(10)	(0)	(10)
(W)	(44)	(0)	(44)		(29)	(0)	(29)		(10)	(0)	(10)
Tot	96	1	97		77	0	77		20	0	20
2005 (F)	(68)	(5)	(73)		(58)	(3)	(61)		(20)	(1)	(21)
(W)	(76)	(0)	(76)		(35)	(0)	(35)		(3)	(0)	(3)
Tot	144	5	149		93	3	96		23	1	24
2006 (F)	(62)	(5)	(67)		(56)	(5)	(61)		(21)	(3)	(24)
(W)	(48)	(6)	(54)		(26)	(5)	(31)		(11)	(1)	(12)
Tot	110	11	121		82	10	92		32	4	36
2007 (F)	(81)	(2)	(83)		(63)	(0)	(63)		(32)	(0)	(32)
(W)	(98)	(6)	(98)		(45)	(4)	(49)		(8)	(1)	(9)
Tot	179	8	181		108	4	112		40	1	41
2008[b](F)	(87)	(16)	(103)		(81)	(13)	(94)		(17)	(7)	(24)
(W)	(110)	(0)	(110)		(64)	(0)	(64)		(21)	(0)	(21)
Tot	197	16	213		145	13	158		38	7	45
2009[a] (F)	(98)	(21)	(119)		(82)	(17)	(99)		(18)	(11)	(29)
(W)	(35)	(1)	(36)		(29)	(0)	(29)		(2)	(0)	(2)
Tot	133	22	155		111	17	128		20	11	31
2010a(F)	(96)	(17)	(113)		(81)	(12)	(93)		(21)	(6)	(27)
(W)	(30)	(1)	(31)		(26)	(0)	(25)		(10)	(0)	(10)
Tot	126	18	144		106	12	118		31	6	37

Local Residents =Unit 17 residents RM573: August 25 - September 20. RM575: 2 weeks (TBA)
December 1 – January 31
NOTE: 2005 - 2008 winter hunts included western GMU 17C
[a] 2009 and 2010 data preliminary. [b] Fall 2008 was first year that aircraft could be used during this hunt.
As of 12/29/2010 six permittees for RM573-2009 still had not reported, and four permittees for RM575-2009 have not reported
As of 02/03/2011 15 permittees for RM573-2010 still had not reported, and five permittees for RM575-2010 have not reported.
(05/08/2011)

during the last five winter hunts under State regulations, this proposal would clarify Federal and State regulations for hunters.

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ADF&G Comments on WP12-40
August 30, 2011; Page 1 of 2

Alaska Department of Fish and Game
Comments to Regional Advisory Council

Wildlife Proposal WP12-40: This proposal seeks to align state and federal regulations by changing the boundary description for Unit 17A winter moose hunt to include all of 17A.

Introduction: This proposal was submitted by the Togiak National Wildlife Refuge (TNWR) to align state and federal regulations by changing the boundary description for Unit 17A winter moose hunt to include all of 17A
Impact on Subsistence Users: Federally qualified subsistence hunters would ___

Opportunity Provided by State:

Residents, one bull by permit	*Aug 25 – Sept 20*
OR	
One antlered bull by permit for residents only	*May be announced*

Conservation Issues: None. This moose population has increased to target management levels with high calf production.

Enforcement Issues: This proposal would align state and federal regulations therefore reducing confusion for both enforcement officers and users.

Other Comments: Research in this area has been conducted jointly by TNWR and the department through collaborative efforts.

Recommendation: Support.

TRI-RAC CUSTOMARY TRADE SUBCOMMITTEE STATUS REPORT

The Tri-RAC subcommittee on customary trade is composed of members from the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council, the Western Interior Subsistence Regional Advisory Council, and the Eastern Interior Subsistence Regional Advisory Council.

The Tri-RAC subcommittee met on May 18-19 and again on August 23-24 to address a river-wide solution to the issue of customary trade of Yukon River Chinook salmon. At both meetings, the subcommittee agreed that low runs of Chinook salmon require conservation efforts to extend to customary trade practices. In the event Chinook salmon runs return to prior levels, limits to customary trade may no longer be warranted.

Subcommittee members present at the May meeting included: Raymond Oney, Harry Wilde Sr., and Aloysius Unok (YKDSRAC); Ray Collins, Robert Walker and Jenny Pelkola (WISRAC); Andy Bassich, Andrew Firmin, and Bill Glanz (EISRAC). Subcommittee members present at the August meeting included: Raymond Oney, Harry Wilde Sr., and Aloysius Unok (YKDSRAC); Ray Collins and Don Honea, Jr. (WISRAC); Andy Bassich, Andrew Firmin, and Bill Glanz (EISRAC).

At its May meeting, the subcommittee suggested three broad customary trade regulatory changes. These changes were motivated by many years of low Yukon River Chinook returns and concern over the continued viability of Chinook populations. The subcommittee's ideas for proposed regulatory changes were sent out for public review and comment.

At its August meeting, the subcommittee discussed the public response to the proposed regulatory changes. Based on those discussions, the subcommittee developed the following recommendation.

Because of declining Chinook salmon runs, the Tri-RAC recommends the following regulation to govern customary trade of Yukon River Chinook salmon:

Customary trade of Yukon River Chinook salmon may only occur between Federally qualified rural residents with a current customary and traditional use determination.

Justification

- By allowing customary trade only between federally qualified rural residents with a customary and traditional use determination for Yukon River Chinook salmon, the subcommittee hopes to curtail large customary trade exchanges involving Chinook salmon which are reported to occur in urban areas of Alaska and may rise to the level of a significant commercial enterprise.

- In times of low abundance, Yukon River Chinook salmon should remain within the Yukon River drainage for subsistence uses.

- Reduces overall Chinook salmon harvest, which may allow fisheries managers to minimize subsistence fishing restrictions.

- Provides fisheries managers additional fish to meet drainage-wide escapement goals, which has the potential of improving future returns.

- Allows fishers to recover reasonable expenses for traditional subsistence activities, which was the original intent of customary trade.

The subcommittee also developed an alternative proposal. This proposal was developed for RAC discussion, but is not the subcommittee's preferred option.

Alternative Proposal

Preclude customary trade of Yukon River Chinook salmon between rural residents and others.

a) Establish a $750 limit per calendar year per qualified household;

b) Require customary trade recordkeeping and receipt form.

Justification

- Establishes an enforceable dollar amount for customary trade of Yukon River Chinook salmon.
- Addresses problem by limiting potential for large volume sales.
- By allowing customary trade only between federally qualified rural residents, and not between rural residents and others, the subcommittee hopes to curtail large customary trade exchanges involving Chinook salmon, which are reported to occur in urban areas of Alaska and may rise to the level of a significant commercial enterprise.
- Reduces overall harvest, which may allow fisheries managers to minimize subsistence fishing restrictions.
- Provides fisheries managers additional fish to meet drainage-wide escapement goals, which has the potential of improving future returns.
- Provides law enforcement necessary information to curtail illegal cash sales by identifying harvest sources and quantities.

Because of declining Yukon River Chinook runs, the subcommittee also recommends that a required Chinook salmon harvest calendar be implemented for Federally qualified subsistence users.

Justification

- Accurate harvest reporting would facilitate Yukon River Chinook salmon management by providing an account of day-to-day harvest levels. This information would be used to support post-season household survey data, and would not replace such data.
- A harvest calendar would also be part of educating people toward greater conservation awareness.

Next Steps:

- Council and public comments compiled and taken back to the subcommittee
- Subcommittee decides on a proposal to submit
- Proposal goes through the Federal regulatory process for fish beginning with the publication of the proposed rule and call to change regulations
- Councils provide recommendations on the proposal during the 2012 fall meetings
- Federal Subsistence Board action in January 2013

INTRODUCTION

BACKGROUND

Since 1999, under the authority of Title VIII of ANILCA, the Federal government has assumed expanded management responsibility for subsistence fisheries on Federal public lands in Alaska. Expanded subsistence fisheries management has imposed substantial new informational needs for the Federal system. Section 812 of ANILCA directs the Departments of the Interior and Agriculture, cooperating with the State of Alaska and other Federal agencies, to undertake research on fish and wildlife and subsistence uses on Federal public lands, and to seek data from, consult with, and make use of the special knowledge of local residents engaged in subsistence uses. To increase the quantity and quality of information available for management of subsistence fisheries, the Fisheries Resource Monitoring Program (Monitoring Program) was established within the Office of Subsistence Management. The Monitoring Program was envisioned as a collaborative interagency, interdisciplinary approach to enhance existing fisheries research, and effectively communicate information needed for subsistence fisheries management on Federal public lands.

Although all proposals addressing subsistence fisheries on Federal lands will be considered, the 2012 Request for Proposals was focused on priority information needs developed either by strategic planning efforts or by expert opinion, followed by review and comment by the Subsistence Regional Advisory Councils. The Monitoring Program is administered by region, and strategic plans sponsored by this program were developed by workgroups of fisheries managers, researchers, Federal Subsistence Regional Advisory Council members and other stakeholders for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska. These plans identify prioritized information needs for each major subsistence fishery and can be viewed on or downloaded from the Office of Subsistence Management's website: http://alaska.fws.gov/asm/index.cfml. Independent strategic plans were completed for the Yukon and Kuskokwim regions for salmon in 2005. For the Northern Region and the Cook Inlet Area, assessments of priority information needs were developed from the expert opinions of the Regional Advisory Councils, the Technical Review Committee, Federal and State managers and staff from the Office of Subsistence Management. Additionally, a strategic plan for research on whitefish species in the Yukon and Kuskokwim river drainages was completed in spring 2011 as a result of efforts supported through Monitoring Program project 08-206.

Cumulative effects of climate change will likely fundamentally affect subsistence fishery resources, their uses, and how they are managed. Therefore, all investigators were asked to consider examining or discussing climate change effects as part of their project. Investigators conducting long-term projects were encouraged to participate in a standardized air and water temperature monitoring program for which the Office of Subsistence Management will provide calibrated temperature loggers and associated equipment, analysis and reporting services, and access to a temperature database. The Office of Subsistence Management has also specifically requested research proposals that would focus on effects of climate change on subsistence fishery resources and uses, and that would describe management implications.

> *The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands, for rural Alaskans, through a multidisciplinary, collaborative program.*

To implement the Monitoring Program, a collaborative approach is utilized in which five Federal agencies (Fish and Wildlife Service, Bureau of Land Management, National Park Service, Bureau of

Indian Affairs, and U.S. Forest Service) work with the Alaska Department of Fish and Game, Regional Advisory Councils, Alaska Native organizations, and other organizations. An interagency Technical Review Committee provides scientific evaluation of proposals and investigation plans. The Regional Advisory Councils provide review and recommendations, and public comment is invited. The Interagency Staff Committee also provides recommendations. The Federal Subsistence Board takes into consideration recommendations and comments from the process, and approves the final monitoring plan.

PROJECT EVALUATION PROCESS

The Technical Review Committee evaluates proposals, and subsequently full investigation plans, and makes recommendations for funding. The committee is chaired by the Fisheries Division Chief of the Office of Subsistence Management and is composed of representatives from each of the five Federal agencies and three representatives from the Alaska Department of Fish and Game. Fisheries and Anthropology staff from the Office of Subsistence Management provide support for the committee.

Four factors are used to evaluate studies:

1. **Strategic Priority**

   Proposed projects should address the following and must meet the first criteria to be eligible for Federal subsistence funding.

   Federal Jurisdiction—Issue or information needs addressed in projects must have a direct association to a subsistence fishery within a Federal conservation unit as defined in legislation, regulation and plans.

   Conservation Mandate—Risk to the conservation of species and populations that support subsistence fisheries, and risk to conservation unit purposes as defined in legislation, regulation and plans.

   Allocation Priority—Risk of failure to provide a priority to subsistence uses.

   Data Gaps—Amount of information available to support subsistence management (higher priority given where a lack of information exists).

   Role of Resource—Contribution of a species to a subsistence harvest (e.g., number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (e.g., cultural value, unique seasonal role).

   Local Concern—Level of user concerns over subsistence harvests (e.g., upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics).

2. **Technical-Scientific Merit**

   The project must meet accepted standards for design, information collection, compilation, analysis, and reporting. Projects should have clear study objectives, an appropriate sampling design, correct statistical analysis, a realistic schedule and budget, and appropriate products, including written reports. Projects must not duplicate work already being done.

3. **Investigator Ability and Resources**

Investigators must have the ability and resources to successfully complete the proposed study. This will be evaluated considering ability in terms of education and training, related work experience, publications, reports, presentations, and past or ongoing work on Monitoring Program studies; and considering resources in terms of office and laboratory (if relevant) facilities, technical and logistic support, and personnel and budget administration.

4. Partnership-Capacity Building

Partnerships and capacity building are priorities of the Monitoring Program. ANILCA mandates that the Federal government provide rural residents a meaningful role in the management of subsistence fisheries, and the Monitoring Program offers tremendous opportunities for partnerships and participation of local residents in monitoring and research. Investigators are requested to include a strategy for integrating local capacity development in their investigation plans. Investigators must complete appropriate consultations with local villages and communities in the area where the project is to be conducted. Letters of support from local organizations add to the strength of a proposal. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building.

POLICY AND FUNDING GUIDELINES

Several policies have been developed to aid in implementing funding.

- Proposals of up to four years duration may be considered in any year's monitoring plan.
- Studies must be non-duplicative with existing projects. Most Monitoring Program funding is dedicated to non-Federal sources.
- Activities not eligible for funding under the Monitoring Program include: a) habitat protection, restoration, and enhancement; b) hatchery propagation, restoration, enhancement, and supplementation; c) contaminant assessment, evaluation, and monitoring; and d) projects where the primary objective is capacity building (e.g., science camps, technician training, intern programs). These activities would most appropriately be addressed by the land management agencies.
- When long-term projects can no longer be funded by agencies, and the project provides direct information for Federal subsistence fisheries management, the Monitoring Program may fund up to 50% of the project cost.

Finances and Guideline Model for Funding

The Monitoring Program was first implemented in 2000, with an initial allocation of $5 million. Since 2001, a total of $6.25 million has been annually allocated for the Monitoring Program. In 2010, the total funding was reduced to $6.05 million. The Department of the Interior, through the U.S. Fish and Wildlife Service, has provided $4.25 million. The Department of Agriculture, through the U.S. Forest Service, provided $1.8 million annually. But the level of funding for 2012 is uncertain. If Department of Agriculture funding is not provided, none of the project investigation plans submitted for the Southeast Region would be funded.

The Monitoring Program budget funds continuations of existing projects (year-2, 3 or 4 of multi-year projects), and new projects in the biennial year. The Office of Subsistence Management issued requests for proposals on an annual basis until 2008, and then shifted to a biennial basis. Therefore, the next request for proposals after 2012 will be for 2014 proposals. Budget guidelines are established by

geographic region and data type, and for 2012, $2 million is projected to be available for new starts. Proposals are solicited according to the following two data types:

5. **Stock Status and Trends Studies (SST)**.

   These projects address abundance, composition, timing, behavior, or status of fish populations that sustain subsistence fisheries with linkage to Federal public lands. The budget guideline for this category is two-thirds of available funding.

6. **Harvest Monitoring and Traditional Ecological Knowledge (HM-TEK)**.

   These projects address assessment of subsistence fisheries including quantification of harvest and effort, and description and assessment of fishing and use patterns. The budget guideline for this category is one-third of available funding.

2012 FISHERIES RESOURCE MONITORING PLAN

For 2012, a total of 32 investigation plans are under consideration for funding (**Table 1**). Of these, 22 are SST projects and 10 are HM-TEK projects. The Technical Review Committee recommends funding 29 of these investigation plans.

Table 1. Number of investigation plans received for funding consideration in 2012, and number recommended for funding by the Technical Review Committee. Data types are stock status and trends (SST), and harvest monitoring and traditional ecological knowledge (HM-TEK).

	Investigation Plans			Technical Review Committee		
Geographic Region	**SST**	**HM-TEK**	**Total**	**SST**	**HM-TEK**	**Total**
Northern Alaska	4	3	7	3	3	6
Yukon	6	1	7	5	1	6
Kuskokwim	7	1	8	6	1	7
Southwest Alaska	0	3	3	0	3	3
Southcentral Alaska	1	1	2	1	1	2
Southeast Alaska	3	1	4	3	1	4
Multi-Regional	1	0	1	1	0	1
Total	22	10	32	19	10	29

Total funding available for new projects in 2012 is $2.70 million, while the proposed cost of funding all 32 projects submitted would be $2.74 million. The 29 projects recommended for funding by the Technical Review Committee have a total cost of $2.18 million. In making their recommendations, the committee weighed the importance of funding new projects in 2012 with the knowledge that the next request for proposals will be issued in 2014. As has been done in past years, any unallocated Monitoring Program funds from the current year will be used to increase the amount of funding available for subsequent years.

The 2012 draft Monitoring Plan recommended by the Technical Review Committee would provide 28% of the funding to Alaska Native organizations, 47% to State agencies, 14% to Federal agencies, and 11% to other non-government organizations.

YUKON REGION OVERVIEW

Issues and Information Needs

The 2012 Request for Proposals for the Yukon Region identified eight priorities:

- Reliable estimates of Chinook and chum salmon escapements (e.g., weir and sonar projects).
- Effects on salmon stocks (e.g., gillnet dropout mortality) and users of fishery management practices implemented to conserve Chinook salmon (e.g., gillnet mesh size, gillnet depth, and windowed openings).
- Methods for including "quality of escapement" measures (e.g., egg deposition, size composition, habitat utilization) in establishing Chinook salmon spawning goals and determining the reproductive potential of spawning escapements.
- Contemporary economic strategies and practices in the context of diminished salmon runs. Topics may include an evaluation of barter, sharing, and exchange of salmon for cash, as well as other economic strategies and practices that augment and support subsistence activities. Of particular interest are distribution networks, decision making, and the social and cultural aspects of salmon harvest and use.
- Description of changes through time in gillnet use (set versus drift, and by mesh size) for Chinook salmon subsistence harvest in the mainstem Yukon River, in context with harvest and escapement levels.
- Location and timing of Bering cisco spawning populations in the Yukon River drainage.
- Complete genetic baseline sampling and population marker development for sheefish spawning populations in the Yukon River drainage.
- Harvest, use, and associated contextual information for whitefish by species in lower Yukon River drainage communities

Projects Funded Under the Fisheries Resource Monitoring Program

Since the inception of the Monitoring Program in 2000, 93 projects have been funded in the Yukon Region, and seven of these will still be operating in 2012 (Tables 1 and 2). Some of the projects continue previously funded work. Seventy-two of the projects have been directed at salmon, 20 projects have addressed resident fish species such as whitefish and northern pike, and one project has examined climate change impacts on fisheries. Of the seven ongoing projects, five address salmon, one focuses on non-salmon, and one examines climate change (Table 2).

Projects Forwarded for Investigation Plan Development

Fifteen Yukon Region proposals were initially submitted to the Office of Subsistence Management in response to the 2012 Request for Proposals. In March 2011, the Technical Review Committee reviewed these proposals and recommended nine for investigation plan development, including seven Stock Status and Trends projects and two Harvest Monitoring and Traditional Ecological Knowledge projects. One Stock Status and Trends and one Harvest Monitoring/Traditional Ecological Knowledge proposal were withdrawn by the investigators prior to submittal of an investigation plan. Investigators for the remaining seven projects responded to Technical Review Committee proposal review comments in developing their investigation plans. Detailed budgets submitted with each investigation plan allowed identification of funds requested by Alaska Native, State, Federal, and other organizations; funds that would be used to hire local residents; and matching funds from investigating agencies and organizations (Tables 3 and 4).

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. While regional budget guidelines provide an initial target for planning, they are not rigid allocations. Upon review and evaluation, the Technical Review Committee, Regional Advisory Councils, Interagency Staff Committee and Federal Subsistence Board have the opportunity to address the highest priority projects across regions. For 2012, approximately $783,000 is available for funding new projects in the Yukon Region.

Recommendations for Funding

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary, collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible monitoring plan for each region and across the entire state. After reviewing the seven investigation plans, the Technical Review Committee recommended funding six projects (Table 5):

12-200	Alatna River Inconnu Population Structure	$	32,547
12-202	Abundance and Run Timing of Salmon in Henshaw Creek	$	136,990
12-204	Anvik River Sonar Project	$	93,366
12-205	Kaltag Chinook Salmon Sampling Project	$	4,000
12-207	Yukon River Bering Cisco Spawning Origins Telemetry	$	71,050
12-251	In-season Management Teleconferences and Harvest Interviews	$	24,866
	Total	$	362,819

The six projects recommended for funding by the Technical Review Committee comprise a strong Monitoring Plan for the region by addressing strategically important information needs based on sound science and by promoting cooperative partnerships. Each investigation plan recommended for funding in the Yukon region in 2012 is summarized below (see Executive Summaries for more details).

12-200 Alatna River Inconnu Population Structure. This one-year project would provide biological information on inconnu (often referred to as sheefish) harvested by subsistence fishermen in the Alatna River during September. Age, sex, length, and gonadosomatic index information would be obtained, and tissue samples would be collected for development of a genetic baseline. The Alatna River contains the only documented spawning habitat for inconnu in the Koyukuk River, and the stock utilizing this habitat is thought to be the second largest one in the Yukon River drainage. Development of genetic baselines and description of stock structure for whitefish stocks was a priority information need identified in the 2012 Request for Proposals as well as in the Whitefish Strategic Plan.

12-202 Abundance and Run Timing of Salmon in Henshaw Creek. This two-year project would allow continued operation of the Henshaw Creek weir, which provides run timing and escapement information for Chinook and summer chum salmon in a stream located in the upper Koyukuk River. Data collected at the Henshaw Creek weir has been used as an index for salmon populations in the upper Koyukuk River drainage, and these stocks support subsistence fisheries in the Koyukuk River and lower Yukon River drainage. Continuation of this work is supported by Tribal, State and Federal stakeholders. Information obtained from this project has been used to evaluate escapements; estimate the age, sex, and length composition; and determine run timing of Chinook and summer chum salmon entering Henshaw Creek. While this project would address a priority information need identified in the 2012 Request for Proposals, collected information primarily supports the management of commercial fisheries directed at summer chum salmon.

12-204 Anvik River Sonar Project. This two-year project would allow continued operation of Anvik River sonar, which provides information used to assess run strength and monitor escapement of the summer chum salmon run. The Anvik River is one of the top producers of summer chum salmon in the Yukon River and currently represents about one third of total production. While information from the project primarily supports management of commercial fisheries directed at summer chum salmon, approximately 70% of the total subsistence harvest of summer chum salmon occurs below the Anvik River. The Alaska Department of Fish and Game has operated this project since 1979, but lost dedicated State funding for its continued operation in 2004. The Monitoring Program has provided 50% of the funding needed to operate the project since that time. This project would address a priority information need identified in the 2012 Request for Proposals.

12-205 Kaltag Chinook Salmon Sampling Project. This four-year project would continue biological sampling of subsistence caught Chinook salmon downstream from Kaltag in Subdistrict 4A. Collected information has been used to supplement age, sex, and length information collected from the Chinook salmon subsistence fishery in the middle Yukon River. The project has allowed direct involvement of a local community in the collection of fisheries data from the subsistence harvest, and requires two local technicians to data and collect scale samples. The Monitoring Program has funded this work since 2001. Although the project would not address priority information need identified in the 2012 Request for Proposals, the information collected would continue to be of use in evaluating Chinook salmon subsistence harvests.

12-207 Yukon River Bering Cisco Spawning Origins Telemetry. This three-year project would use radio telemetry to document the spawning locations and timing of Bering cisco in the Yukon River drainage. Bering cisco is an important component of Yukon River subsistence fisheries, but spawning in the entire Yukon drainage may be limited to only a few areas in the main stem of the river. It is likely that one of these is located in the Yukon Flats National Wildlife Refuge. The identification and characterization of spawning areas is essential for conservation and management of this species, and was a priority information need identified in the 2012 Request for Proposals as well as in the Whitefish Research Strategic Plan.

12-251 In-season Management Teleconferences and Harvest Interviews. This four-year project would allow continuation of weekly in-season teleconferences between managers of and fishers for Chinook, chum, and coho salmon stocks spawning in the Yukon River. These teleconferences between fishers and managers in Alaska and Canada, facilitated by the Yukon River Drainage Fisheries Association, have been funded through the Monitoring Program since 2000. The project would also provide for the collection of qualitative information on Chinook salmon harvests from ten Alaskan villages (Marshall, Russian Mission, Holy Cross, Kaltag, Nulato, Huslia, Galena, Nenana, Fort Yukon, Eagle), which would be reported during teleconferences. Although the project would not address priority information need identified in the 2012 Request for Proposals, in-season teleconferences have become an important part of the management process and provide a vital outreach and communication tool for managers and fishers throughout the Yukon drainage.

Table 1. Summary of Fisheries Resource Monitoring Program projects completed in the Yukon since 2000. Abbreviations used for investigators are: AC=Alaskan Connections, ADFG=Alaska Department of Fish and Game, AVCP=Association of Village Council Presidents, AV= Arctic Village, BF=Bill Fliris, BLM=Bureau of Land Management, BSFA=Bering Sea Fisherman's Association, CATG=Council of Athabascan Tribal Governments, COK=City of Kaltag, DFO=Department of Fisheries and Oceans, EMV= Emmonak Village Council, NPS=National Park Service, LTC=Louden Tribal Council, NVE=Native Village of Eagle, NVHB= Native Village of Hooper Bay, NVV=Native Village of Venetie, RN=Research North, RW=Robert Wolfe and Associations, SVNRC= Stevens Village, SZ=Stan Zuray, TCC=Tanana Chiefs Conference, TTC=Tanana Tribal Council, UAF=University of Alaska Fairbanks, USFWS=U.S. Fish and Wildlife Service, USGS=U.S. Geological Survey, UW=University of Washington, and YRDFA=Yukon River Drainage Fisheries Association.

Project Number	Project Title	Investigators
	Yukon River Salmon Projects	
00-003	Effects of *Ichthyophonus* on Chinook Salmon	UW
00-005	Tanana Upper Kantishna River Fish Wheel	NPS
00-018	Pilot Station Sonar Upgrade	ADFG
00-022	Hooper Bay Test Fishing	ADFG, NVHB
00-024	Pilot Station Sonar Technician Support	AVCP
00-025	Henshaw Creek Salmon Weir	USFWS
00-026	Circle and Eagle Salmon and Other Fish TEK	NVE
01-014	Yukon River Salmon Management Teleconferences	YRDFA
01-015	Yukon River Salmon TEK	YRDFA
01-018	Pilot Station Sonar Technician Support	AVCP
01-026	East Fork Andreafski River Salmon Weir	BSFA
01-029	Nulato River Salmon Weir	BSFA
01-032	Rampart Rapids Tagging Study	USFWS
01-038	Kateel River Salmon Weir	USFWS
01-048	Innoko River Drainage Weir Survey	USFWS
01-050	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
01-058	East Fork Andreafsky Weir Panel Replacement	USFWS
01-122	Lower Yukon River Salmon Drift Test Fishing	ADFG, EMV
01-177	Rampart Rapids Extension	USFWS
01-197	Rampart Rapids Summer CPUE Video	SZ
01-199	Tanana Fisheries Conservation Outreach	TTC
01-200	Effects of *Ichthyophonus* on Chinook Salmon	USGS
01-211	Upper Yukon, Porcupine, & Black River Salmon TEK	CATG
02-009	Pilot Station Sonar Technician Support	AVCP
02-011	Rampart Rapids Fall Chum Handling/mortality	USFWS
02-097	Kuskokwim & Yukon Rivers Sex-ratios of Juvenile & Adult Chinook	USFWS
02-121	Yukon River Chinook Salmon Genetics	USFWS, ADFG, DFO
02-122	Yukon River Chinook & Chum Salmon In-season Subsistence	USFWS
03-009	Tozitna River Salmon Weir	BLM
03-013	Gisasa River Salmon Weir	USFWS
03-015	Phenotypic Characterization of Chinook Salmon Subsistence Harvests	YRDFA, USFWS
03-034	East Fork Andreafsky River Salmon Weir	USFWS
03-038	Yukon River Sub-district 5-A Test Fishwheel	BF
04-206	Tozitna River Salmon Weir	BLM
04-208	East Fork Andreafsky River Salmon Weir	USFWS
04-209	Gisasa River Salmon Weir	USFWS
04-211	Henshaw Creek Salmon Weir	USFWS

Table 1. continued.

Project Number		Project Title	Investigators
		Yukon River Salmon Projects (continued)	
04-217		Rampart Rapids Fall Chum Salmon Abundance	USFWS
04-228		Yukon River Chum Salmon Genetic Stock Identification	USFWS
04-229		Lower Yukon River Salmon Drift Test Fishing	ADFG
04-231		Yukon River Chinook Salmon Telemetry	ADFG
04-234		Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
04-251		Fort Yukon Traditional Ecological Knowledge Camp	TCC,CATG, ADFG
04-255	[a]	Yukon River Salmon Fishery Traditional Ecological Knowledge	NPS
04-256		Tanana Conservation Outreach	TTC, USFWS
04-263		Yukon River Salmon Management Teleconferences	YRDFA
04-265		Yukon River TEK of Customary Trade of Subsistence Fish	YRDFA
04-268		Hooper Bay Subsistence Monitoring	ADFG, HBTC
05-203		Yukon River Coho Salmon Genetics	USFWS
05-208		Anvik River Salmon Sonar Enumeration	ADFG
05-210		Tanana River Fall Chum Salmon Abundance	ADFG
05-211		Henshaw Creek Salmon Weir	TCC, USFWS
05-254		Yukon River Salmon Inseason Subsistence Harvest Monitoring	USFWS
06-205		Yukon River Chum Salmon Mixed Stock Analysis	USFWS
07-202		East Fork Andreafsky River Salmon Weir	USFWS
07-204		Lower Yukon River Salmon Drift Test Fishing	ADFG
07-207		Gisasa River Salmon Weir	USFWS
07-208		Tozitna River Salmon Weir	BLM
07-209		Yukon River Salmon Management Teleconferences	YRDFA
07-210		Validation of DNA Gender Test Chinook Salmon	USFWS
07-211		Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
07-253		Yukon River Salmon Harvest Patterns	RWA, AC
08-200	[a]	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
08-201	[a]	Henshaw Creek Salmon Weir	TCC
08-202	[a]	Anvik River Chum Salmon Sonar Enumeration	ADFG
08-253	[a]	Yukon River Teleconferences and Inseason Management	YRDFA
10-206		Nulato River Salmon Assessment	TCC
		Yukon River Non-Salmon Projects	
00-004		Humpback Whitefish/Beaver Interactions	USFWS, CATG
00-006		Traditional Ecological Knowledge Beaver/Whitefish Interactions	ADFG, CATG
00-021		Dall River Northern Pike	ADFG, SV
00-023		Upper Tanana River Humpback Whitefish	USFWS
01-003		Old John Lake TEK of Subsistence Harvests and Fish	ADFG, AV, USFWS
01-011		Arctic Village Freshwater Fish Subsistence Survey	ADFG, AV, USFWS
01-100		Koyukuk Non-salmon Fish TEK and Subsistence Uses	ADFG, TCC
01-140		Yukon Flats Northern Pike	ADFG, SV
01-238		GASH Working Group	USFWS
02-006		Arctic Village Freshwater Fish Subsistence	ADFG, NVV
02-037		Lower Yukon River Non-salmon Harvest Monitoring	ADFG, TCC
02-084		Old John Lake Oral History and TEK of Subsistence	USFWS, AV, ADFG
04-253		Upper Tanana Subsistence Fisheries Traditional Ecological Knowledge	USFWS,UAF, ADFG
04-269		Kanuti NWR Whitefish TEK and Radio Telemetry	USFWS, RN

Table 1. continued.

Project Number		Project Title	Investigators
		Yukon River Non-Salmon Projects	
06-252		Yukon Flats Non-salmon Traditional Ecological Knowledge	ADFG, BLM, USFWS, CATG
06-253		Middle Yukon River Non-salmon TEK and Harvest	ADFG, LTC
07-206	[a]	Innoko River Inconnu Radio Telemetry	USFWS, ADFG
08-206		Yukon and Kuskokwim Coregonid Strategic Plan	USFWS, ADFG
08-250		Use of Subsistence Fish to Feed Sled Dogs	RN, AC

[a] Final Report in preparation.

Table 2. Summary of ongoing 2012 projects funded under the Fisheries Resource Monitoring Program in the Yukon Region. Abbreviations used for investigators are: BC=Bue Consulting, RN=Research North, USFWS=U.S.Fish Wildlife Service, and YRDFA=Yukon River Drainage Fisheries Association.

Project Number	Data Project Title	Investigators	Budget 2012	Budget 2013
	Yukon River Salmon			
10-200	Yukon River Chinook Salmon Run Reconstruction	BC	$6.9	$0.0
10-201	Yukon River Chinook Salmon ASL Data	YRDFA	$16.7	$16.8
10-202	East Fork Andreafsky River Salmon Assessment	USFWS	$156.1	$149.6
10-205	Yukon River Chum Salmon Mixed-Stock Analysis	USFWS	$124.8	$124.8
10-207	Gisasa River Chinook and Summer Chum Salmon Assessment	USFWS	$135.1	$141.9
	Yukon River Non-Salmon			
10-209	Yukon Delta Bering Cisco Mixed-Stock Analysis	USFWS	$22.2	$13.9
	Harvest Monitoring and Traditional Ecological Knowledge			
10-250	Yukon Climate Change Impacts on Subsistence Fisheries	RN	$31.9	$0.0
	Total Yukon Monitoring Program		$493.7	$447.0

Table 3. Yukon project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2012.

Project Number	Title	Budget ($000s) Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
12-200	Alatna River Inconnu Population Structure	$32.5			
12-202	Henshaw Creek Salmon Weir	$137.0			
12-203	Chinook Salmon Untrasound Evaluation of Reproductoin Biology	$50.8			$80.5
12-204	Avnik River Sonar		$93.4		
12-205	Kaltag Chinook Salmon Sampling				$4.0
12-207	Yukon river Bering Cisco Spawning Origins Telemetry Investigation			$66.1	$5.0
	Harvest Monitoring and Traditional Ecological Knowledge Projects				
12-251	Inseason Salmon Harvest Teleconferences				$24.8

Table 4. Yukon local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2012. Abbreviations used are: ADFG= Alaska Department of FIsh and Game, COK=City of Kaltag, TCC=Tanana Chiefs Conference, USFWS=U.S. Fish and Wildlife Servce, and YRDFA=Yukon River Drainage Fisheries Association.

Project Number	Lead Organization	Title	Funding ($000s) Local Hire	Matching
		Stock Status and Trends Projects		
12-200	TCC	Alatna River Inconnu Population Structure	$0.0	$11.0
12-202	TCC	Henshaw Creek Salmon Weir	$0.0	$6.8
12-203	TCC	Chinook Salmon Untrasound Evaluation of Reproductoin Biology	$0.0	$0.0
12-204	ADFG	Avnik River Sonar	$0.0	$100.7
12-205	COK	Kaltag Chinook Salmon Sampling	$2.3	$1.5
12-207	USFWS	Yukon river Bering Cisco Spawning Origins Telemetry Investigation	$0.0	$148.0
		Harvest Monitoring and Traditional Ecological Knowledge Projects		
12-251	YRDFA	Inseason Salmon Harvest Teleconferences	$6.2	$0.0

Table 5. Funding recommendations by the Technical Review Committee (TRC) for the Yukon 2012 Fisheries Resource Monitoring Program.

Project Number	Title	TRC	Requested Budget ($000) 2012	2013	2014	2015
	Stock Status and Trends Projects					
12-200	Alatna River Inconnu Population Structure	Yes	$32.5	$0.0	$0.0	$0.0
12-202	Henshaw Creek Salmon Weir	Yes	$137.0	$131.4	$0.0	$0.0
12-203	Chinook Salmon Untrasound Evaluation of Reproductoin Biology	No	$131.3	$133.6	$77.1	$0.0
12-204	Avnik River Sonar	Yes	$93.4	$97.0	$0.0	$0.0
12-205	Kaltag Chinook Salmon Sampling	Yes	$4.0	$4.0	$4.0	$4.0
12-207	Yukon river Bering Cisco Spawning Origins Telemetry Investigation	Yes	$71.1	$77.6	$10.0	$0.0
	Harvest Monitoring and Traditional Ecological Knowledge Projects					
12-251	Inseason Salmon Harvest Teleconferences	Yes	$24.9	$72.5	$72.9	$54.7
	Total		$494.2	$516.1	$164.0	$58.7
	Funding Guideline		$783.0			
	TRC Rcommendation		$362.9	$382.5	$86.9	$58.7

Project Number: 12-200
Project Title: Alatna River Inconnu Population Structure
Geographic Region: Yukon
Information Type: Stock Status and Trends
Principal Investigator: Aaron Dupuis, Tanana Chiefs Conference
Co-Investigator(s): Randy Brown, U.S. Fish and Wildlife Service
Jeffrey Olsen, U.S. Fish and Wildlife Service

Project Cost:* **2012:** $32,547

*Tanana Chiefs Conference has applied for continuation of the Office of Subsistence Management's Partner in Fisheries Program to fund a fishery biologist through 2015. Should Tanana Chiefs Conference receive this award, the salary of the fishery biologist (plus 33.2% indirect) requested in this proposal will be returned to the Office of Subsistence Management.

Recommendation: Fund

Issue

Five species of whitefish are present in the Koyukuk River drainage and are routinely harvested in local subsistence fisheries. Local residents rely heavily on whitefish which are taken in currently unmonitored fisheries. Inconnu *Stenodus leucichthys*, a large, long-lived, piscivorous whitefish, represent an important component of this subsistence harvest. The Alatna River is the only documented spawning tributary for inconnu in the Koyukuk River drainage and has been identified as the second largest spawning stock for inconnu in the Yukon River system. Despite the obvious importance of the Alatna River spawning population, there is currently no biological information available describing the age, sex, and length structure, and there have been no genetic collections for baseline development. Development of genetic baselines from known spawning stocks and the collection of stock and sex specific age and length data were cited as high priorities for inconnu throughout Alaska. Genetic baseline samples have been collected from the Yukon Flats and Sulukna River populations and samples from the Alatna River will be extremely useful in the future determination of stock compositions of inconnu taken in mixed-stock subsistence fisheries in the Yukon River drainage. Information describing the maturity of whitefishes is also important when describing the demography of a population. The gonadosomatic index can be used to assess the maturity of whitefishes. In addition, sex-specific age and length data can be used to monitor responses to changes in future management decisions and harvest activities. Given the importance of the Alatna River spawning stock to local subsistence fisheries and its contribution to the Yukon River system, it is appropriate to support this tissue and data collection activity.

Objectives

1. Collect 200 tissue samples from inconnu spawning in the Alatna River for population specific genetics baseline development.
2. Describe the demographic composition (age, sex, length, gonadosomatic index) of the Alatna River inconnu population.

Methods

Inconnu will be captured in cooperation with subsistence fishers from the local community of Alatna. Fish sampling will occur when subsistence fishers target fishing efforts near the putative spawning area in the

Alatna River in the month of September. In order to sample fish over the entire run in the Alatna River, weekly sampling trips will be made during the month of September. Each week will be treated as separate strata for subsequent analyses. During each trip, 50 fish will be randomly sampled, for a total sample size of 200 inconnu. This sample size is consistent with similar studies describing the demographic composition of whitefishes in Alaska.

To address objective 1, a small piece of the pelvic fin will be removed from each fish, placed in a labeled genetic sample vial, and preserved in ethanol for genetic analyses. To address **objective 2**, all captured fish will be individually numbered, measured (fork length to the nearest 1 mm), weighed (wet weight to the nearest 1 g), sexed (by gross examination), and otoliths will be removed for aging. Removed otoliths will be placed in a labeled centrifuge tube. Female fish will have their ovaries removed and each ovary will be weighed separately. The gonadosomatic index (GSI) for female fish will be determined as: GSI = (total ovary weight/wet weight) x 100.

The U.S. Fish and Wildlife Service, Genetics Laboratory will archive the genetic samples with those from the Yukon Flats and Sulukna River populations until they are ready to proceed with baseline development and analysis (J. Olson, U.S. Fish and Wildlife Service, personal communication). All otoliths will be returned to the U. S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office for age analysis (R. Brown, U.S. Fish and Wildlife Service, personal communication).

All genetic analyses will be the responsibility of the U. S. Fish and Wildlife Service, Genetics Laboratory. Age determination will be completed by U. S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office personnel. To describe the demographics of the Alatna River inconnu population ordinary least squares regression will be used to describe the relationships between age, length, weight, and GSI. Logarithmic transformations of data will be used if variances need to be stabilized. A paired t-test will be used to compare the length and weight for male and female inconnu. A Kruskal-Wallis one-way analysis of variance will be used to determine if significant differences in length and weight exist among the sampling strata (weeks). If differences are found, a Dunn's multiple comparisons test will be used to identify when differences occurred.

Partnerships and Capacity Building

This project represents collaboration among Tanana Chiefs Conference, U. S. Fish and Wildlife Service's Fairbanks Fish and Wildlife Field Office, U. S. Fish and Wildlife Service's Genetics Lab, and local subsistence fishers from Allakaket. The principal investigator will hire local fishers to coordinate sampling with subsistence fishing of inconnu on the Alatna River. This project will serve to build capacity among the residents of Allakaket by giving them a role in the future management and conservation of this resource. Additionally, this project will build the capacity of the Tanana Chiefs Conference fisheries program by involving the Office of Subsistence Management's Partners Program fishery biologist, and by strengthening professional relationships with the U. S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office and the subsistence fishers from Allakaket.

Justification

The proposed work addresses a priority information need supporting monitoring and management of Federal subsistence fisheries resources. The study outline is achievable and investigators are fully capable of successfully completing the work. The project would build capacity in a regional Tribal organization for conducting meaningful fisheries research supporting Federal subsistence management.

Project Number: 12-202
Project Title: Abundance and Run Timing of Adult Salmon in Henshaw Creek, Alaska
Geographic Region: Yukon
Information Type: Stock Status and Trends
Principal Investigator: Aaron Dupuis, Tanana Chiefs Conference
Co-Investigator(s): Aaron Martin, U.S. Fish and Wildlife Service

Project Cost:* **2012:** $136,990 **2013:** $131,369

*Tanana Chiefs Conference has applied for continuation of the Office of Subsistence Management's Partners in Fisheries Program to fund a fishery biologist and a fishery intern through 2015. Should Tanana Chiefs Conference receive this award, the salary of the fishery biologist and the fishery technician crew leader (plus 33.2% indirect) requested in this proposal will be returned to the Office of Subsistence Management. The savings to this project would be substantial, totaling $115,450 over the two year period which would reduce the total cost of the project to $152,909. Expected notice of the availability of these funds will be in fall 2011.

Recommendation: Fund

Issue

Management of the Koyukuk River salmon fishery is complex. This is due, in part, to a limited number of salmon escapement studies within the system and the mixed stock nature of the Yukon River salmon fishery. The Alaska Department of Fish and Game, Division of Commercial Fisheries has conducted aerial surveys within the Koyukuk River drainage since 1960, but the usefulness and reliability of that information is limited. Both Chinook salmon *Oncorhyncus tshawytscha* and chum salmon *O. keta* from Henshaw Creek contribute to the harvests occurring in the Koyukuk and Yukon rivers, and the information collected at Henshaw Creek is vital to the difficult task of managing the complex mixed-stock subsistence and commercial salmon fisheries in the Yukon River. In-season management and post-season evaluations of management actions are enhanced by the data from this project as well. Further, the Henshaw Creek weir is the only Upper Koyukuk River drainage salmon escapement monitoring project and its information can facilitate comparisons with lower drainage escapement projects. Furthermore, in recent years subsistence and commercial harvesters have identified a concern with the apparent decrease in the size of Chinook salmon in the Yukon River. The continuation of reliable escapement estimates and the collection of age, sex, and length (ASL) data at Henshaw Creek will assist in future analyses of trends in Chinook salmon and summer chum salmon run timing, escapements, gender composition, and size and age structure over time. In addition, this project aids the Kanuti National Wildlife Refuge in meeting objectives outlined in the 1993 Kanuti National Wildlife Refuge Fishery Management Plan, and addresses the priority information needs outlined for Yukon Region salmon by providing reliable estimates of Chinook and chum salmon escapements. With Tanana Chiefs Conference as the primary investigator and through the hire of local residents, this project will help to facilitate capacity building within Tanana Chiefs Conference and will give local communities a continued role in the management of this resource.

Objectives

1. Determine daily escapement and run timing of adult salmon
2. Determine age, sex and length (ASL) composition of adult salmon
3. Determine the number of resident fish passing the weir

4. Serve as an outreach platform for Kanuti National Wildlife Refuge staff and Tanana Chiefs Conference Partners Program fisheries biologist to conduct an onsite science camp

Methods

The Henshaw Creek weir project will provide involvement, education, and employment opportunities within local communities, as well as provide Federal and state managers with necessary information. The first component of this project will be to record abundance and run timing of Chinook and summer chum salmon returning to Henshaw Creek using a resistance board weir. The weir will be operational from approximately the last week of June until the middle of August. The second component will be to collect biological data from adult salmon migrating through the weir. A fish trap will be used to collect and sample salmon for ASL information, and also to document the movement and presence of resident fishes. Data will be collected using established sampling protocols. Daily escapement counts will be provided to Federal and state managers for in-season management needs. All data will be sent to the PI to collaborate with the co-investigator in organizing, editing, and ensuring data quality. The principal investigator will forward pertinent data to the proper laboratory for analysis. Biological samples will be prepared, processed, compiled, analyzed, and summarized by Alaska Department of Fish and Game laboratories. ASL data will be handled by the Stock Biology Laboratory (Anchorage). Any Chinook and chum genetic samples will be sent to Alaska Department of Fish and Game and U.S. Fish and Wildlife Service laboratories, respectively. The third component will be to serve as a platform for a one week science camp conducted in cooperation with Kanuti National Wildlife Refuge staff and local community members and funded by a Challenge Cost Share grant through the refuge.

Partnerships and Capacity Building

The Henshaw Creek weir project represents collaboration among the Tanana Chiefs Conference, the U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, the Kanuti National Wildlife Refuge, and the local communities of the Koyukuk River drainage. This project has consulted with the U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office to provide logistical support for field operations, training of field technicians, and support with post-season data analyses and report writing. Consultations have been made with Kanuti National Wildlife Refuge in providing the project with overwintering storage facilities for gear and annually being a participant in a science camp hosted at Henshaw Creek weir through a Challenge Cost Share Grant. Additionally, Larry DuBois, Alaska Department of Fish and Game AYK Stock Biologist provided input and will continue to support this project through in-kind support by analyzing ASL data. Tanana Chiefs Conference will continue to work with Kanuti National Wildlife Refuge staff, the Western Regional Advisory Council, Allakaket, Alatna, Hughes, and Evansville traditional councils to recruit local residents.

Justification

The Henshaw Creek weir provides run timing and escapement information for Chinook and summer chum salmon in a stream located in the upper Koyukuk River. Data collected at the Henshaw Creek weir is used as an index for salmon populations in the upper Koyukuk River drainage; these stocks support subsistence fisheries in the Koyukuk River and lower Yukon River drainage. Project objectives are clear and have been achieved. The capacity building portion of this study is excellent, with Tanana Chiefs Conference assuming more responsibility for the Henshaw Creek weir. Support has been voiced by Tribal, State and Federal stakeholders. The continuation of reliable escapement estimates and the collection of age-sex-length data at Henshaw Creek will enable future analyses of trends in Chinook and summer chum salmon run timing, escapements, gender composition, and size and age structure over time. Funding beyond 2013 could be considered in response to the 2014 Request for Proposals; but given competing

priorities and budget limitations, investigators should begin seeking other funding sources. The overall long term priority of this project to address Federal subsistence management issues may not be sufficient to justify longer term support.

Project Number: 12-203
Project Title: Ultrasound Evaluation of the Reproductive Biology of Chinook Salmon
Geographic Region: Yukon
Information Type: Stock Status and Trends
Principal Investigator: Aaron Dupuis, Tanana Chiefs Conference
Co-Investigator(s): Dr. Trent Sutton, University of Alaska Fairbanks
Dr. Andrew Seitz, University of Alaska Fairbanks

Project Cost:* **2012:** $131,296 **2013:** $133,602 **2014:** 77,111

*Tanana Chiefs Conference has applied for continuation of the Office of Subsistence Management's Partners in Fisheries Program to fund a fishery biologist through 2015. Should Tanana Chiefs Conference receive this award, the salary of the fishery biologist (plus 33.2% indirect) requested in this proposal would be returned to Office of Subsistence Management.

Recommendation: Do Not Fund

Issue

In 2000, the Alaska Board of Fisheries classified Yukon River Chinook salmon *Oncorhynchus tshawytscha* as a stock of yield concern in response to poor returns and low harvests. The management of this resource is complex and utilizes information from several escapement monitoring projects located throughout the drainage which collect data on abundance, and age, sex, and length (ASL) composition from returning Chinook salmon to develop management strategies. Data describing the reproductive capacity of a spawning stock are also important when considering management strategies, but can be difficult to obtain and incorporate into monitoring programs. Fecundity influences the reproductive capacity of spawning stocks (i.e., egg deposition), and can have significant spatial, temporal, and intra-population variation. Because the fecundity of female fish is related to size, a decline in mean length or weight could also result in declining reproductive capacity for spawning stocks. To estimate the reproductive capacity of a spawning stock, information on abundance, ASL, and the fecundity-size relationship is needed. Traditional methods for estimating fecundity require that fish be sacrificed; however, ultrasound technology has been shown to be an effective non-lethal method for sexing Chinook salmon and has been used to estimate fecundity, gonad volume, and egg size in other fish species. Additionally, this project will also be able to evaluate the use of ultrasound for sex determination of Chinook salmon, which will be important in lower Yukon River monitoring projects. The goal of this project is to develop the use of ultrasound as a viable method for determining the fecundity and sex of Chinook salmon in the Yukon River drainage. The proposed project would develop readily-transferable methods for the use of ultrasound technology to estimate reproductive biology parameters in Chinook salmon; therefore, it would be possible to begin incorporating fecundity monitoring into escapement monitoring projects and to accurately determine sex in lower river test fisheries. This would allow managers to make informed in-season management decisions and post-season evaluations, as well as aid in the development of conservation and harvest strategies.

Objectives

1. Evaluate the use of ultrasound technology as a non-lethal method for determining the sex of Chinook salmon in the Yukon River drainage;

2. Evaluate the use of ultrasound technology as a non-lethal method for determining the fecundity of female Chinook salmon in the Yukon River drainage.

Methods

Female Chinook salmon will be collected in cooperation with locally hired subsistence fishers from Pilot Station, Holy Cross, Koyukuk, Nenana, and Eagle, Alaska. To determine the sex of Chinook salmon, at least 60 fish (30 female fish must be identified) will be randomly selected from the subsistence catch from each sampling location in each year. To determine the fecundity of Chinook salmon, of the fish identified as female, 30 will be randomly selected at each sampling location each year. These sample sizes are consistent with similar studies conducted to evaluate estimations of sex and fecundity using ultrasound technology. All captured fish will be measured (mid-eye to fork length) to the nearest 1 mm and weighed to the nearest 1 g, and scales will be removed for aging. Scales will be aged in the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences aging laboratory.

A NanoMaxx portable ultrasound device with an L38n transducer (SonoSite; Bothell, WA) will be used to identify sex and estimate three ovarian characteristics: fecundity, egg diameter, and gonad volume. For sex determination, fish will be scanned and the resulting image will be used to estimate sex. For fecundity estimation, female fish will be scanned to identify the posterior and anterior points of the ovary; a transverse cross section of the ovary will then be captured using the ultrasound at three equidistant points along the gonad. Ultrasound images will be analyzed using image analysis software. Diameters of clearly defined eggs will be measured from each cross-sectional image, and a random sub-sample of egg diameters will be taken from each cross-section. Total gonad volume will be estimated by incorporating the cross-sectional images and length measurements into a cylindrical shape that is representative of the ovaries. Fecundity will be estimated for individual females by dividing mean egg volume (derived from egg diameter) by total ovary volume. This project will require a validation of the ultrasound estimates by also estimating fecundity, egg diameter, and gonad volume using standard methods to allow for a direct comparison of estimates between the ultrasound and standard methods.

Partnerships and Capacity Building

This project represents collaboration among Tanana Chiefs Conference; University of Alaska Fairbanks, School of Fisheries and Ocean Sciences; Alaska Department of Fish and Game, Division of Commercial Fisheries; and subsistence fishers of the Yukon River. Project personnel will work with Tanana Chiefs Conference, the Western and Eastern Regional Advisory Councils, and local traditional councils to identify subsistence fishers who would be willing to provide the samples necessary to satisfy the project objectives. This project will provide an opportunity for interns hired through the Partner's in Fisheries Program at Tanana Chiefs Conference (if funded) to be exposed to different types of research and to learn about the educational opportunities in fisheries available at the University of Alaska. This project will provide opportunities for local communities to participate in the management of fishery resources, and will help to build the capacity of the Tanana Chiefs Conference fisheries program by developing a professional relationship with the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences and with Alaska Department of Fish and Game, Division of Commercial Fisheries.

Justification

The Technical Review Committee proposal review specifically requested that the investigation plan be focused on sex determination at a substantially reduced cost rather than fecundity measurements. Fecundity measurements were viewed as a low priority since existing projects already include routine measurement of Chinook salmon size (length and/or girth), which is a good indicator of fecundity. While

the investigation plan addressed sex determination as an objective and included sampling at the lower river test net project, the investigators chose to include measurement of fecundity with ultrasound as a primary objective and increased the level of funding. The Technical Review Committee considered the investigators' arguments concerning the need to further examine fecundity, but unanimously determined that the cost of the project given the limited utility of results could not be justified. Concept feasibility could be tested with hatchery fish for a fraction of the cost. In addition, some Technical Review Committee members felt that the project cost might be more reasonable if a feasibility study was combined with an actual application of the methods for selected spawning stocks.

Project Number: 12-204
Project Title: Anvik River Sonar Project
Geographic Region: Yukon
Information Type: Stock Status and Trends
Principal Investigator: Carl T. Pfisterer, Alaska Department of Fish and Game
Co-Investigator(s): Malcolm McEwen, Alaska Department of Fish and Game

Project Cost: **2012:** $93,366 **2013:** $97,043

Recommendation: Fund

Issue

The Anvik River contributes to the subsistence chum salmon fishery in the lower Yukon River, which is part of the Yukon Delta National Wildlife Refuge. The subsistence summer chum fishery occurs in the Yukon Delta National Wildlife Refuge from approximately June 10 through July 15. The Anvik River sonar project is a continuing project that directly addresses the identified Yukon Region priority need "reliable estimates of Chinook and chum salmon escapements (e.g., weir and sonar projects)".

The Anvik River sonar project has provided reliable estimates of chum salmon escapement to the Anvik River since 1979 and is one of only two projects in the Yukon River drainage with an established Biological Escapement Goal for summer chum salmon. A Biological Escapement Goal is the escapement that provides the greatest potential for maximum sustained yield and is the primary management objective for escapement. The Anvik River sonar project's longevity and history of being one of the largest producers of summer chum salmon in the Yukon River drainage combine to make this one of the most important projects for escapement monitoring and management of chum salmon in the Yukon Region. Daily estimates of chum salmon passage are provided to Federal and State fishery managers daily for consideration in management actions that can directly affect subsistence harvest in the Yukon Delta National Wildlife Refuge and the rest of the Yukon River drainage.

Objectives

1. Estimate chum salmon fish abundance in the Anvik River using DIDSON sonar from approximately June 16 through July 26.
2. Collect between 162–210 chum salmon samples during each of 3 to 4 stratum throughout the season to estimate the age, sex, and length (ASL) composition of the Anvik River chum salmon passage, such that simultaneous 95% confidence intervals of age composition in each sample are no wider than 0.20 ($\alpha = 0.05$ and $d = 0.10$).
3. Monitor selected climatic and hydrological parameters daily at the project site for use as baseline data.

Methods

The Anvik River sonar project will be operated from its customary location approximately 76 km upstream of the confluence of the Anvik and Yukon Rivers, 5 km below Theodore Creek (Figure 2) in Sections 34 and 35, Township 31 North, Range 61 West, Seward Meridian, at latitude/longitude 62° 44.208" N 160° 40.724" W.

Dual Frequency Identification Sonar (DIDSON) will be used to count salmon migrating past the site. The DIDSON sonar is a state-of-the-art imaging sonar that produces video like images making it easy to identify fish, the direction of travel, and even limited ability to estimate size. Sonar will be deployed on each bank of the Anvik River and data will be collected 30 minutes of each hour, 24-hours per day, and seven days a week for the duration of the study. This will provide a total of 12 hours of data per day per bank. Counts will be expanded for the fraction of the day sampled to estimate daily passage. The only fish species present in large numbers during the chum salmon run is pink salmon. When pink salmon are present a tower will be used to estimate the relative proportion of chum and pink salmon. These proportions will be used to apportion the sonar counts to species.

Region wide standards have been set for the sample size needed to describe age composition of a salmon population. These would apply to the time period or stratum in which the sample is collected. Sample size goals are based on accuracy (d) and precision (a) objectives of d = 0.10 and a = 0.05 for a rejection rate of 10%. Sample sizes will be based on obtaining 162 summer chum salmon for each of the following time strata: June 17–30; July 1–7; July 8–14; and July 15–30.

Climatic and hydrologic data will be collected at approximately 1800 hours each day at the sonar site. River depth is monitored using a staff gauge marked in 1 cm increments. Change in water depth will be presented as negative or positive increments from the initial reading of 0.0 cm. Water and air temperature will be measured using a HOBO temperature logger, which will electronically recorded the temperature every hour. Subjective notes on wind speed and direction, cloud cover and precipitation will be recorded.

Partnerships/Capacity Building

Due to the technical nature of the work, limited opportunities exist to develop partnerships and build local capacity. During the fishing season information is presented during the weekly Yukon River Drainage Fisheries Association teleconference. Currently we have a technician working on the project from a village downriver of Anvik. When there is a vacancy with the crew we are trying to hire from the local villages.

Justification

The Anvik River is one of the top producers of summer chum salmon in the Yukon River currently accounting for approximately one third of total production. Approximately 70% of the total subsistence harvest of summer chum salmon occurs below the Anvik River. The Anvik River Sonar project is an important monitoring project for summer chum salmon to assess run strength and meet biological escapement goals. The project primarily supports the management of commercial fisheries directed at summer chum salmon. Consistent with policy for ongoing base projects, the proposal includes a 56% match with State funds. However, the overall long term priority of this project to address Federal subsistence management issues may not be sufficient to justify longer term support. Therefore, it is recommended that the project be funded for only an additional two years. Funding beyond 2013 could be considered in response to the 2014 Request for Proposals; but given competing priorities and budget limitations, investigators should begin seeking other funding sources.

Project Number: 12-205
Project Title: Kaltag Chinook Salmon Sampling Project
Geographic Region: Yukon
Information Type: Stock Status and Trends
Principal Investigator: Richard Burnham, City of Kaltag

Project Cost: **2012:** $4,000 **2013:** $4,000 **2014:** 4,000 **2015:** $4,000

Recommendation: Fund

Issue

Knowledge of Chinook salmon mixed stock harvests are a prerequisite to understanding and evaluating changes to stock-specific production. Current sampling programs are designed to fulfill the U.S.-Canada Treaty Agreement by assessing the number of Yukon River Chinook salmon harvested and estimating this harvest by age, sex, length (ASL), and stock composition. A lack of data from the District 4 harvest, which includes Kaltag, has contributed to uncertainty in previous stock specific harvest estimates. In 2005, subsistence harvest samples from Kaltag and Nulato will be used to estimate the ASL and stock composition of the Yukon River Subdistrict 4-A subsistence harvest. In some years, with no or limited sampling, the nearest commercial harvest samples were used for estimating subsistence harvest composition. However, the subsistence harvest is greater than the commercial harvest in some districts, and the gear types may be different. Further, as subsistence harvests increase in relation to other harvests, these samples will become increasingly important to the composite database.

Federal and State managers rate this project as a high strategic priority. This project helps fulfill the US-Canada Treaty Agreement by estimating the age, sex, length (ASL), and stock composition for the fishery in Subdistrict 4-A. The Office of Subsistence Management supported this project in 2001 (01-050).

Objectives

Collect biological data from 250 Chinook salmon harvested by Kaltag subsistence fishers. These data include scales, sex, length, and an axillary process clip.

Record associated data such as date, harvest location, gear type, and mesh size.

Methods

Chinook salmon will be sampled in the round as soon after capture as practical. Sampling will occur throughout the duration of the run in proportion to abundance as much as possible. During sampling, all available fish will be sampled for an axillary process clip, scales, sex, and length. Capture method, mesh size, location, date, fish number, scale card number, and genetic vial number will be recorded.

Alaska Department of Fish and Game will send sampling supplies to Kaltag before the field season begins in late May. Sampling technicians will be hired before the field season. Sample collection will begin as soon as subsistence fishers start harvesting salmon, usually early to mid-June.

Three scales are collected from the preferred area on the left side of the fish and mounted on pre-printed gum cards. Length will be measured from mid-eye to fork of tail to the nearest five mm. Sex will be visually determined from external morphological characteristics or from internal examination of the

gonads. Approximately ¾-inch of the axillary process is clipped, placed in individually numbered vials, and the vial filled with ethanol. Associated data are recorded in field logbooks and later transferred to Opscan forms. After the majority of the Chinook salmon subsistence harvest has occurred, samples and associated data will be will be sent to the Alaska Department of Fish and Game, Anchorage office.

From August through December, samples will be processed, analyzed and summarized by Alaska Department of Fish and Game. ASL data will be compiled by the Stock Biology Laboratory and the axillary process clips will be compiled by the Genetics Laboratory to estimate stock composition for Canadian- and U.S.-origin fish. Upon completion of sample processing and analysis, Alaska Department of Fish and Game will forward preliminary results to the principal investigator for inclusion in performance, annual, and final reports. Alaska Department of Fish and Game final reports, which include data collected by the principal investigator, will be forwarded to the principal investigator when available.

Partnership/Capacity Building

The project directly involves Kaltag residents collecting inseason fisheries data from the subsistence Chinook salmon harvest. Technical consultations were completed with Alaska Department of Fish and Game, Division of Commercial Fisheries, Larry Dubois, Summer Season Area Research Biologist.

Justification

The project supplements the commercial age, sex, and length database providing 250 samples from subsistence caught Chinook salmon in Subdistrict 4A. The project provides for direct involvement of a local community in the collection of fisheries data from the subsistence harvest. The project is reasonably budgeted and the information collected benefits the post-season evaluation of Chinook salmon harvest. Two local technicians would be hired to collect age, sex, and length and scale samples. The Office of Subsistence Management has supported this work since 2001.

Project Number: 12-207
Project Title: Yukon River Bering Cisco Spawning Origins Telemetry Investigation
Geographic Region: Yukon
Information Type: Stock Status and Trends
Principal Investigator: David Daum, U.S. Fish and Wildlife Service
Co-Investigator(s): Randy Brown, U.S. Fish and Wildlife Service

Project Cost: **2012:** $71,050 **2013:** $77,550 **2014:** $9,500

Recommendation: Fund

Issue

The Bering cisco *Coregonus laurettae* population in the Yukon River is thought to spawn in main-stem reaches of the upper Yukon Flats and rear in coastal lagoons of western and northern Alaska, though a comprehensive study defining spawning and rearing extent has not been attempted to date. Subsistence fishers harvest Bering cisco throughout their range and the species is particularly favored in most coastal communities of western Alaska. Annual subsistence harvest data specific to Bering cisco have not been collected (harvest surveys combine all Coregonid species under a "whitefish" category); however, harvest is assumed to be substantial. A commercial fishery for whitefish was initiated in the lower Yukon River in the fall of 2005 and the product is being marketed as a smoked fish product in New York City. Initially, all coregonid species were targeted in the fishery, but Bering cisco is now the preferred commercial species. The fishery has been limited to an annual cisco harvest of about 4,500 kg (10,000 lb) until 2010, when the allocation was increased to 6,800 kg (15,000 lb). This amount has been considered by fishery managers to be conservative, but there are no population abundance estimates to support this view. On numerous occasions, the commercial buyer has requested substantial increases in the annual allocation, but without additional population-specific data, managers have been reluctant to grant an additional allocation. Some coastal subsistence users are concerned about the developing commercial fishery and its potential impact on their harvest. There is also a biological concern for the potential over-harvest of Yukon River Bering cisco since the species is demographically distributed over a very large geographic region.

This proposed study will define the geographic spawning distribution of the Yukon River Bering cisco population. A spawning aggregate has been documented in the Yukon River main stem, upper Yukon Flats, though upper and lower limits of spawning have not been described. Also, additional spawning aggregates may exist that have not been identified. Defining the spawning locations of Yukon River Bering cisco is the next step in the sequential process leading to the ability to manage this important fishery. As outlined in the Preliminary Strategic Plan for Research of Whitefish Species in the Yukon and Kuskokwim River Drainages in Alaska, run timing and demography of the spawning run past Rampart Rapids (1,200 km upstream from the Yukon River mouth) have been described, genetic stock composition and demographic description of the commercial harvest are ongoing; spawning locations identified (this proposal); stock composition of the subsistence catch quantified; and a population monitoring program established. Data from this project will also be useful for ensuring protection of these important freshwater habitats from potential disruptive development, such as, streambed gravel extraction for rural village infrastructure upgrades. This proposal addresses the Yukon Region Priority Information Needs described in Office of Subsistence Management's 2012 Request for Proposals, specifically, location of Bering cisco spawning habitat and timing of spawning in the Yukon River drainage. This proposal also addresses the Whitefish Strategic Plan general issues of concern #4, spawning origins of priority species

must be located to identify populations; and Bering cisco research priority #3, delineation of the spawning distributions of Bering cisco in the Yukon and Kuskokwim River drainages.

Objectives

1. Deploy 100 radio transmitters per year (2012 and 2013) at Rampart Rapids during the Bering cisco summer/fall spawning migration;
2. Locate spawning destinations for Bering cisco using remote station and aerial telemetry techniques;
3. Analyze telemetry data to determine geographic spawning distribution, timing of spawning, and post-spawning downstream migration; and
4. Nominate spawning areas for inclusion into the Alaska Anadromous Waters Catalog and other appropriate habitat protection vehicles.

Partnership/Capacity Building

A large part of this project (fish tagging) is directly dependent on the partnership with Rapids Research Center, the director Stan Zuray, and the local individuals (mostly students) who work at the Student Educational Camp during the summer months. The Rapids video fish wheel project (funded by Restoration and Enhancement Funds) will be the platform used for capturing, tagging, and releasing fish. This fish wheel has been designed to capture and release fish unharmed, which is not the case for most subsistence and commercial fish wheels operating in the Yukon River drainage. Local students, workers, fisherman, and camp instructors will all witness the Bering cisco tagging project first hand; becoming acquainted with all aspects of the project through discussions, hands on demonstrations, scientific interactions, and direct participation when work schedules allow. The Rapids Research Center will also provide housing and logistics for the project during the summer/fall tagging seasons in 2012 and 2013.

Justification

The proposal specifically addresses a priority information need established in the 2012 Request for Proposals and Strategic Whitefish Research Plan. Strategic priority, technical merit and investigator ability are rated high. The project design and sampling described in the investigation plan should ensure that the project objectives are achievable. The association and participation of the Rapids Research Center in this project provide enhanced opportunities for capacity building with local stake holders and communities. Given the importance of Bering cisco to Yukon River subsistence fisheries, detailed mapping and documentation of this species spawning areas will assist management agencies to protect their habitat as well as design future work to monitor the status of the Yukon River Bering cisco stock. This work should be viewed as an important and necessary step leading to development of effective management strategies to ensure long term conservation.

Project Number: 12-251
Project Title: In-season Salmon Management Teleconferences and Harvest Interviews
Geographic Region: Yukon
Information Type: Harvest Monitoring and Traditional Ecological Knowledge
Principal Investigator: Jason Hale, Yukon River Drainage Fisheries Association
Co-Investigator(s): Catherine Moncrieff, Yukon River Drainage Fisheries Association

Project Cost: **2012:** $24,886 **2013:** $72,472 **2014:** $72,940 **2015:** $54,722

Recommendation: Fund

Issue

This project addresses the need for inclusive management in-season for Chinook, chum, and coho salmon fisheries on the Yukon River. Salmon are a critical resource for subsistence and commercial users in this region, which includes numerous Federal conservation units, and fisheries managers must have a means to gather input, assess harvests, and share information with these fishermen and fisheries stakeholders throughout the fishing season.

Yukon River Drainage Fisheries Association will host public in-season salmon management teleconferences throughout the salmon fishing season to foster communications between managers and fishermen in Yukon River. The Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service fisheries managers monitor salmon fisheries and make in-season management decisions that need to be conveyed to approximately 55 communities in the Alaskan and Canadian portions of the Yukon River. The in-season management teleconferences give fishermen a reliable and consistent forum to access current information and also provide a direct link to communicate with fisheries managers. During the calls each week, fisheries reports are given up and down the river, including from 10 villages where Yukon River Drainage Fisheries Association will coordinate gathering qualitative in-season salmon harvest data. This enables fisheries managers to hear from fishermen, and community members from many locations along the Yukon River about fishing effort, harvest levels, and fishing conditions that impact their ability to harvest salmon. The calls aim to focus on in-season salmon management to ensure a maximum number of people can participate in the 90 minute time frame allotted to the calls. This project addresses the need for Alaskans and Canadians to participate first hand in fisheries management decision-making, especially during times of low salmon abundance and builds understanding regarding the management, use, and status of their shared salmon resource. The information shared helps fishing families prepare for the fishing season and builds relationships among diverse stakeholders that are needed for resource decision-making. Due to the need for consistent

The in-season harvest survey is an important assessment tool in that it qualitatively informs managers how fishers in key locations throughout the drainage are doing in-season, enabling managers to make timely decisions allowing the maximum of fishers to meet their subsistence needs. The in-season harvest survey will compliment the quantitative post-season survey by providing an explanation of fishing success such as high water, debris and other adverse effects that influence fishing success. In addition, a new question will be added to gather total harvest goals allowing for a secondary analysis of subsistence needs met as compared to harvest goal size.

Objectives

Provide an in-season forum for sharing information, facilitating discussion, building understanding among all stakeholder and user groups in the Yukon River drainage;

Collect qualitative harvest data information from 10 communities in the Alaskan portion of the Yukon River drainage during the Chinook salmon season.

Methods

Yukon River Drainage Fisheries Association will work with Alaska Department of Fish and Game and U.S. Fish and Wildlife Service annually to plan for the project by reviewing past performance and refining methods to meet project objectives. Yukon River Drainage Fisheries Association will implement pre-season promotions through direct mail, e-mail, social media, letters, posters, and newspaper advertisements to increase participation. Yukon River Drainage Fisheries Association will reserve a toll free phone line for every Tuesday at 1 p.m. AK time from the first week in June to the last week in August. During the first teleconference of the season Yukon River Drainage Fisheries Association will review the agenda and meeting protocols and Yukon River Drainage Fisheries Association staff will facilitate each teleconference that will include subsistence and management reports, as well as discussion. Yukon River Drainage Fisheries Association will summarize each call, which will be reviewed by agency managers and distributed through email and Yukon River Drainage Fisheries Association's website.

In-season harvest interviews will take place during the summer Chinook salmon season in 10 villages (Marshall, Russian Mission, Holy Cross, Kaltag, Nulato, Huslia, Galena, Nenana, Fort Yukon, and Eagle). The interview methodology will follow the *Principles for Conduct of Research in the Arctic*. The Yukon River Drainage Fisheries Association anthropologist will review the interview methodology and survey instrument will be reviewed and revised annually to ensure the recording and reporting formats are useful for managers and fishermen; she will identify any limitations from the previous year and will update data collection forms, interviewer training and protocols, and reporting.

Feedback from the state and federal managers in 2011 led to changes in the interview form and reports. Both the Yukon River post-season survey and the Kuskokwim River In-season survey have been reviewed and staff consulted on revisions. The in-season harvest survey methodology focuses on interviewing fishers weekly to collect qualitative information to provide managers with a real time assessment of the run. Quantitative information is not collected through this survey because of the nature of the design, surveyors do not always interview the same fishers every week but opportunistically interview all fishers they are able to contact, would make it difficult to collect extensive quantitative information, as in the post-season survey. But a secondary analysis that can link the post-season survey will include a question inquiring about each fisher's harvest goals at the beginning of the season and followed up weekly with a report on their progress towards their harvest goals.

In addition to collecting information from fishers, interviewers will disseminate relevant information to fishers as it becomes available. This will give fishers another link to management and keep them informed in-season regarding the fishery.

Partnerships/Capacity Building

This project will build the capability and expertise of Yukon River Drainage Fisheries Association, local interviewers, tribal councils and the fishing families participating in the interviews. Yukon River Drainage Fisheries Association will contract with tribal councils and train interviewers on information

gathering and reporting to include interview techniques, informed consent, protection of privacy, and how to report results in weekly teleconferences. The survey portion of the project will also build the capacity of the fishers being interviewed by informing them of current fisheries news and involving them in management. This project will promote interaction among rural residents through participation in the teleconferences and interaction within their villages on fisheries management. By engaging the resource users in the process of data gathering and including them in weekly discussions, they will be building their capacity in resource decision-making. Yukon River Drainage Fisheries Association will also build capacity in working with tribal councils on program implementation, oversight and delivery of services.

Justification

The project has a high strategic priority with high investigator ability and will continue to promote in-season information sharing, partnerships and capacity building, and management efforts on the Yukon River. In-season teleconferences have facilitated and improved communication and information sharing; the current proposal continues that effort. The budget is adequate for the proposed work.

KUSKOKWIM REGION OVERVIEW

Issues and Information Needs

For the Kuskokwim Region, the 2012 Request for Proposals focused on 10 priority information needs, both of which address salmon:

- Reliable estimates of Chinook, chum, sockeye, and coho salmon escapement (e.g., weir projects).
- Effects on salmon stocks and users of fishery management practices implemented to conserve Chinook salmon.
- Methods for including "quality of escapement" measures (e.g., egg deposition, size composition, habitat utilization) in establishing Chinook salmon spawning goals and determining the reproductive potential of spawning escapements.
- Harvest, use, and associated contextual information for whitefish by species in upper Kuskokwim River drainage communities. Communities of interest include McGrath, Telida, Nikolai, Takotna, and Lime Village.
- Contextual information associated with whitefish harvest by species in central Kuskokwim River drainage communities to supplement information from previous research. Communities of interest include Upper Kalskag, Lower Kalskag, Aniak, Chuathbaluk, Red Devil, Sleetmute, Stony River, and Crooked Creek.
- Harvest, use, and associated contextual information for whitefish by species in lower Kuskokwim River drainage communities. Specific groups of communities of interest are Kwethluk, Akiachak, Napaskiak, and Tuluksak, or Chefornak, Kipnuk, Kongiganak, and Kwigillingok.
- Broad whitefish population assessment, including distribution and age structure.
- Location and timing of Bering cisco spawning populations in the Kuskokwim River drainage.
- Complete genetic baseline sampling and population marker development for sheefish spawning populations in the Kuskokwim River drainage.
- Status of sheefish spawning population in Highpower Creek, an upper tributary of the Kuskokwim River (this could be part of the genetic baseline study listed directly above).

Projects Funded Under the Fisheries Resource Monitoring Program

Since the inception of the Monitoring Program in 2000, 75 projects have been funded in the Kuskokwim Region, and eight of these will still be operating during 2012 (**Tables 1 and 2**). These projects provide information needed to manage and conserve subsistence fisheries resources, address fisheries issues and priorities identified by the Kuskokwim Regional Advisory Councils, and address regulatory actions. Presently, the Monitoring Program supports over 50% of all fisheries monitoring and research conducted in the Kuskokwim Region.

Projects Forwarded for Investigation Plan Development

Sixteen Kuskokwim Region proposals were submitted to the Office of Subsistence Management. The Technical Review Committee reviewed the proposals and recommended nine for investigation plan development. Investigators for one of these proposals withdrew it from further consideration prior to submitting an investigation plan. Investigators for the remaining eight responded to Technical Review Committee proposal review comments in developing their investigation plans. Detailed budgets submitted with each investigation plan allowed identification of funds requested by Alaska Native, State, Federal, and other organizations; funds that would be used to hire local residents; and matching funds from investigating agencies and organizations (**Tables 3 and 4**).

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. While regional budget guidelines provide an initial target for planning, they are not rigid allocations. Upon review and evaluation, the Technical Review Committee, Regional Advisory Councils, Interagency Staff Committee and Federal Subsistence Board have the opportunity to address the highest priority projects across regions. For 2012, approximately $783,000 is available for funding new projects in the Kuskokwim Region (Table 5).

Recommendations for Funding

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary, collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible monitoring plan for each region and across the entire state. After reviewing the eight investigation plans, the Technical Review Committee recommended funding seven of the proposed projects (Table 5):

12-302	Lower Kuskokwim River Chinook Salmon Harvest ASL	$	100,279
12-303	George River Salmon Weir (Option B)	$	171,097
12-304	Takotna River Salmon Escapment Monitoring	$	116,096
12-309	Kwethluk River Weir Video Salmon Escapement Enumeration	$	36,240
12-312	Highpower Creek Sheefish Status and Upper Kuskokwim River	$	100,776
12-313	Kuskokwim River Bering Cisco Spawning Origins	$	74,116
12-352	Upper Kuskokwim River Whitefish Climate Change Trends	$	68,277
	Total	$	666,881

The seven projects recommended for funding by the Technical Review Committee comprise a strong Monitoring Plan for the region by addressing strategically important information needs based on sound science and by promoting cooperative partnerships. Each of the projects proposed for funding in 2012 are summarized below (see Executive Summaries for more details on all projects).

12-302 Lower Kuskokwim River Chinook Salmon Harvest ASL. This four-year project would continue the collection and analysis of age, sex, and length information from the subsistence Chinook salmon harvest in the lower Kuskokwin River, from Eek Island to Tuluksak. During the first year, a sampling goal would be set based on results of a sensitivity analysis using data from 2001 to 2012. Information provided by this work has been used in managing Kuskokwim River salmon fisheries. Age, sex, and length composition comparisons have shown distinct differences between the subsistence harvest, the commercial harvest and the escapement. This project would address a priority information need identified in the 2012 Request for Proposals and by the Kuskokwim Fisheries Resource Coalition. This work has been supported by the Fisheries Monitoring Program since 2005.

12-303 George River Salmon Weir (Option B). This two-year project would continue operation of the George River weir to monitor salmon escapement. The investigation plan includes two options: Plan A followed the original proposal, and Plan B added funding for a high school intern component. While the George River is located upstream of the Federal conservation unit boundary, George River salmon stocks are harvested by Federally-qualified subsistence users within the boundaries of the Yukon Delta National Wildlife Refuge. This weir has been operated since 1996, and managers use resulting information to monitor Chinook, chum, and coho salmon escapements and run timing. The weir has been operated

cooperatively by Alaska Department of Fish and Game and Kuskokwim Native Association since 1996, and supported by Monitoring Program funds since 2005.

12-304 Takotna River Salmon Escapment Monitoring. This two-year project would continue operation of the Takotna River weir to monitor salmon escapement. Takotna River salmon stocks are harvested by Federally-qualified subsistence users within the boundaries of the Yukon Delta National Wildlife Refuge. This weir has been operated since 1996, and managers use resulting information to monitor Chinook, chum, and coho salmon escapements and run timing. The weir has been operated cooperatively by the Alaska Department of Fish and Game and Takotna Tribal Council since 1999, and supported by Monitoring Program funds since 2005.

12-309 Kwethluk River Weir Video Salmon Escapement Enumeration. This project would provide funding and support to purchase, install and operate an underwater video system to improve salmon escapement monitoring at the Kwethluk River weir. The weir is located within the Yukon Delta National Wildlife Refuge and has been supported by the Monitoring Program since 2000. Weir counts have been suspended on several occasions due to high or turbid water conditions. Adding video monitoring capability could provide more reliable monitoring of salmon passage and species identification. Underwater video and above water counts by field staff would be compared to ensure proper functioning of the video system and motion detection software as well as to evaluate the effectiveness of the methodology. Results of these comparisons will be presented in an annual report for the weir operations (project 10-306). Managers use information from the weir to monitor Chinook, chum, pink, and coho salmon escapements and run timing.

12-312 Highpower Creek Sheefish Status and Upper Kuskokwim River. This three-year project would build upon previous Monitoring Program work conducted by the investigator by providing information on the status of sheefish (referred to as inconnu by fishery scientists) spawning populations in Highpower Creek. Sheefish have very specialized spawning habitat needs, and very few spawning locations have been documented in the Kuskokwim River. This project would use radiotelemetry to determine whether sheefish spawn at the mouth of Highpower Creek or elsewhere in the Swift Fork drainage. Sheefish are highly valued by Kuskokwim Area subsistence users and account for a large percentage of the total annual subsistence harvest of non-salmon fish species. This project would address a priority information need identified in the 2012 Request for Proposals and the Whitefish Strategic Plan.

12-313 Kuskokwim River Bering Cisco Spawning Origins. This three-year project would use radiotelemetry to provide information on the migratory timing and spawning locations of Bering cisco entering the Kuskokwim River. Biological sampling suggests that the Yukon and Kuskokwim rivers may be the only two western Alaska drainages in which Bering Cisco spawn, so these two rivers may be the source of all Bering cisco harvested in western Alaska coastal waters. Subsistence use of Bering cisco has been well documented in coastal and interior villages of western and northwestern Alaska, including those in Federal Conservations Units. Since 2005, Bering cisco has also been commercially harvested in the Yukon River Delta. Information on Bering cisco life history, including documentation of spawning areas, is needed to ensure that harvest level in both the subsistence and commercial fisheries are sustainable. This project would address a priority information need identified in the 2012 Request for Proposals and the Whitefish Strategic Plan.

12-352 Upper Kuskokwim River Whitefish Climate Change Trends. This three-year project would examine whitefish harvests within the broader context of non-salmon harvest efforts in two Kuskokwim River drainage communities, Lime Village and Nikolai. Given the importance of whitefish subsistence harvests in the upper Kuskokwim River, this research would attempt to determine why harvest levels

for key species have declined over the past few decades. This would be accomplished by documenting contemporary harvest and use patterns of each whitefish species used by Lime Village and Nikolai residents, and by examining factors that have shaped harvest efforts for each whitefish species over time and that are influencing the ability of residents to harvest the various species of whitefish. This project would address a priority information need identified in the 2012 Request for Proposals and the Whitefish Strategic Plan.

Table 1. Summary of Fisheries Resource Monitoring Program projects completed in the Kuskokwim since 2000. Abbreviations used for investigators are: ADFG=Alaska Department of Fish and Game, AVCP=Association of Village Council Presidents, BC=Bue Consulting, BSFA=Bering Sea Fisherman's Association, KNA=Kuskokwim Native Association, MNVC=McGrath Native Village Council, NPT=Nuniwarmiut Piciryarata Tamaryalkuti, Inc., ONC=Orutsararmiut Native Council, OVK=Organized Village of Kwethluk, TNC=Tuluksak Native Community, and USFWS=U.S. Fish and Wildlife Service.

Project Number	Project Title	Investigators
	Kuskokwim River Salmon	
00-007	Tatlawiksuk River Salmon Weir	ADFG, KNA
00-008	Bethel Inseason Subsistence Harvest Data	ONC
00-009	Bethel Postseason Harvest Monitoring	ADFG, ONC
00-019	Kwethluk River Salmon Weir	USFWS, OVK
00-029	Documentation/Communication on Floating Weirs	AVCP
00-030	Kuskokwim Salmon Project Site Surveys	ADFG, USFWS
01-019	Planning Meetings in AVCP Region	AVCP, KNA
01-023	Upper Kuskokwim River Inseason Data	ADFG, MNVC
01-024	Bethel Postseason Fishery Household Surveys	ADFG, ONC
01-053	Tuluksak River Salmon Weir	USFWS, TNC
01-070	Kuskokwim River Chinook Salmon Genetic Diversity	ADFG, USFWS
01-086	Kuskokwim River Escapement Project Technician	ONC
01-088	Natural Resource Internship Program	KNA
01-116	Kuskokwim River Salmon Work Group support	ADFG
01-117	Kuskokwim Salmon Age-Sex-Length Assessment	ADFG
01-132	Bethel Inseason Subsistence Salmon Harvest Data	ONC, ADFG
01-141	Holitna River Chinook, Chum and Coho Telmentry	ADFG
01-147	Aniak River Sport Fisheries Survey	ADFG, KNA
01-225	Middle Kuskokwim River Inseason Salmon Harvest	KNA, ADFG, USFWS
01-226	Subsistence Fisheries Research Capacity Building	ADFG
02-036	Aniak Postseason Subsistence Fishery Surveys	ADFG, KNA
02-046	Kuskokwim River Chinook Salmon Inriver Abundance	ADFG
03-030	Kuskokwim River Salmon Mark-Recapture	ADFG, KNA
03-041	Kuskokwim Coho Salmon Genetics	ADFG, USFWS
03-931	Kuskokwim Science Plan	BSFA
04-301	Kwethluk River Salmon Weir	USFWS, OVK
04-302	Tuluksak River Salmon Weir	USFWS, TNC
04-306	Holitna River Chinook and Chum Salmon Telemetry	ADFG
04-307	Kuskokwim Age-Sex-Length Sampling	ADFG
04-308	Kalskag Salmon Mark-Recapture	ADFG
04-309	Kuskokwim Native Association Intership Program	KNA
04-310	Tatlawiksuk River Salmon Weir	ADFG, KNA
04-311	Kuskokwim Coho Salmon Genetic Mixed Stock Assessment	USFWS
04-353	Bethel Inseason Subsistence Salmon Data Collection	ADFG, ONC
04-359	Kuskokwim Postseason Salmon Subsistence Harvest Surveys	ADFG, KNA, ONC
05-302	Kuskokwim River Chinook Salmon Inriver Abundance	ADFG

Table 1 continued.

Project Number		Project Title	Investigators
		Kuskokwim River Salmon (continued)	
05-304		George and Takotna River Salmon Weirs	ADFG
05-305		Kuskokwim Chinook Salmon Genetic Stock Identification	ADFG
05-307		Lower Kuskokwim Subsistence Fisheries Catch Monitoring	ONC
06-306	[a]	Lower Kuskokwim Salmon Inseason Subsistence Catch Monitoring	ADFG
06-307		Kuskokwim River Salmon Management Working Group	ADFG
07-302		Kuskokwim River Chum Salmon Run Reconstruction	ADFG, BC
07-304		Tatlawiksuk River Salmon Weir	ADFG, KNA
07-306		Kwethluk River Salmon Weir	USFWS, OVK
07-307		Tuluksak River Salmon Weir	USFWS, TNC
08-302	[a]	Lower Kuskokwim Subsistence Chinook Salmon Age-Sex-Length	ADFG
08-303	[a]	George River Salmon Weir	ADFG
08-304	[a]	Takotna River Salmon Weir	ADFG
08-351		Tuluksak River Subsistence Chinook Salmon Age-Sex-Length	USFWS
08-352	[a]	Bethel and Aniak Postseason Subsistence Salmon Harvest Surveys	ADFG
		Kuskokwim Bay Salmon	
00-027		Goodnews River Salmon Weir	ADFG
00-028		Kanektok River Salmon Weir	ADFG, USFWS
01-118		Kanektok River Salmon Weir	ADFG, BSFA
04-305		Kanektok River Salmon Weir	ADFG, BSFA
04-312		Goodnews River Coho Salmon Weir	ADFG
04-351		Kuskokwim Bay Traditional Ecological Knowledge and Oral History	USFWS
05-353		Nunivak Island Subsistence Cod Fisheries	NPT
		Resident Species	
01-052		Whitefish Lake Humpback & Broad Whitefish	USFWS, KNA
01-112		Aniak River Subsistence Fisheries Study	ADFG, KNA
01-235		Upper Kuskokwim Community Use Profiles	ADFG
04-304		Whitefish Lake Whitefish Telemetry	USFWS
05-301		Whitefish PIT Tags	USFWS
06-303		Kuskokwim River Whitefish Migratory Behaviour	USFWS, KNA
06-305		Kuskokwim River Inconnu Spawning Distribution	ADFG
06-351		Lower Kuskokwim Non-salmon Harvest and TEK	ADFG, AVCP
08-300		Aniak River Rainbow Trout Seasonal Distribution	ADFG
10-305	[a]	Kuskokwim River Sheefish Spawning, Distribution and Timing	ADFG

[a] Final Report in preparation.

Table 2. Summary of ongoing 2012 projects funded under the Fisheries Resource Monitoring Program in the Kuskokwim by subsistence fishery. Abbreviations used for investigators are: ADFG=Alaska Department of Fish and Game, USFWS=U.S. Fish and Wildlife Service.

Project Number	Project Title	Investigators	Budget 2012	Budget 2013
	Kuskokwim River Salmon			
10-300	Kanektok and Goodnews River Salmon Assessment	ADFG	$184.1	$145.9
10-303	Kuskokwim River Salmon Age Sex Length Assessment	ADFG	$117.0	$121.4
10-304	Tatlawiksuk River Salmon Assessment	ADFG	$192.3	$200.4
10-306	Kwethluk River Salmon Assessment	USFWS	$221.3	$224.3
10-307	Tuluksak River Salmon Assessment	USFWS	$167.2	$157.8
10-352	Kuskokwim Salmon Postseason Harvest Monitoring	ADFG	$91.2	$82.3
10-353	Kuskokwim Salmon Working Group Support	ADFG	$46.7	$45.3
10-354	Kuskokwim Salmon Inseason Harvest Monitoring	ADFG	$31.4	$21.5
	Total Kuskokwim Monitoring Program		$1,051.2	$998.9

Table 3. Kuskokwim project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2012.

Project Number	Title	Budget ($000s) Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
12-302	Lower Kuskokwim River Chinook Salmon Harvest ASL	$35.0	$65.3		
12-303	George River Salmon Weir (Option A or B)	$51.5	$119.5		
12-304	Takotna River Salmon Escapment Monitoring	$4.0	$112.1		
12-308	McGrath Broad Whitefish Spawning Population	$34.4	$12.5	$75.7	
12-309	Kwethluk River Weir Video Salmon Escapement Enumeration			$36.2	
12-312	Highpower Creek Sheefish Status and Upper Kuskokwim River		$100.8		
12-313	Kuskokwim River Bering Cisco Spawning Origins	$69.6		$4.5	
	Harvest Monitoring and Traditional Ecological Knowledge				
12-352	Upper Kuskokwim River Whitefish Climate Change Trends		$68.3		

Table 4. Kuskokwim local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2012. Abbreviations used are: ADFG=Alaska Department of Fish and Game, KNA=Kuskokwim Native Association, and USFWS=U.S. Fish and Wildlife Service.

Project Number	Lead Organization	Title	Funding ($000s) Local Hire	Funding ($000s) Matching
		Stock Status and Trends Projects		
12-302	ADFG	Lower Kuskokwim River Chinook Salmon Harvest ASL	$14.8	$70.2
12-303	ADFG	George River Salmon Weir (Option A or B)	$7.1	$118.6
12-304	ADFG	Takotna River Salmon Escapment Monitoring	$34.4	$67.3
12-308	USFWS	McGrath Broad Whitefish Spawning Population	$40.4	$306.5
12-309	USFWS	Kwethluk River Weir Video Salmon Escapement Enumeration	$0.0	$29.6
12-312	ADFG	Highpower Creek Sheefish Status and Upper Kuskokwim River	$9.0	$105.3
12-313	KNA	Kuskokwim River Bering Cisco Spawning Origins	$7.7	$26.5
		Harvest Monitoring and Traditional Ecological Knowledge		
12-352	ADFG	Upper Kuskokwim River Whitefish Climate Change Trends	$0.0	$0.0

Table 5. Funding recommendations by the Technical Review Committee (TRC) for the Kuskokwim 2012 Fisheries Resource Monitoring Program.

Project Number	Title	TRC	Requested Budget ($000) 2012	2013	2014	2015
	Stock Status and Trends Projects					
12-302	Lower Kuskokwim River Chinook Salmon Harvest ASL	Yes	$100.3	$93.8	$96.9	$82.4
12-303	George River Salmon Weir (Option B)	Yes	$171.1	$175.3	$0.0	$0.0
12-304	Takotna River Salmon Escapment Monitoring	Yes	$116.1	$115.3	$0.0	$0.0
12-308	McGrath Broad Whitefish Spawning Population	No	$122.6	$66.8	$0.0	$0.0
12-309	Kwethluk River Weir Video Salmon Escapement Enumeration	Yes	$36.2	$0.0	$0.0	$0.0
12-312	Highpower Creek Sheefish Status and Upper Kuskokwim River	Yes	$100.8	$45.8	$24.4	$0.0
12-313	Kuskokwim River Bering Cisco Spawning Origins	Yes	$74.1	$56.9	$17.1	$0.0
	Harvest Monitoring and Traditional Ecological Knowledge					
12-352	Upper Kuskokwim River Whitefish Climate Change Trends	Yes	$68.3	$61.4	$41.0	$0.0
	Total		$789.5	$615.3	$179.4	$82.4
	Funding Guideline		$783.0			
	TRC Recommendation		$666.9	$548.5	$179.4	$82.4

Project Number: 12-302
Project Title: Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL Composition
Geographic Region: Kuskokwim
Information Type: Stock Status and Trends
Principal Investigator: Zachary W. Liller, Alaska Department of Fish and Game
Co-Investigator(s): Greg Roczicka, Orutsararmiut Native Council
Christopher A. Shelden, Alaska Department of Fish and Game
Kevin L. Schaberg, Alaska Department of Fish and Game

Project Cost: **2012:** $100,279 **2013:** $93,803 **2014:** $96,923 **2015:** $82,429

Recommendation: Fund

Issue

This project is designed to characterize the annual age, sex, and length (ASL) composition of the Lower Kuskokwim River Chinook salmon subsistence harvest for years 2012–2015. This project provides a quantitative assessment of Kuskokwim River Chinook salmon subsistence harvest patterns such as timing and methods (i.e., gear type) and the resulting harvest composition by age, sex, and size. The utility of this data is magnified when integrated with other existing Kuskokwim River monitoring projects that estimate total subsistence harvest of Chinook salmon, ASL composition of the annual escapement, ASL composition of the annual commercial harvest, and total Chinook salmon run abundance. Collectively, this information allows for broad-scale analyses that guide sustainable management of Kuskokwim River Chinook salmon.

The Kuskokwim Area subsistence salmon fishery is one of the largest and most important in the state. With a recent 10-year average (2000–2009) annual harvest of over 87,000 Chinook salmon, the Kuskokwim River subsistence fishery accounts for about half of the total statewide subsistence harvest of Chinook salmon. Within the Kuskokwim River, subsistence harvest accounts for over 96% of the average annual total harvest of Chinook salmon (2000–2009) with approximately 85% of the subsistence harvest occurring in the project study area, which is within the Yukon Delta National Wildlife Refuge. On average (2000–2009), the subsistence fishery harvests 33% of the total annual returns of Chinook salmon to the Kuskokwim River; although, exploitation by the subsistence fishery has been as high as 50–60% in years of low Chinook salmon abundance.

Given the relative size of the Kuskokwim River subsistence harvest of Chinook salmon compared to other fisheries, it is clear that the subsistence fishery has the single greatest inriver influence on the number and quality of returning adult Chinook salmon that escape each year. Moreover, considering that the timing of the Chinook salmon subsistence fishery tends to be focused during the early portion of the run and the primary gear type used (i.e., large mesh gill nets) is selective for larger fish (of which many are older-aged fish and females), there is considerable potential to adversely affect spawning escapement by harvesting disproportionately across stocks, age classes, sex, and sizes.

Continuing to accurately quantify the ASL composition of the Lower Kuskokwim River Chinook salmon subsistence harvest may prove especially valuable in upcoming years. Given the recent low returns of Chinook salmon to monitored tributaries in the Lower Kuskokwim River, conservation measures may be warranted that could have implications to subsistence fishermen. This project could provide insight into

the effects those management actions may have on subsistence harvests. Furthermore, knowledge of the ASL composition of the harvest is critical for generating reliable estimates of drainage wide Chinook salmon escapement and producing quantitative forecasts of future year returns, the importance of which are magnified during years of expected low abundance.

Objectives

- Describe the annual and temporally stratified ASL composition of Chinook salmon in the lower Kuskokwim River subsistence harvest.
- Characterize the annual ASL composition of Chinook salmon in the lower Kuskokwim River subsistence harvest by gear type.
- Compare the ASL composition of Chinook salmon harvested in the Kuskokwim River subsistence fishery to the ASL composition of the commercial harvest and spawning escapement.
- Assess the effectiveness of the current project study design. The goal of this analysis will be to:
- Identify an optimal number of participants to characterize the proportions of gear types used by lower Kuskokwim River Chinook salmon subsistence fishermen;
- Examine the cost vs. benefit of the spatial distribution of participants' fishing effort;
- Examine the effects of sub-sampling fishermen's annual harvest.

Methods

This study is a continuation of Monitoring Program project 08-302. The project study area is defined as ranging from the Eek Island at the mouth of the Kuskokwim River upstream to Tuluksak (rkm 192). Chinook salmon ASL information will be collected throughout the study area by non-agency participants, primarily subsistence fishermen and subsistence household members that will sample from their annual harvest. This study will implement a two-stage sampling design for collecting representative ASL data from the lower Kuskokwim River Chinook salmon subsistence harvest. The first stage involves recruiting a voluntary sample of lower river subsistence fishermen in order to characterize the harvest patterns of the subsistence fleet. The second stage involves collection of ASL samples from each Chinook salmon harvested by those participating fishermen. All data will be collected using standardized methods consistent with those used by Alaska Department of Fish and Game staff. All samples will be processed by Alaska Department of Fish and Game stock biologists and summarized in table and figure form. Data will be archived in the Arctic-Yukon-Kuskokwim Regional Database Management System and published in the Alaska Department of Fish and Game Fisheries Data Series.

Partnerships/Capacity Building

Alaska Department of Fish and Game, Commercial Fisheries Division and Orutsararmiut Native Council will conduct this project in partnership. Alaska Department of Fish and Game, Commercial Fisheries Division is responsible for data collection from communities outside the Bethel area, for data processing, and reporting. Orutsararmiut Native Council staff is responsible for data collection from Bethel and fish camps within nearly 20 miles of Bethel. Orutsararmiut Native Council staff provides critical review of data analysis and reporting.

Communication and consultation are cornerstones of the Kuskokwim Area fishery program with a proud history of building trust and broad public support through active sharing of information, which is perhaps best epitomized through the Kuskokwim River Salmon Management Working Group and the semi-annual Kuskokwim Interagency Fisheries meetings. Investigators not only heighten awareness of the subsistence ASL program, but guide participants through the process of interpreting and integrating a broad array of

fisheries projects to build a foundation on which to base informed fishery management decisions, and which facilitate effective public integration into the management process.

Justification

The project addresses a priority information need identified in the 2012 Request for Proposals. The principal investigator was responsive to the Technical Review Committee's proposal review and thoroughly addressed all study design and budget issues. The investigation plan includes an additional objective to assess the effectiveness of the current project study design (sensitivity analysis) in the first year of the project and sets a sampling goal. Project objectives appear to be achievable with proposed budget. The funding request represents a 12% decrease over the previous four-year project budget. There is a strong partnership between the Alaska Department Fish and Game and the Orutsararmiut Native Council, project investigators.

Project Number: 12-303
Project Title: George River Salmon Weir
Geographic Region: Kuskokwim
Data Type: Stock Status and Trends
Principle Investigator: Christopher A. Shelden, Alaska Department of Fish and Game
Co-Investigator(s): Michael Thalhauser, Kuskokwim Native Association
Kevin Schaberg, Alaska Department of Fish and Game
Zachary Liller, Alaska Department of Fish and Game

Project Cost Option A: **2012:** $154,903 **2013:** $159,630
Project Cost Option B: **2012:** $171,097 **2013:** $175,289
Inclusive of Kuskokwim Native Association High School intern costs.

Recommendation: Fund Option B

Issue

George River salmon contribute to subsistence, commercial, and recreational fisheries within the Yukon Delta National Wildlife Refuge Federal nexus. Contributing to numerous initiatives that are inclusive of the entire Kuskokwim River drainage, the George River weir is one of several projects used to develop reliable estimates of abundance, run timing, stock structure, productivity, and carrying capacity of salmon stocks over a broad geographic scale in the Kuskokwim Region (Area), issues identified by the Office of Subsistence Management as a priority information need. The project provides fundamental escapement information necessary to facilitate inseason management decisions and to assess trends in salmon populations. This project is essential as a platform for several other projects and for developing escapement goals. This project also incorporates substantial capacity building and outreach components, including a Kuskokwim Native Association High School Internship program that has fostered understanding and cooperation between stakeholders and agencies across the region.

Salmon escapements from this project have been monitored successfully 13 out of 15 years since 1996. Information from this project has become integrated into the annual management process, both by providing insights into escapement and stock specific run timing through the fishery. The escapement age, sex, and length information collected at George River provides part of the context needed to assess the impacts of subsistence harvest practices (*Age, Sex, and Length Composition of Lower Kuskokwim River Subsistence Chinook Harvest,* proposed project 12-302). Total run abundance estimates that include data from George River weir contribute to determination of annual exploitation rates, comparison of exploitation among age/sex components, assessment of high seas interception, examination of the influence of environmental factors on variability in abundance, and investigations into the potential development of drainage-wide escapement goals. This information is foundational for assessing changes in salmon abundance and run dynamics that may result from management actions or environmental factors such as climate change. Total abundance estimates facilitate the identification of both harvestable surpluses and conservation concerns, contributing to regulatory and management decisions that directly affect subsistence use as the issue of “allocation priority” is defined in the 2012 Request for Proposals.

Objectives

1. Determine daily and total annual Chinook, chum, and coho salmon escapements from 15 June to 20 September;
2. Estimate age-sex-length (ASL) composition of annual Chinook, chum, and coho salmon escapements to the George River such that 95% confidence intervals of age composition will be no wider than ±10% (a=0.05, d=0.10);
3. Provide mentorship and administer education curriculum to Kuskokwim Native Association high school interns; and
4. Serve as a platform to facilitate current and future fisheries research projects.

Methods

Investigators will install a resistance board weir on the lower George River. Passage gates in the weir will allow fish to be identified by species and counted as they pass upstream and a live trap will be used to sample salmon for scales, and sex and length information; and for tag recovery for AYK SSI funded projects *Kuskokwim River coho salmon investigations,* and *Kuskokwim River Sockeye Salmon Investigations*. ASL data is processed post-season under the *Kuskokwim Salmon ASL Assessment Project* (project 10-303). Investigators will also record daily water temperature, water level, and weather conditions, and maintain equipment in support of *Temperature Monitoring* (project 08-701). A local technician hired by Kuskokwim Native Association will operate the project along with a lead crew member provided by Alaska Department of Fish and Game. The project will serve as a platform for several research initiatives including those listed above and genetic and otolith collection for stock identification. Potential exists for this project to provide a platform for future studies as well.

Partnership/Capacity Building

Kuskokwim Native Association and Alaska Department of Fish and Game operate the George River weir jointly at the Partnership Level. Planning, operation, and data analysis associated with the weir is done through an interactive feedback between staff from both organizations, including the Kuskokwim Native Association fishery biologist who is employed through the Office of Subsistence Management Partners Program. Kuskokwim Native Association has a proven track record of effective involvement in weir operation. Past interactions between Kuskokwim Native Association, Alaska Department of Fish and Game, Commercial Fisheries Division, and local communities has created a high level of public awareness about salmon management and stock status, and has fostered career interests in fisheries through the student internship program.

The George and Takotna project hosts an established high school mentorship program, which facilitates broad community awareness and understanding, interest, and direct involvement fisheries management. The Kuskokwim Native Association High School intern program sponsors between 15 and 20 high school age students from throughout the Kuskokwim Area on week-long internships, which includes a curriculum of activities and assignments on salmon life history and management. This outreach program is a long-term investment that develops informed individuals who will serve as the future technicians, biologists, board members, public leaders, and the voting citizens who will influence the course of future events through their decisions. Several former High School and college interns from this program have already gone on to become fisheries technicians with both Kuskokwim Native Association and the Department of Fish and Game. Several others are now completing college degrees, having gotten a start through this program.

Justification

The project addresses a priority information need for salmon escapement monitoring identified in the 2012 Request for Proposals and provides information for inseason subsistence fishery managers. The investigators are experienced, competent and knowledgeable and there is strong partnership between the Alaska Department of Fish and Game and Kuskokwim Native Association. Option B is a request for $16,000 of additional funds per year for approximately 15 high school interns. Under this option, the interns would spend 1-2 weeks at the George River weir and other fisheries projects, and would complete a curriculum of field work, a photo and writing journal, and worksheets; and engage in other relevant and related educational activities. The intern program is currently being funded under the Partners Program, PFM-103, which will conclude on 31 December 2011. Due to some confusion, the Kuskokwim Native Association Co-Investigator did not submit a proposal in early 2011 to the Office of Subsistence Management to continue this portion of the Partners Program. The public outreach and community involvement engendered by the intern program is one of the most important components of the various activities that the Alaska Department of Fish and Game and Kuskokwim Native Association do cooperatively, and therefore warrants inclusion in Project 12-303. There is a precedence for funding through a Stock Status and Trends project, as funding for the intern program was part of the Monitoring Program budget for the Tatlawiksuk River weir project (FIS 07-304), also cooperatively operated by the Alaska Department of Fish and Game and Kuskokwim Native Association. The investigation plan submitted would provide only two years of funding for this project. This was done at the request of the Technical Review Committee so that a programmatic and geographic review of all Kuskokwim area salmon enumeration (weir) projects could be done prior to the 2014 Call for Proposals.

Project Number: 12-304
Project Title: Takotna River Salmon Weir
Geographic Region: Kuskokwim
Information Type: Stock Status and Trends
Principle Investigator: Christopher A. Shelden, Alaska Department of Fish and Game
Co-Investigators: Dick Newton, Takotna Community Association
Nell Huffman, Takotna Community Association
Kevin Schaberg, Alaska Department of Fish and Game
Zachary Liller, Alaska Department of Fish and Game
Clinton Goods, Alaska Department of Fish and Game

Project Cost: **2012:** $116,096 **2013:** $115,345

Recommendation: Fund

Issue

Takotna River salmon contribute to subsistence, commercial, and recreational fisheries within the Yukon Delta National Wildlife Refuge Federal nexus. Contributing to numerous initiatives that are inclusive of the entire Kuskokwim River drainage, the Takotna River weir is one of several projects used to develop reliable estimates of abundance, run timing, stock structure, productivity, and carrying capacity of salmon stocks over a broad geographic scale in the Kuskokwim Region (Area), issues identified by the Office of Subsistence Management as a priority information need. The project provides fundamental escapement information necessary to facilitate inseason management decisions and to assess trends in salmon populations. This project is essential as a platform for several other projects and for developing escapement goals. This project also incorporates substantial capacity building and outreach components, including a Takotna Community Association High School Internship program that has fostered understanding and cooperation between stakeholders and agencies across the region.

Salmon escapements from this project have been monitored successfully 13 out of 15 years since 1996. Information from this project has become integrated into the annual management process, both by providing insights into escapement and stock specific run timing through the fishery. The escapement age, sex, and length information collected at Takotna River provides part of the context needed to assess the impacts of subsistence harvest practices (*Age, Sex, and Length Composition of Lower Kuskokwim River Subsistence Chinook Harvest, p*roposed project 12-302). Total run abundance estimates that include data from Takotna River weir contribute to determination of annual exploitation rates, comparison of exploitation among age/sex components, assessment of high seas interception, examination of the influence of environmental factors on variability in abundance, and investigations into the potential development of drainage-wide escapement goals. This information is foundational for assessing changes in salmon abundance and run dynamics that may result from management actions or environmental factors such as climate change. Total abundance estimates facilitate the identification of both harvestable surpluses and conservation concerns, contributing to regulatory and management decisions that directly affect subsistence use as the issue of “allocation priority” is defined in the 2012 Request for Proposals.

Objectives

1. Determine daily and total annual Chinook, chum, and coho salmon escapements from 15 June to 20 September;
2. Estimate age-sex-length (ASL) composition of annual Chinook, chum, and coho salmon escapements to the Takotna River such that 95% confidence intervals of age composition will be no wider than ±10% (a=0.05, d=0.10);
3. Provide mentorship and administer education curriculum to Takotna Community Association high school interns; and
4. Serve as a platform to facilitate current and future fisheries research projects.

Methods

Investigators will install a resistance board weir on the lower Takotna River. Passage gates in the weir will allow fish to be identified by species and counted as they pass upstream and a live trap will be used to sample salmon for scales, and sex and length information; and for tag recovery for Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative funded projects *Kuskokwim River coho salmon investigations,* and *Kuskokwim River Sockeye Salmon Investigations*. ASL data is processed post-season under *Kuskokwim Salmon ASL Assessment Project* (project 10-303). Video equipment will be installed to improve counting coverage at times of low volume passage. Investigators will also record daily water temperature, water level, and weather conditions, and maintain equipment in support of *Temperature Monitoring* (project 08-701). A local technician hired by Takotna Community Association will operate the project along with a lead crew member provided by Alaska Department of Fish and Game. The project will serve as a platform for several research initiatives including those listed above and genetic and otolith collection for stock identification. Potential exists for this project to provide a platform for future studies as well.

Partnership/Capacity Building

Takotna Community Association and Alaska Department of Fish and Game operate the Takotna River weir jointly at the Partnership Level. Planning, operation, and data analysis associated with the weir is done through an interactive feedback between staff from both organizations. Formerly, this project was administered by Takotna Tribal Council with assistance from Takotna Community Association. However, because of financial and administrative difficulties, Takotna Tribal Council has requested that Takotna Community Association take responsibility for this project. Takotna Community Association is the recognized village government of the village of Takotna and has a proven track record of grant and project management. Takotna Community Association is committed to fostering the continued development of a high level of public awareness about salmon management and stock status, and to continue to foster career interests in fisheries through the student internship program.

The Takotna projects has an established high school mentorship program, which facilitates broad community awareness and understanding, interest, and direct involvement fisheries management. The Takotna program provides part-time employment throughout the season to high school students who work directly with the full-time adult crew members. This program also sponsors an annual meeting where community members for Takotna and McGrath spend a full day touring the weir and participating in a presentation that describes the annual status of Kuskokwim River salmon runs and an overview of projects. This outreach program is a long-term investment that has developed informed individuals who have served as technicians, and will one day be board members, public leaders, and voting citizens who will influence the course of future events through their decisions.

Justification

The investigation plan addresses a priority information need for salmon escapement monitoring identified in the 2012 Request for Proposals. The investigators are experienced, competent and knowledgeable and there is strong partnership between the Alaska Department of Fish and Game and the community of Takotna. This project has a history of successful operation, providing fisheries managers with reliable information on salmon escapement in the Takotna River. In addition, the Takotna River weir has been utilized as a platform for other projects, including Monitoring Program project 08-701 for water temperature and stream gauge monitoring. The proposed budget is adequate to achieve project objectives, with both years less than the budget amount for 2011 under project 08-304. The investigation plan submitted would provide only two years of funding for this project. This was done at the request of the Technical Review Committee so that a programmatic and geographic review of all Kuskokwim area salmon enumeration (weir) projects could be done prior to the 2014 Call for Proposals.

Project Number: 12-308
Project Title: Population Assessment of Kuskokwim River Broad Whitefish Spawning above McGrath
Geographic Area: Kuskokwim
Information Type: Stock Status and Trends
Principal Investigator: Ken Harper, U.S. Fish and Wildlife Service
Co-Investigator(s): Malcolm McEwen, Alaska Department of Fish and Game
Merlyn Schelske, Bureau of Land Management
Kevin Whitworth, McGrath, Takotna, Nicholai, Telida Properties

Project Cost: **2012:** $122,621 **2013:** $66,815
Total Cost: **$189,436**

Recommendation: Do Not Fund

Issue

The exercise of making management recommendations implies that characteristics of fish populations have been reasonably estimated. Recent studies of broad whitefish biology in the Kuskokwim River have provided information on general location of spawning grounds and movement patterns, but have not estimated population sizes, age composition, or harvest, all critical information needs for management. This study will focus on determining the population size and demographics of broad whitefish that migrate from feeding area within the Yukon Kuskokwim Delta National Wildlife Refuge and other areas along the Kuskokwim River to the spawning area between McGrath and Medfra. This project addresses broad whitefish priority research needs identified in the Whitefish Strategic Plan for the Yukon and Kuskokwim rivers including collection of population-specific length and age data, and development of methods to estimate abundance of broad whitefish spawning populations. This feasibility study will allow us to determine size and age of the broad whitefish population that spawns upstream of McGrath. These data will be used in the future to monitor changes in spawning population abundance, age composition, recruitment, and mortality. This project will also assist the Service in meeting the legislative intent of Section 303 (7) (B) of ANILCA. Section 303 sets forth the purpose for which the Refuge was established, and mandates the Service to: (i) conserve fish and wildlife populations and habitats in their natural diversity . . . . (ii) provide, in a manner consistent with the purposes set forth in paragraph (I), the opportunity for continued subsistence uses by local rural residents.

Objectives

To conduct an initial mark-recapture study to estimate abundance of mature broad whitefish spawning in the Kuskokwim River upstream of McGrath using the standard levels of accuracy and precision prescribed by Robson and Regier (1964) for preliminary studies, resulting in an estimate that is within 50% of the true value 95% of the time;

Determine feasibility of using user-configurable sonar equipment to monitor the upstream and downstream migration of broad whitefish and estimate abundance of broad whitefish spawning in the Kuskokwim River between McGrath and Medfra.

To estimate the age, sex and length composition of mature broad whitefish spawning in the Kuskokwim River upstream of McGrath from samples collected from the run such that simultaneous 90% confidence intervals have a maximum width of 0.20."

Methods

We propose to use both mark-recapture (M-R) and Dual frequency identification sonar (DIDSON) to assess the population size of broad whitefish migrating to the spawning area located upstream of McGrath and below Medfra. The bounds of the study will include the marking and recapture of fish moving upstream to the spawning area and downstream after spawning. The upstream migration time-period will require capture of upstream migrating broad whitefish from September 1 through approximately October 28. Capture of post spawning fish will allow for mixing of tagged upstream migrants and the population estimated from this mixture. If this is not feasible then the upstream marking and recapture events will be used to estimate the numbers of whitefish during the upstream passage period.

Broad whitefish migrating upstream will be captured using nets and traps, marked with numbered tags, a secondary mark of a fin clip applied and released. Recapture will occur using similar equipment upstream of the initial marking location and below the spawning location during the upstream migration and then near the lower marking location during the post-spawning downstream migration. The M-R combination thought to be obtainable to estimate the population is 316 marked and 695 examined for marks. Although observed sample sizes will differ from these estimates as a function of success the goal will be to mark and examine in excess of this number.

Dual frequency identification sonar (DIDSON) will be deployed simultaneously from both banks of the Kuskokwim River near McGrath during the same period as the M-R study. DIDSON sonar will be deployed on each bank of the Kuskokwim River and sonar data will be collected, in two 30 min files, 24-hours per day, 7 days a week for the duration of the study. Technicians will mark fish on an electronic echogram, verifying swimming direction using DIDSON video. Marked files will be saved and the counts entered in a Microsoft Excel spreadsheet where daily estimates will be computed. Depending on the amount of time that may be missed, the crew will use different methods to make up for incomplete or missing counts. If less than 25 minutes are missed the passage rate for the period within that interval will be used to estimate passage for the non-sampled portion of the interval. Nets or seines fished near the sonar will be used to verify species.

To estimate the age, sex and length composition of the spawning population, otoliths and fin rays will be removed from a sample of fish (N=177, k=15, α 0.10, d=0.10) to estimate the simultaneous confidence intervals of ages present. Otoliths and fin rays will be cleaned and stored dry in coin envelopes and labeled with capture date, crew, capture method, location, species, and length. Otoliths, and fin rays will be aged and compared using published standards and guidelines. Fin clips will also be collected for genetic analysis.

Partnerships and Capacity Building

This project will foster the development of a partnerships and capacity building between the Service, locally hired end users, and McGrath, Takotna, Nicholai, Telida Properties. Technicians working on this project and hired by McGrath, Takotna, Nicholai, Telida Properties will be hired locally and trained in data collection and reporting methods. One Alaska Native Science and Engineering Program student intern hired by BLM will be able to work on this project during the spring semester at the University of Alaska Fairbanks..The use of local residents will also benefit the Service in gaining local traditional knowledge of fishing locations and environmental conditions. This Project will also allow technicians

and residents of McGrath and other residents of the Kuskokwim River to learn more about the research being conducted, the information gained from that research, and to take this information back to their communities.

Justification

While the investigators appear well qualified to conduct the proposed work, it was difficult to determine whether the first, and most important, objective of the project was achievable. The investigation plan mentions three to four models that could be used to estimate abundance, implying that one or more would be selected for use based on the recapture technique that proved most successful in the field. However, the investigation plan did not address an important issue raised in the proposal review concerning treatment of recoveries at more than one location. Since capture probabilities will likely vary among recovery locations, this aspect of the study design should have been addressed. Finally, the proposed budget appears high for a one-year project having a 2-4 month field season.

Project Number: 12-309
Project Title: Kwethluk River Weir Salmon Escapement Enumeration with Videography
Geographic Area: Kuskokwim
Information Type: Stock Status and Trends
Principal Investigator: Ken Harper, U.S. Fish and Wildlife Service
Co-Investigator(s): Steve J. Miller, U.S. Fish and Wildlife Service

Project Cost: **2012:** $36,240

Denotes cost associated with data analysis and report preparation between October 2013 and May 2014.

Recommendation: Fund

Issue

This project focuses on one of the priority information needs identified in the Federal Subsistence Fisheries Resource Program: Obtaining reliable estimates of Chinook, chum, and coho salmon escapements (e.g. weir projects). Management of Kuskokwim Area salmon fisheries is complex because of annual variability in run size, timing, and harvest of mixed stocks, overlapping runs of multiple species, allocation issues, and the immense size of the Kuskokwim River drainage. Weirs that monitor salmon returning to Kuskokwim River tributaries provide accurate escapement numbers, sex and age information as well as run timing. These data are heavily relied upon by state and federal managers for management of the Kuskokwim River commercial fisheries and the largest subsistence fisheries in the state. Without adequate and accurate escapement monitoring of salmon returns to the Kwethluk River, there is a risk to the conservation and maintenance of Chinook *Onchorynchus tshawytscha*, chum *O. keta*, sockeye *O. nerka*, pink *O. gorbuscha,* and coho salmon *O kisutch* populations. Monitoring of salmon returns to the Kwethluk River is essential to ensuring that Federal conservation mandates are fulfilled within the Yukon Delta National Wildlife Refuge (Alaska National Interest Lands Conservation Act (Section 303 (7) (8) a, b, c)). Escapement monitoring also helps reduce the risk of failure to provide a priority to subsistence uses, and the risk that subsistence harvest user needs will not be met. The addition of videography to the Kwethluk weir will enable accurate enumeration and identification of salmon passing the weir. It is anticipated that the video will allow for counts during turbid and high water events and allow fish passage to be recorded unattended during the night. The addition of the video will also help with fixed budgets and increasing operational costs that may result in reduced monitoring at the weirs in the future.

Objectives

1. Install and operate an underwater video system to improve enhance salmon escapement monitoring at the Kwethluk River weir.
2. Compare results of underwater video and above water counts to ensure video system functions correctly.

Methods

An underwater video system will be installed and operated in conjunction with the existing Kwethluk River weir project (project 10-306). The weir will direct upstream migrating adult salmon through a fish passage panel. A live trap will be attached to the upstream side of the fish passage panel and will be used

to capture and sample fish. A fish passage chute and video box will be installed at the head of the live trap to count fish. The entire weir and live trap will be visually inspected daily and maintained as needed to insure integrity.

Setup, design and operation of the video system will be similar to that used successfully in other rivers or tributaries in Bristol Bay, Kuskokwim River, and south-central Alaska. One underwater video camera will be located inside a sealed video box attached to the fish passage chute. The video box will be constructed of 3.2-mm aluminum sheeting and filled with filtered water. Safety glass will be installed on the front of the video box to allow for a scratch-free, clear surface through which images are captured. The passage chute will be constructed from aluminum angle and enclosed in plywood to isolate it from exterior light. The backdrop of the passage chute from which video images are captured will be adjustable laterally to minimize the number of fish passing through the chute at one time. The backdrop will be fabricated for ease of removal from the video chute when dirty and replaced with a new one. All video images will be recorded on a removable hard drive at 20 frames-per-second using a computer-based Digital Video Recorder. Fish passage will be recorded 24 hours per day seven days each week. Stored video files will be reviewed daily. The video box and fish passage chute will be artificially lit using a pair of 12-volt underwater pond lights. Pond lights will be equipped with 10-watt bulbs, which provided a quality image. The lights are to provide a consistent source of lighting during day and night hours. The Digital Video Recorder unit will be equipped with motion detection to minimize the amount of blank video footage and review time. A solar panel array will provide power to batteries. A gasoline generator will provide supplemental power to charge the batteries as needed. The video system will be installed and operated in conjunction with the weir, from late June through September 10. Age, sex, and length samples will continue to be collected as outlined in the weir investigation plan for the weir operations (project 10-306).

Proper function of the video system and motion detection software will be validated by comparisons of visual counts using established weir protocol and review of video footage for the same hourly blocks of time. Counts from on top of the fish trap will occur between the hours of 08:00 and 23:00 hours and adjustments to the video system will occur during this time when paired counts can be evaluated. Once counts match (± 3%) between the two methods the fish passage chute will be opened and fish passage recorded 24 hours / day with video. The passage chute will be closed during periods when fish are sampled for ASL data. Video counts between 23:00 and 08:00 hours will be reviewed and tallied each day. Video operations will be evaluated and checked throughout the season. Four hours of randomly selected paired counts/week will be checked to validate the video system. During these paired counts, comparisons will be made between numbers counted, and identification of species. It is suspected that some deviation will occur between the two counting methods due to: water turbidity, multiple fish passing at one time, effects of water glare, and or rain/wind disturbances of the water surface. Species identification is also more accurate using the video because frames can be frozen, and reviewed numerous times by multiple observers. Results will be presented in the annual report for the weir operations (project 10-306).

Partnerships and Capacity Building

The Organized Village of Kwethluk has cooperatively worked with the U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field Office at the Kwethluk weir from 2001–present. The village employs local residents on the weir and keeps their constituents informed of information gathered at the weir. OVK is looking forward to continuing the partnership and working with the U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field Office. The addition of video to the weir will allow the FWS to train village technicians in the operation of this technology.

Justification

The Kwethluk River weir is an established and successful salmon monitoring project that provides the primary escapement and run strength data used to ensure sustainability of subsistence fisheries in the Yukon Delta National Wildlife Refuge and to conserve fisheries stocks in the Kwethluk River. Over the years of operation, weir counts have had to be suspended on several occasions due to high water or turbid water conditions. Adding video monitoring capability to the Kwethluk weir could provide more reliable estimates of salmon abundance, improve the long term data set necessary to monitor changes in adult salmon run strength on the Yukon Delta National Wildlife Refuge, and make enumeration work more cost effective.

The Office of Subsistence Management is planning to conduct a programmatic and geographic review of all Kuskokwim area weir projects prior to the 2014 Request for Proposals. If this video project (12-309) is funded in 2012, the video equipment may need to be transferred to another weir in 2014, if results of the programmatic and geographic review indicate this weir site to be of lower priority than others.

Project Number: 12-312
Project Title: Status of sheefish in Highpower Creek and Upper Kuskokwim River
Geographic Region: Kuskokwim
Information Type: Stock Status and Trends
Principle Investigator: Lisa Stuby, Alaska Department of Fish and Game

Project Cost: **2012:** $100,776 **2013:** $45,828 **2014:** $24,396

Recommendation: Fund

Issue: Sheefish are a highly migratory, long-lived species that migrate throughout most of the Kuskokwim River drainage and are important to both subsistence and sport fishers. A five-year radiotelemetry study (06-305; 10-305) was initiated in 2007 to extend our understanding of sheefish in the Kuskokwim River drainage. Through this effort, two previously undocumented spawning areas (Middle and East Forks) have been identified and information refined on the most populous spawning area (Big River) in the upper Kuskokwim River. However, none of the radio-tagged sheefish were detected at the mouth of Highpower Creek, which had been described as a spawning area in an Alaska Department of Fish and Game 1972 study. In 2010, a survey of this area noted that the habitat characteristics were unlike the Big River and Middle Fork spawning areas. According to the 1972 study, an area approximately 24 km upstream of Highpower Creek on the Swift Fork had the right combination of gravel size, water depth, and current for sheefish spawning. However, few sheefish were observed and it was assumed that most spawning occurred downstream. Implanting radio transmitters into sheefish located in the vicinity of Highpower Creek would facilitate locating the actual spawning area(s), provide information on migratory behavior and life history characteristics of fish spawning in that area, and contribute additional samples toward genetic baseline stock identification efforts. Identifying the status of a sheefish spawning population in Highpower Creek and completing genetic baseline sampling of sheefish spawning populations have been identified as priority research needs by the Strategic Plan for Research of Whitefish Species and by the 2012 Fisheries Monitoring program.

Locating aggregations of radio-tagged sheefish during the spawning period does not necessarily provide conclusive evidence of spawning in a particular location. Verification of spawning requires site visits to those areas to sample sheefish and assess their spawning condition. By completion date of the current project (10-305), site visits and sampling activities will have been completed at 2 of the 5 known or suspected spawning areas in the Kuskokwim River (Big River and Middle Fork). This project proposes to conduct site visits and sample sheefish in the 3 remaining potential spawning areas (the Kongeruk River, East Fork, and Highpower Creek) to verify whether spawning is occurring at these locations and to collect tissue samples from documented spawning stocks for genetic baseline development.

Objectives

1. Determine the status of the sheefish in the vicinity of Highpower Creek by:
    a. Documenting the locations of radiotagged sheefish during the spawning period;
    b. Verifying spawning areas by conducting site visits and capturing fish to assess their spawning condition; and,
    c. Determining the migratory timing and seasonal distribution of radiotagged sheefish through aerial tracking surveys and stationary tracking stations.

2. Conduct site visits and capture sheefish to assess spawning condition on suspected spawning areas on the East Fork Kuskokwim River and Kongeruk River to verify whether spawning is occurring there.
3. Collect tissue samples from each sheefish captured at spawning areas for future genetic stock identification analysis.
4. Describe habitat characteristics of the areas used for spawning such as channel characteristics, water temperature, spawning substrate, flow, turbidity, and pH.

Methods

Thirty sheefish will be captured using gillnets and hook and line gear and implanted with radio transmitters on the North Fork Kuskokwim River, principally at and near the mouth of Highpower Creek during September 2012. These fish will be followed through the fall of 2014 with a combination of stationary tracking stations and aerial tracking flights to ascertain whether or not they are actually spawning at the mouth of Highpower Creek or elsewhere on the Swift Fork Kuskokwim River. Because sheefish have been noted arriving at the Big River and Middle Fork 1–2 months prior to spawning, up to 15 transmitters will be deployed downriver to determine if sheefish migrate to additional upper Kuskokwim River locations to spawn. These transmitters will be deployed above the confluence with South Fork Kuskokwim River in order to not inadvertently tag sheefish bound for the East Fork Kuskokwim River spawning area.

Site visits to the Highpower Creek area (fall 2012) and the suspected spawning areas on the East Fork and Kongeruk River (fall 2013) will be made to capture sheefish and ascertain spawning readiness to verify whether spawning is occurring there. During these sampling efforts, a minimum of 10 sheefish will be examined at each location. Spawning readiness (i.e., determination of whether a fish will spawn in that season) will be evaluated based on a visual examination of gonads and Gonadosomatic indices (GSI) will be calculated for all fish sacrificed to begin establishing quantitative standards for maturity. Sheefish will be captured from each site using gillnet and/or hook and line gear. In addition, for every sheefish sampled, lengths will be taken and a fin clip will be collected and archived for future genetic analysis. Otoliths will be removed from all fish aged and archived for future strontium distribution microchemistry analysis to decipher the degree of anadromy for the different spawning stocks.

Few studies have been performed to classify and/or characterize sheefish spawning habitats, but it is generally recognized that sheefish require very specific habitats to spawn. Therefore, basic habitat characteristics in spawning areas such as water temperature, channel characteristics, spawning substrate, flow, pH, turbidity, and other pertinent habitat characteristic will be noted.

Partnerships/Capacity Development

The project biologist will continue to provide project updates to the Kuskokwim Native Association, McGrath, Telida, Nikolai, and Takotna, Limited), McGrath Native Village Council, and Tanana Chiefs Conference. She will continue to work closely with Kuskokwim Native Association and McGrath Native Village Council to garner college interns and/or local hires and will encourage local participation. The project biologist will offer to give public and school presentations. She will continue to present at the Kuskokwim Area staff meetings. The project biologist will work with the Eluska family of Telida and relatives in Nikolai for assistance in tagging sheefish at Highpower Creek and sampling sheefish on the East Fork Kuskokwim River. This project will be conducted cooperatively with other Kuskokwim River whitefish projects in sharing downloading duties of the stationary tracking stations and incorporating frequencies during aerial tracking flights. The fin clips collected during this study will be combined with

the fin clips collected during 2007 –2010 and added to a larger Yukon/Kuskokwim database currently at the U.S. Fish and Wildlife Service's Alaska Conservation Genetics Laboratory in Anchorage. The project biologist is a co-investigator for "Yukon and Kuskokwim Rivers Inconnu Genetic Baseline (project 12-700)".

Justification

This project addresses a priority information need identified in the 2012 Request for Proposals and the Whitefish Strategic Plan (project 08-206). The principal investigator has successfully designed, planned, and conducted similar sheefish work in the Kuskokwim River drainage (projects 06-305 and 10-305). The four objectives of the project are well thought out, clear, build on previous work by the principal investigator, and appear achievable with the proposed budget.

Project Number: 12-313
Project Title: Location, Migration Timing, and Description of Kuskokwim River Bering Cisco Spawning Origins
Geographic Area: Kuskokwim
Data Type: Stock Status and Trends
Principle Investigator: J. Michael Thalhauser, Kuskokwim Native Association
Co-Investigators: Randy J. Brown, U.S. Fish and Wildlife Service
Ken Harper, U.S. Fish and Wildlife Service

Project Cost: **2012:** $74,116 **2013:** $56,878 **2014:** $17,138

Recommendation: Fund

Issue

This project addresses the Kuskokwim River priority information need for determining migration timing and destination of Bering cisco *Coregonus laurettae* spawning populations in the Kuskokwim River Drainage. Bering cisco are anadromous salmonids with known spawning populations only in the Yukon, Kuskokwim, and Susitna rivers in Alaska. At this time, there is little understanding of the life history of Bering cisco harvested in the coastal waters of western Alaska. It is believed that all Bering cisco in coastal environments are rearing individuals from the Yukon and Kuskokwim rivers because these are the only two rivers, among the many surveyed in western Alaska, in which spawning Bering cisco have been identified. Sampling activities in late September 2010 within the Kuskokwim River drainage suggest that Bering cisco restrict their spawning migration to the mainstem, and appear to go into the South Fork Kuskokwim River only, where pre-spawning fish were captured approximately 20 miles above the village of Nikolai.

Starting in 2005, fall commercial fisheries for coregonid (whitefish) species were permitted in the Yukon River delta. During the first two (more explorative) years of this fishery, 10,077 coregonids of various species were harvested (17,541 lbs). During 2006, Bering Cisco made up a bulk of that catch and since then, have been the targeted species of this fishery with buyers originally requesting an allocation of 40,000 lbs for an East Coast Kosher market. Managers set the limit at 10,000 lbs from the Yukon Delta region, which was considered to be a conservative allocation given that little biological information was available for Bering cisco. The commercial fishery continues to target Bering cisco and in 2008 and 2009 an average of 8,914 Bering cisco was harvested per year with an average weight of 8,642 lbs/year. Buyers have continued to pressure managers for higher harvest limits with the near limitless demand of the market, despite a lack of information on Bering ciscos life history and abundance. If the commercial fishery for Bering cisco continues, it will be important to identify all spawning origins and to determine a sustainable harvest level. Identification of their spawning destination and timing will allow: 1) description and protection of the habitat; and 2) the possibility of obtaining stock abundance (mark-recapture) estimates if management of the fishery is required.

Objectives

1. Deploy 50 radio transmitters per year (2012 and 2013); 25 at the Kalskag Fish Wheels on the main stem and 25 near Nikolai on the South Fork;

2. Identify spawning destinations for Bering cisco in the Kuskokwim River by use of fixed tracking stations along the main stem and aerial telemetry flights along the main stem and in suspected, tributary spawning areas;
3. Characterize habitat that make these spawning areas suitable for Bering cisco spawning in order to add this information to the life history record of Bering cisco; and
4. Nominate spawning areas for inclusion into the Alaska Anadromous Waters Catalog

Methods

We propose to deploy radio transmitters in Bering cisco that are migrating upstream in the Kuskokwim River and track them to their spawning destinations. Sampling data in the Yukon and Kuskokwim rivers suggests that all Bering cisco migrating upstream during summer and fall months are mature spawning individuals. Gonadosomatic index data for Bering cisco captured in late September (near Nikolai) further indicate that spawning in this area takes place in October. While some migration timing research has been conducted in the Yukon River, migration timing in the middle reaches of the Kuskokwim River is not as well understood, although it is presumed to be similar.

Radio tags will be deployed in migrating Bering cisco from a Kuskokwim River fish wheel operated by Alaska Department of Fish and Game at Lower Kalskag and by using beach seines and fish traps near the village of Nikolai in 2012 and 2013. Twenty-five transmitters will be deployed at each location between May and September. Receiving stations upstream from the Lower Kalskag deployment site will identify those fish that migrate upstream and the region of the upper drainage to which they migrate. Aerial surveys flown from Aniak to suspected spawning areas of the upper drainages will take place in late September and throughout October to further identify migration rates and to locate spawning destinations. In 2013, Mike Thalhauser, assisted by one local technician and Daniel Gillikin from U.S. Fish and Wildlife Service, Yukon-Delta National Wildlife Refuge will travel to identified spawning areas to conduct habitat studies in order to better characterize the flow and substrate qualities that Bering cisco utilize during spawning.

Partnerships/Capacity Building

We have spoken with numerous individuals and organizations about this project and have received only favorable responses. Kuskokwim Native Association has and will continue to involve its represented villages involved in this project through outreach and locally hired technicians. The Village of Nikolai will play a key role in this project.

Justification

This project directly addresses a priority information need in the 2012 Request for Proposals and would help determine whether or not Bering cisco from the Kuskokwim drainage are being harvested in the commercial Bering cisco fishery in the Yukon River, which could have implications for subsistence management. The study is well-thought out and designed, and utilizes proven methods from previous whitefish studies in the Kuskokwim River drainage. The objectives are clear and appear achievable with the proposed budget, and the investigators are well qualified to conduct the proposed work. The capacity building component of this project would be strong, particularly since the principal investigator would be a Partners Program biologist and the Kuskokwim Native Association.

Project Number: 12-352
Project Title: Whitefish trends on the Upper Kuskokwim, Alaska
Geographic Region: Kuskokwim Region
Information Type: Harvest Monitoring/Traditional Ecological Knowledge
Principal Investigator: Davin Holen, Alaska Department of Fish and Game
Co-Investigator(s): James Van Lanen, Alaska Department of Fish and Game
Alida Trainor, Alaska Department of Fish and Game

Project Cost: **2012:** $68,277 **2013:** $61,413 **2014:** $40,965

Recommendation: Fund with modification

Issue

The Yukon-Kuskokwim Delta and Western Interior Regional Advisory Councils have identified collection and analysis of traditional ecological knowledge and non-salmon fish population monitoring as issues and information needs. Whitefish are among the most important non-salmon fish in local subsistence harvests on the upper Kuskokwim River, but subsistence harvest levels have declined over the last several decades, for unknown reasons. Whitefish migration patterns are also little understood on the upper Kuskokwim River and genetic studies of whitefish species are incomplete. This project responds to two information needs identified by the 2012 Fisheries Resource Monitoring Program's "Priority Information Needs" document; "harvest, use, and associated contextual information for whitefish by species in upper Kuskokwim River drainage communities" and the multi-regional priority information need to document "changes in subsistence fishery resources and uses, in the context of climate change where relevant including but not limited to fishing seasons, species targeted, fishing locations, fish quality, harvest methods and means, and methods of preservation. Include management implications."

This project seeks to understand whitefish harvests within the broader non-salmon harvest efforts. These efforts mainly take place in the spring and fall and include jigging for fish through holes in the ice in the spring, or by using nets in the fall. In addition, whitefish near Nikolai are caught in nets during the salmon harvest and are often incorrectly identified as distinct whitefish species and harvests are underreported. In order to understand contemporary harvests and reasons for change over time researchers have focused on three research questions: 1) What are the contemporary harvest and use patterns of each whitefish species used by Lime Village and Nikolai?; 2) What factors have shaped the harvest efforts of each whitefish species over time and why are whitefish harvests declining?; 3) What factors are influencing the ability of residents to harvest the varied species of whitefish?

Objectives

1. Estimate the subsistence harvest of non-salmon fish by residents of Lime Village (pop. 27) and Nikolai (pop. 96) in 2012 and 2013.
2. Evaluate the harvest of subsistence non-salmon fish in terms of species, gear, location, and timing of harvests.
3. Document traditional ecological knowledge of each whitefish species, including life history, ecology, environmental and climate-related observations, seasonal movement, spawning areas, interactions with other fish and wildlife, local taxonomies, trends in abundance, and traditional management systems.

4. Describe the characteristics and trends of the whitefish fishery by species.
5. Identify what factors may be influencing the ability of residents to harvest various whitefish species through the ice in the spring by jigging and with nets, and with nets in the summer and fall.

Methods

1) Harvest survey. The harvest survey is intended to address Objective 1, to estimate the harvest of non-salmon by residents of Lime Village and Nikolai in 2012 and 2013, and Objective 2, to evaluate the harvest of non-salmon fish in terms of species, gear, location, and timing of harvests. A harvest survey for all non-salmon species will occur for study year 2012 between February and March of 2013 and for study year 2013 in February 2014. The survey will be a recall survey. The respondents will be asked to estimate their households' harvests for the past year. An attempt will be made to interview knowledgeable representatives of all households in each study community.

2) Key Respondent Interviews. Key respondent interviews will collect traditional ecological knowledge related to trends in whitefish stocks and subsistence uses of these stocks to add to the information already available from previous. A minimum of five key respondent interviews will be conducted in each of the study communities. Researchers will identify key respondents in each community during household harvest surveys and through consultation with community members during the community scoping meetings. Key respondents will represent a range of harvesting effort and experience in the fishery. Topics will focus on those addressed in Objective 3, to document local knowledge of each whitefish species, including life history, ecology, environmental and climate-related observations, seasonal movement, spawning areas, interactions with other fish and wildlife, local taxonomies, trends in abundance, and traditional management systems.

3) Participant observation. Participant observation will be utilized during this project to add an ethnographic context to whitefish harvest patterns and use. It is also important for researchers to have firsthand experience in participating in spring ice fishing to better understand the skills and knowledge involved in this important activity. Participant observation will be useful in meeting Objectives 3 and 4. This participation will mainly occur during spring whitefish harvest activities in Lime Village and during the summer in Nikolai. Researchers will document methods and gear for taking whitefish. In addition researchers will attempt to understand if whitefish are a target species, if certain species of whitefish targeted, or if whitefish are simply part of the overall harvest of non-salmon fish.

Partnerships/Capacity Building

The project will only be successful through participation of the residents of Lime Village and Nikolai. As noted community scoping meetings will occur prior to the start of research and residents will work with community members during fishing activities. Lime Village and Nikolai have been contacted about this project and both communities will submit resolutions supporting this project after the community scoping meeting takes place. Nikolai has submitted a letter of support already for this project. Local researchers will be trained to assist in conducting interviews and surveys and will work as co-researchers on this project. Alaska Department of Fish and Game will sign cooperative agreements with the tribal governments of Lime Village and Nikolai. This will allow the communities to choose and hire local personnel. The local research assistant hired by each community will be responsible for arranging and conducting interviews in their communities.

Justification

The proposed project addresses a priority information need in the 2012 Request for Proposals, notably data on whitefish (by species) in upper Kuskokwim River drainage communities. The investigators followed the suggestions of the Technical Review Committee and presented an investigation plan that may provide needed harvest data for the region. The objectives for collecting harvest and some demographic data are clear and achievable and the project goals on these topics may be met within the suggested time frame. The methods to reach the objectives could provide ample data for the investigators to answer research questions such as those about harvests and use patterns, which is valuable and desired data. However, broader contextual data, in-depth ethnographic data, and factors contributing to possible changes, were not defined to the extent to easily ascertain if the final objective could be met. The background and contexts for why and how this research is needed and how it will fit into previously collected data is sparse. However, the investigators may be able to meet most of their objectives as written. Without a clear discussion of how this study fits into existing data or without clearly defined and presented parameters surrounding 'factors' of influence, this study may only meet the first four objectives. The ability of the researchers, partnership and capacity building, and the need for this research were all rated as high, and the Federal linkage is clear, but the technical and scientific merit is rated as medium for the reasons stated above. As a result, it is recommended that this project be advanced for funding because the objectives and research questions may reveal data on changes in harvest numbers, harvest locations, as well as local knowledge about these changes. A modification of the investigation plan relating to the final objective is needed. The modification should define how new data can complement existing harvest and traditional ecological knowledge data. The modification should also explain how the research will be placed into broader contexts including past research. If the above modification is addressed, it is recommended that this project be funded.

MULTIREGIONAL OVERVIEW

Issues and Information Needs

For the Multiregional category, the 2012 Request for Proposals was focused on four priority information needs:

- Changes in subsistence fishery resources and uses, in the context of climate change where relevant, including but not limited to fishing seasons, species targeted, fishing locations, fish quality, harvest methods and means, and methods of preservation. Include management implications.
- Develop models based on long-term relationships between ocean conditions and production for Bering Sea and Gulf of Alaska Chinook salmon stocks to better understand and respond to changes in run abundance.
- An indexing method for estimating species-specific whitefish harvests on an annual basis for the Kuskokwim and Yukon drainages. Researchers should explore and evaluate an approach where sub-regional clusters of community harvests can be evaluated for regular surveying with results being extrapolated to the rest of the cluster, contributing to drainage-wide harvest estimates.
- Evaluation of conversion factors used to estimate edible pounds from individual fish, and from unorthodox units such as tubs, sacks, or buckets.

Projects Funded Under the Fisheries Resource Monitoring Program

Since the inception of the Monitoring Program in 2000, 14 projects have been funded in the Multiregional category, and one of these projects is ongoing during 2012 (Tables 1 and 2). The ongoing project (08-701) provides for monitoring water temperature at many of the field project sites funded by the Fisheries Resource Monitoring Program, as an information baseline for multiple applications, including climate change assessment.

Projects Forwarded for Investigation Plan Development

Three proposals for research in the Multiregional category were submitted to the Office of Subsistence Management for funding consideration in 2012. In March 2011, the Technical Review Committee reviewed these proposals and recommended two for development of investigation plans. One of these was subsequently withdrawn by the investigator, while investigators for the other one used comments from the Technical Review Committee review of their proposal to develop an investigation plan. The detailed budget submitted with that investigation plan allowed identification of funds requested by Alaska Native, State, Federal, and other organizations; funds that would be used to hire local residents; and matching funds from investigators (Tables 3 and 4).

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. While regional budget guidelines provide an initial target for planning, they are not rigid allocations. Upon review and evaluation, the Technical Review Committee, Regional Advisory Councils, Interagency Staff Committee and Federal Subsistence Board have the opportunity to address the highest priority projects across regions. For 2012, approximately $135,000 is available for funding new projects in the Multiregional category.

Recommendations for Funding

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary, collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible monitoring plan for each region and across the entire state. After reviewing the investigation plan, the Technical Review Committee recommended funding the proposed project (Table 5):

12-700	Yukon and Kuskokwim Inconnu Genetic Baseline	$16,788

The project recommended for funding in the Multiregional category in 2012 is summarized below (see Executive Summary for more details on this project).

12-700 Yukon and Kuskokwim Inconnu Genetic Baseline. This three-year project would assess the genetic population structure and develop and evaluate a genetic baseline for inconnu (also referred to as sheefish) from the Yukon and Kuskokwim rivers. Inconnu is one of four important whitefish species harvested in subsistence fisheries in the Yukon and Kuskokwim River drainages and is a very valuable subsistence resource because of its year-round availability. This project would analyze samples from three to seven populations of inconnu collected through other efforts. Samples from three populations (upper Yukon Flats, Sulukna River, and Big River) are currently available for analysis, while samples from four others (Alatna River, Tanana River, upper Innoko River, and Highpower Creek) have not yet been collected. Availability of samples from these four populations would depend on whether Monitoring Program projects 12-200 (Alatna River) and 12-312 (Highpower Creek) are funded, and whether joint efforts by U.S. Fish and Wildlife Service and Alaska Department of Fish and Game being planned for the upper Innoko and Tanana rivers are successful. Additionally, data from project 10-104 (Hotham Inlet and Selawik Lake) would be used to examine inconnu population structure across western Alaska. This project would address a priority information need identified in the 2012 Request for Proposals and the Whitefish Strategic Plan.

Table 1. Summary of projects previously funded under the Fisheries Resource Monitoring Program in Interregional Alaska since 2000. Abbreviations used for investigators were: ADFG=Alaska Department of Fish and Game, AITC=Alaska Inter-Tribal Council, EA=Elizabeth Andrews, NPS=National Park Service, USFWS=U.S. Fish and Wildlife Service.

Project Number		Project Title	Investigators
00-016		Information Access of AYK Fish Data	ADFG
00-017		Statewide Subsistence Harvest Strategy	ADFG, AITC
01-010		Regulatory History of Alaska Salmon Regulations	ADFG, EA
01-106		Validity and Reliability of Fisheries Harvest	ADFG, AITC, NPS
01-107		Implementation of Statewide Fisheries Harvest Strategy	ADFG, AITC
01-154		Project Information and Access System	ADFG
02-043		Alaska Subsistence Fisheries Database GIS Integration	ADFG
02-069		Shared Fishery Database	ADFG
04-701		Develop Shared Fishery Database	ADFG
04-703	[a]	Hatching Success of Eulachon Eggs	USFS
04-751		Subsistence Harvest Database Update and Report	ADFG
05-702		Whitefish Genetic Species Markers	USFWS
06-701	[a]	Dolly Varden Stock Composition	USFWS

[a] Final Report in preparation.

Table 2. Summary of ongoing 2012 projects funded under the Fisheries Resource Monitoring Program in Southcentral Alaska. Abbreviations for investigator is: ARRI=Aquatic Restoration and Research Institute.

Project Number	Project Title	Investigators	Budget ($000) 2012	2013
08-701	Temperature Monitoring	ARRI	$23.7	$0.0

Table 3. Multiregional project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2012.

Project Number	Title	Budget ($000s) Alaska Native	State	Federal	Other
	Stock Status and Trends Projects				
12-700	Yukon and Kuskokwim Inconnu Genetic Baseline			$16.8	

Table 4. Multiregional local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2012. Abbreviations used are: USFWS=U.S. Fish and Wildlife Service.

Project Number	Lead Organization	Title	Funding ($000s) Local Hire	Matching
		Stock Status and Trends Projects		
12-700	USFWS	Yukon and Kuskokwim Inconnu Genetic Baseline	$0.0	$0.0

Table 5. Funding recommendations by the Technical Review Committee (TRC) for Multiregional category, 2012 Fisheries Resource Monitoring Program.

Project Number	Title	TRC	Requested Budget ($000) 2012	2013	2014	2015
	Stock Status and Trends Projects					
12-700	Yukon and Kuskokwim Inconnu Genetic Baseline	Yes	$16.8	$49.9	$23.3	$0.0
	Total		$16.8	$49.9	$23.3	$0.0
	Guideline		$135.0			
	TRC Recommendation		$16.8	$49.9	$23.3	$0.0

Project Number:	12-700
Project Title:	A Genetic Baseline for Inconnu from the Yukon and Kuskokwim Rivers
Geographic Region:	Multi-Regional
Information Type:	Stock Status and Trends
Principal Investigator:	Jeffrey B. Olsen, U.S. Fish and Wildlife
Co-Investigator(s):	Randy J. Brown, U.S. Fish and Wildlife Service John K. Wenburg, U.S. Fish and Wildlife Service Ray Hander, U.S. Fish and Wildlife Service Lisa Stuby, Alaska Department of Fish and Game, Aaron Dupuis, Tanana Chiefs Conference

Project Cost: **2012:** $16,788 **2013:** $49,896 **2014:** $23,316

Recommendation: Fund

Issue

Inconnu (sheefish) *Stenodus leucichthys* contribute to subsistence fisheries in both the Yukon and Kuskokwim rivers. Despite the importance of inconnu as a subsistence resource in both rivers, relatively little information is available on the number and spatial distribution of discrete populations (population structure) and the impact of subsistence harvest on those populations. In this regard, genetic data is useful for not only describing population structure but also as a baseline for estimating population-specific harvest rates in a mixed-stock fishery. There are seven locations presently thought to be spawning sites for the majority of inconnu in both the Yukon and Kuskowim rivers. These sites include the upper Yukon Flats, the Sulukna, Alatna, and Tanana, upper Innoko rivers in the Yukon River drainage and Big River and High Power Creek in the Kuskokwim River drainage. It is not clear however if inconnu exhibit natal site fidelity to these spawning sites, although radio telemetry data suggests adults return multiple times to the same location to spawn. If distinct spawning populations exist the extent to which each population is available to, and impacted by, the fishery will likely vary depending the timing and location of the fishery. This study would assess genetic population structure of inconnu in the Yukon and Kuskokwim rivers and develop and evaluate a genetic baseline for monitoring the harvest of Yukon/Kuskokwim inconnu.

Objectives

1. Develop and test genetic markers for inconnu.
2. Describe and evaluate population structure of inconnu from the Yukon and Kuskokwim rivers. The data from this region will also be combined with data from the Kobuk and Selawik rivers (Monitoring Program project10-104) to describe population structure across western Alaska
3. Develop and test a genetic baseline for estimating the population composition in a mixed population sample of inconnu in the Yukon and Kuskokwim rivers.

Methods

Objective 1: Over 30 microsatellite markers have been identified from inconnu. Eight microsatellites have been tested and at least 10 more will be tested for Project 10-104. All microsatellites used for project 10-104 would be applied to populations in this study. In addition, the 12 microsatellites not tested in project 10-104 may be examined here if more loci are needed to provide adequate genetic variation.

Objective 2: Microsatellites would be used to describe and evaluate population structure among collections from putative spawning populations in the Yukon and Kuskokwim rivers. The goal is to examine population structure by sampling the seven locations thought to support the majority of inconnu spawners. These locations include the upper Yukon Flats, the Sulukna, Alatna, Tanana, and upper Innoko rivers in the Yukon River drainage and Big River and High Power Creek in the Kuskokwim River drainage. We presently have samples from the upper Yukon Flats (N=142), Sulukna River (N=177) and Big River (N=80). We anticipate receiving collections from at least some of the remaining four locations in the summer and fall of 2011 and 2012. Assuming a target sample size of 200 for the remaining collections, approximately 1,200 samples would be used to estimate and evaluate population structure. In addition, the data from Project 10-104 would be incorporated with data collected in this study to examine inconnu population structure across western Alaska.

In the event that we do not acquire samples from all seven locations, we would reduce the scope and cost of the project accordingly. We feel the most likely alternative is that we receive some samples from all but the Tanana River. However, at the very least this project would examine inconnu population structure using the collections currently on hand (Sulukna River, upper Yukon Flats, and Big River). These three collections would help reveal the extent of population structure in western Alaska when combined with the samples from Project 10-104, Genetic Mixed-Stock Analysis and Composition of Inconnu from the Hotham Inlet and Selawik Lake Winter Subsistence Gillnet Fishery.

Objective 3: The genetic data derived from objective 2 would be evaluated for mixed-stock fishery analysis in the Yukon and Kuskokwim rivers using computer simulation.

Partnerships and Capacity Building

We have discussed the project with John Burr (Alaska Department of Fish and Game, Yukon Area sport fish management biologist) who has expressed support for the conceptual proposal and currently plans to participate in collecting samples from the upper Innoko River in 2011. This project would build capacity within the Tanana Chiefs Conference by strengthening relationships between them and the U.S. Fish and Wildlife Service. Also, the proposed Alatna River inconnu Monitoring Program project (Project12-200) includes the involvement of subsistence fishers from Alatna to sample fish and collect fin tissue for genetic analysis. The results of this study would contribute to a better understanding of the population structure of western Alaska inconnu and the genetic baseline would help subsistence fishery managers better assess the population-specific impacts of a mixed-stock subsistence fishery.

Justification

This project directly addresses a priority information need in the 2012 Request for Proposals. Data from this project would be used with data from Hotham Inlet and Selawik Lake, collected as part of Monitoring Program project 10-104, to examine inconnu population structure across western Alaska. All the investigators are well-qualified. The Conservation Genetics Laboratory investigators are currently conducting a similar Monitoring Program project on cisco (project 10-209, Genetic Stock Assessment of Yukon Delta Bering Cisco Commercial Harvest). Project objectives should be achievable with the proposed budget, and the methods used would be technically sound.

BRIEFING ON TRIBAL CONSULTATION

As discussed with the Regional Advisory Councils at the Winter 2011 meetings, the Federal Subsistence Board has been taking steps to formally incorporate tribal consultation into the Federal Subsistence Management Program, while maintaining the established role of the Councils. This action is consistent with the Secretaries of the Interior and Agriculture's renewed emphasis on respectful relationships with tribes.

Towards this end, Tribes were invited to participate in the January 18–21, 2011 Federal Board meeting. Invitations were sent to all Federally recognized Tribes in Alaska, as well as ANCSA corporations[1]. The invitations were twofold: Tribes and ANCSA Corporations were invited to provide comments on the fisheries proposals and they were also invited to a meeting on the 21st to discuss development of a consultation protocol for the overall Federal Subsistence Management Program. The meeting on the 21st was generally a listening session, and the Board recognized that development of specific consultation mechanisms would require further meetings between the Federal Subsistence Board and Tribes and ANCSA Corporations. The Board's goal is to work with Tribes and ANCSA Corporations to develop a consultation policy for the subsistence management program, consistent with Departmental policies.

At its May 4–5, 2011 meeting, the Federal Subsistence Board reviewed the summary of comments from the January 21st meeting, and directed that a workgroup comprised of a small number of Federal and tribal representatives be formed to develop a draft protocol(s) on consultation for the Board's review. The workgroup held an initial meeting in June 2011 to begin developing interim protocols to guide consultation between the Federal Subsistence Board and Tribes and ANCSA corporations.

In July 2012, the Board approved two interim protocols, one for Tribes and one for ANCSA Corporations; these will guide consultation efforts through the wildlife cycle. The interim protocols (included in the Council books), and an accompanying letter, were sent out to all Tribes and ANCSA Corporations in July. The Workgroup is continuing to work on drafting the final protocols, and multiple opportunities will be provided for Tribal and ANCSA Corporation involvement and review of the draft documents. It is hoped that the final protocols will be ready in time for the Board to adopt at its May 2012 meeting. A few key dates and events in the development of final protocols are as follows:

- October 20, 2011—Consultation with ANCSA Corporations at AFN
- December 1, 2011—Consultation with Federally recognized Tribes at the BIA Tribal Service Providers Conference
- January 17–19, 2012—Federal Subsistence Board meeting in Anchorage, discussion of draft protocols on the agenda

[1]Consultation with Alaska Native corporations is based on Public Law 108–199, div. H, Sec. 161, Jan. 23, 2004, 118 Stat. 452, as amended by Public Law 108–447, div. H, title V, Sec. 518, Dec. 8, 2004, 118 Stat. 3267, which provides that: "The Director of the Office of Management and Budget and all Federal agencies shall hereafter consult with Alaska Native corporations on the same basis as Indian tribes under Executive Order No. 13175." See also 25 USC Section 450, note.

Final as adopted by Federal Subsistence Board: July 12, 2011

U. S. Department of Interior

& U.S. Department of Agriculture

FEDERAL SUBSISTENCE BOARD

INTERIM PROTOCOL

FOR

GOVERNMENT-TO-GOVERNMENT CONSULTATION

The United States Government has a unique relationship with American Indian governments as set forth in the Constitution of the United States, treaties, statutes, court decisions, executive orders and policies. In recognition of that special relationship, on November 6, 2000, the President issued Executive Order 13175 (Consultation & Coordination with Indian Tribal Governments), which provided guidelines to all Federal agencies for establishing regular and meaningful consultation with Tribal officials in decision-making processes that may have Tribal implications. On November 5, 2009, a Presidential Memorandum was issued pursuant to Executive Order 13175, reaffirming the Federal government's commitment to operate within a government-to-government relationship with federally recognized tribes. Pursuant to the direction provided by the Secretaries of Interior and Agriculture, this document lays out an interim protocol for consultation between the Federal Government and Federally recognized Tribal Governments located in Alaska for the Federal Subsistence Board process.

The following **interim** protocol sets out a framework for consultation during the 2011 cycle of the Federal Subsistence Management Program with respect to: 1) the 2012-2014 wildlife regulatory proposals and 2) the Government-to-Government Subsistence Consultation Protocol.

1. Each federally recognized Tribe will be sent a letter from the Federal Subsistence Board inviting consultation on all 2012-2014 wildlife regulatory proposals. The letter will:
    a. Explain the interim consultation process and the need for this interim consultation effort regarding the 2012-2014 wildlife regulatory proposals.
    b. Explain that the final consultation protocol is expected to be in place by May 2012 in time to be implemented for the fisheries regulatory cycle process.
    c. Inform the Tribes of the face-to-face consultation opportunity focusing on the consultation protocol during the Tribal Service Providers Conference on the afternoon of December 1, 2011 in Anchorage.
2. Government-to-government consultation will take place regarding the 2012-2014 wildlife regulatory proposals during the August 15 through September16, 2011, timeframe.
    a. Conduct a consultation via teleconference for each Federal Subsistence Regional Advisory Council area prior to the Regional Advisory Council meeting.
        i. At least four Federal Subsistence Board members or their designees will participate in each teleconference.

ii. Federal officials will receive training on principles and practices of government-to-government consultation prior to participating in the teleconferences.

iii. A Tribal official and Federal official will be selected during the consultation to jointly report the results of the consultation to the Federal Subsistence Regional Advisory Council.

3. An in-person government-to-government consultation will be held the day prior to the January Federal Subsistence Board meeting regarding wildlife regulatory proposals and the May Board meeting regarding the consultation protocol.

Final as adopted by Federal Subsistence Board: July 12, 2011

FEDERAL SUBSISTENCE BOARD

INTERIM PROTOCOL

FOR

GOVERNMENT-TO-ANCSA-CORPORATIONS CONSULTATION

Pursuant to the direction provided by the Secretaries of Interior and Agriculture, this document lays out an interim protocol for consultation between the Federal Government and Alaska Native Claims Settlement Act (ANCSA) Corporations.

ANCSA Corporations, by mandate of the 25 USC §450 note (Consultation with Alaska Native corporations), must be consulted with by the Federal Subsistence Board with respect to: 1) the 2012-2014 wildlife regulatory proposals and 2) the Government-to-ANCSA-Corporations Subsistence Consultation Protocol.

Interim Consultation Protocol:

1. Each ANCSA corporation will be sent a letter from the Federal Subsistence Board inviting consultation on all 2012-2014 wildlife regulatory proposals.
   The letter will:
   a. Explain the interim consultation process and the need for this interim consultation effort regarding the 2012-2014 wildlife regulatory proposals.
   b. Explain that a final protocol is expected to be in place by May 2012, in time to be implemented for the fisheries regulatory cycle process.
   c. Mention the Board's interest in having a presentation made about the consultation protocol at the AFN convention.
2. Two dates will be scheduled for a government-to-ANCSA-corporations consultation teleconference opportunity prior to August 22, 2011.
   a. ANCSA corporations can choose to consult at either or both teleconferences.
   b. At least four Federal Subsistence Board members or their designees will participate at each consultation.
   c. ANCSA corporations and Federal agencies will each appoint a representative to report the results of consultation to each of the 10 Federal Subsistence Regional Advisory Councils during the fall 2011 Regional Advisory Council meetings.

STATUS REPORT ON THE SECRETARIAL RECOMMENDATIONS TO THE FEDERAL SUBSISTENCE MANAGEMENT PROGRAM

"Subsistence is of critical cultural as well as nutritional importance to rural Alaskans, and I take seriously the responsibility for carrying out the mandate of Title VIII of ANILCA to provide opportunities and priority for subsistence uses on Federal lands and waters."

Secretary Salazar, December 2010

Implementation of a subsistence program that fulfills the obligations of the U.S. Government to rural families is important to me. The Federal Subsistence Management Program in Alaska aligns closely with the mission of the U.S. Department of Agriculture's (USDA) mission and embodies key priorities that include sustaining the livelihood of rural families, ensuring access to healthy and affordable food, providing jobs in rural communities, sustaining cultural and traditional ways of life, and strengthening relationships with Alaska Native tribes.

Secretary Vilsack, April 2011

In 2009, the Secretaries of Interior and Agriculture announced a review of the Federal Subsistence Management Program, acknowledging that it was no longer temporary, and stating that there was value in examining the program. Their stated goals were to look ahead to plan for the future of the program to ensure that it is best serving rural Alaskans and that the letter and spirit of Title VIII of ANILCA are being met. The review began in November 2009, and preliminary recommendations were released in August 2010.

In December 2010 the Secretary of Interior with concurrence from the Secretary of Agriculture announced the results of their review and provided several recommendations to the Federal Subsistence Board towards the purpose of providing a more responsive, effective program.

All of these recommendations can be implemented by the Secretary of the Interior or by the Secretary with concurrence of the Secretary of Agriculture, or by the Federal Subsistence Board. Most can be accomplished as a matter of Secretarial directive or policy. However, some would be regulatory changes requiring a formal rule-making process. The Federal Board prioritized the recommendations and began working on a subset in December 2010. Work is proceeding as follows:

1. Develop a proposed regulation to increase the membership on the Federal Subsistence Board to include two additional public members representing subsistence users.

    - **Status**: A Final Rule has been developed and will be published in the Federal Register following Secretarial Signature. The recommended language from the Secretaries is as follows:

      "(1) The voting members of the Board are: … two public members representing rural Alaskan subsistence users who possess personal knowledge of and direct experience with subsistence uses in rural Alaska to be appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture."

- Once the Final Rule is published, the Secretaries will begin the application/nomination process. The goal is to have these two positions seated by January 2012.

2. As a matter of policy, expand deference to appropriate RAC recommendations in addition to the "takings" decisions of the Board provided for under Section 805(c) of ANILCA, subject to the three exceptions found in that Section.

    - **Status:** The Board is still in the process of considering expanding its deference to Regional Advisory Council recommendations to matters beyond take. The Board is generally supportive of expanding deference to Councils on C&T and has yet to determine whether or not it is sufficient to reflect this perspective in policy or if rulemaking needs to be pursued. With regard to deference on rural determinations, the Board is continuing to learn the intricacies of the regulations and the process, and is exploring whether or not deference regarding rural determinations is appropriate given Court findings. Finally, with regard to deference on in-season management decisions, the Board understands that because in-season management decisions often must be made quickly in response to newly obtained information, deference to Council recommendations will occur only when time and conservation allow.

3. Review, with RAC input, the December 2008 Memorandum of Understanding (MOU) with the State to determine either the need for the MOU or the need for potential changes to clarify federal authorities in regard to the subsistence program.

    - **Status:** The MOU was provided to all ten Regional Advisory Councils for comment during winter 2011 meeting cycle. Council comments were summarized and reviewed by the Board in summer 2011. The Board has directed that the changes recommended by the Councils be examined by a work group comprised of both state and federal members, with a report back to the Board and final action on proposed changes by December 2011.

4. Review, with RAC input, the customary and traditional use determination process and present recommendations for regulatory changes.

    - **Status**: All ten Regional Advisory Councils were asked for their perspectives on the existing process during the Winter 2011 meeting cycle. These comments were summarized and reviewed by the Board in May 2011. Because most comments were generally supportive of the existing process, the Board is focusing its energies on other action items at this point in time.

5. Review, with RAC input, rural/nonrural determination process and present recommendations for regulatory changes.

    - **Status:** The Board held a work session in April to learn about rural process, and is continuing to learn the intricacies of the regulations and the process. In response to the Secretarial Review, the Board is exploring whether or not it can delay the implementation date for the communities or areas which were rural and were determined to be nonrural during the 2000 review process. The Board is evaluating how best to proceed in conducting the 2010 rural determination process.

6. Review the Board's written policy on executive sessions and minimize the use of executive sessions to those cases specifically prescribed.

- **Status:** The Board has revised its Executive Session policy to reflect that it intends to keep its business transparent, and will provide a summary of Executive Sessions as and when they occur. The Board adopted its revised policy at its May 2011 meeting.

7. At the request of the Director of the US Fish and Wildlife Service and under Departmental procedures, review and submit recommendations for Departmental consideration of the annual budget for the Federal subsistence program. Under this directive, the following elements (gleaned from the Secretarial Review comments) are recommended as a focus:

   a. Hold Federal Subsistence Board meetings in rural areas

      - **Status**: Pending Additional funding

   b. Increase Training and support to Regional Advisory Councils

      - **Status**: Implement when funding and staffing allow.

   c. Implement Wildlife Monitoring Studies

      - **Status:** Pending additional funding

   d. Increase Tribal Consultation

      - **Status:** In Progress (see written briefing)

   e. Increase capacity within Office of Subsistence Management for research and implementation

      - **Status:** Pending additional funding

   f. Reinstate the annual regulatory cycle

      - **Status:** The Board sees the value of every other year cycle, but may be open to reinstating the annual cycle should funding allow.

The Federal Board has not yet begun work on the following directives:

8. Review, with RAC input, and present recommendations for changes to Federal subsistence procedural and structural regulations (Parts A&B of the CFRs) adopted from the State in order to ensure Federal authorities are fully reflected and in accord with subsistence priorities provided for in Title VIII.

9. Ensure the Secretaries are informed when non-Department rule-making entities develop regulations that may adversely affect subsistence users.

10. To the extent practicable, utilize contracting and use of ANILCA Section 809 cooperative agreements with local tribes and other entities in the Board's review and approval of proposals for fulfilling subsistence program elements.

BUDGET IMPLICATIONS

The Secretary's 2010 Report recognizes that the Federal program will be in place for the foreseeable future and as such, it must fulfill the commitments made in ANILCA relative to providing for the rural subsistence priority. In light of the Secretary's emphasis on the Federal Subsistence Management Program and resultant heightened expectations of rural Alaskans, additional funding is needed for the Federal Subsistence Management Program to implement many of the Secretarial Recommendations. Unfortunately, funding in 2012 and beyond is likely to be flat or reduced; this will affect the ability of both the Board and the Program to deliver on certain of these recommendations.

UPDATE ON BERING SEA/ALEUTIAN ISLANDS CHUM SALMON BYCATCH

In May 2011, the Federal Subsistence Board sent a letter to the North Pacific Fishery Management Council recommending that a hard cap of 50,000 (the lowest hard cap amount among the range of alternatives under consideration), with a trigger cap of 25,000 be adopted.

During its June 2011 meeting in Nome, the North Pacific Fishery Management Council (Council) held its initial review of the analysis of proposed management measures to minimize chum salmon bycatch in the Bering Sea pollock fishery. Representatives from the Seward Peninsula, Yukon-Kuskokwim Delta, Western Interior and Eastern Interior Regional Advisory Councils attended, and provided testimony. The proposed measures included hard caps on the pollock fishery; triggered time and area closures; and participation in the Rolling Hotspot Program, a fleet-managed program for real-time bycatch area closures on 4–7 day time frames. The Council revised and restructured the suite of alternatives and options, and requested new information. Some of the changes include the following:

- An additional option for a separate hard cap for June and July when western Alaskan chum stocks are more prevalent in the bycatch. If reached, this cap would close all fishing for Bering Sea Pollock until August 1.

- Removal from consideration complicated monthly area management options and triggers (formerly Alternative 3).

- Additional provisions to the Rolling Hotspot program for area closures based on historical bycatch proportions (80% and 60%) to which the fleet would be subject regardless of Rolling Hot Spot program participation.

- Analysis of additional parameters of the Rolling Hotspot program that could be adjusted by the Council to improve program performance.

The full Council motion is posted on the website (see http://www.fakr.noaa.gov/npfmc/current_issues/bycatch/ChumBycatchMotion611.pdf).

A revised set of alternatives based upon the Council's motion will be posted in the near future.

The Council further requested that the analysis be revised per its requests and be brought back to the Council for review in early 2012. The decision to schedule a review for 2012 was made, at least in part, since the October 2011 meeting is in Dutch Harbor, which is difficult place for rural western Alaska residents to access, and the December 2012 meeting is focused on groundfish stock assessments, so staff are focused on preparing assessments for several months prior to this meeting. Once the Council reviews the chum salmon bycatch analysis in early 2012, it will need to provide time for the public to comment on the analysis and proposed alternatives. It is unlikely the Council will make a final decision until its April 2012 meeting.

Federal Subsistence Board
1011 E. Tudor Rd., MS 121
Anchorage, Alaska 99503-6199

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

U.S. FOREST SERVICE

FWS/OSM11056/TT

Eric Olson, Chair
North Pacific Fishery Management Council
605 W. 4th Avenue, Suite 306
Anchorage, Alaska 99501-2252

MAY 20

Dear Mr. Olson:

The Federal Subsistence Board (Board) is taking this opportunity to provide its comments and recommendation on chum salmon bycatch in the Bering Sea/Aleutian Islands (BSAI) commercial pollock fishery as the North Pacific Fishery Management Council (NPFMC) prepares to select a preliminary preferred alternative at its June 2011 meeting in Nome, Alaska. The Board, comprised of the Regional Directors of the U.S. Fish and Wildlife Service, the Bureau of Indian Affairs, the National Park Service, the Bureau of Land Management and the USDA Forest Service, and a Chair appointed by the Secretaries of the Interior and Agriculture, provides subsistence fishing opportunities in Federal public waters in Alaska under Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA).

Bycatch is of concern to the Board and the affected Regional Advisory Councils because Western Alaska chum salmon stocks are important subsistence resources for Federally-qualified subsistence users in the Norton Sound, Yukon, Kuskokwim, and Bristol Bay areas. Along the Yukon and Kuskokwim rivers alone, there are 6,800 households in 80 villages. Chum salmon make a significant contribution to the way of life of western and interior Alaska's subsistence users, families and communities. The recent fall chum salmon runs in the Yukon River are of particular concern. In both 2009 and 2010, subsistence harvest was restricted due to poor, lower than average size runs and/or to ensure passage into Canada to meet escapement goals.

At its May 2011 public meeting the Board reviewed, discussed and heard public testimony on the various alternatives under consideration in the NPFMC's revised *Bering Sea non-Chinook (Chum) Salmon Bycatch Management Measures*, dated February 2011. **The Board recommends that a hard cap of 50,000, with a trigger cap of 25,000 chum salmon be adopted**. Once the trigger cap is reached, conservation measures would be implemented to assist the pollock fishery fleet to avoid reaching the hard cap. This alternative would provide a better opportunity for increased numbers of chum salmon to reach Western and Interior Alaska rivers to meet spawning escapement and provide for subsistence uses.

Eric Olson 2

It also 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 bycatches of Yukon River salmon. The 50,000 level represents a meaningful reduction in the 1997-2001 average of 58,000 chum salmon bycatch, just prior to the signing of the U.S./Canada Yukon River Salmon Agreement. This five-year period is also the same period utilized by the Board for its recommendation to the NPFMC on BSAI Chinook salmon bycatch in April 2009.

The Board appreciates the outreach efforts that NPFMC members and staff conducted on this issue by attending the February/March 2011 meetings of the Yukon-Kuskokwim Delta, Western Interior, Eastern Interior and Bristol Bay Subsistence Regional Advisory Councils. If the Board can be of further assistance, please contact Peter J. Probasco, Assistant Regional Director, Office of Subsistence Management, at (907) 786-3888. The Board will continue to monitor developments on this important issue and looks forward to the results of your efforts to significantly reduce chum salmon bycatch in the BSAI pollock fishery.

Sincerely,

/S/

Tim Towarak
Chair, Federal Subsistence Board

cc: Federal Subsistence Board members
Gene Virden, Acting Regional Director - Bureau of Indian Affairs
Bud Cribley, State Director - Bureau of Land Management
Sue Masica, Regional Director - National Park Service
Geoff Haskett, Regional Director - U.S. Fish and Wildlife Service
Beth Pendleton, Regional Forester - USDA Forest Service
Pat Pourchot, Department of the Interior, Alaska
Peter J. Probasco, Office of Subsistence Management
Lester Wilde, Chair, Yukon-Kuskokwim Delta Regional Advisory Council
Jack Reakoff, Chair, Western Interior Alaska Regional Advisory Council
Sue Entsminger, Chair, Eastern Interior Alaska Regional Advisory Council
Molly Chythlook, Chair, Bristol Bay Regional Advisory Council
Weaver Ivanoff, Chair, Seward Peninsula Regional Advisory Council
Cora J. Campbell, Commissioner, Alaska Department of Fish and Game
James W. Balsiger, Administrator, Alaska Region, National Marine Fisheries Service
David Balton, Deputy Assistant Secretary, Oceans and Fisheries, U.S. Department of State

IN REPLY REFER TO:

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INFORMATION BULLETIN - August 2011

The Roles of Alder and Salmon in Driving Aquatic Productivity Contact: Pat Walsh
In 2010, Togiak Refuge, the University of Illinois, the University of Washington, and ADF&G began a project to determine the relative role of salmon and alder in controlling productivity in lakes. Both salmon and alder contribute nutrients to lakes: salmon do so via decomposition of carcasses after spawning, and alder does so through nitrifying the soil, and by mobilizing soil nutrients which would otherwise be biologically inaccessible. This project will measure the contribution of nutrients from both sources by analyzing water samples from thirteen Refuge lakes over a four year period. The information that will come from this project will help salmon managers better understand the ecological consequences of harvest. In 2010, we installed water quality and quantity monitoring equipment at 13 lakes on Togiak Refuge. We collected and processed over 150 water samples in summer and fall 2010 and again in summer 2011 to be analyzed for a battery of biological and chemical attributes. We monitored stream discharge in summer and fall at 26 streams entering the study lakes in order to estimate lake water budgets. We performed aerial salmon surveys at all study lakes and estimated run size in each. We have begun updating an existing landcover map to refine our estimate of alder cover in the study area. A progress report is available.

Cooperative Salmon Escapement Monitoring Projects Contact: Mark Lisac
Togiak Refuge will again provide support to the Native Village of Kwinhagak (NVK) and ADF&G to operate salmon escapement monitoring projects (weirs) on the Kanektok (KRW) and Middle Fork Goodnews Rivers (MFGRW).

On the Middle Fork Goodnews River, ADF&G has monitored Chinook, chum and sockeye salmon escapement since 1980. Escapement goals and management of the commercial fishery are based on salmon escapement at the weir. Togiak Refuge has worked with ADF&G since 1992 to include the coho salmon and Dolly Varden runs in the project operation. ADF&G, Togiak Refuge and the Office of Subsistence Management (OSM) fund the project operation. This weir project also uses an underwater video system which allows the weir to be opened to salmon passage more hours a day. Use of motion sensors and digital recording video can improve fish counting accuracy, especially during periods of high water and poor visibility. The MFGRW was fish tight on 24 June and will continue operation until late September 2011.

On the Kanektok River, ADFG, NVK and Togiak Refuge worked cooperatively to monitor salmon and Dolly Varden runs since 2001. This project is currently funded by OSM and Coastal Villages Region Fund. Escapement goal ranges have not been established for the Kanektok River because the weir has not been operational for enough years. This weir has operated from 27 June.

Preliminary escapement counts for up to 11 August 2011 for these two projects are:

	Chinook	Sockeye	Chum	Coho	Pink	Dolly V.
MFGRW	1,812	17,282	18,997	835	1,102	3,490
KRW	4,922	84,379	49,839	2,850	490	28,085

Rainbow Trout Population Identification Contact: Pat Walsh
Togiak Refuge, ADF&G Sport Fish, and the Conservation Genetics Laboratory are working together to inventory populations and determine the genetic relationships between populations of rainbow trout throughout Togiak Refuge. Archived genetic material collected from previous investigations were inventoried and assessed for suitability in the current study. A collection plan for unsampled populations was completed and new tissue collections began in the Goodnews, Kanektok, Igushik, Snake, and Wood River watersheds in summer 2009. A collection trip occurred in the Indian River in summer 2010, but no rainbow trout were encountered. Collections continued in the North Fork Goodnews River in 2011. It is anticipated that this project will occur through 2014. A progress report is available.

Kanektok River Rainbow Trout Population Identification Contact: Mark Lisac
In 2009 the Refuge, Kenai Fish and Wildlife Field Office and ADFG Sport Fish Division implanted radio transmitters in 200 rainbow trout in the Kanektok River. The purpose of this study is to identify the geographic extent of the population and specifically to document these fishes' overwintering locations, seasonal movements, and to locate potential spawning areas. Thirty-six aerial tracking flights have been conducted between August 2009 and August 2011. Fishers are asked to contact the Refuge office if they recover any radio tags.

Chinook Salmon Escapement In The Togiak River Watershed Using Radio Telemetry Contact: Theresa Tanner (Anchorage Fish & Wildlife Field Office)
In 2011 the Anchorage Fish and Wildlife Field Office is completing the fourth year of a five year study to determine Chinook salmon run timing, distribution and abundance in the Togiak River watershed. Over 170 Chinook salmon were captured and implanted with esophageal radio transmitters. Movements and final spawning destinations of radio-tagged Chinook salmon has been documented using a combination of fixed data-logging receiver stations and aerial or boat tracking surveys. A weir was placed on the Gechiak River tributary and has counted 160 Chinook, 4 of which had radio tags by 9 August 2011. The known number of Chinook salmon past the Gechiak River weir will be used to extrapolate an escapement estimate for the entire Togiak drainage. This project is currently funded by OSM through 2012. Fishers are asked to contact the Refuge office if they recover any radio tags.

Determining Aquatic Habitat Quantity and Quality Contact: Mark Lisac
The Refuge is currently working with the UAF School of Fisheries and Ocean Science, and the U.S. Geological Survey developing a project to estimate the quantity and quality of aquatic habitat in two study areas in the Kulukak River watershed. Multispectral digital imagery and field collected data are being used to assess habitat quality and estimate the habitat quantity for juvenile salmon in the watershed. Habitat is being classified by in-stream physical habitat features, water chemistry, and juvenile salmon abundance and distribution. Over 10,000 images and over 5,000 juvenile coho and sockeye salmon were captured during 2010. A juvenile salmon and habitat relationships model is being developed to estimate habitat carrying capacity for salmon and serve as a baseline for monitoring aquatic habitat in the future to determine if changes have occurred. Preliminary results have provided estimates of the surface area of pool, riffles, runs and eddy drop zones in the East and West Fork study areas. Based on this estimate there are approximately 121,000 and 102,000 juvenile coho salmon in the West and East Fork study areas, respectively. There are approximately 22,000 sockeye salmon juveniles in each study area. This project will result in the completion of MS Fisheries degrees for two UAF graduate students.

Mulchatna Caribou Contact: Andy Aderman
Togiak Refuge assisted ADF&G with telemetry monitoring flights, radiocollar deployment, satellite data acquisition, data entry and database management. Primary calving areas in 2011 were near Lime Village (Unit 19A) and the mid-Nushagak River area (Unit 17C) similar to the past several years. Caribou were also observed calving in the southern Kilbuck Mountains (Unit 18). Caribou did not group up sufficiently after calving to conduct a photocensus. A composition survey is planned for early October 2011.

Nushagak Peninsula Caribou Contact: Andy Aderman
Fifty Federal subsistence caribou permits (1 caribou per permit) were issued for the February 1 – March 31, 2011 hunt. Forty-five caribou were reported harvested. During late May 2011, 23 of 27 (85.2%) radiocollared caribou produced a calf. A photocensus conducted on July 5, 2011 found a minimum of 859 caribou. A similar effort in 2010 found a minimum of 708 caribou. A composition survey is planned for early October 2011. The Nushagak Peninsula Caribou Planning Committee will meet in November and/or January.

Wolf Predation on Nushagak Peninsula Caribou Contact: Pat Walsh
Using radio telemetry, Togiak Refuge and ADF&G are investigating the seasonality and duration of wolf use of the Nushagak Peninsula, in order to assess whether predation is a likely factor in driving population dynamics of Nushagak Peninsula caribou. From 2007 through 2011, we placed conventional and GPS radio transmitters on wolves from two packs located within 30 km of the Nushagak Peninsula. Tracking flights have been flown monthly to locate wolves and to download location data from the GPS collars. Preliminary data indicates that one of the two packs used the Nushagak Peninsula approximately 40% of the time during the period March--January, with the majority of time spent there in the fall. Summers were spent primarily off the Nushagak Peninsula, and diet appeared to focus on salmon. Winter and spring was also spent primarily off the Peninsula, and diet appeared to be focused on moose. Little wolf activity occurred on the Peninsula during or soon after caribou calving, which is a time when caribou are more susceptible to wolf predation. We will continue to assess the use of the Nushagak Peninsula by wolves through spring 2012.

Moose Contact: Andy Aderman
Population counts during March 2011 found a minimum of 1,166 moose in Game Management Unit 17A, an increase from the 1,070 moose counted in 2008. In the neighboring southern portion of Game Management Unit 18 (Goodnews River drainage), population counts found a minimum of 196 moose, up from the 142 counted in 2009. In May 2011, 20 of 33 radiocollared cows produced a minimum of 34 calves, or 103 calves per 100 cows. Production in 2010 was 127.8 calves per 100 cows.

Walrus Contact: Michael Winfree
Refuge staff monitors the numbers of walrus that haul out on land at various locations on Togiak Refuge. Peak haulout counts over the past three decades have varied greatly, from less than 100 to over 12,000 walrus. Cameras installed at Cape Peirce on the cliff edges overlooking the beaches recorded 9 haulout events from November 2010 through May 2011. The number of walrus present during the haulouts ranged from 1 to 842. The longest haulout event at Cape Peirce lasted for 336 hours. Additional cameras were installed at other major haulouts on Hagemeister Island, Round Island, and Cape Seniavin in June and August 2011. No walrus were documented at Hagemeister Island or Cape Newenham during aerial surveys.

In fall 2010, and electric fence was installed at Cape Peirce in efforts to prevent mortality events caused when walrus travel up the bluff and fall off cliffs. Walrus broke through the fence on two occasions. However, only one walrus mortality was documented from November 2010 through August 2011. The cause of death was by trampling.

Seabirds Contact: Michael Swaim
Togiak National Wildlife Refuge has monitored seabird populations at Cape Peirce from 1980 through 2011, making this one of the longest continuously studied seabird colonies in Alaska. During this time, pelagic cormorant populations have remained relatively constant, while black-legged kittiwake and common murre populations declined by 1.5% and 1.7% per year respectively. The data provided by this study are not only useful for tracking changes in populations at the local and regional level, but this information is also useful for monitoring climate-driven changes within the Bering Sea.

Eelgrass Monitoring Contact: Michael Swaim
Togiak Refuge has partnered with the USGS Alaska Science Center to map and conduct biological inventories of 23 eelgrass beds on the refuge since 2007. In 2010, a series of boat-based surveys were completed in Goodnews Bay, Chagvan Bay, and Nanvak Bay to characterize the distribution and abundance of eelgrass. Water temperature sensors were also deployed in Nanvak Bay to assess the rate of seawater exchange within the site. Future work will focus on re-acquiring aerial photographs for Goodnews Bay, Hagemeister Spit, and portions of Togiak Bay and developing better maps of eelgrass distribution.

Water Temperature Monitoring Contact: Michael Swaim
Togiak Refuge staff have continuously monitored water temperature at eighteen locations on the refuge since 1990. To date, no statistically significant trends have been detected on any of these rivers. The refuge plans to continue monitoring in the future, since this study provides important baseline information that is useful for a variety of other fisheries and climate-related studies.

Quantifying River Discharge Contact: Michael Winfree
Togiak Refuge and the USFWS Water Resources Branch have worked cooperatively since 1999 to acquire baseline hydrologic data of the flow regime (magnitude, duration, timing, frequency, and rate of change) and water quality. A network of stream discharge gauges collected stream flow data from 1999-2005 at 20 locations. A subset of five of these stations continued to collect data through fall 2009, after which three of the five stations were removed. We will continue indefinitely to monitor discharge in the Togiak and Kulukak Rivers. Each gauge is instrumented with pressure sensors that measure water level every 15 minutes.

Salmon River Water Quality Contact: Michael Winfree
The Salmon River drainage, just south of Platinum, has been the site of a placer mine since the 1930's. Major production by the Goodnews Bay Mining Company stopped in 1976. The mine was sold to Hanson Industries in 1980, who in turn sold it to XS Platinum in 2007. In the summer of 2009, re-mining of the old tailings began. In September 2009, Togiak Refuge installed a continuous water-quality gauge on the Salmon River. The gage monitors pH, turbidity, specific conductivity, dissolved oxygen, temperature, and depth. The gage runs continuously, taking a reading every 15 minutes. Baseline value estimates from April 1 through November 17, 2010 were: temperature = 5.0°C, specific conductivity = 83 µS/cm at 25°C, pH=7.3, turbidity=8.9 NTU, dissolved oxygen= 12.2mg/L. Baseline values will be further refined with the collection of more data.

Education and Outreach Contact: Terry Fuller
Togiak Refuge has an active education and outreach program including the Migratory Bird Calendar and Junior Duck Stamp contests; National Wildlife Refuge Week; career fairs; production of Bristol Bay Field Notes (aired three times weekly @ 10 minutes per episode on KDLG); and numerous classroom presentations in 12 villages in the Southwest Region, Lower Kuskokwim, and Dillingham City school districts. Field trips with area students for the 2010-2011 school year included bird walks, animal tracks and ID, archery, salmon life cycles, aquatic resources and bear safety. The refuge website is also a

valuable education tool and is available at http://togiak.fws.gov . Also, the refuge partners with others to conduct three environmental education camps described below:

Southwest Alaska Science Academy Contact: Terry Fuller
This past July, Togiak Refuge helped with the 10th year of a summer camp aimed at teaching middle and high school students about fisheries science and the importance of salmon to our ecosystem. Students were selected from the Bristol Bay region. During the camp students worked in the field alongside fisheries professionals. Cooperators with the refuge on this project included the Bristol Bay Economic Development Corporation, Bristol Bay Science and Research Institute, University of Alaska, University of Washington School of Fisheries, the Dillingham City and Southwest Region school districts, and the Alaska Department of Fish and Game.

Cape Peirce Marine Science and Yup'ik Culture Camp Contact: Terry Fuller
July 2011 saw a return of the junior high Science camp to the Cape Peirce site, after a three year hiatus due to high bear numbers. (an alternate camp was held at Togiak Lake for each of those three years) Students at this camp were able to observe seabirds, marine mammals and learn how field studies are conducted, as well as learning about food webs and ecological relationships. Students and agency staff also learned- through the instruction of a local village elder- about traditional Yup'ik uses of animals and plants and about Native survival skills. This camp is designed to help students gain a better understanding of the biological diversity of a marine ecosystem. It also strengthens their sense of stewardship for local natural resources. Other topics at this camp included tide pools, wilderness survival skills and careers with USFWS. Traditional councils and school districts from throughout western Bristol Bay are cooperators with this camp.

Summer Outdoor Skills and River Ecology Float Camp Contact: Terry Fuller
The 2011 Float Camp took place on the Togiak River. Students learned about river ecosystems and how to enjoy them safely and responsibly while taking part in a float trip. Students observed and learned about the many fish, wildlife and plant species found on refuge rivers and streams. Rafting skills, water safety, different angling methods (Catch and Release), Leave No Trace camping practices and bear safety were topics during the trip. Students also participated in other outdoor activities such as outdoor survival skills, archery and careers in natural resource fields. This camp helped students understand the biological diversity of riparian ecosystems and the importance of salmon as a nutrient source, while developing a deeper sense of stewardship for local natural resources. Traditional councils and school districts from throughout western Bristol Bay are cooperators with this camp.

River Ranger Program Contact: Allen Miller
The Refuge River Ranger Program was conceived during the public use management planning process and was first implemented in 1991. The program serves many purposes. River Rangers are the main contact source for sport fishermen and local residents. Information distributed to the public includes Service policies, regulations, resource management practices, State sport fish regulations, bear safety, wilderness ethics, Leave-No-Trace camping, and information about private lands to prevent trespass. Rangers document public use occurring on the river along with the location and timing of activities, conflicts between users, and sport fish catch/harvest per unit effort. Rangers also assist Refuge and ADF&G staff at the Kanektok River and Middle Fork Goodnews River weirs, and assist Refuge staff with biological studies. In addition, Rangers patrol campsites for litter, monitor compliance of sport fishing guides, and offer assistance as needed.

Two River Rangers were stationed in the village of Togiak during summer 2011 and patrolled the Togiak River several times each week. One River Ranger was also stationed in Quinhagak and patrolled the Kanektok River. All three rangers were residents of the villages where they were assigned. Two River Rangers stationed out of Dillingham patrolled the north and middle forks of the Goodnews River.

Rangers on the Kanektok and Goodnews rivers used inflatable kayaks in addition to motorboats (which have been used since the program started). Use of kayaks allowed rangers to access the entire length of the Kanektok and Goodnews rivers, which are inaccessible to power boats during most water levels.

Winter 2012 Regional Advisory Council Meeting Calendar

February–March 2012 current as of 03/28/11

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Feb. 12	*Feb. 13* *Window Opens*	*Feb. 14*	*Feb. 15*	*Feb. 16*	*Feb. 17*	*Feb. 18*
		SP—Nome	**NS—Barrow**			
Feb. 19	*Feb. 20* ***HOLIDAY***	*Feb. 21*	*Feb. 22*	*Feb. 23*	*Feb. 24*	*Feb. 25*
				YKD—Emmonak		
Feb. 26	*Feb. 27*	*Feb. 28*	*Feb. 29*	*Mar. 1*	*Mar. 2*	*Mar. 3*
		WI—McGrath			**EI—Central**	
Mar. 4	*Mar. 5*	*Mar. 6*	*Mar. 7*	*Mar. 8*	*Mar. 9*	*Mar. 10*
	BB—Naknek		**NWA—Kotzebue**			
Mar. 11	*Mar. 12*	*Mar. 13*	*Mar. 14*	*Mar. 15*	*Mar. 16*	*Mar. 17*
	SE—Sitka					
		SC—Anchorage				
Mar. 18	*Mar. 19*	*Mar. 20*	*Mar. 21*	*Mar. 22*	*Mar. 23* *Window Closes*	*Mar. 24*
			K/A—Old Harbor			

Fall 2012 Regional Advisory Council Meeting Calendar

August 20–October 12, 2012 current as of 07/20/11

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 19	*Aug. 20* *WINDOW OPENS*	*Aug. 21*	*Aug. 22*	*Aug. 23*	*Aug. 24*	*Aug. 25*
Aug. 26	*Aug. 27*	*Aug. 28*	*Aug. 29*	*Aug. 30*	*Aug. 31*	*Sept. 1*
Sept. 2	*Sept. 3* ***HOLIDAY***	*Sept. 4*	*Sept. 5*	*Sept. 6*	*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*	*Sept. 26*	*Sept. 27*	*Sept. 28*	*Sept. 29*
Sept. 30 *END OF FY2012*	*Oct. 1*	*Oct. 2*	*Oct. 3*	*Oct. 4*	*Oct. 5*	*Oct. 6*
Oct. 7	*Oct. 8* ***HOLIDAY***	*Oct. 9*	*Oct. 10*	*Oct. 11*	*Oct. 12* *WINDOW CLOSES*	*Oct. 13*