YUKON-KUSKOKWIM DELTA SUBSISTENCE REGIONAL ADVISORY COUNCIL

October 7-8, 2015
Bethel, Alaska

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YUKON-KUSKOKWIM DELTA SUBSISTENCE REGIONAL ADVISORY COUNCIL

October 7-8, 2015
10:00 a.m. October 7, 8:30 a.m. October 8
Yupiit Piciryarait Cultural Center
Bethel, Alaska

TELECONFERENCE: call the toll free number: 1-866-560-5984, then when prompted enter the passcode: 12960066

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

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

AGENDA

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2. Invocation

3. Call to Order (Chair)

4. Welcome and Introductions (Chair)

5. Review and Adopt Agenda* (Chair)

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13. Closing Comments

14. Adjourn (Chair)

To teleconference into the meeting, call the toll free number: 1 (866) 560-5984, then when prompted enter the passcode: 12960066

Reasonable Accommodations

The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for sign language interpreting services, closed captioning, or other accommodation needs to Carl Johnson, (907) 786-3676, carl_johnson@fws.gov, or (800) 877-8339 (TTY), by close of business on September 25, 2015.

REGION 5
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council

Seat	Year Apptd *Term Expires*	Member Name and Community
1	2004 ***2016***	**William F. Brown** Eek
2	1997 ***2016***	**James A. Charles** Tuntutuliak
3	2014 ***2016***	**John W. Andrew** Kwethluk
4	2014 ***2016***	**Michael P. Peters** Marshall
5	1996 ***2017***	**Lester Wilde, Sr.** **Chair** Hooper Bay
6	2014 ***2017***	**Dale T. Smith** Mekoryuk
7	2014 ***2017***	**Anthyony F. Ulak** Scammon Bay
8	2014 ***2017***	**Annie C. Cleveland** Quinhagak
9	2014 ***2017***	**Dorothy G. Johnson** Mountain Village
10	2013 ***2015***	**Raymond J. Oney** **Secretary** Alakanuk
11	2003 ***2015***	**Greg J. Roczicka** **Vice-Chair** Bethel
12	2003 ***2015***	**Robert E. Aloysius** Kalskag
13	2012 ***2015***	**David Bill, Sr.** Toksook Bay

YUKON-KUSKOKWIM DELTA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Yupiit Piciryarait Cultural Center, Bethel

February 25-26, 2015

Meeting Minutes

Meeting was called to order at 11:00 a.m.

Bob Aloysius led the Council in an invocation

Raymond Oney conducted a roll call; all members present except for John Andrew who is at an appointment at the hospital and is expected to be in shortly. Quorum established with thirteen members present (Raymond Oney, William Brown, James Charles, Michael Peters, Lester Wilde Sr., Dale Smith Jr., Anthony Ulak, Annie Cleveland, Dorothy Johnson, Greg Roczicka, Robert Aloysius, David Bill Sr.)

Welcome and introductions
Agency Present:
Pat Petrivelli, BIA
Neil Lalonde, FWS
Robert Sundown, FWS
Gerald Maschmann, FWS
Fred Bue, FWS
Trevor Fox, FWS
Chris Mckee, OSM
Pippa Kenner, OSM
Carl Johnson, OSM
Adrienne Fleek, OSM
Don Rivard, OSM (telephonic)
Pat Walsh, FWS (telephonic)
Stephanie Schmidt, ADF&G (telephonic)
Heather Tonneson, FWS (telephonic)

Adoption of agenda

Several additions were made to the agenda under new business and agency reports.
Amended agenda was adopted. Under new business, five items: BLM Bering Sea Western Interior Plan (YRDFA), Wood Bison Management Plan (Chris McKee), Proposed Kuskokwim Fisheries Co Management demonstration project (AVCP), Reduction of Chinook Salmon bycatch in the Bering Sea Pollock fishery (AVCP), and Clarification of GMU Boundaries.

The interpreters introduced themselves and explained the interpretation process. Charlie Charlie from the Village of Tuntutuliak. Pat Sampson, Bethel.

DRAFT

Election of Officers

Lester Wilde elected as chair. Greg Roczicka and Bob Aloysius were nominated for the position of vice chair. A secret ballot was conducted for the election. Mr. Roczicka was elected on a vote of 8-5. Nominations for secretary included Raymond Oney, Dale Smith and Dorothy Johnson. The results of the election: Mr. Oney was elected on a vote 6-4-3.

Bob Aloysius and James Charles were confirmed to represent the RAC at any CFC related to Kuskokwim, with Greg Roczicka as an alternate. For the Yukon River, it will be Raymond Oney and Michael Peters, with Anthony Ulak as an alternate.

Review and Approve Previous Meeting Minutes

Raymond Oney offered two corrections on name spellings for Stanislaus (page 9) and Ms. Chavez (page 11). Alex Nick offered a change to his comments on the minutes, to change from "overview" to questioning of the boundaries. John Andrew corrected the last name of Martin Nicolai on page 5. The Council approved the previous meeting minutes as corrected.

Council recessed for lunch at 12:00.

Council resumed session at 1:30 p.m.

Council Member Reports

Greg Roczicka provided an overview on his involvement with the working group on the Wood Bison reintroduction project, noting how several of his concerns have been addressed in the management plan.

James Charles discussed his representation on any CFC for the Kuskokwim River, and how he hopes that involvement on the CFCs works better in the future than it has in the past. He noted how the State and Federal agencies do not listen well to the CFC members, as with opening the river for subsistence.

Raymond Oney agreed that the CFCs have not worked as well as they could, calling on his involvement as a Yukon River representative on the CFCs.

Michael Peters noted that people need to get better information on proposed changes to the Yukon or Kuskokwim management.

Dale Smith inquired as to whether this was the time for Council comments. Chair Wilde noted that was at the end of the meeting.

Robert Aloysius asked about what sort of support he could get from OSM to provide reports back in his community on the activities at the Council meeting. He then noted that while these meetings talk a lot about salmon, we need to start talking more about resident fish populations.

David Bill raised the issue of State versus Federal waters out in the Kuskokwim Bay area, who has enforcement authority on salmon out in Federal waters beyond the three-mile zone. He then discussed confusion about where requirements for six-inch gill net are enforced. Pippa Kenner, OSM, attempted to address his question.

Lester Wilde discussed how the Federal Subsistence Board at its last meeting adopted or rejected recommendations consistent with all of the Council's recommendations.

Tribal and Public Comment on Non-Agenda Items

Alex Nick of Bethel thanked the Council for the opportunity to comment. He raised the issue of Unit 18 Yukon River moose hunting. He identified certain unacceptable activities related to moose hunting, such as leaving behind trash. This is an issue that was raised by elders, and he feels responsible to give a report on the issue to the Council. He then addressed the issue of dip nets as a gear type for harvesting salmon on the Kuskokwim River, noting that they are not an efficient gear type and that it would be good to have that gear type removed from regulations. Mr. Nick then discussed the history of the Council's involvement with Coordinated Fisheries Committees (CFCs) in the past. Mr. Aloysius noted that no agency is requiring people to use dip nets, that it is only an additional tool for harvesting fish. Michael Peters also mentioned the use of dip net as a gear type, noting that people in the Marshall area did not find them helpful. He suggested that people should go back to set nets. After further discussion on dip nets, the conversation returned to the issue of the history of CFCs.

James Nicori of Kwethluk discussed a problem with the fish weir at their village, where the village did not authorize ADF&G to put a fish weir in the river. He noted his people hoped that the fish would be able to go up the river without any distractions, without people on the shore or in the river distracting them. The people running the fish weir did not provide any reports back to the village on their activities. He then discussed restrictions on salmon gear. He noted in the old days, the type of gear they used allowed them to avoid catching females, who run later in the season. They used 8 inch in the past, but now with 4 inch gear they destroy more fish, when some of those fish should be going upstream to spawn. He said that if we went to traditional gear, 8-inch set net only, no drifting, we would have more escapement.

Lilian Lliaban (in Yup'ik) from Akiak discussed the use of the 4-inch gear, how it kills the smaller fish. She said that just how we need to help our children grow; we need to help the jack king salmon grow up to be producing in later years. As we look back in our history, the young people would give the elders a good broth, but the elders would say that you need to feed children, as the elders have lived a good life. She said that these meetings pass regulations; they take information from the local people, but don't give information back to the local people. She mentioned how much trouble the regulations made for Katie John, and we should not impose changing our way of life. She noted that it should be put into regulations that our way of life should not be changed due to conservation measures imposed from other areas. All these regulations do is put us against each other and interfere with our way of life. We are one people. Man cannot take away a real person who lives on the land. Only God can take away our way of life and this land. Air is not governed by man, only God governs the air. The air that provides life is not regulated by anyone.

Mr. Aloysius (in Yup'ik) also said that we are taught about water and land, and we keep a hold of what we are taught about the Yup'ik way of life. He added that the other ethnic groups do not understand our way of life.

Mr. Bill (in Yup'ik) told him that his grandmother mentioned before he left his village that he does not bring wisdom to other villages, that the people have their own knowledge. Things will not be changed because of you. She said that the most important thing is to not be hungry. All of these changes are coming from Western ways, from laws and regulations. But he said that one of the laws he was taught was to not kill a thing unless you are going to eat it.

Jackson Williams noted that a lot of the things he had in mind were already being brought out. He said that decisions need to be made here, not in D.C. That's not right. He said that at the various working groups he said that he was told that the decision is made by the "big man in D.C." He also talked about how trawlers damage the ocean floor and plants, and how big ships are dumping waste into the ocean. He talked about hunting, and how when times were abundant he could get as many as 20 muskrat in a day. Then 3-4 years ago, he took some youth out looking for muskrat and then did not see a single muskrat in the whole day. He then discussed the current 4-inch mesh compared to the 8-inch mesh they used to use. He closed by noting the success of Tribes in the Pacific Northwest in taking over fish management, and hopes that we can do that here.

Adolph Lupie designated representative from Tuntutuliak discussed how several Tribal organizations in his area (Tribe and village corporation-Qinarmiut Corporation) are involved in addressing issues in Tuntutuliak. He noted that they have had a difficult time because of the low Chinook Salmon runs, that residents were getting arrested or cited for violations. He added that the moose population was not adequately counted in their area last year, but added that the moose population has increased due to the 5-year moratorium. The people did not agree with the moratorium. He then discussed the fish allocation on the Kuskokwim River last year, noting the allocation was not enough for the whole village, that having only 36 fish allocated was difficult. He wondered how to increase that 36 fish, to get more allocation for the people. He noted that the Federal/State jurisdiction is not clear, that it's not really written out where the lines are at the mouth of the river. He concurred with Mr. Nick's comments on dip nets; he understands that right now it is just one of the tools, but thinks that in the future they will be forced to use them. He then discussed the State's Tier 2 system, referring to its prior use in Nome and noted that he didn't think it was right to put those restrictions on elders who need fish for the winter supply. Henry Tikiu (in Yup'ik) from Atmautluak noted he had a lot of grandchildren and great-grandchildren and that he needed to speak for their future. He said the elders used to say that when the white people come into their area the people will have disagreements and divisions. He said the white people pretended like they knew things, and they called them shamans. He mentioned how these shamans would know things about the weather and the seasons, but they didn't know anything about fish or animals. They couldn't predict how many fish could be harvested. They made us learn things that were not useful, when all that mattered was if you could eat. That in times of famine the hunger was so strong it was like a searing heat. What do you do when you are hungry? Why is it that the white people push us to famine, is it because they don't know God? God gives you everything you need if you listen and know the land. We didn't have laws or regulations; we had our own ways that we know how to follow. If you get up early in the morning, you will be able to get food. If you sleep all day long, you will go hungry.

Paul Jenkins (in Yup'ik) from Hooper Bay, said that before the Western innovations came to the area he was already living his life, he already knew the ways of life in the village, he knew the seasons and how to live on the land. You caught and dried fish before humidity got up in the summers. People all the way down to the Aleutians would hang fish for their dog teams. People would stop fishing when their racks were full. But now everything has because of the United States. There was no law before. When Eskimo gets a moose, he eats all of it. But these other men, they waste food. He talked about commercial fishing, and there were so many they looked like a fence across the water. They are changing the river, especially the outer regions, the trawlers are going out there and depleting the fish. He is thankful to be talking to the Council, and asks if there is a way they can come up with a regulation to address the problems they are experiencing. The 4-inch mesh is not good for conservation, it only catches the small fish, it is not good at all. Adopt regulations in the right way, good regulations, and the Alaskan people will be happy with you. He talked about when the stores first came and the huge Baby Ruth candy bars he used to like that only cost a nickel, and now the small candy bars are so expensive. He noted that people who do not cause dissention and live in harmony live a long, prosperous life. We never went sport fishing; we went fishing for sustenance for ourselves and for our dogs, who were our transportation. Please look at all of the issues and do not shove anything under the carpet. This is a truthful and honest thing that I say to you. I want everyone to be happy; I don't want anyone to be hungry.

Dale Smith of Mekoryuk spoke to raise an issue about halibut. His Tribal Council had a meeting, and a Tribal member expressed his concern over the subsistence of halibut. Mekoryuk relies a lot on the ocean, and was wondering what the RAC can do to sway management on the bycatch of halibut. Trawlers catch a good amount of halibut as bycatch and throw them overboard; some 9-10 million pounds of halibut. The Village of Mekoryuk is wondering what this Council can do, in the form of a letter or resolution, on this issue. He noted they have seen a decline in halibut in the area in the last five years. Historically, they would only go 3-5 miles off the island, but now are going farther.

Meeting recessed at 3:30 for a 15-minute break.

Jackie Cleveland of the Native Village of Kwinhagak is seeking the Council's support for a special action request regarding limiting harvest, through a Section 804 analysis, of Chinook Salmon on the Kanektok River. A hard copy of a letter making this request was provided to the Council. Greg Roczicka asked if it had been submitted to OSM, and Ms. Cleveland responded that it had not, but that the Village was seeking support. The Chair agreed that the special action request should be directed to OSM for action. Greg reiterated that the special action request should be submitted sooner than later.

David Bill talked about the sport fishery on the Kanektok, and that ADF&G had said they couldn't do anything about it, that only the legislature could address it.

Myron Naneng of AVCP spoke about the resolution of the Kodiak/Aleutians Subsistence Regional Advisory Council regarding Emperor Geese. He noted that the population estimates are indexed, not actual counts. The aerial surveys are conducted in the springtime when people are

hunting seals. He said that USFWS Migratory Birds needs to provide better numbers, more accurate numbers, in hopes that this will lead to a springtime opportunity to hunt Emperor Geese. He also noted that several communities have expressed concern about outside hunters coming into the Andreafski Wilderness Area and hunting moose. These people leave food in bags at the airport and it gets wasted. Most of the time all they take back with them is the head or the antlers. Local people would get cited for wanton waste. They were successful last year in getting the BOG to deal with wanton waste of birds, namely swans. So AVCP is going to be working with villages on the lower Yukon to deal with this wanton waste of moose. Greg thanked him for that update, and switched gears to jurisdiction issues and authorities for the Federal Subsistence Board on the Bering Sea bycatch issue. He mentioned that it was asked that subsistence be recognized in the reauthorization of the Magnuson-Stevens Act and asked what the latest updates were on that. Bob Aloysius asked if AVCP has pursued the legality of prohibiting Lower 48 hunters from coming into the region to hunt waterfowl. Myron responded that he was not aware of any Lower 48 hunters who come into the region to hunt birds. He mentioned that the Cackler Geese management plan has not been renewed since 2010 because of problems with those geese in Oregon. Greg inquired if a Federal proposal would be before them in the fall to prevent wanton waste of migratory birds. Michael Peters indicated he was supportive of efforts to reduce wanton waste. Dale Smith addressed the issue of the NPFMC subsistence or Tribal seat.

Old Business

Customary & Traditional Use Determinations – Southeast Proposal

Pippa Kenner, OSM, provided a briefing on the proposed language that the Southeast Alaska Subsistence Regional Advisory Council is considering for making changes to the customary and traditional use (C&T) determination process. Dale Smith mentioned that someone from ADF&G came to Mekoryuk last year to do a customary and traditional use survey, and wondered if that had something to do with this. Dale spoke about generational differences and the introduction of musk ox to Nelson Island in the 1950s, and how they can claim customary and traditional use of musk ox. His father was first generation to harvest it, and passed down that knowledge to him. Pippa noted that C&T determinations can be made for introduced species, that ANILCA does not distinguish between natural and introduced species. Bob Aloysius noted that 25% of the food source is plants, berries and roots, yet no one says anything about that.

Alex Nick took a moment to comment on C&T determinations for Unit 18. He noted that his understanding of the eight factors the Federal program relies on are outdated. He noted that when one person hunts a resource who has C&T, they will not get cited; but when someone else does hunt the same resource who does not have C&T, they will get cited. This issue has been before the Council before and the Council has commented on it. But have we overlooked something? Will this C&T process put communities at a disadvantage? The current C&T determinations for moose are very confusing, and for people with just a basic understanding of English it may be difficult to understand where it is they can hunt.

Greg discussed the issue, noting that there was some merit to the Southeast's proposal, but that he is not inclined to make any changes at this time. Bob Aloysius noted that the Unit 18 determinations are affected by the change in boundaries to the GMUs. Pippa Kenner noted that

the village of Lower Kalskag was in the process of submitting a proposal to update the C&T determinations. Trevor Fox, USFWS, noted that while the State BOG had adopted new boundaries for Units 18, 19 and 21, but that the Federal Subsistence Board had not adopted new boundary regulations, so the unit boundaries are out of alignment. John Andrew raised a point of order on the discussion as not relating to the agenda.

Refuges Proposed Rule on Hunting

Heather Tonneson, Region 7 USFWS Refuges Program, provided a PowerPoint presentation on the proposed rule, which would limit predator reduction activities that are intended solely for the purpose of reducing predator populations. These include take of brown bear cubs or sows with cubs, brown bears over bait, brown bears using traps or snares, take of wolves or coyotes during denning season, and same-day airborne take of bears. She explained the reason for the proposed changes, based on current management guidelines and laws for refuges in Alaska. The proposed changes would also include updating the public participation and closure procedures. She added the proposed changes would only apply to State regulated activity and would not affect Federal subsistence regulations, and would only apply on national wildlife refuges (and not private or Native Corporation lands within the refuges). She then provided an overview of the timeline on the proposed rule process.

Greg Roczicka commended the USFWS for doing a better job on public outreach than the NPS did on its similar proposal. He wondered whether Federal regulations recognized human harvest as part of the natural biodiversity. He added that this sort of thing seemed to be driven by outside interests, by people who had not been to Alaska except for maybe ANWR. He wanted the word "potential" to be taken out so as to not risk subsistence hunting activities, that it should squarely address the Intensive Management law if that is the goal. James Charles asked if anyone can make a proposal to change Federal regulations like the State does. Heather noted that the Federal system for changing refuge-specific regulations is a different process, as opposed to the Federal Subsistence regulation process where anyone can make changes. As for updating the Refuge-specific regulations, they seek to work with local people to address their concerns. It is a different process than the RAC process. John Andrew asked if the prohibition to use traps and snares would affect the ability to deal with problem bears at their fish camps. Michael Peters noted that in Marshall there were some brown bears that came into the villages and stole fish; if they were to kill the bear in DLP, would they be charged with a crime? Heather Tonneson noted that such takings would not be covered by the proposed rule. Neil Lalonde, Yukon Delta NWR manager, noted that law enforcement staff could come out and answer questions, provide guidance on how to handle the DLP issues under State and Federal laws. Greg noted that he was glad that collecting of plants and firewood was protected. David Bill asked what could be done about bears that could threaten blackberry pickers. Neil responded that the community should take advantage of all open seasons on bears in the area. Greg added that they should take advantage of that year-round season in the area.

The Council recessed at 5:30 p.m. until the next day.

Meeting resumed at 9:00 a.m. on February 26.

Tribal and Public Comments on Non-Agenda Items

Alex Nick of Bethel provided comments on the rural determination review process, noting that the Council needs to focus on the next steps. We need to think not only of ourselves, but the future. The rural determination process in the future will adversely affect subsistence hunting and fishing in the region. There needs to be some homework done by the Council, by people in the region. When we look at what will impact subsistence in the future, it is not something that we should set aside and forget about. We need to do something about it. The Council needs to revisit the criteria and be mindful of how it affects the communities. We need to make certain that the rural determination process benefits the future of our children. Thank you for the opportunity to provide these comments.

Bob Aloysius noted that the Council cannot police the people. They had an opportunity to come here and provide input. It's open to everybody, information has been handed down for days and weeks. We cannot force people to do what is good for them, like everything else; the opportunity is there.

David Bill responded in Yup'ik. Alex Nick noted that perhaps people didn't show up because of church services for Lent. Michael Peters noted that there was a lot of information that needed to be brought out to the public. Someone needs to follow up with the people. When people speak up we need to respect what they have to say. Alex Nick concluded that he was providing comments not to criticize but to make certain that if something is going to be adversely impacting subsistence it needs to be dealt with carefully.

Jackson Williams of Akiak provided comments. He also expressed concerns about the future of subsistence, particularly if the population gets too high. He was pleased to hear the Chair saying yesterday that the Federal Subsistence Board accepts so many of the Council's recommendations. Sometimes things that need to be corrected are not being corrected. He noted that the operation of the weir on the Tuluksak River has diminished the fish population. Before the weir, there used to be a lot of fish, but not as much anymore. He then spoke about concerns over the moose population, and that the Lower Kuskokwim AC indicated that the Department had not done a winter moose survey. He then spoke of the interaction between Tribal leaders and ADF&G. We concluded by noting that we need change, and that change is that we Natives are being recognized. That when we speak up, they listen and help us. Anthony Ulak (in Yup'ik) spoke on the issue of the impact of weirs on salmon, that we don't need weirs because the weirs make the salmon skittish and keep them from going up river. If we want to grow our salmon stock, we need to take the weirs off the rivers.

Philip Peter (in Yup'ik) spoke on customary and traditional use. He noted that this land is owned by nobody, but according to the people who live on them, they are the caretakers. Our way of life has rules and regulations that are part of life. In the past, people knew that when you went to another village are you asked if it was okay to go hunting and trapping there. If they responded yes, they would tell you what the local rules are. But state and federal corporations have rules and boundaries. He spoke of hunting moose on the Yukon, and noticed that they were skinny. He also said that he saw numerous wolves on the Yukon. He spoke of the younger generations, his kids, grandkids and great-grandkids, and that filling our stomach is the most important thing, that

we should not be idle. We are always thankful of how we are provided, whether or not we catch anything. He then spoke about Chinook Salmon on the Kuskokwim River and small mesh size nets. He spoke of learning about the upriver conditions from the elders in Kalskag. He also spoke about other ways he learned about the river and where the fish may be from his forefathers.

Lilian Lliaban said that Natives talk about our experience. We don't walk on cement we walk on Earth. We don't take a book across the other side of the country and talk about it. We talk about our experience. She spoke of 45 years ago learning how to sport fish with her late husband using a rod and reel near Seattle on the Columbia River, and how they heard gunshots and her husband said it was law enforcement shooting at Natives over fish. She added that the Native people of the Columbia River in Washington started to handle their own fish and game recently. She added that you cannot solve something overnight, it takes years. Last summer her family did not put up one slab of king salmon, they had to buy their king salmon. It's very uncalled-for. It's very sad to have to buy king salmon to bring slabs to her family. They are making rules and laws without consulting us, and it's unconstitutional. This summer, if she lives, she is going to put up twenty slabs; they can put her in jail, she doesn't care. She then spoke about her experience as working as an interpreter for an Aleut man in Seattle, and how it led to developing subsistence rights for his people. She then spoke about how if people work together and understand each other, it can lead to good things.

Tim Andrew from AVCP spoke about the rural determination process. He talked about shortages of Chinook Salmon on the Kuskokwim and Yukon Rivers. We have also seen shortages of Chum Salmon in Nome, Elim, Golovin and White Mountain. It is a disturbing trend to see how many people are able to get the fish that they need, to get that taste of salmon that is so important. The Alaska Native people have been here long before the Russians came. You cannot take away the people's dependence on the resources. He spoke of his brother who moved to the city and still craves the fish, birds and moose that he grew up with on the Yukon, but with the rural determination process, he can no longer come out here and catch those things for food. He noted that he says these things not to be hurtful to people who are in management, but because it is important for the people of the region. He concluded by noting that the rural determination process is a dangerous road to go down on. Dale Smith asked if AVCP working with ONC regarding the rural determination process. Tim responded that they try their best to work with other Native organizations, including AFN. Michael Peters thanked him for his work with AVCP, and he thanked Alex Nick for his work in helping get information out to the villages.

The Council took a ten minute recess.

Paul Jenkins spoke about someone 20 years ago who went upriver with a snowmachine and had four wolves go after him. He also spoke about how people used to fill their racks, but last year there was nothing hanging in the racks at the fish camps. He then talked about hunting geese, and how he likes to shoot fat geese, not skinny geese, and storing them in the frozen ground.

Adolph Lupie from Tuntutuliak, representing Qinamiut Corporation. Spoke regarding the concern over having one person testify during the rural public meeting last night, and noted that when people agree, they don't come up and speak for it. So if no one speaks out, that means they agree with what was said. He then spoke about how dual management was not meaningful,

because the Tribes are not involved with the issues that are brought up. Triple management – federal, state and Tribe – would allow for Tribes to help in management. He then spoke on sustainable fisheries and the Magnuson-Stevens Act, and the role of traditional knowledge in management. He concluded by noting that when the people exercise their own law, they become outlaws.

Martin Nicolai from Kwethluk spoke about the moose population in the Kuskokwim, and how they were hoping last fall to have the quota raised, but it did not happen. He added that they would like to see the harvest quota raised to 150. He then spoke about the impact of catch-and-release sport fishing on salmon, how it takes the strength out of the fish and harms the fish.

James Nicori from Kwethluk spoke about the allotments of fish and game to a unit or area. Some of his people came back from hunting and were told that the moose season had closed two days ago; they go out for hunting and do not take a radio. He noted that people in Bethel got more allotments than people in villages because there are more people. The land around us in the river is the supermarket, that is our Fred Meyer or Carrs store. We depend on it for the winter. He added that if there was to be a season for hunting moose, we would like to see a different number for the higher populated area (Bethel) and a different number for the villages, it would be more balanced for hunting and fishing. He spoke on rural determination, and urged the Council to study the issue well.

Dorothy Johnson of Mountain Village spoke about an enforcement plane landing last year, and how officers threatened people and warned them if they hang king salmon in their fish racks that the fish would be taken away. She said it is a lot of hard work to go out and catch the fish and then cut and hang the fish. They take people's fishing gear and boats and permits, and fish from their racks and smoke houses. The people are fighting for their subsistence rights and it's unfair. We don't want to live in fear anymore when we see wildlife troopers flying around. Lester Wilde asked if she knew which enforcement personnel it was, and she responded that they fly around in a blue and white plane, which is ADF&G.

Lester Wilde asked what authority that the Troopers have for going into villages and checking fish racks. Fred Bue, USFWS, noted that no one was cited last year for harvesting Chinook Salmon. He added that they encourage people to avoid Chinook Salmon, which the 4-inch mesh are designed to allow people to fish and avoid Chinook Salmon. Dale Smith asked if there is any communication between wildlife troopers and USFWS, and Fred Bue mentioned that law enforcement is visiting fish camps to see how people are doing and to make sure that people are following the law. A couple Council members spoke about experiences in their communities with law enforcement. Bob Aloysius recommended that people write down date, time, plane number, name of wildlife trooper and what happened.

Greg Roczicka moved for a suspension of the rules to allow for a presentation.

Skye Starkey, legal counsel for AVCP, gave a PowerPoint presentation on a proposed co-management demonstration project for the Kuskokwim River drainage. He started with a history of the development of Intertribal Fishery Commissions for the Yukon and Kuskokwim beginning in 2012. He then spoke about the preliminary plans for the Kuskokwim River Inter-Tribal Fish

Commission structure, including membership and authority. He then spoke of who a Kuskokwim Fisheries Management Regional Advisory Council would be created by the DOI for development of salmon management plans for the river. The KFMRAC would consist of 12 members, six appointed by the Secretary of the Interior to the Intertribal Fishery Commission. The Governor would nominate 2 members (residents along the Kuskokwim from a state advisory committee), the YKDRAC would appoint two members and the Western Interior RAC would appoint two members. The KFMRAC would make fishery recommendations to the FSB, and it would be entitled to deference from the FSB. The Secretary and FSB would be legally required to provide substantive weight to the traditional knowledge of Tribes, and the FSB would have to give deference to all recommendations regarding subsistence fishery recommendations, including management plans. The KFMRAC would only have to consult with the WIRAC and YKDRAC. The KFMRAC would also have a role with in-season management. The KFMRAC would also have a technical committee that would advise the new RAC. It would also develop a Tribal Salmon Management Plan for the Kuskokwim. If the same plan were adopted by a Tribe, then the Tribe would be able to directly take over management through a co-management agreement under Section 809 of ANILCA.

Alex Nick had some questions about the demonstration project, regarding how long the legislation would take and if the nomination process would be the same as the RAC process.

Mike Williams calling from Washington, D.C. said that he had spoken to Senator Sullivan on this issue and discussed his interaction with Pacific Northwest Tribes in talking about their Tribal management.

The Council asked questions regarding how this project would differ from the current RAC process and whether funding was available.

Carl Johnson, OSM, noted that the presentation was a proposal from AVCP/TCC and that it was still under review by the Department of Interior. He also noted that under current guidance in Section 805 of ANILCA, it would not be a RAC but what is referred to as a local advisory committee, that while everyone is used to using the term “RAC” that this would not be a RAC. Skye Starkey indicated that he disagreed, and Mr. Johnson noted that under ANILCA and its regulations there are ten subsistence regions and ten regional advisory councils.

Greg Roczicka moved, with a second from Bob Aloysius, for support of development of the KFMRAC. Roll call vote was conducted, with the motion passing unanimously with one absence (Annie Cleveland).
Bob Aloysius spoke against the notion of people leaving the meeting early; we meet for two days and we need to stay for the full meeting.

The Council recessed for lunch at 12:30 p.m.

The Council was back on record at 2:00 p.m.

Geoff Haskett, Regional Director USFWS, provided some comments to the Council. He noted that he has been visiting villages in the region on a Stellar’s Eider reintroduction project. He also

commented on the AVCP presentation on the Kuskokwim Demonstration Project. Raymond Oney asked a question about how far up the chain the comments from the public and Council go. Mr. Haskett noted that a good example is a recent letter from the FSB to the Secretaries regarding Pollock bycatch and subsistence representation on the NPFMC. The letter was entered into the record. Dale Smith commented on his hunting of sea ducks, common eiders and murres. He noted a reduction in Eiders and murres recently, and was wondering if any studies have been done. Mr. Haskett noted it was managed by the Yukon Delta NWR and asked the refuge to respond. Brian McCaffery from the refuge noted that they have not been able to get out there for a survey, so the local knowledge filled a data gap about the population levels for the birds in that area. He made other comments about populations in that area and had a discussion with Dale Smith about his observations. David Bill made an observation about impacts from an ice storm in March about 3-4 years ago. Michael Peters asked Mr. Haskett a question about boundaries on moose hunting and public outreach on changes. Robert Sundown, Yukon Delta NWR, responded by providing information about moose hunting opportunities in the Marshall area of Unit 18. Greg Roczicka commented on the Refuges proposed rule on hunting, noting that it was a vastly improved document, but that there were still some problems with some language. For example, managing for natural biodiversity should include human activity, as people have been interacting with the land for thousands of years. He also commented on the AVCP proposal for co-management and the Demonstration Project, that it is an important first step and important in providing a meaningful role in management. Mr. Haskett thanked him on clarifying what was presented by Mr. Starkey and addressed his comments on the proposed rule, noting it has been shaped by Tribal consultation and that it does greatly address Intensive Management. James Charles inquired about the deadline for regulatory proposals and noted a concern raised earlier through public testimony. Mr. Haskett added that Myron Naneng from AVCP joined on some of the Stellar's Eider village trips and thanked him for his assistance. He also commented on how Lester Wilde does an exemplary job of representing the Council's concerns at Federal Subsistence Board meetings.

Old Business

Rural Determination Proposed Rule

Pippa Kenner, OSM, provided a briefing on the proposed rule to the Council. She provided the background from the Secretarial review and the steps leading up to this proposed rule. She then provided information from the Federal Register notice and the language that is in the proposed rule. She noted it was an action item for the Council. Greg Roczicka noted that people may not have been here last night because they felt they had already been through this exercise. He noted that people felt their concerns were addressed. He noted his own concerns about the lack of any specific criteria to guide future decisions. He was pleased that various communities do not have to be worried about being aggregated with Bethel. He then moved to support the proposed rule as written, which was seconded by James Charles. Question was called and a roll call vote conducted by Secretary Raymond Oney. The motion carried unanimously with one absence (John Andrew). Greg Roczicka added that we as a Council have to always keep a watch on these things as they come forward.

New Business

Call for Federal Hunting and Trapping Regulatory Proposals

Chris McKee, OSM, provided an overview on the call for proposals, the content of proposals, how to submit proposals and the deadline of March 25. Greg Roczicka noted that people have suggested raising the limit on the Unit 18 moose registration hunt in the Kuskokwim River drainage. Several Council members commented on increasing the limit. Mr. McKee noted that it was not a fixed number in regulation, but announced each season by the manager. He reiterated that anyone can submit a proposal, and that sometimes several groups or individuals may submit the same proposal and that they are combined in those circumstances. Bob Aloysius asked why moose hunting from September 1-10 was open to the entire State of Alaska, when the moratorium was put into place to benefit the local users so that they could be able to hunt moose. Charlie Brown (in Yup'ik) noted he had been seated on this Council for some time, and asked a question about the moose quota. He asked when the last time was the moose was counted, and he said that he thought it was 2010. Mr. McKee responded that the Refuge would address that issue during their presentation. Mr. Brown further addressed the issue of the moose quota for the Lower Kuskokwim, and that it is difficult for hunters in the field to get information on the moose season closing due to the quota being reached. Bob Aloysius noted that people have handheld VHF in their boats and can use that to get information. Mr. McKee reiterated that if any proposal is submitted it will undergo a rigorous review process and will be back before the Council in the fall. Dale Smith asked why there was a moose quota on the Kuskokwim but not on the Yukon. Robert Sundown responded to the question, noting that the moose population on the Yukon is much higher. Raymond Oney spoke about the moose moratorium on the Yukon, with villages voluntarily accepting a total of seven years of moratorium and now the population is booming.

At 3:09 p.m., Greg Roczicka assumed chairmanship of the meeting.

Notice of Funding Availability for Fisheries Resource Monitoring Program

Pippa Kenner, OSM, presented the call for funding availability. James Charles asked how much funding was assigned to the Kuskokwim Region. Ms. Kenner responded that the Yukon and Kuskokwim Rivers take about 40% of the total funding. Michael Peters said he would like to see some funding for the Yukon side for monitoring and asked how much money would be available there. Greg Roczicka noted the $2.4 million for new projects, and wondered about continuation projects. Ms. Kenner responded that most funding that comes in goes to existing projects, that the total money coming in this year will be $4-8 million total.

Draft Annual Report

Carl Johnson, OSM, provided a briefing on the draft annual report. There was no discussion. Raymond Oney moved, and it was seconded, to approve the draft annual report. Motion carried.

Draft Charter Changes

Carl Johnson, OSM, provided an overview of the draft charter changes. Dale Smith asked why

the one-year election was required. Mr. Johnson responded that it was a requirement of either FACA or its administrative rules adopted by USFWS. Mr. Oney moved to adopt the proposed changes, seconded by James Charles; motion carried.

Greg Roczicka called the meeting back to order. He noted that if the Council wanted to submit a moose proposal it was an action item. Raymond Oney moved to submit a proposal to increase the moose quota for the Kuskokwim Drainage registration hunt in Unit 18. The motion was seconded by Mr. Peters. Question called, motion carried.

Kodiak/Aleutians Subsistence Regional Advisory Council Emperor Goose Resolution

Carl Johnson, OSM, provided a briefing on the KARAC's resolution regarding Emperor Geese, and noted that it is an information item only and requires no Council action. Tim Andrew, AVCP, provided public comment on the issue, noting that AVCP is working on getting the survey methodology improved and that the AMBCC is working on addressing some issues.

Wood Bison Management Plan

Chris McKee, OSM, provided an overview of the Wood Bison management plan for reintroduction of that species to the Western Interior Region. Greg Roczicka also commented on the management plan and the development of the plan, and commented that while this will be occurring in the Western Interior Region, the herd could potentially expand into the Yukon-Kuskokwim Delta Region as it grows through the years. There is some good habitat in the region. He also commented on how the ANCSA corporations will be collecting land use fees from those hunting the wood bison and putting those fees into management. James Charles asked how can hunt the wood bison, and Mr. McKee responded that no one can hunt them now, we are just at the stage of introducing the bison. Alex Nick raised a couple of questions about the management plan, noting that no one from lower Yukon River communities was on the working group for the management plan. He also expressed concerns about safety, noting problem encounters with musk ox. Rita St. Louis from ADF&G responded on the teleconference, noting that wood bison will avoid people unless cornered. She added that many groups were invited to this process, and more may be added in the future as the herd grows. Bob Aloysius expressed a concern about how this captive herd would handle predators in the wild. Rita responded that while they have been held in captivity, they are wild and will respond with genetic instinct once released in the wild. Plus, bison tend to act as a herd to protect calves, unlike moose where it is only that calf's mother that protects the calf. Raymond Oney commented that there has been a lot of work put into the management plan. The Council voted unanimously to approve the plan.

Agency Reports

North Pacific Fishery Management Council – Update on Bering Sea Salmon Bycatch

Steve McLain (NPFMC staff), Dan Hull (ADF&G representative on the NPFMC and chairman), Ed Dursham (Alaska member on the NPFMC), Craig Cross (Washington representative on the NPFMC) introduced themselves to the Council. The presentation covered the following issues:

- Current status of salmon bycatch

- Distribution of the Pollock fishery
- Amendment 91 Bering Sea Chinook bycatch program instituted in 2011
- Membership on the NPFMC
- Process for submitting recommended changes to management
- Factors that affect salmon bycatch
- Chinook Salmon genetics, showing specific stock locations
- Chum Salmon stock origins
- Impact rate analysis for impact on individual river runs
- Results of analysis of the effectiveness of salmon excluders
- Alternatives under consideration in 2015
    - Incorporate chum bycatch management into existing plans
    - Mandate use of salmon excluders
    - Closures if weekly bycatch rates exceed thresholds
    - Change the Pollock fishery season
    - Lower bycatch caps in times of low Chinook Salmon abundance
    - IPA revisions
- There was also an analysis presented on impacts of the various alternatives
- Upcoming NPFMC meeting dates where the NPFMC will take action on the suggested alternatives, none of which are mutually exclusive
- How to submit comments on the considered alternatives

During the presentation, members of the audience and Council members asked a variety of questions ranging from data assumptions, sharing the burden of restrictions, whether any action has been taken with regard to caps, and other miscellaneous issues. Following the presentation, each of the NPFMC members took time to address the issues raised and the process of developing management alternatives.

Bob Aloysius commented that he was surprised and pleased to see ordinary men sitting up there and trying to explain to us the issues. He thanked them for coming and shook each of their hands. He added that he would be rooting for them.

Martin Nicoli thanked the NPFMC members and staff for coming. He said they understand that Chinook Salmon is important to the lives and culture of the Yukon and Kuskokwim, that last year hardly anyone caught any Chinook. He asked how possible it would be to distribute bycatch to the communities in the region. It was noted that the bycatch could be made available, but added that they are not mature fish and not of the same quality. Some communities have received fish but were disappointed; the bycatch could be made available at no cost. It was noted that the poor quality is due to bruising. Craig Cross told a story about a captain calling him and asking for advice about what to do with caught Chinook Salmon, that what they are doing is having an effect of raising awareness and concern.

Dale Smith thanked the NPFMC members and staff for the presentation. He then talked about halibut bycatch by the trawler fishery in his area, and asked if the NPFMC looked into halibut bycatch. Dan Hull responded saying that the NPFMC had spent 4-5 days at its last meeting on

Bering Sea halibut bycatch, that there is a process underway to reduce bycatch for all sectors by 50% of the current levels, with final action coming at the June 2015 meeting. Anthony Ulak thanked the NPFMC members for coming to the meeting. David Bill thanked the NPFMC members for attending, and noted that he had asked before if the whole NPFMC could meet in Bethel, but was told it was too small of a community to meet here. He spoke about halibut declining, and codfish taking over, that halibut is only being caught in 70 feet of water. He talked about the bottom trawl fishery in Kuskokwim Bay, noting that people in some communities have experiencing dead, floating halibut. Dan Hull discussed the catch limits set by the International Halibut Commission. Raymond Oney thanked the NPFMC members and staff for coming. He commented on the importance of salmon and the struggles with trying to manage the fish to improve the population, dealing with the closures. He talked about the Yukon River being a feeding ground for the young fish. Michael Peters thanked them for coming, noted that people from different parts of the river have different concerns. But we all have similar needs, and he was glad that the NPFMC was there to hear the concerns of the people. Greg thanked them all for coming, and noted it was good to see them and hear the information. He added that perhaps in the future they could have an evening meeting that is connected with the RAC meeting and it would generate a lot of interest.

The Council took a 10 minute recess.

AVCP

Tim Andrew, Natural Resources Director for AVCP, presented a resolution regarding Bering Sea Pollock bycatch. The resolution was provided to the Council as part of the supplemental materials. He provided an overview of the impact of bycatch on salmon in the region and then highlighted the main provisions of the resolution, and identified the parties involved. He noted that AVCP is promoting preferred alternative 5, option 2, as presented by the NPFMC. The resolution also endorsed Alternatives 2 and 3, options 1-5. He then encouraged the Council to endorse and adopt the resolution for presentation to the NPFMC for consideration at its April 2015 meeting. Bob Aloysius moved that the Council adopt the resolution as its own and submit it to the NPFMC, and the motion was seconded. Dale Smith asked a question about what the 60% reduction would mean, which Tim answered. Question was called, motion carried unanimously.

Tim Andrew added a short report about AVCP's Natural Resources activities, which includes hiring new staff and working on the Intertribal Fisheries Commission. He also discussed lower Yukon moose, where the population is abundant, and the extra attention that has been directed at that moose for hunting. He noted there are conflicts with other people coming in, often un-guided. He discussed efforts they have made to position transporter and guide camps at certain locations, and working on consultation with USFWS on that. He also commented on the earlier testimony regarding skinny moose being observed in some areas. He spoke about future meetings related to marine mammals that he will be attending and current work on migratory bird issues. Mr. Andrew then spoke of the musk ox population and the need for monitoring the population and developing a management plan. Bob Aloysius asked about the estimated beaver population in the YK Delta; Mr. Andrew responded he did not know that it would be a good question for Fish & Wildlife. There was a brief discussion on the problems and values of beaver. Bob suggested a bounty and having AVCP paying people to go and blow up abandoned beaver

dams. Mr. Andrew added that the only viable option is to go out and hunt them.

Yukon Delta NWR

Neil Lalonde and Robert Sundown provided the Refuge report. Mr. Lalonde started by saying that he and his staff have been actively listening and taking notes about the Councils' concerns. He started with a discussion on the current status of the Kuskokwim moose populations. He noted the moose quota of 100 is based on the most recent population surveys. Next, he covered population estimates on the Mulchatna Caribou Herd. Then, he addressed the Kuskokwim Chinook Salmon fishery, including population numbers, escapement (which met objectives), and the estimated Chinook Salmon harvest for 2014. He noted that the success of the escapement, coupled with the harvest data, showed that people sacrificed and made an important investment for the future of the population and traditions. He provided information on the 2015 forecast and noted the likelihood that additional conservation measures may be necessary. He added information about future public meetings and outreach on the 2015 season. Bob Aloysius asked that each Council member be notified if there is going to be a meeting in their communities. He then discussed water birds and water fowl, noting there is good data on both, and providing population counts and growth levels for various specific species, including Emperor Geese, Cackling Geese, White-Fronted Geese and Black Brandt. James Charles asked what the Refuge thinks is happening to these birds that are declining, especially birds that we don't hunt. Mr. Lalonde said they are looking closely to look at the causes of the declines. Robert Sundown noted there are still persistent issues with lead shot and Eiders. Bob Aloysius noted that he saw a sign once that he thought said that "Spectacled Elders" were threatened, but he put his glasses on and saw it was "Eiders."

Next topic was beavers. Mr. Lalonde noted that the season on beavers is open year round, and that there is no daily limit or bag limit. He added that abandoned beaver dams could be removed using hand tools with no permits. Beaver houses, however, cannot be tampered with. He encouraged everyone to work with their villages on the take of beaver. Bob Aloysius asked if the prohibition on destroying beaver houses extended to abandoned houses, and Mr. Sundown responded that houses can be empty only temporarily, that they are often used by transients.

Finally, Mr. Lalonde provided an overview on the current status of Refuge Information Technician (RIT) staff at the Refuge. Bob Aloysius asked questions about how recruitment was done. James Charles commented on his experience working as a RIT, and how they worked in assigned areas. Raymond Oney thanked the Refuge for the updates.

Greg Roczicka asked Geoff Haskett to come back up to the table and asked him if any Special Action Requests have been submitted to seek management like last year on the Kuskokwim River. Both Mr. Haskett and Mr. Lalonde responded to the question, noting that one had been received for the Yukon River and they were expecting others for the Kuskokwim River.

Togiak NWR Report

Pat Walsh provided a brief report to supplement the written report in the meeting book. He added that they have been surveying the common murre population since 1990, and have noted a decline. He then provided an update on the moose population surveys and harvest activities.

ADF&G

Drew Crawford commented on Dorothy Johnson's testimony regarding law enforcement encounters at fish camps; he checked with the area biologist who reported that there was only one citation for possession and fishing of kings, with only one person who had nets or fish seized. All other citations were minor, such as for safety issues. He provided a detailed report on enforcement and citation efforts.

Joint State-Federal Yukon Salmon Report

Fred Bue, USFWS, provided a report. A handout entitled "Yukon River Salmon: 2015 Winter Meeting Packet" was provided to the Council as a supplemental material. He then discussed the contents of the report with the Council. He added at the end of his presentation that there has been a lot of cooperation on the river, that AVCP and TCC have been important in helping to coordinate efforts. He then noted the April 29 meeting of the Yukon River Panel, and that it is important to have a diversity of voices at these meetings. Raymond Oney thanked Fred for his presentation and asked about the first pulse closure. Mr. Bue responded that the first pulse closure is in regulation. Michael Peters noted that the dip net was not working in his area, and that they should go back to the set net in regulation. Mr. Bue noted that when they say gillnet, it means both set nets and drift nets.

OSM Report

Chris McKee, OSM, provided a report highlighting recent hiring of staff at the Office of Subsistence Management. He also noted that the Federal Subsistence Board had recently approved of the ANCSA Corporation Consultation Policy and the Tribal Consultation Implementation Guidelines.

Future Meeting Dates

The date confirmed its fall 2015 meeting dates, and selected Bethel as the meeting location.

The Council was also provided an overview of the All-Council meeting in March 2016.

Closing comments:
James Charles: he's heard from people in his area that people prefer having federal subsistence management over State.

Robert Aloysius: let's make sure folks are here for entire meeting instead of leaving early.

Raymond Oney: thank the OSM staff, well run. Thank you for having Geoff Haskett and NPFMC. Thank you to the new RAC members, I was nervous when I first started and have learned a lot and appreciate what Elders taught me. Thank and welcome Adrienne Fleek as new Coordinator and all staff that are staying up late. Recommend testifiers go first and limit them to a timeframe.

Dale Smith: First time Council member, learned a lot, very good exposure to hear different aspects of subsistence. Reiterate what Raymond said about public testimony—time limits. Also, council members should be here from the beginning to the end. Suggests earlier start time.

Anthony Ulak: Thank you Council, Staff, and people who attended. Welcome new members and suggest amending policies and procedures on Council attendance.

Michael Peters: Thank you to Bob Aloysius to be on time (representing their Village). Thank staff, FSB, Carl, Adrienne, ADFG, USFWS, all federal agencies for homework provided. Appreciates NPFMC coming (bycatch people). Suggests having an "alternate" if we cannot make the meeting. Also appreciated the RAC orientation.

Greg Roczicka: Appreciation to staff. Acknowledged RAC progress that has been made. Beavers take down trees one at a time, sometimes you've got to be a pest to get things done. Wished everyone could have stayed the whole time.

The Council adjourned at 8:30 p.m.

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

March 16, 2015

/s/ Carl Johnson
Carl Johnson, DFO
USFWS Office of Subsistence

/s/ Lester Wilde Sr.
Lester Wilde Sr., Chair
Yukon Kuskokwim Delta Subsistence Regional Advisory Council

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

DRAFT

U.S. Fish and Wildlife Service
Bureau of Land Management
National Park Service
Bureau of Indian Affairs

Federal Subsistence Board
News Release

Forest Service

For Immediate Release:
July 29, 2015

Contact: Deborah Coble
(907) 786-3880 or (800) 478-1456
deborah_coble@fws.gov

Federal Subsistence Board work session summary

During its work session held on Tuesday, July 28, 2015 the Federal Subsistence Board (Board) discussed deferred Request for Reconsideration RFR14-01. The motion to accept the State's request for reconsideration failed unanimously with a vote of 0-8. The Red Sheep and Cane Creek drainages will remain closed to non-Federally qualified subsistence users during the Aug 10-Sept. 20 sheep season in the Arctic Village Sheep Management Area of Unit 25. No further public comments were received regarding the issue at this work session.

The Rural Determination Process briefing was divided into three phases. Phase I addressed the Board's recommendation on the current secretarial proposed rule. The Board voted to recommend to the Secretaries to adopt the proposed rule as written. Phase II was determining a starting point for non-rural communities/areas. The Board voted to publish a direct final rule adopting the pre-2007 non-rural determinations. Phase III was direction on future non-rural determinations. The Board voted to direct staff to develop options to determine future non-rural determination for the Board's consideration. All three requests passed unanimously (8-0). OSM staff is expected to have a draft of options for the Board by the January 2016 meeting.

The Ninilchik Traditional Council submitted requests concerning the Kenai River gillnet fishery to the Board. The Board voted 7-1 to direct USFWS to continue working with NTC on an operational plan for the fishery. The request to rescind USFWS in-season manager's delegation of authority failed unanimously in a 0-8 vote. The request to reverse the emergency special action that closed the subsistence fishery for Chinook Salmon on the Kenai River failed in a 4-4 vote. NTC's final request to remove or amend current regulatory language on the Kenai River gillnet fishery was deferred and may be addressed during the next regulatory cycle.

Also discussed today during the work session was the 10 Subsistence Regional Advisory Council's Annual Report Replies. The RAC nominations discussion will occur during a closed executive session today, July 29, 2015 and is not open to the public.

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This document has been cleared for public release # 1807292015.

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Options for Board Recommendation on Current Secretarial Proposed Rule

The Board has four options for consideration:

1. Adopt as written;
2. Reject,
3. Adopt with Modification; or
4. Adopt and include in the preamble, direction for OSM and the ISC to develop a policy to address future nonrural determinations.

Program staff recommend the proposed rule be adopted as written. This action would be in line with the majority of the Regional Advisory Councils recommendations and public comments. It would also provide the shortest timeline and greatest opportunity for the resolution of this issue prior to the May 2017 deadline. If the Board does not take action prior to the deadline, communities that were selected to change from rural to nonrural in the 2007 final rule will become effective.

Options for Board Action to Determine Start-point for Nonrural Communities/Areas

The Board has three options to address rural determinations following action on the proposed rule. *If no action is taken, the 2007 final rule will become effective in May 2017*.

1. Initiate a direct final rule to adopt the pre-2007 rural determinations;
2. Initiate normal rulemaking to adopt an earlier rural determination;
3. Initiate rulemaking that would not address a start point and address each community individually.

Program staff recommend the Board initiate a direct final rule that would adopt the pre-2007 rural determinations. This action would resolve any current issues with communities/areas that were changed to nonrural in the 2007 final rule. If significant negative response from the public occurred, the direct final rule could be withdrawn and normal rulemaking could be undertaken. This option provides the shortest timeline and greatest opportunity for the resolution of this issue prior to the May 2017 deadline.

Options for Board to Direct Future Nonrural Determinations

To address future nonrural determinations, the Board has two options. The Board may direct staff to develop a draft nonrural determinations policy on how future determinations will be made; or, the Board may initiate rulemaking to address future determinations.

Program staff recommend the Board direct a policy to be drafted to address future nonrural determinations. This action will allow the greatest flexibility for Board action and the inclusion of regional variations. This option addresses concerns raised by some of the Councils (what the process of future nonrural determinations will be). Additionally it would require less time and the policy could be revised without formal rulemaking. Potential policy components could address nonrural characteristics with weighting potential that would accommodate regional variation and criteria for initiating a review of a community or area. The rural subcommittee, whose membership consists of program staff and ISC members, would develop the policy with input from the Councils, tribes, and public over the next 18 months with a goal of adoption by the Board in early 2017.

Rural Determination Recommendation Phases July 28, 2015

Phase I

Options for Board Recommendation on Current Secretarial Proposed Rule

Board Option	Pro	Con	Timeline	Notes
1. Adopt as written	- Shortest timeline - Majority of comments support	Lacks guidance on future actions	Publish mid-August 2015 (timeline is based on how long it would take staff to process the final rule; the response time from the Secretaries will be critical in any timeline)	- This option provides the greatest opportunity for the Board to resolve this issue well prior of the May 2017 deadline - Guidance for future actions could be addressed in preamble of final rule
2. Adopt with directive to develop/maintain policy	- Would address some of the public comments - Likely will meet proposed timeline for rule completion	- Would probably add 60 days to the publication date - Secretaries could direct another round of public comments, adding considerable time and possibility that will not meet intended timeline for decision making	Publish October 2015	- This option may not meet the May 2017 deadline if the Board is directed to allow for additional public comment - The preamble could address the Board's policy making plan (if that option is selected)
3. Adopt with substantial modification **(a) RAC deference** **(b) List nonrural criteria**	- Would address some of the public/RAC comments	- Goes against Secretaries' intent to simplify the process - Would likely require additional public comment period - May require additional proposed rule, which could affect ability to meet May 2017 deadline	Publish November 2016	
4. Reject		- 2007 final rule becomes effective on May 7, 2017 - Does not follow Secretarial directive to address rural issue - Does not address the majority of public comments received	No action to be taken	

Rural Determination Recommendation Phases July 28, 2015

Phase II
Options for Board Action to Determine Start-point for Nonrural Communities/Areas

Board Option	Pro	Con	Timeline	Notes
1. Direct final rule adopting the nonrual communities pre-2007 final rule	- Shortest timeline - Provides foundation for nonrural	Possible public disapproval due to lack of current public input	Publish September 2015	Communities that were ruled as nonrural in 2007 final rule would become rural
2. Initiate new formal rulemaking to revert to pre-2007 rural determinations	- Would have RAC and public comment periods	Process could take up to a year to complete	Publish July 2016	
3. Initiate new formal rulemaking with no "start point" and address each nonrural community on a case by case basis.		- Process could take 2+ years to complete - 2007 final rule becomes effective on May 7, 2017	Publish July 2017 or later	Communities selected in 2007 final rule to change status from rural to nonrural become nonrural

Phase III
Options for Board to Direct Future Nonrural Determinations

Board Option	Pro	Con	Timeline	Notes
1. Direct staff to draft policy on nonrural determinations	- Allows greatest flexibility for Board actions and the inclusion of regional variations - Requires less time than formal rulemaking		Would depend on Board's direction for public, RAC and Tribal input	
2. Direct staff to initiate formal rulemaking to address future nonrural determination		Any future revisions would require formal rulemaking	Approximately 1 year	

U.S. Fish & Wildlife Service

July 2015

Alaska Refuges

Possible Statewide Regulatory Changes

Lisa Hupp/USFWS

Kodiak brown bear sow with cub.

National Wildlife Refuges (refuges) in Alaska are mandated to conserve species and habitats in their natural diversity and ensure that the biological integrity, diversity, and environmental health of the National Wildlife Refuge System are maintained for the continuing benefit of present and future generations of Americans. The U.S. Fish and Wildlife Service (USFWS) is proposing changes to the regulations governing Alaska refuges (under 50 CFR 36) to ensure that we are managing those refuges in accordance with our mandates and to increase consistency with other Federal laws, regulations, and policies. In addition, we aim to more effectively engage the public by updating our Public Participation and Closure Procedures to broaden notification and outreach methods, ensure consultation with Tribes and the State, provide for increased transparency in our decision-making, and to allow for additional opportunities for the public to provide input.

We recognize the importance of the fish, wildlife and other natural resources in the lives and cultures of Alaska Native peoples and in the lives of all Alaskans. These proposed regulatory changes would not change Federal subsistence regulations (36 CFR 242 and 50 CFR 100) or restrict taking of fish or wildlife under Federal subsistence regulations. The Alaska National Interest Lands Conservation Act (ANILCA) provides a priority to rural Alaskans for the nonwasteful taking of fish and wildlife for subsistence uses on refuges in Alaska. Under ANILCA all refuges in Alaska (except the Kenai Refuge) also have a purpose to provide the opportunity for continued subsistence use by rural residents, as long as this use is not in conflict with refuge purposes to conserve fish and wildlife populations and habitats in their natural diversity or fulfill international treaty obligations of the United States.

The changes we are considering would:

- Codify existing Federal mandates for conserving the natural diversity, biological integrity, and environmental health on refuges in Alaska in relation to predator harvest. Predator control is not allowed on refuges in Alaska unless it is determined to be necessary to meet refuge purposes, federal laws, or policy and is consistent with our mandates to manage for natural and biological diversity and environmental health. The need for predator control must be based on sound science in response to a significant conserverstation concern. Demands for more wildlife to harvest cannot be the sole or primary basis for predator control on refuge in Alaska.
- Prohibit the following particularly efficient methods and means for non-subsistence (Federal) take of predators on refuges in Alaska due to the potential for cumulative effects to predator populations and the environment that are inconsistent with our mandates to conserve the natural and biological diversity, biological integrity, and environmental health on refuges in Alaska:
    - take of bear cubs or sows with cubs (exception allowed for resident hunters to take black bear cubs or sows with cubs under customary and traditional use activities at a den site October 15 – April 30 in specific game management units in accordance with State law)
    - take of brown bears over bait;
    - take of bears using traps or snares;
    - take of wolves and coyotes during the spring and summer denning season (May 1– August 9); and
    - take of bears from an aircraft or on the same day as air travel has occurred (take of wolves or wolverines from an aircraft or on the same day as air travel is already prohibited under current refuge regulations).
- Update the Public Participation and Closure Procedures. The following table summarizes the current regulations for the Public Participation and Closure Procedures and updates we are considering.

Public Participation and Closure Procedures

Current	Proposed Updates
Authority	
Refuge Manager may close an area or restrict an activity on an emergency, temporary, or permanent basis.	No updates
Criteria (50 CFR 36.42(b))	
Criteria includes: public health and safety, resource protection, protection of cultural or scientific values, subsistence uses, endangered or threatened species conservation, and other management considerations necessary to ensure that the activity or area is being managed in a manner compatible with refuge purposes.	Add conservation of natural and biological diversity, biological integrity, and environmental health to the current list of criteria.
Emergency closures or restrictions (50 CFR 36.42(c))	
Emergency closure may not exceed 30 days. Closure effective upon notice as prescribed in 50 CFR 36.42 (f) (see below for details). Closures related to the taking of fish and wildlife shall be accompanied by notice with a subsequent hearing.	Increase the period from 30 to 60 days, with extensions beyond 60 days being subject to nonemergency closure procedures (i.e. temporary or permanent). Closure effective upon notice as prescribed in 50 CFR 36.42 (f) (see below for details).
Temporary closures or restrictions (50 CFR 36.42(d))	
May extend only for as long as necessary to achieve the purpose of the closure or restriction, not to exceed or be extended beyond 12 months. Closure effective upon notice as prescribed in 50 CFR 36.42 (f) (see below for details). Closures related to the taking of fish and wildlife effective upon notice and hearing in the vicinity of the area(s) affected by such closures or restriction, and other locations as appropriate	Temporary closures or restrictions related to the taking of fish and wildlife may still only extend for so long as necessary to achieve the purpose of the closure or restriction. These closures or restrictions must be re-evaluated as necessary, at a minimum of every 3 years, to determine whether the circumstances necessitating the closure still exist and warrant its continuation. A formal finding will be made in writing that explains the reasoning for the decision. When a closure is no longer needed, action to remove it will be initiated as soon as practicable. The USFWS will maintain a list of refuge closures and publish this list annually for public review and input. Closure will be subject to notice procedures as prescribed in 50 CFR 36.42 (f) (see below for details). For closures related to the taking of fish and wildlife, consultation with the State and affected Tribes and Native Corporations, as well as the opportunity for public comment and a public hearing in the vicinity of the area(s) affected will be required.
Permanent closures or restrictions (50 CFR 36.42(e))	
No time limit. Closure effective after notice and public hearings in the affected vicinity and other locations as appropriate, and after publication in the Federal Register.	No time limit. For closures related to the taking of fish and wildlife, consultation with the State and affected Tribes and Native Corporations, as well as the opportunity for public comment and a public hearing in the vicinity of the area(s) affected will be required. Closures would continue to be published in the Federal Register.
Notice (50 CFR 36.42(f))	
Notice is to be provided through newspapers, signs, and radio.	Add the use of the Internet or other available methods, in addition to continuing to use the more traditional methods of newspapers, signs, and radio.

For more information, please visit:
http://www.fws.gov/alaska/nwr/ak_nwr_pr.htm

Questions and Answers on Regulatory Changes Being Proposed by the U.S. Fish & Wildlife Service for National Wildlife Refuges in Alaska

1. What are the proposed regulatory changes?

National Wildlife Refuges (refuges) in Alaska are mandated to conserve species and habitats in their natural diversity and ensure that the biological integrity, diversity, and environmental health of the National Wildlife Refuge System (Refuge System) are maintained for the continuing benefit of present and future generations of Americans. The U.S. Fish and Wildlife Service (USFWS) is proposing changes to the regulations governing Alaska refuges (under 50 CFR 36) to ensure that we are managing those refuges in accordance with our mandates and to increase consistency with other Federal laws, regulations, and policies. In addition, we aim to more effectively engage the public by updating our Public Participation and Closure Procedures to broaden notification and outreach methods, ensure consultation with Tribes and the State of Alaska (State), provide for increased transparency in our decision-making, and allow for additional opportunities for the public to provide input.

<u>The changes we are proposing would:</u>

- Codify existing Federal mandates for conserving the natural diversity, biological integrity, and environmental health on refuges in Alaska in relation to predator harvest. Predator control is defined as the intention to reduce the populations of predators for the benefit of prey species. Predator control is not allowed on refuges in Alaska, unless it is determined necessary to meet refuge purposes, Federal laws, or policy and is consistent with our mandates to manage for natural and biological diversity, biological integrity, and environmental health. The need for predator control must be based on sound science in response to a significant conservation concern. Demands for more wildlife for human harvest cannot be the sole or primary basis for predator control on refuges in Alaska.

- Prohibit the following particularly efficient methods and means for non-subsistence take of predators on refuges in Alaska due to the potential impacts to predator populations and the environment that are inconsistent with our mandates to conserve the natural and biological diversity, biological integrity, and environmental health on refuges in Alaska:
  - take of bear cubs or sows with cubs *(exception allowed for resident hunters to take black bear cubs or sows with cubs under customary and traditional use activities at a den site October 15 – April 30 in specific game management units in accordance with State regulations*);
  - take of brown bears over bait;
  - take of bears using traps or snares;
  - take of wolves or coyotes from May 1 – August 9; and
  - take of bears from an aircraft or on the same day as air travel has occurred (*same day airborne take of wolves or wolverines is already prohibited under current refuge regulations).*

- Update the Public Participation and Closure Procedures to make them more consistent with other Federal regulations and more effectively engage the public.

<u>Important notes:</u>

- These proposed changes would not apply to the take of fish or wildlife under Federal subsistence regulations or to defense of life and property as defined in State of Alaska (State) regulations (see 5 AAC 92.410).
- Hunting and trapping is considered a priority use of refuges in Alaska and most State of Alaska hunting and trapping regulations, including harvest limits, would still apply.

2. Why is the U.S. Fish & Wildlife Service proposing making these changes?

We are considering these regulatory changes to ensure that the taking of fish and wildlife on National Wildlife Refuges in Alaska is managed consistent with Federal laws, regulations, and USFWS policies. The proposed regulatory changes we are considering would clarify allowable practices for the non-subsistence take of wildlife on refuges in Alaska, as well as update existing Alaska refuge regulations for closures and restrictions.

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. As such, refuges are required to work to conserve species and habitats for the long-term, benefiting not only the present, but also future generations of Americans and in Alaska, this includes the continuation of the subsistence way of life.

The USFWS is required by law to manage refuges "to ensure that . . . biological integrity, biological diversity, and environmental health are maintained" (National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997). The Alaska National Interest Lands Conservation Act (ANILCA) states that the primary purpose of the Act is "to preserve for the benefit, use, education, and inspiration of present and future generations certain lands and waters in the State of Alaska that contain nationally significant natural, scenic, historic, archeological, geological, scientific, wilderness, cultural, recreational, and wildlife values…" The first purpose for all refuges in Alaska under ANILCA is to "conserve fish and wildlife populations and habitats in their natural diversity."

In managing for natural diversity, the USFWS conserves, protects and manages all fish and wildlife populations within a particular wildlife refuge system unit in the natural 'mix,' not to emphasize management activities favoring one species to the detriment of another. The USFWS assures that habitat diversity is maintained through natural means on refuges in Alaska, avoiding artificial developments and habitat manipulation programs, whenever possible. The USFWS fully recognizes and considers that rural residents utilize and are often dependent on refuge resources for subsistence purposes and manages for this use consistent with the conservation of species and habitats in their natural diversity. The terms biological integrity, diversity, and environmental health are defined in the biological integrity policy, which directs the USFWS to maintain the variety of life and its processes; biotic and abiotic compositions, structure, and functioning; and to manage populations for natural densities and levels of variation throughout the Refuge System.

The overarching goal of the USFWS's wildlife-dependent recreation policy is to enhance opportunities and access to quality visitor experiences on refuges and to manage the refuge to conserve fish, wildlife, plants, and their habitats (605 FW 1.6). We consider hunting to be one of many priority uses of the Refuge System (when and where compatible with refuge purposes) that is a healthy, traditional outdoor pastime, deeply rooted in the American heritage (605 FW 2).

These proposed regulatory changes are aimed at ensuring that natural ecological processes and functions are maintained and wildlife populations and habitats are conserved and managed to function in their natural diversity on Alaska refuges.

3. Will the proposed regulatory changes apply to subsistence hunting and trapping on National Wildlife Refuges?

We recognize the importance of fish and wildlife and other natural resources in the lives of all Alaskans and in the lives and cultures of Alaska Native peoples. We take seriously our responsibility to provide the opportunity for continued subsistence use by rural Alaskans on refuges under ANILCA. These proposed regulatory changes will not change Federal subsistence regulations (36 CFR 242 and 50 CFR 100) or restrict taking of fish or wildlife under Federal subsistence regulations.

We recognize there may be some impacts to local communities that result from these changes. We have worked to address concerns that were raised during Tribal consultations and early public scoping in rural communities, and are open to discussing others that arise through the public comment process.

4. What authority does the U. S. Fish & Wildlife Service have to establish hunting and trapping regulations? Isn't it the State's job to manage wildlife in Alaska?

We recognize that the State has obligations to manage wildlife in Alaska according to the directives in the State constitution. The USFWS similarly must ensure that activities on refuges are consistent with Federal laws and USFWS policy and has final authority for managing plants, fish, and wildlife on refuges in Alaska. We prefer to defer to the State on regulation of hunting and trapping on refuges in Alaska; unless, in doing so, we are out of compliance with Federal laws and USFWS policy.

5. What is the process and timeline for making these regulatory changes? Can I participate?

We have been consulting with Alaska Tribes and Alaska Native Claims Settlement Act (ANCSA) Corporations, as well as having discussions with the State and Federal Subsistence Regional Advisory Councils on the changes we are considering. We anticipate publishing a proposed rule (draft regulations) in the Federal Register around mid to late July of 2015, at which time a 90 day public comment period will begin. We have prepared an Environmental Assessment (EA) in accordance with the requirements of the National Environmental Policy Act (NEPA) for these proposed regulatory changes, which will be made available for comment at the same time. Public input is very important to us and in order to allow additional time for folks to provide input, we will be offering a 90 day comment period, as opposed to the traditional duration of 30 days. During the public comment period, we plan to hold meetings and hearings around the state in locations near Alaska refuges and other locations as appropriate. Comments and input we receive will inform the revision and finalization of the proposed rule. Our goal is to have a final rule published sometime in the beginning of 2016.

Local engagement is very important to us and we are committed to providing meaningful opportunities for consultation with the Tribal Governments and ANCSA Corporations in Alaska. We greatly value local knowledge in our work and are committed to strengthening our Tribal-Federal government relations by working closely with the Tribes on conservation issues in Alaska.

We would like to hear from you, whether at a community meeting or via written comment. We welcome public comment during the comment period, and will continue to offer Tribal Consultation to Federally recognized Tribes and ANCSA Corporations through the end of the comment period.

For the most current information, visit http://www.fws.gov/alaska/nwr/ak_nwr_pr.htm.

WP16–33 Executive Summary	
General Description	Proposal WP16-33 requests that Lower Kalskag be added to the current customary and traditional use determination for caribou and moose in Unit 18. *Submitted by the Village of Lower Kalskag*.
Proposed Regulations	**Customary and Traditional Use Determination – Caribou** *Unit 18* — *Residents of Unit 18, Manokotak, Stebbins, St. Michael, Togiak, Twin Hills,* ***Lower Kalskag,*** *and Upper Kalskag* **Customary and Traditional Use Determination-Moose** *Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and the portion of the Kukokwim River drainage upstream of, but not including, the Tuluksak River drainage* — *Residents of Unit 18, St. Michael, Stebbins,* ***Lower Kalskag,*** *and Upper Kalskag* *Unit 18, remainder* — *Residents of Unit 18,* ***Lower Kalskag,*** *and Upper Kalskag*
OSM Preliminary Conclusion	**Support**
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	

WP16–33 Executive Summary	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-33

ISSUES

Proposal WP16-33, submitted by the Village of Lower Kalskag, requests that Lower Kalskag be added to the current customary and traditional use determination for caribou and moose in Unit 18.

DISCUSSION

The proponent states that the community of Lower Kalskag was originally in Unit 18 but, due to changes made by the State in the Unit 18 boundary, is now in Unit 19A under State regulations. Proposal WP16-36 requests that the Federal boundaries for Units 18, 19, and 21 be changed to align them with State descriptions. If proposal WP16-36 is adopted, then Lower Kalskag will be located in Unit 19A under Federal regulations.

The people of Lower Kalskag have a history of hunting caribou and moose in Unit 18 and would like for their community to be included in the customary and traditional use determination for caribou and moose in Unit 18, so they can continue to hunt in Unit 18 if the Federal Unit boundaries are changed. Upper Kalskag has a customary and traditional use determination for caribou and moose in Unit 18 and residents hunt in the same areas as those from Lower Kalskag.

Existing Federal Regulations

Customary and Traditional Use Determination – Caribou

Unit 18	*Residents of Unit 18, Manokotak, Stebbins, St. Michael, Togiak, Twin Hills, and Upper Kalskag.*

Customary and Traditional Use Determination – Moose

Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and the portion of the Kukokwim River drainage upstream of, but not including, the Tuluksak River drainage	*Residents of Unit 18, Upper Kalskag, Aniak and Chauthbaluk*
Unit 18, that portion north of a line from Cape Romanzof to Kusilvak Mountain to Mountain Village, and all drainages north of the Yukon River downstream from Marshall	*Residents of Unit 18, St. Michael, Stebbins, and Upper Kalskag*

Unit 18, remainder	*Residents of Unit 18 and Upper Kalskag*

Proposed Federal Regulations

Customary and Traditional Use Determination – Caribou

Unit 18	*Residents of Unit 18, Manokotak, Stebbins, St. Michael, Togiak, Twin Hills,* ***Lower Kalskag,*** *and Upper Kalskag*

Customary and Traditional Use Determination – Moose

Unit 18, that portion of the Yukon River drainage upstream of Russian Mission and the portion of the Kukokwim River drainage upstream of, but not including, the Tuluksak River drainage	*Residents of Unit 18, St. Michael, Stebbins,* ***Lower Kalskag,*** *and Upper Kalskag*
Unit 18, remainder	*Residents of Unit 18,* ***Lower Kalskag,*** *and Upper Kalskag*

Extent of Federal Public Lands

Federal public lands comprise approximately 66% of Unit 18 and consist of 63% U.S. Fish and Wildlife Service (USFWS) managed lands and 3% Bureau of Land Management (BLM) managed lands (**See Unit 18 map**).

Regulatory History

The Federal Subsistence Board (Board) has never addressed Lower Kalskag's customary and traditional use of moose in Unit 18. The original Federal customary and traditional use determination for moose in Unit 18 was adopted in 1990 from the State of Alaska. The community of Lower Kalskag was in Unit 18 at that time, and traditionally hunted in Unit 18 until the State changed the unit boundary in 2014, making the community part of Unit 19. At the March 2014 Alaska Board of Game meeting, residents of Kalskag asked if they would still have customary and traditional use for moose in Unit 18, and were assured they would (Levi 2015, pers. comm).

Community Characteristics

Lower Kalskag is a Yup'ik village located in the Bethel census area, approximately 61º 30' North Latitude and 160 º 21' West Latitude, on the north bank of the Kuskokwim River. The village of Lower Kalskag was settled by people who moved from the village now called Upper Kalskag. The villages are

two miles apart and are connected by a gravel road (Explore North 2015). The community is located 89 miles northeast of Bethel and 350 miles west of Anchorage. According to the US Census, there were 282 people in Lower Kalskag in 2010, living on 1.3 square miles of land. An estimated 185 people, or 66% of the people living in the community, are aged 19 or under (Census.gov 2015).

The climate is semi-arctic with maritime influences from the Bering Sea. Most people in the community depend on at least some subsistence foods such as salmon, moose, black bear, caribou, porcupine and waterfowl. A household survey conducted in 2010 showed that moose constituted 17% of the diet by weight in 2009 (Brown, C.L. et al. 2012). Much of the cash income in the community is derived from jobs through the city, school, or clinic and from seasonal jobs for the BLM fighting fires in the summers. The area is only accessible by small plane, boat, or by vehicles traveling on the frozen Kuskokwim River in the winter.

The original village of Kalskag is situated on land that was used as a seasonal fish camp known as Kessiglik by people from the village of Kalthagamute, located four miles to the southwest of what is now Upper Kalskag. Kalthagamute was listed as having a population of 106 in 1880. In 1898, Nicholas Kameroff, Sr., his wife Olinga Kameroff, and their eight children settled in the community. Starting around 1900, residents of Kalthagamute and other nearby villages began to move to Kalskag. In the 1930s the BIA established a school and residents of neighboring communities started moving to the area of what is now Upper Kalskag. Within a few years, there was a general store, post office, and barge company (Ancestry.com 2015).

Russian and American explorers brought both Roman Catholic and Russian Orthodox religions to Kalskag. In the 1930s, many Russian Orthodox practitioners moved two miles downriver due to religious differences, forming the village of Lower Kalskag. Today, Lower Kalskag is predominantly Russian Orthodox and Upper Kalskag is Roman Catholic (Calista Corporation, 2015). The Russian Orthodox Chapel was built in 1940, a school was built in 1959, and a post office opened in 1965. Lower Kalskag was incorporated in 1969 (Department of Commerce, Community, and Economic Development 2015).

Eight Factors for Determining Customary and Traditional Use

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

cultural, economic, social, and nutritional elements to the community or area.

The Board makes customary and traditional use determinations based on an application of these either factors (50 CFR 100.16(b) and 36 CFR 242.16(b)). In addition, the Board takes into consideration the reports and recommendations of any appropriate Regional Advisory Council regarding customary and traditional use of subsistence resources (50 CFR 100.16(b) and 36 CFR 242.16(b)).

In 2009, 97% of the households surveyed in Lower Kalskag reported using at least one subsistence resource, with families using an average of 12 subsistence resources (Brown, C.L. et al. 2012), demonstrating the importance of subsistence resources for the community. The three most used wild foods were Chinook Salmon, moose and crowberries, with 81% of the households reporting the use of moose. An estimated 30% of the households harvested 78% of the reported subsistence resources used, suggesting substantial resource sharing within the village (Brown, C.L et al. 2012).

A report completed by the Alaska Department of Fish and Game (ADF&G) (Brown, C.L et al. 2012), highlighted the importance of moose in Lower Kalskag. They noted that moose was a common theme as they interviewed people and respondents talked about the importance of sharing, adolescent rites of passage, and its value as a resource. Researchers reported that people in Lower Kalskag shared what they harvested with people in the village who either could not go hunting, or did not have the resources to do so. Some people told stories of how their ancestors had hunted moose nearby, where these hunts took place, and how they learned to harvest moose as children. They stressed the importance of using the whole moose and not wasting any parts of it (Brown, C.L et al. 2012).

Traditionally, according to household surveys, people harvested moose all year long, but preferred moose harvested in the fall. In 2009 the village reported a harvest of 18 moose which provided 9,643 pounds of meat. Households reported harvesting more moose than any other land mammals, with 62% of the households reported receiving moose, and 24% reported sharing moose with others. In 2003, residents of Lower Kalskag harvested an estimated 30 moose, but the harvest dropped to an estimated 12 moose in 2004. In 2009, residents reported seeing more moose around their community than they had in several years (Brown, C.L. et al. 2012).

Lower Kalskag also reported harvesting four caribou in 2009. The number of caribou in the central Kuskokwim River valley reached its peak in the middle 1990s, but became scarcer after that time (Brown, C.L. et al. 2012). According to Nastasia Levi of Kalskag, people harvest caribou when the herds come close enough to the community. She also reported that the herds have changed their migration routes and don't come near the village as often as they did previously (Levi 2015, pers. comm).

Survey, respondents in Lower Kalskag reported using a total of 1,263 square miles of land for subsistence harvests, with the majority of the subsistence activities taking place within 20 miles of the village. Village residents have harvested resources in Unit 18 and Unit 19A, as well as in Unit 21E (Brown, C.L. et al. 2012).

Effects of the Proposal

If adopted, this proposal would provide residents of Lower Kalskag the continued opportunity to hunt moose and caribou in an area they have traditionally used, if the boundaries for Units 18, 19 and 21 are changed under Federal regulations, making Lower Kalskag part of Unit 19. Proposal WP16-36 proposes to change the boundaries of Units 18, 19 and 21. Adopting proposal WP16-33 should not have a major impact on other subsistence users, or put added pressure on the moose or caribou population in the area because people in Lower Kalskag currently hunt moose and caribou in Unit 18. If this proposal is not adopted, the residents of Lower Kalskag will not be able to hunt caribou or moose in areas where they have traditionally hunted if proposal WP16-36 is adopted changing the boundaries.

OSM PRELIMINARY CONCLUSION

Support proposal WP16-33.

Justification

The people of Lower Kalskag have a history of hunting caribou and moose in Unit 18, the unit they are currently in. Proposal WP16-36 proposes to change the boundaries of Units 18, 19 and 21. If adopted, Lower Kalskag would become part of Unit 19 under new Federal regulations. Their use of moose and caribou in Unit 18 has been documented through household surveys. They clearly have demonstrated a customary and traditional use of caribou and moose harvested in this area. Also, Upper Kalskag has a customary and traditional use determination for caribou and moose in Unit 18 and residents hunt in the same areas as those from Lower Kalskag.

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WP16–34 Executive Summary	
General Description	Proposal WP16-34 requests closure of Federal lands in a portion of Unit 18 to the harvest of all big game by non-Federally qualified subsistence users. *Submitted by Leonard Landlord of Mountain Village.*
Proposed Regulation	**Unit 18—Black Bear** ***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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—3 bears*** ***Jul. 1 – Jun. 30*** ***Federal public lands are closed to the harvest of black bear except by Federally qualified subsistence users.*** *Unit 18* ***remainder****—3 bears* *Jul. 1 – Jun. 30* **Unit 18—Brown Bear** ***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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—1 bear by State registration permit only*** ***Sep. 1 – May 31*** ***Federal public lands are closed to the harvest of brown bear except by Federally qualified subsistence users.*** *Unit 18* ***remainder****—1 bear by State registration permit only* *Sep. 1 – May 31* **Unit 18—Moose**

WP16–34 Executive Summary		
	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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—2 moose, only one of which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30.	***Aug. 1 – Mar. 31***
	Federal public lands are closed to the harvest of moose except by Federally qualified subsistence users.	
	Unit 18, remainder—2 moose, only one of which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30.	*Aug. 1 – Mar. 31*
	Unit 18—Wolf	
	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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—*10 wolves*	***Aug. 10 – Apr. 30***
	Federal public lands are closed to the harvest of wolves except by Federally qualified subsistence users.	
	Unit 18 ***remainder****—10 wolves*	*Aug. 10 – Apr. 30*
OSM Preliminary Conclusion	**Oppose**	
Bristol Bay Subsistence Regional Advisory Council Recommendation		

WP16–34 Executive Summary	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-34

ISSUES

Proposal WP16-34, submitted by Leonard Landlord, requests the closure of Federal lands in a portion of Unit 18 to the harvest of all big game by non-Federally qualified subsistence users.

DISCUSSION

The proponent states that traditional hunting grounds are often occupied by non-local sport hunters who fly overhead and disrupt fall subsistence hunts, while seeking only trophies. The proponent advocates closure of Federal lands west of Mountain Village to the harvest of all big game species by non-Federally qualified subsistence users. Office of Subsistence Management staff was unsuccessful in contacting the proponent to clarify the specific geographic area proposed for closure. Therefore, the analysis was conducted for the formerly delineated moose hunt area known as the lower Yukon hunt area (**Map 1**).

Big game species found in Unit 18 include black bear, brown bear, caribou, moose, muskox and wolf. Caribou and muskox will be excluded from this analysis. Caribou will be excluded because neither the Mulchatna nor the Western Arctic herds' ranges currently or historically overlap the area proposed for closure. Muskox will be excluded because there is currently no harvest allowed under State or Federal regulation in the area proposed for closure.

Existing Federal Regulation

Unit 18—Black Bear

3 bears	*Jul. 1 – Jun. 30*

Unit 18—Brown Bear

1 bear by State registration permit only	*Sep. 1 – May 31*

Unit 18—Moose

Unit 18, remainder—2 moose, only one of which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30.	*Aug. 1 – Mar. 31*

Unit 18—Wolf

10 wolves	*Aug. 10 – Apr. 30*

Proposed Federal Regulation

Unit 18—Black Bear

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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—3 bears	***Jul. 1 – Jun. 30***
Federal public lands are closed to the harvest of black bear except by Federally qualified subsistence users.	
Unit 18 ***remainder****—3 bears*	*Jul. 1 – Jun. 30*

Unit 18—Brown Bear

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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—1 bear by State registration permit only	***Sep. 1 – May 31***
Federal public lands are closed to the harvest of brown bear except by Federally qualified subsistence users.	
Unit 18 ***remainder****—1 bear by State registration permit only*	*Sep. 1 – May 31*

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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—2 moose, only one of which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30.	***Aug. 1 – Mar. 31***
Federal public lands are closed to the harvest of moose except by	

Federally qualified subsistence users.

Unit 18, remainder—2 moose, only one of which may be antlered. Antlered bulls may not be harvested from Oct. 1 through Nov. 30.	*Aug. 1 – Mar. 31*

Unit 18—Wolf

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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village—*10 wolves*	***Aug. 10 – Apr. 30***

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

Unit 18 ***remainder****—10 wolves*	*Aug. 10 – Apr. 30*

Existing State Regulation

Unit 18—Black Bear

Residents and nonresidents: Three bears	*No closed season*

Unit 18—Brown Bear

Residents and nonresidents: One bear	*Sep. 1 – May 31*
Resident subsistence: One bear every regulatory year by permit available in Bethel, and Unit 18 license vendors beginning July 1	*Sep. 1 – May 31*

Unit 18—Moose

Unit 18, remainder

Residents: Two moose only one of which may be an antlered bull, taking cows accompanied by calves or calves is prohibited	*Aug. 1 – Sep. 30*

OR: Two antlerless moose	*Oct. 1. – Nov. 30*
OR: Two moose	*Dec. 1 – Mar. 15*
Nonresidents: One antlered bull	*Sep. 1 – Sep. 30*

Unit 18—Wolf

Residents and nonresidents: Ten wolves	*Aug. 10 – Apr. 30*

Extent of Federal Public Lands

Federal public lands comprise 66% of Unit 18 and consist of 63% U.S. Fish and Wildlife Service managed lands and 3% Bureau of Land Management managed lands. See **Map 1**.

Customary and Traditional Use Determinations

Residents of Units 18, 19A (living downstream of the Holokuk River), Holy Cross, Stebbins, St. Michael, Togiak, and Twin Hills have a positive customary and traditional use determination for black bear in Unit 18.

Residents of Akiachak, Akiak, Eek, Goodnews Bay, Kwethluk, Mountain Village, Napaskiak, Platinum, Quinhagak, St. Mary's and Tuluksak Hills have a positive customary and traditional use determination for brown bear in Unit 18.

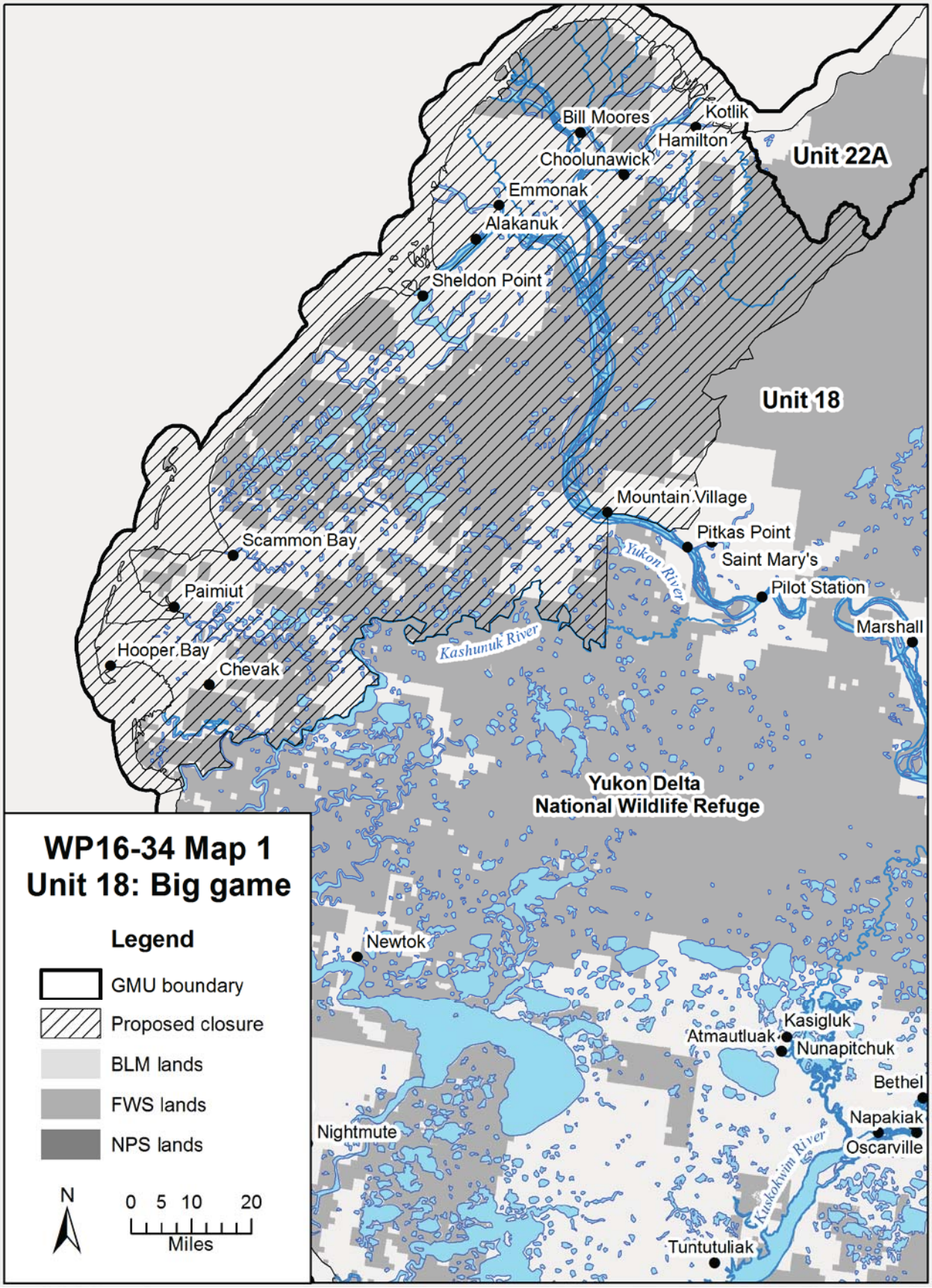
Residents of Unit 18 remainder and Upper Kalskag have a positive customary and traditional use determination for moose in Unit 18 remainder.

Residents of Units 6, 9, 10 (Unimak Island only), 11 – 13, Chickaloon, and 16 – 26 have a positive customary and traditional use determination for wolf in Unit 18.

Regulatory History

Black Bear

In 1996, the Federal Subsistence Board (Board) adopted Proposal P96-40, which requested that all residents of Unit 18 be given a customary and traditional use determination for black bear in Unit 18. There have been no subsequent changes in State or Federal seasons or harvest limits.


WP16-34 Map 1
Unit 18: Big game
Legend
GMU boundary
Proposed closure
BLM lands
FWS lands
NPS lands
N
0 5 10 20
Miles
Unit 22A
Unit 18
Bill Moores
Kotlik
Hamilton
Choolunawick
Emmonak
Alakanuk
Sheldon Point
Mountain Village
Pitkas Point
Saint Mary's
Pilot Station
Marshall
Scammon Bay
Paimiut
Hooper Bay
Chevak
Yukon River
Kashunuk River
Yukon Delta
National Wildlife Refuge
Newtok
Kasigluk
Atmautluak
Nunapitchuk
Bethel
Napakiak
Oscarville
Nightmute
Kuskokwim River
Tuntutuliak

Brown Bear

In 1992, Proposals P92-55, P92-58 and P92-59, were adopted by the Board. These proposals liberalized brown bear harvest to accommodate traditional practices of residents who use brown bears primarily for food. Adoption of these proposals by the Board established the current Federal season and harvest limits.

State subsistence harvest regulations for residents have not changed for at least 20 years. However, the Alaska Board of Game has incrementally liberalized the general harvest regulations for brown bear. In 2001, the Alaska Board of Game extended the general resident and nonresident season from Sep 10 – Oct. 10 and May 10 – May 25 to Sep. 1 – May 31 for the lower Yukon portion of Unit 18. In 2003, the same change was made for the remainder of Unit 18 and the harvest limit was raised from one bear every four regulatory years to one bear every regulatory year.

Moose

In November 2005, the Alaska Board of Game adopted Proposal 4 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 adopted Proposal 6, which lengthened the fall moose season for the lower Yukon and remainder areas of Unit 18 by 21 days and lengthened the winter season in the lower Yukon by 10 days.

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 Alaska Board of Game stated that the affected moose population increased to a size that could support the harvest of cows.

At its November 12, 2009 work session, the Board approved Special Action WSA08-13, 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.

Proposal 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 requested that the Yukon Delta National Wildlife Refuge manager be delegated the authority to restrict the harvest in the winter season to only 1 antlered bull or only 1 moose per regulatory year, after consultation with the Alaska

Department of Fish and Game (ADF&G). The proposal was adopted by the Board with modification to extend the winter season to February 28.

Proposal 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 adopted by the Board with modification in to remove the Cape Romanzof to Kusilvak Mountain section and replace it with a descriptor for the Kashunuk River drainage.

Proposal WP12-49, submitted by the Yukon Delta National Wildlife Refuge, requested the moose hunting season in 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 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 Aug. 1 – Sept. 30. The proposal was adopted with modification by the Board at its January 2012 meeting to allow for the harvest of an antlered bull starting on Aug. 1 instead of Sept. 1.

Proposal WP14-23, submitted by the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council, requested an extension of the moose season in 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 to Mountain Village and excluding all Yukon River drainages upriver from Mountain Village, from Aug. 1 to the last day of February, to Aug. 1 to Mar. 31. It also requested removal of the bull-only restriction from Aug. 1-Sept. 30. The proposal was adopted with modification by the Board, which resulted in combining the lower Yukon portion of Unit 18 with Unit 18 remainder, establishing a single Yukon drainage hunt area. The modification also stipulated that antlered bulls may not be harvested Oct. 1 – Nov. 30.

Wolf

In 2012, the Board adopted Proposal WP12-54, which requested that the wolf harvest limit for hunters in Unit 18 be increased from five to ten wolves. The same year, the Alaska Board of Game adopted Proposal 15, which also changed the harvest limit for hunting from five to ten wolves.

All Species

In 2007, the Board adopted a policy on closures to hunting, trapping, and fishing on Federal public lands and waters in Alaska (Appendix A). The intent of the closure policy was to summarize and clarify the circumstances under which the Board has the authority to restrict or close Federal public lands to the harvest of fish and wildlife under existing statutes and regulations. This policy allows establishment or retention of closures primarily for the conservation of subsistence resources or to ensure continued use of these resources by subsistence users.

Biological Background

Black Bear

The distribution of black bears in Alaska generally follows the distribution of spruce forest (Miller and Aumiller 2003). They are found primarily in the eastern portions of Unit 18. However, in recent years, they have been increasingly observed on the lower portions of the Yukon and Kuskokwim Rivers (Perry and Jones 2014). Although little is known about the black bear population in this area, managers have not voiced concern about the population or harvest status (Rearden 2015a, pers. comm.).

Brown Bear

Traditionally, brown bears have been an important subsistence resource for the Yup'ik people of Unit 18. Most bears in the unit occupy either the Kilbuck Mountains or the Andreafsky Mountains. Surveys conducted in 2002 and 2003 indicated that there were approximately 550 bears in Unit 18. Two hundred brown bears are thought to occur in the Adreafsky Mountains and along the Yukon River. The population is currently believed to be stable (Perry 2011).

Moose

Moose began to immigrate into the Yukon-Kuskokwim Delta during the mid-to-late 1940s and have become an important subsistence resource for locals. 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 Yukon-Kuskokwim Delta is lowland treeless tundra and is therefore not suitable as winter moose habitat (Perry 2010).

In February 2008, the Yukon Delta National Wildlife Refuge and ADF&G conducted cooperative moose surveys in portions of Unit 18, including the Lowest Yukon survey area, which encompasses the riparian corridor along main stem of the Yukon River downstream of Mountain Village. The population in this survey area was estimated at 3,319 ± 16% (95% CI), or 2.8 moose/mi^2 when corrected for sightability (Rearden 2015b), indicating that the population is growing rapidly (**Figure 1**). Although population estimates in the Lowest Yukon area have not been updated since 2008, surveys were conducted in the adjacent Adreafsky survey area in 2012 (Rearden 2015b). The moose population in this area grew to an estimated at 3,170 ± 24.3% (95% CI) or 2 moose/mi^2 (**Figure 1**). In 2011, population composition data for the Lowest Yukon survey area showed 30 bulls per 100 cows and 69 calves per 100 cows (Rearden 2015b), suggesting that the population has continued to grow since 2008.

Moose habitat

The Alaska Department of Fish and Game estimates a minimum of 8,000 mi^2 of moose habitat within Unit 18. Approximately 4,500 mi^2 of this habitat occurs along riparian zones of the Yukon River. While Unit 18 does contains areas of unexploited moose habitat (Perry 2010), there is concern that if population growth outpaces harvest, moose will become habitat limited, precipitating a natural population crash (Rearden

2015, pers. comm.). Habitat assessment is expected to become an increasingly important tool in managing the growing moose population in Unit 18 (Perry 2010).

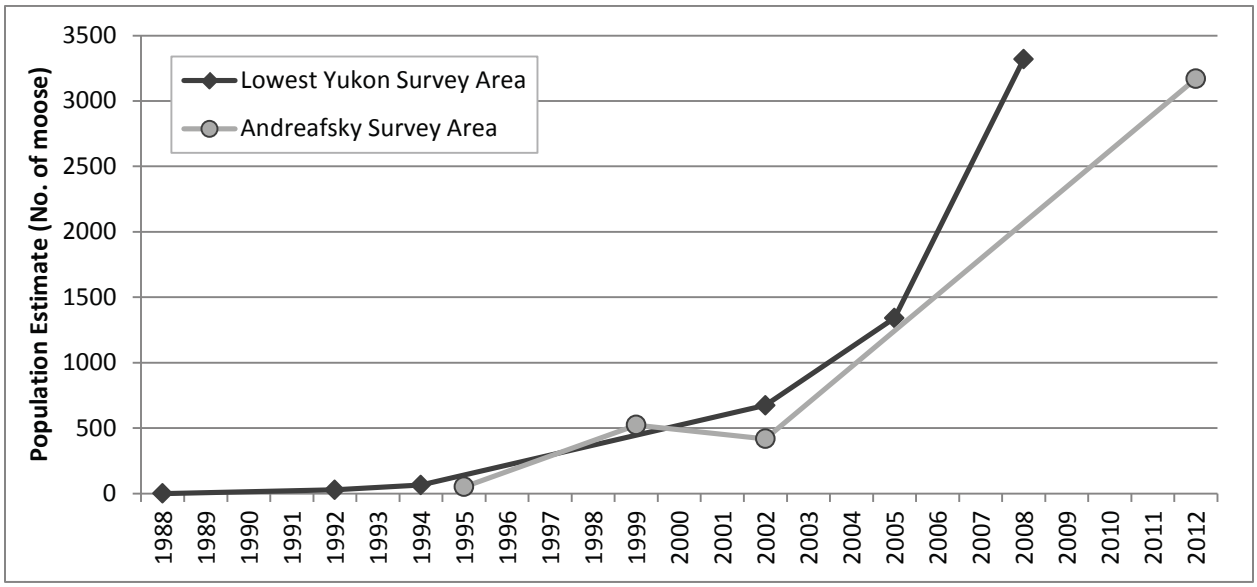


Figure 1. Moose population estimates for the Lowest Yukon and Adreafsky survey areas of Unit 18, 1988-2012 (Rearden 2015b).

Wolf

The wolf population in Unit 18 was small between the 1930s, when reindeer herding was disrupted, and the 1980s, when moose populations became established in the region. Wolves are now established along the entire Yukon River corridor, including the delta. The distribution of packs follows the range and distribution of moose and caribou in the region.

Comprehensive wolf surveys have not been conducted in the region. However, harvest reports and trapper questionnaires indicate that wolves are common and that the population continues to grow. The population was estimated to be 150-200 animals in 15-25 packs as of 2011. While wolves using the eastern portion of the unit are likely transient, following the movement of the Mulchatna Caribou Herd, the growing moose population appears to be promoting the growth of resident packs. It is believed that the growing ungulate population can support a larger numbers of wolves (Jones 2012).

Harvest History

Black Bear

Harvest of black bears in Unit 18 does not require a harvest ticket, and the State does not require sealing (Perry and Jones 2014). As a result, little is known about harvest of black bears along the lower Yukon. However, in the Units immediately to the east, harvest pressure is low, despite the presence of good black bear habitat. It is believed that reported harvest is low in these units, not only because they lack a sealing

requirement, but because actual harvest is low (Pierce 2011). It is likely that harvest is similarly low along the lower Yukon.

Brown Bear

Reported brown bear harvest averaged 22 bears per year between 2000 and 2009 (Perry 2011). Most of the reported harvest occurs along the Kuskokwim River. Harvest along the Yukon River averaged only 2 bears annually during this time period. Between 2000 and 2009, there were a total of 16 reported brown bears harvested along the Yukon River. Only two of these were harvested during the fall season, one in 2003 and one in 2004. Annual harvest by drainage and season is given in **Table 1**.

Table 1. Unit 18 brown bear harvest by drainage and season, 2000-2009 (Perry 2011).

Year	Unit 18 Total	Kuskokwim			Yukon		
		Fall	Spring	Total	Fall	Spring	Total
2000	5	1	4	5	0	0	0
2001	8	5	3	8	0	0	0
2002	14	10	4	14	0	0	0
2003	15	13	1	14	1	0	1
2004	39	33	2	35	1	3	4
2005	24	20	3	23	0	1	1
2006	22	18	4	22	0	0	0
2007	33	25	4	29	0	4	4
2008	31	23	5	28	0	3	3
2009	25	19	3	22	0	3	3

Moose

Overall, the reported moose harvest in Unit 18 has shown an increasing trend since 2000. Most of the harvest occurs in the fall, though winter harvest represents a growing proportion of total harvest (**Figure 2**). While the Unit 18 moose harvest has always been dominated by Alaska residents, nonlocal resident harvest has grown substantially in recent years. Between 2004 and 2008, approximately 64 moose were harvested annually by nonlocal residents. This increased by nearly 350% for 2009 – 2013, when harvest by nonlocal residents averaged 284 moose annually. Annual local harvest increased from 238 for 2004 – 2008 to 316 for 2009 – 2013, though local harvest has declined somewhat since peaking in 2010 (**Figure 3**). Harvest by locals is a known to be underreported, but reporting appears to be improving (Perry 2010).

Most hunters use boats to access moose in Unit 18 (**Table 2**). Between 2009 and 2013, 989 hunters reported using boats each year, compared to 53 hunters who reported using airplanes. Compared to the 2004 – 2008 time period, use of boats and airplanes each increased by 77% for 2009 – 2013. Snowmachines are used increasingly to harvest moose, reflecting the increase in winter harvest (**Table 2**).

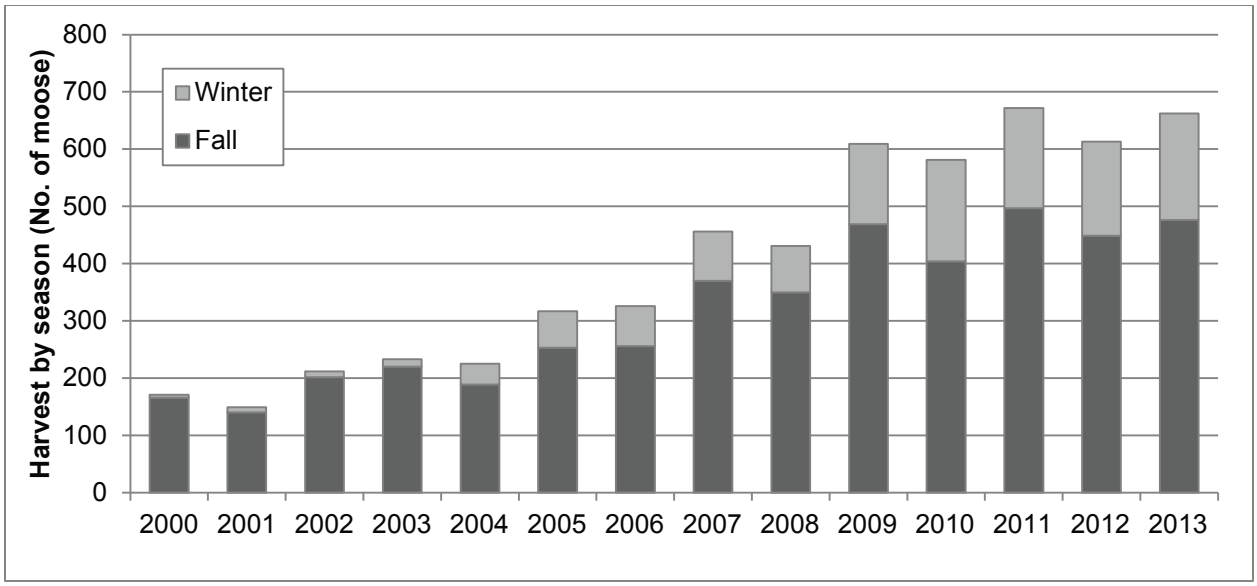


Figure 2. Unit 18 moose harvest by season, 2000-2013 (Perry 2010; ADF&G 2015).

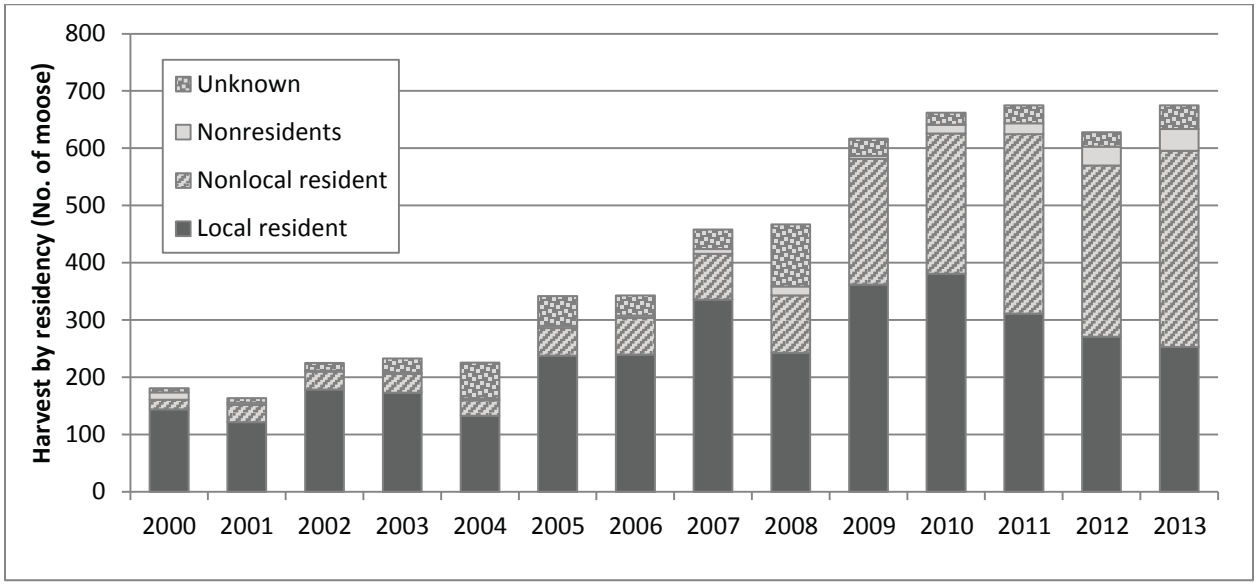


Figure 3. Unit 18 moose harvest by residency, 2000-2013 (ADF&G 2015).

<u>Wolf</u>

Reported wolf harvest has been variable, ranging from 19 to 109 annually between 2000 and 2010. During this time period, approximately half the harvested wolves were trapped, while the other half were shot. Reported harvest occurred almost exclusively by residents. There is high local demand for wolf pelts and it is suspected that many pelts remain unsealed, resulting in an underestimation of local harvest (Jones 2012). Of the reported wolf harvest between 2000 and 2010, 28% was harvested in the Yukon River drainage, though the proportion of wolves harvested in the Yukon drainage increased after 2007 (**Figure 4**). Between 2000 and 2011, 80% of wolves were harvested December through March (**Table 3**).

Table 2. Transport method of moose hunters (successful and unsuccessful) in Unit 18, 2000-2013 (ADF&G 2015).

Year	Airplane	Boat	Snowmachine	Three- or four-wheeler	Other or Un-known
2000	14	399	15	0	7
2001	16	384	16	2	12
2002	21	533	33	3	27
2003	13	597	31	2	10
2004	8	442	58	3	22
2005	18	527	127	6	16
2006	22	542	107	3	23
2007	42	640	124	2	22
2008	61	648	115	7	17
2009	31	924	182	12	64
2010	51	827	219	10	27
2011	52	1472	204	4	42
2012	70	949	204	6	92
2013	63	775	219	10	60

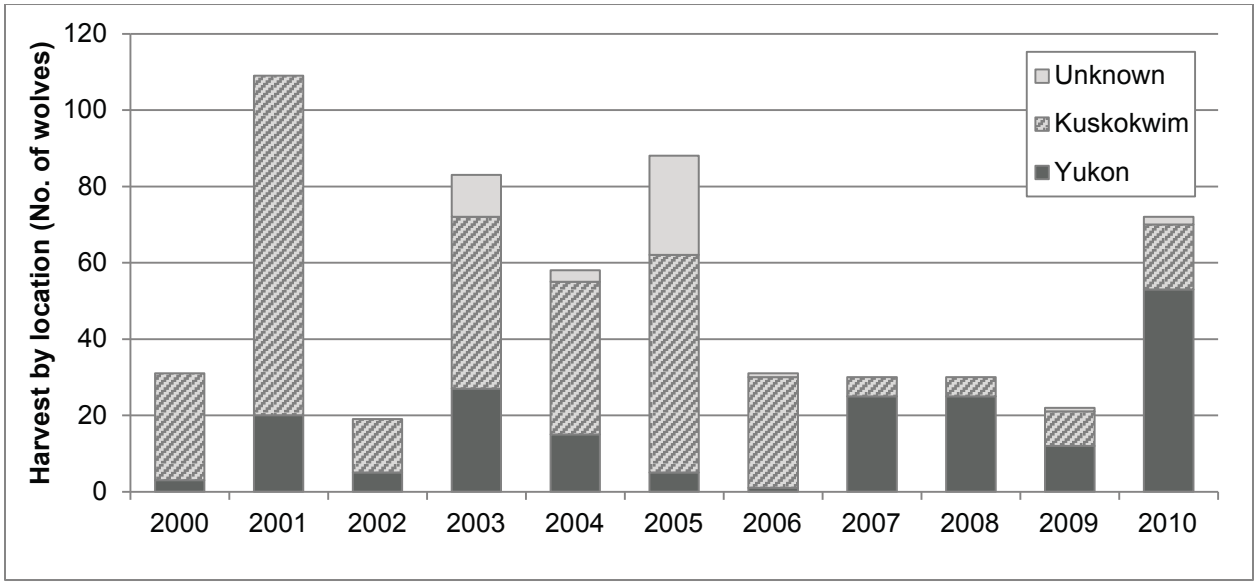


Figure 4. Unit 18 wolf harvest by drainage, 2000-2010 (Jones 2012).

Table 3. Unit 18 wolf harvest in by month, 2000-2011.

Year	September	November	December	January	February	March	April	Unknown
2000	1	1	2	11	4	6	1	5
2001		4	4	27	43	19		12
2002			1	5	10	2		1
2003			9	15	31	27		4
2004			13	20	15	8	1	8
2005		3	7	13	14	11	1	39
2006	1	0	8	4	2	6	1	9
2007			6	7	18	30	2	13
2008		3	6	4	1	11	3	2
2009		1	3	2	7	8		
2010	2	2	12	16	13	18	1	1
2011		1	6	2	8	7		

Effects of the Proposal

If this proposal is adopted, Federal public lands in Unit 18, west of Mountain Village, would be closed to the harvest of wolves, black bears, brown bears and moose except by Federally qualified subsistence users. Adoption of this proposal is not expected to have a significant effect on black or brown bear populations. While little is known about the lower Yukon black bear population, it is believed to be healthy. Current harvest is unknown, but is assumed to be low. Brown bear harvest along the Yukon drainage during the fall appears to be low as well, with only two bears reported between 2000 and 2009. Closing Federal public lands along the lower Yukon to non-Federally qualified users is unlikely to result in an appreciable decrease in hunters targeting bears during fall. As a result, it is not expected to increase opportunity for Federally qualified subsistence users.

If adopted, this proposal would result in fewer non-local moose hunters in the area. An increasing proportion of hunters in Unit 18 are non-local residents, most of whom probably use the area in the fall, when most moose are harvested. Eliminating these users from Federal lands along the lower Yukon River would result in less competition, thereby potentially improving harvest opportunities for Federally qualified subsistence users in the area. However, the consequence of eliminating non-local users would be a substantial reduction in total moose harvest at a time when growth rates are high and managers are concerned about the impact of over browsing and the potential for a population crash.

Adoption of this proposal is expected to have little effect on the wolf population. Nearly all of the wolf harvest can be attributed to local residents, and harvest generally occurs during winter and spring. Closing Federal public lands to non-Federally qualified subsistence users is not likely to result in a decrease in hunters present during the fall. As a result, it is not expected to increase opportunity for Federally qualified subsistence users.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP16-34.

Justification

The proponent is concerned that non-local big game hunters are impairing the ability of Federally qualified subsistence users to hunt in traditional areas. However this closure request does not meet the criteria for closure, as outlined in the Board's closure policy (Appendix A), for any big game species. There are no conservation concerns for black bear, brown bear, or wolf. Given the residency, chronology and geography of harvest of these three species, it is likely that any non-Federally qualified subsistence users the proponent is encountering during the fall are moose hunters. Eliminating non-Federally qualified moose hunters from Federal lands would likely result in less competition. However, the moose population appears to be sufficient to provide for both subsistence and non-subsistence uses at this time. Furthermore, given current moose population growth rates and concerns about future habitat viability, maintaining high levels of moose harvest along the Yukon River riparian corridor is advisable to prevent overuse of the habitat and a subsequent population crash. Such a crash would likely reduce subsistence harvest opportunities, which could result in significant impacts on Unit 18 communities.

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POLICY ON CLOSURES TO HUNTING, TRAPPING AND FISHING ON FEDERAL PUBLIC LANDS AND WATER IN ALASKA

FEDERAL SUBSISTENCE BOARD

Adopted August 29, 2007

PURPOSE

This policy clarifies the internal management of the Federal Subsistence Board (Board) and provides transparency to the public regarding the process for addressing federal closures (closures) to hunting, trapping, and fishing on Federal public lands and waters in Alaska. It also provides a process for periodic review of regulatory closures. This policy recognizes the unique status of the Regional Advisory Councils and does not diminish their role in any way. This policy is intended only to clarify existing practices under the current statute and regulations: it does not create any right or benefit, substantive or procedural, enforceable at law or in equity, against the United States, its agencies, officers, or employees, or any other person.

INTRODUCTION

Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) establishes a priority for the taking of fish and wildlife on Federal public lands and waters for non-wasteful subsistence uses over the taking of fish and wildlife on such lands for other purposes (ANILCA Section 804). When necessary for the conservation of healthy populations of fish and wildlife or to continue subsistence uses of such populations, the Federal Subsistence Board is authorized to restrict or to close the taking of fish and wildlife by subsistence and non-subsistence users on Federal public lands and waters (ANILCA Sections 804 and 815(3)). The Board may also close Federal public lands and waters to any taking of fish and wildlife for reasons of public safety, administration or to assure the continued viability of such population (ANILCA Section 816(b)).

BOARD AUTHORITIES

- ANILCA Sections 804, 814.815(3), and 816.
- 50 CFR Part 100 and 36 CFR Part 242, Section .10(d)(4).

POLICY

The decision to close Federal public lands or waters to Federally qualified or non-qualified subsistence users is an important decision that will be made as set forth in Title VIII of ANILCA. The Board will not restrict the taking of fish and wildlife by users on Federal public lands (other than national parks and park monuments) unless necessary for the conservation of healthy populations of fish and wildlife resources, or to continue subsistence uses of those populations, or for public safety or administrative reasons, or 'pursuant to other applicable law." Any individual or organization may propose a closure. Proposed closures of Federal

public lands and waters will be analyzed to determine whether such restrictions are necessary to assure conservation of healthy populations of fish and wildlife resources or to provide a meaningful preference for qualified subsistence users. The analysis will identify the availability and effectiveness of other management options that could avoid or minimize the degree of restriction to subsistence and non-subsistence users.

Like other Board decisions, closure actions are subject to change during the yearly regulatory cycle. In addition, closures will be periodically re-evaluated to determine whether the circumstances necessitating the original closure still exist and warrant continuation of the restriction. When a closure is no longer needed, actions to remove it will be initiated as soon as practicable. The Office of Subsistence Management will maintain a list of all closures.

Decision Making

The Board will:

- Proceed on a case – by – case basis to address each particular situation regarding closures. In those cases for which conservation of healthy populations of fish and wildlife resources allows, the Board will authorize non-wasteful subsistence taking.

- Follow the statutory standard of "customary and traditional uses." Need is not the standard. Established use of one species may not be diminished solely because another species is available. These established uses have both physical and cultural components, and each is protected against all unnecessary regulatory interference.

- Base its actions on substantial evidence contained within the administrative record, and on the best available information; complete certainty is not required.

- Consider the recommendations of the Regional Advisory Councils, with due deference (ANILCA § 805 (c)).

- Consider comments and recommendations from the State of Alaska and the public (ANILCA § 816(b)).

Conditions for Establishing or Retaining Closures

The Board will adopt closures to hunting, trapping or fishing by non-Federally qualified users or Federally qualified subsistence users when one or more of the following conditions are met:

- Closures are necessary for the conservation of healthy populations offish and wildlife:

  a) When a fish or wildlife population is nor sufficient to provide for both Federally qualified subsistence users and other users, use by non-Federally qualified users may be reduced or prohibited, or

b) When a fish or wildlife population is insufficient to sustain all subsistence uses, the available resources shall be apportioned among subsistence users according to their:

1) Customary and direct dependence upon the populations as the mainstay of livelihood.

2) Local residency, and

3) Availability of alternative resources, or

c) When a fish or wildlife population is insufficient to sustain any use, all uses must be prohibited.

- Closures are necessary to ensure the continuation of subsistence uses by Federally qualified subsistence users.
- Closures are necessary for public safety.
- Closures are necessary for administrative reasons.
- Closures are necessary "pursuant to other applicable law."

Considerations in Deciding on Closures

When acting upon proposals recommending closure of Federal public lands and waters to hunting, trapping, or fishing. The Board may take the following into consideration to the extent feasible:

- The biological history (data set) of the fish stock or wildlife population.
- The extent of affected lands and waters necessary to accomplish the objective of the closure.
- The current status and trend of the fish stock or wildlife population in question.
- The current and historical subsistence and non-subsistence harvest, including descriptions of harvest amounts effort levels, user groups, and success levels.
- Pertinent traditional ecological knowledge.
- Information provided by the affected Regional Advisory Councils and Alaska Department of Fish and Game.

- Relevant State and Federal management plans and their level of success as well as any relationship lo other Federal or State laws or programs.

- Other Federal and State regulatory options that would conserve healthy populations and provide a meaningful preference for subsistence, but would be less restrictive than closures.

- The potential adverse and beneficial impacts of any proposed closure on affected fish and wildlife populations and uses of lands and waters both inside and outside the closed area.

- Other issues that influence the effectiveness and impact of any closure.

Reviews of Closures

A closure should be removed as soon as practicable when conditions that originally justified the closure have changed to such an extent that the closure is no longer necessary. A Regional Council a State or Federal agency, or a member of the public may submit, during the nom1al proposal period, a proposal requesting the opening or closing of an area. A closure may also be implemented, adjusted, or lifted based on a Special Action request according to the criteria in 50 CFR 100.19 and 36 CFR 242.19.

To ensure that closures do not remain m place longer than necessary, all future closures will be reviewed by the Federal Subsistence Board no more than three years from the establishment of the closure and at least every three years thereafter. Existing closures in place at the time this policy is implemented will be reviewed on a three-year rotational schedule, with at least one-third of the closures reviewed each year.

Closure reviews will consist of a written summary of the history and original justification for the closure and a current evaluation of the relevant considerations listed above. Except in some situations which may require immediate action through the Special Action process, closure review analyses will be presented to the affected Regional Cowlcil(s) during the normal regulatory proposal process in the form of proposals to retain, modify or rescind individual closures.

Chair, Federal Subsistence Board

Board Member, U.S. Fish and Wildlife Service

Board Member, Bureau of Indian Affairs

Board Member, U.S. Forest Service

Board Member, National Park Service

Board Member, Bureau of Land Management

WP16-35 Executive Summary	
General Description	Proposal WP16-35 requests that the use of artificial light be allowed to aid in the harvesting of a bear at a den site in Unit 18. *Submitted by Martin Nicolai of Kwethluk.*
Proposed Regulation	**50 CFR 100.26 and 36 CFR 242.26 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:* . . . *(8) Using or being aided by use of a pit, fire, artificial light, radio communication, artificial salt lick, explosive, barbed arrow, bomb, smoke, chemical, conventional steel trap with a jaw spread over 9 inches, or conibear style trap with a jaw spread over 11 inches.* . . . *(17) Taking a bear cub or a sow accompanied by cub(s).* **Unit 18—Black Bear** **Regulation** — **Season** *3 bears* — *July 1–June 30* **Unit 18—Brown Bear** **Regulation** — **Season** *1 bear by State registration permit only* — *Sept. 1–May 31* **§_____.26(n)(18)(iii) Unit 18—Unit specific regulations** . . . ***G) You may use artificial light when taking a bear at a den site.***
OSM Preliminary Conclusion	**Support with modification** to include a head lamp or a hand-held artificial light. The modification regulation should read:

WP16-35 Executive Summary	
	50 CFR 100.26 and 36 CFR 242.26 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:* . . . *(8) Using or being aided by use of a pit, fire, artificial light, radio communication, artificial salt lick, explosive, barbed arrow, bomb, smoke, chemical, conventional steel trap with a jaw spread over 9 inches, or conibear style trap with a jaw spread over 11 inches.* . . . *(17) Taking a bear cub or a sow accompanied by cub(s).* **Unit 18 Black Bear** **Regulation** — **Season** *3 bears* — *July 1–June 30* **Unit 18 Brown Bear** **Regulation** — **Season** *1 bear by State registration permit only* — *Sept. 1–May 31* **§_____.26(n)(18)(iii) Unit 18—Unit specific regulations** ***(G) You may use a head lamp or a hand-held artificial light when taking a bear at a den site.***
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional	

WP16-35 Executive Summary	
Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comment	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-35

ISSUES

Proposal WP16-35, submitted by Martin Nicolai of Kwethluk, requests that the use of artificial light be allowed to aid in the harvesting of a bear at a den site in Unit 18.

DISCUSSION

The proponent states that some members of the Native Village of Kwethluk traditionally, historically, and currently travel to the Kilbuck Mountains to harvest bears, and sometimes denning bears are targeted. The proponent states that people harvest bears from dens in the springtime to meet subsistence needs. According to the proponent, it is a customary activity practiced over many generations of Yup'ik people. The proponent states that only certain hunters harvest bears from dens and only when there is a heavy covering of snow in springtime when hunters can reach the mountains behind the village on snow machines. Since becoming available, people have used flashlights to observe bears in dens. The proponent states the practice is legal in other management units in State regulations. The proponent became aware that this was illegal when a local hunter pointed it out to him (Nicolai 2015, pers. comm.).

Existing Federal Regulation

50 CFR 100.26 and 36 CFR 242.26 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:

. . .

(8) Using or being aided by use of a pit, fire, artificial light, radio communication, artificial salt lick, explosive, barbed arrow, bomb, smoke, chemical, conventional steel trap with a jaw spread over 9 inches, or conibear style trap with a jaw spread over 11 inches;

. . .

(17) Taking a bear cub or a sow accompanied by cub(s).

Unit 18—Black Bear

Regulation	Season

3 bears	*July 1–June 30*

Unit 18—Brown Bear

Regulation	**Season**
1 bear by State registration permit only	*Sept. 1–May 31*

Proposed Federal Regulation

50 CFR 100.26 and 36 CFR 242.26 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:

. . .

(8) Using or being aided by use of a pit, fire, artificial light, radio communication, artificial salt lick, explosive, barbed arrow, bomb, smoke, chemical, conventional steel trap with a jaw spread over 9 inches, or conibear style trap with a jaw spread over 11 inches.

. . .

(17) Taking a bear cub or a sow accompanied by cub(s).

Unit 18—Black Bear

Regulation	**Season**
3 bears	*July 1–June 30*

Unit 18—Brown Bear

Regulation	**Season**
1 bear by State registration permit only	*Sept. 1–May 31*

§_____.26(n)(18)(iii) Unit 18—Unit specific regulations

(G) You may use artificial light when taking a bear at a den site.

Existing State Regulation

5 AAC 92.080. Unlawful methods of taking game; exceptions

The following methods of taking game are prohibited

. . .

(7) with the aid of a pit, fire, artificial light, laser sight, electronically enhanced night vision scope, any device that has been airborne, controlled remotely, and used to spot or locate game with the use of a camera or video device, radio communication, cellular or satellite telephone, artificial salt lick, explosive, expanding gas arrow, bomb, smoke, chemical (excluding scent lures), or a conventional steel trap with an inside jaw spread over nine inches, except that

. . .

(C) artificial light may be used

. . .

(iv) by a resident hunter taking black bear under customary and traditional use activities[1] at a den site from October 15 through April 30 in Unit 19(A), that portion of the Kuskokwim River drainage within Unit 19(D) upstream from the Selatna River drainage and the Black River drainage, and in Units 21(B), 21(C), 21(D), 24, and 25(D);

5 AAC 92.260. Taking cub bears and female bears with cubs prohibited

A person may not take a cub bear or a female bear accompanied by a cub bear, except that a black bear cub or a female black bear accompanied by a bear cub may be taken by a resident hunter

(1) under customary and traditional use activities at a den site

(A) from October 15 through April 30 in

(i) Unit 19(A);

(ii) Unit 19(D), that portion of the Kuskokwim River drainage upstream from the Selatna and Black river drainages;

(iii) Units 21(B), 21(C), and 21(D); and

[1] Customary and traditional use activities were described in the customary and traditional use work sheets for black bears that were presented at the November 7–11, 2008, Alaska Board of Game meeting (2008 RC 2 Tab D and Tab E at http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo).

(iv) Unit 24; and

(B) from December 1 through the last day of February in Unit 25(D); and

(2) from July 1 through November 30 and March 1 through June 30 in Unit 25(D).

Extent of Federal Public Lands

Federal public lands comprise approximately 66% of Unit 18 and consist of 63% U.S. Fish and Wildlife Service and 3% Bureau of Land Management managed lands (see **Unit 18 Map**).

Customary and Traditional Use Determination

For black bear, residents of Unit 18, Unit 19A living downstream of the Holokuk River (including Aniak, Chuathbaluk, Kalskag, and Lower Kalskag), Holy Cross, Stebbins, St. Michael, Twin Hills, and Togiak have a customary and traditional use determination in Unit 18.

For brown bear, residents of Akiachak, Akiak, Eek, Goodnews Bay, Kwethluk, Mountain Village, Napaskiak, Platinum, Quinhagak, St. Marys, and Tuluksak have a customary and traditional use determination in Unit 18

Regulatory History

Black Bears

For black bear, in Unit 18, the season has been opened year round and the harvest limit has been 3 bears per year since 1960 (Boards of Fisheries and Game 1959 *in* FWS 1996). Hunters have not been required to obtain harvest permits or to report their harvests. Sealing is not required. . In 2008, the Alaska Board of Game adopted Proposal 79, which allowed "under customary and traditional use activities at a den site" the use of an artificial light to take a black bear, including a cub or a sow with a cub, at a den site Oct. 15–Apr. 30 in Unit 19A, Unit 19D that portion of the Kuskokwim River drainage upstream from the Selatna and Black River drainage drainages, and in Units 21B, 21C, 21D, 24, and 25D; except that in Unit 25D a black bear cub or a black bear sow accompanied by a cub can be taken from a den site December 1 to the last day of February only. Additionally, a black bear cub or a black bear sow with a cub can be taken Jul. 1–Nov. 30 or Mar. 1–Jun. 30 in Unit 25D by any state resident (ADF&G 2015a).

Brown Bears

Hunters were required to seal brown bears from 1961 through the spring of 1992 in western Alaska, but participation by subsistence users was very limited, and few subsistence harvests were reported through this system. In 1992, the Alaska Board of Game adopted the Western Alaska Brown Bear Management Area (WABBMA) and associated regulations (ADF&G 2015a, **Table 3**).

In 1990, 1991, and 1992, proposals to the Federal Subsistence Board (Board) to exempt Unit 18 hunters from brown bear sealing requirements and tag fees and to implement a year round brown bear season and

community harvest and reporting system were submitted by the Association of Village Council Presidents (AVCP), two individuals, and the Kwethluk, Akiak, and Akiachak tribes (Proposals R90-11, R90-06, R91-17, P92-059, and P92-069). Concurrently, in 1992 the Alaska Department of Fish and Game (ADF&G) submitted Proposals P92-55, 56, 57, 58, 59, 103, 160 and 170 requesting changes to brown bear regulations that would implement the Western Alaska Brown Bear Management Area, described above. The Board took up all of the proposals at once and adopted Proposal P92-55 with modification thereby implementing the WWBBMA in Federal regulations. The resulting regulations covered Units 9B, 17, 18, and 19B, and a portion of 19A. Federally qualified subsistence users did not have to seal brown bears unless the hide or skull was removed from the management unit. If presented for sealing, the trophy value of the hide was destroyed by removing the skin of the head and front claws, and these parts were retained by ADF&G. Federally qualified subsistence users did not have to get tags but were required to have a State registration permit and salvage the meat for human consumption, but the hide and skull need not be salvaged. The brown bear harvest season was lengthened to Sept. 1–May 31, and the harvest limit was increased to one brown bear every regulatory year (see **Table 3**).

Biological Background

Black bears are found in low densities in Unit 18. Most black bears stay in forested areas, along the main Yukon and Kuskokwim river corridors in the eastern portion of Unit 18, and in the Kilbuck and Andreafsky mountains (Perry 2015, pers. comm.). Little is known about the population size or composition.

It is estimated that brown bears exist at moderate density and the population is stable in Unit 18. Brown bear harvests increased after 2000 and success was primarily by aircraft. There are large areas of Unit 18 that are not accessible by hunters. The ADF&G management report suggests that brown bear harvests are not impacting the population status in the unit in part due to the low percentage of sows harvested (Perry 2011). Current population estimates of brown bears in Unit 18 are based on extrapolation studies done in 2002 and 2003 providing a midpoint density of 40.3 bears per 1,000 km^2 as a comparative value for similar habitats found in the remainder of Unit 18 (Walsh et al. 2006 *in* Perry 2011) and a unit-wide estimate of 550 brown bears; 350 bears in the Kilbuck Mountains along the Kuskokwim River, 200 bears in the Andreafsky Mountains along the Yukon river, and few bears existing elsewhere in Unit 18. Reported brown bear harvests ranged from 25 to 31 bears per year from 2008 through 2010 and represented an estimated 6% harvest rate. Little change in the number of brown bears harvested by nonresidents of the state are anticipated due to guide requirements for hunters and restrictions on the number of guides allowed to operate in the Yukon Delta National Wildlife Refuge that comprises the majority of hunt areas in Unit 18. Subsistence hunts are reported to have low participation and success (Perry 2011, **Table 3**).

It has been shown in northern Alaska that female brown bears do not successfully reproduce until they are older than 5 years (Reynolds 1987). The delay in reproduction, as well as small litter sizes, long intervals between successful reproductive events, and short potential reproduction periods lead to the low rates of successful production in brown bears in northern Alaska (FWS 1982). In addition, female brown bears exhibit high fidelity to home ranges and little emigration or immigration (Reynold 1993). Therefore brown bears are often managed conservatively.

Harvest History

As mentioned previously, the Alaska Board of Game has not implemented an annual harvest reporting system for black bears in Unit 18.

Before the 2006, the harvests of brown bears in the subsistence hunt that were reported on State registration permits were documented for the entire WABBMA and no unit-by-unit harvest reports were available. Since then, in 2007, 2008, and 2009 only one brown bear was reported harvested in the subsistence hunt on State registration permits in Unit 18. In the general season where no State registration permit was required, sealing records indicated that the annual harvest of brown bears in 2007, 2008, and 2009 was 33, 31, and 25 bears, respectively. Nonresidents of the state reported harvesting 14 of 31 brown bears in 2008 and 12 of 25 brown bears in 2009. Most brown bears were harvested in the Kilbuck Mountains south of the Kuskokwim River (Perry 2011). According to management biologist Perry (2011), "prior to the arrival of caribou in Unit 18 in the mid 1990s, most of the bears taken in Unit 18 were killed in the spring. This pattern was variable and depended on snow conditions that allowed travel by snowmachine, which provided greater access. More recently the fall harvest has exceeded the spring harvest, which is attributable to caribou hunters opportunistically taking bears" (Perry 2011:193). Additionally, Perry (2011) noted that "hunters who use subsistence permits typically use snowmachines. Since the subsistence season is open from 1 September through 31 May, and spring hunting is preferred by subsistence hunters, snowmachines are more practical" (Perry 2011:193).

Conventional ADF&G harvest reporting systems, described in the previous paragraph, do not always reflect the true level of harvest (see the discussions in Van Lanen et al. 2012 and Anderson and Alexander 1992 for an understanding): however, household harvest surveys have been conducted to estimate harvest. Based on the results of household harvest surveys conducted between 1980 and 2013, residents of Akiak harvested the highest number of black bears in any one year (36 in 1998), followed by Holy Cross in 1990 (26 black bears) and Bethel in 2012 (21 black bears). Other communities that harvested black bears in most study years included Akiak, Aniak, Chuathbaluk, Kwethluk, Lower Kalskag, Marshal, Mountain Village, Nunapitchuk, Russian Mission, Tuluksak, and Upper Kalskag (**Table 1**). For brown bears, the highest estimated annual harvest was at Quinhagak in 1982 (16 brown bears). Other communities that harvested one or more brown bears in most study years included Akiachak, Eek, Kwethluk, and Tuluksak (**Table 2**). Most brown bears were harvested by residents of the Kuskokwim River portion of Unit 18, and fewer brown bears were harvested by residents of the Yukon River portion of Unit 18.

Cultural Knowledge and Traditional Practices

Although the level of information describing subsistence uses of bears in Unit 18 is not as complete as for other large land mammal species, bears have been and continue to be hunted by residents. The harvest and use of bears was described in the following documents: Andrew and Brelsford (1992); Andrews (1989); Andrews and Peterson (1983); Brown, Magdanz, Koster, and Braem (2012); Brown, Ikuta, Koster, and Magdanz (2013); Coffing (1991); Coffing et al.(2001); Fienup-Riordan (2007); Hensel (1994, 1995); Ikuta et al. (2014); Runfola et al. (2014); Schneider et al. (2004); Stickney (1983); Wolfe (1984); **Table 1** and **Table 2**).

Based on the references cited above, Federally qualified subsistence users hunt black bear in Unit 18 primarily from mid-August through early October or until black bears den up. Hunting denning black bears during the winter months has been done traditionally, and some hunters continue this practice when meat is needed and if hunters have the experience necessary to successfully hunt a denned bear. Some families continue to use traditional hunting camps located along mountain lakes and access their hunting areas by aircraft in April, May, August, and September. During periods of adequate snow cover, access to bear hunting areas is by snowmachine. Black bears are considered a source of food on par with moose, caribou, and other wild resources and they are harvested accordingly.

Based on the references cited above, brown bears have been hunted for their meat and hides and other parts of the bear have been used for traditional medicine or fashioned into such things as tools, ceremonial regalia, and art. Brown bear fat is rendered and is sometimes used as a condiment akin to seal oil for dipping dried meat and fish and is mixed with berries and fish to make ice cream, *akutaq*. It has been customary practice of some Yup'ik villagers to use bear hides for mattresses, trimming on clothing, sitting pads when ice fishing, door coverings and skin for boats. Brown bear skulls are rarely removed from the field and are buried facing east at the kill site. Brown bear harvests for food remain part of the contemporary subsistence pattern in some of the predominantly Yup'ik communities of Unit 18. Brown bear harvesting is a specialized pursuit that is concentrated in certain villages and certain families. Fienup-Riordan (2007) observed that in the Yukon Kuskokwim delta area, "Just as bearded seals and walrus were a coastal hunter's prized catches, bears were highly valued by inland hunters" (Fienup-Riordan 2007:164). Because of their powerful senses and ability to hear through the ground, "brown bears were usually referred to indirectly" and respectfully so that they would continue to give themselves to hunters. They were called "*carayak* (lit., 'terrible fearsome thing'), *ungungssiq* (land animal, quadruped, especially bear), *naparngali* (one who stands upright) or *kavirluq* (red thing, as opposed to *tan'gerliq*, 'black bear,' lit., 'dark thing')" (Fienup-Riordan 2007:164).

Coffing reported in 1991 from Kwethluk,

> Both black and brown bears were harvested for food . . . . Several families maintain strong ties with the mountain areas east of Kwethluk where many Kwethluk families have traditional camps, where several old settlement sites are located and where a variety of subsistence activities continue to take place. . . . Brown bear were harvested by hunters who went out specifically looking for them . . . . Brown and black bear were harvested when people wanted meat and fat . . . . Hunters preferred to harvest brown bear within a couple of weeks after the bear emerged from dens in spring . . . . Brown bears were sometimes hunted while they were still in their dens . . . some Kwethluk hunters knew the location of brown bear dens and bear trails that were used year after year . . . . Occasionally, when hunting on foot from camps near Heart Lake and North Fork Lakes, hunters sometimes spent two or three days away from their main camp when tracking and hunting brown bear (Coffing 1991:167–172).

There was habit and practice and rules surrounding knowledge of butchering, preparing, and distributing meat, and fat, and skins. “Internal organs, such as the heart, kidneys, and intestines were often distributed to elders” (1991:172).

Tuluksak people travelled up the Tuluksak River drainage and other streams as far as the foothills of the Kilbuck Mountains to access moose, brown bears, black bears, caribou, and arctic ground squirrels. Skin-hulled boats were floated down the river in the spring. Especially in Aniak, Chuathbaluk, and Kalskag, bear meat and fat continue to be a significant component of the diet.

Effects of the Proposal

If this proposal was adopted, hunting with an artificial light would be allowed for Federally qualified subsistence users hunting a bear at a den site that is situated in Unit 18. Only a few specialized hunters concentrated in certain villages and certain families harvest bears from den sites, and the use of artificial light for this purpose is not likely to increase. A hunter inadvertently harvesting a sow that is in a material den can have an impact on cub survival because the surviving cub cannot survive.

If this proposal was not adopted, Federally qualified subsistence users using the method on Federal public lands in Unit 18 could be cited for using an illegal method.

OSM PRELIMINARY CONCLUSION

Support Proposal WP16-35 **with modification** to include a head lamp or a hand-held artificial light.

The modification regulation should read:

> **50 CFR 100.26 and 36 CFR 242.26 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:*
>
> > . . .
> >
> > *(8) Using or being aided by use of a pit, fire, artificial light, radio communication, artificial salt lick, explosive, barbed arrow, bomb, smoke, chemical, conventional steel trap with a jaw spread over 9 inches, or conibear style trap with a jaw spread over 11 inches.*
> >
> > . . .
> >
> > *(17) Taking a bear cub or a sow accompanied by cub(s).*

Unit 18 Black Bear

Regulation	**Season**
3 bears	*July 1–June 30*

Unit 18 Brown Bear

Regulation	**Season**
1 bear by State registration permit only	*Sept. 1–May 31*

§_____.26(n)(18)(iii) Unit 18—Unit specific regulations

(G) You may use a head lamp or a hand-held artificial light when taking a bear at a den site.

Justification

A few specialized hunters harvest bears from den sites. Hunters consider the use of artificial light, such as a flashlight, for hunting a bear at den site to be safe and efficient. It is likely that hunters have used flashlights for this purpose since flashlights became available. A census of bears in Unit 18 has not been conducted, which is true for many fur-bearing animals in rural areas of the State, and the biological effects of adopting the proposal cannot be evaluated. Harvest limits or seasons can be limited to conserve bear populations, if necessary. The use of artificial light for this purpose is not likely to increase.

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Table 1. The number of black bears harvested by communities in the customary and traditional use determination, based on household surveys, by study year.

UNIT 18 HOUSEHOLD SURVEYS					
Community name	Study year	Harvest of black bears			
		Reported	Estimated	Lower estimate	Upper estimate
Akiachak	1998	25	36	28	45
Akiak	2010	3	4	3	7
Alakanuk	2009				
	1980				
Aniak	2009	10	12	10	16
	2005	5	6	5	10
	2004	4	6	4	12
	2003				
Bethel	2012	6	21	21	21
Chevak	2009				
Chuathbaluk	2009	4	5	4	8
	2005	3	6	3	15
	2004	3	4	3	9
	2003	2	4	2	8
	1983	6	6	6	6
Emmonak	2008				
	1980				
Holy Cross	2004				
	2003				
	2002				
	1990	12	26	13	38
Kotlik	2009				
	1980				
Kwethluk	2010	5	8	5	13
	1986	4	4	4	4
Lower Kalskag	2009	1	1	1	9
	2005	1	2	1	10
	2004	3	3	3	5
	2003	1	2	1	2
Marshall	2010	5	9	9	9
	2009	8	12	8	22
Mountain Village	2010				
	2009	1	2	1	21
	1980	1	6	-	-
Napakiak	2011				
Napaskiak	2011				
Nunam Iqua	2009				
	1980				
Nunapitchuk	1983	2	8	2	18
Oscarville	2010				
Russian Mission	2011	5	9	9	9

Continued on next page.

Table 1. *Continued from previous page*.

UNIT 18 HOUSEHOLD SURVEYS					
Community name	**Study year**	**Harvest of black bears**			
		Reported	**Estimated**	**Lower estimate**	**Upper estimate**
Saint Marys	2009				
Saint Michael	2003				
Stebbins	2002				
	1993				
	1980				
Togiak	2008				
	2001				
	1999				
Twin Hills	2001				
	1999				
Tuluksak	2010	6	8	6	11
Upper Kalskag	2009	9	11	9	18
	2005	4	8	4	20
	2004	4	4	4	5
	2003	3	5	3	10

Source: ADF&G 2015b. Blank cell=0. "-"=information not available.

Table 2. The number of brown bears harvested by communities in the customary and traditional use determination, based on household surveys,by study year.

UNIT 18 HOUSEHOLD SURVEYS					
Community name	Study year	Harvest of brown bears			
		Reported	Estimated	Lower estimate	Upper estimate
Akiachak	1998	5	7	5	11
	1993	1	1	1	1
	1992	1	1	1	1
	1991	1	1	1	1
Akiak	2010				
	1991	3	3	3	3
Eek	1993	2	2	2	2
	1992	3	3	3	3
	1991	2	2	2	2
Kwethluk	2010	4	7	4	11
	1992	5	5	5	5
	1991	9	9	9	9
	1986	-	9	-	-
Mountain Village	2010				
	1992	1	1	1	1
	1980				
Napakiak	2011				
Napaskiak	2011				
	1992				
Platinum	1992				
	1991	2	2	2	2
Quinhagak	1993	6	6	6	6
	1992	1	1	1	1
	1991	4	4	4	4
	1982	2	16	2	36
Saint Mary's	2009				
	1992				
Tuluksak	2010	1	1	1	2
	1992	1	1	1	1
	1991				

Source: ADF&G 2015b. Blank cell=0 "-"=information not available.

Table 3. Brown bear hunting regulations in Unit 18, Federal and State, 2015.

BROWN BEAR REGULATIONS—UNIT 18	
Federal	**State of Alaska**
1 brown bear by State registration permit. Sept. 1–May 31. No resident tag required. The meat must be salvaged for human consumption. Hide and skull need not be sealed unless removed from the area. Eligible hunters must be residents of Akiachak, Akiak, Eek, Goodnews Bay, Kwethluk, Mountain Village, Napaskiak, Platinum, Quinhagak, St. Marys, or Tuluksak.	1 brown bear by State registration permit. Sept. 1–May 31. No resident tag required. The meat must be salvaged for human consumption. Hide and skull need not be sealed unless removed from area. Eligible hunters must be residents of the state.
	OR 1 brown bear Sept. 1–May 31 No resident tag required. Meat need not be salvaged. Hide and skull must be sealed Eligible hunters can be residents or nonresidents of the state; however nonresident hunters must be accompanied by a guide.

WP16–36 Executive Summary	
General Description	Proposal WP16–36 requests changes to the existing boundaries for Unit 18, Unit 19, and Unit 21. *Submitted by Office of Subsistence Management.*
Proposed Regulation	(18) *Unit 18.* (i) ~~Unit 18 consists of that area draining into the Yukon and Kuskokwim Rivers downstream from a straight line drawn between Lower Kalskag and Paimiut and the drainages flowing into the Bering Sea from Cape Newenham on the south to and including the Pastolik River drainage on the north; Nunivak, St. Matthew, and adjacent islands between Cape Newenham and the Pastolik River.~~ ***Unit 18 consists of that area draining into the Yukon and Kuskokwim Rivers westerly and downstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Paimiut Portage to its intersection with Arhymot Lake, then south along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River), then along the south bank of Crooked Creek downstream to the northern terminus of Crooked Creek to the Yukon-Kuskokwim Portage (locally known as the Mud Creek Tramway), then along the west side of the tramway to Mud Creek, then along the westerly bank of Mud Creek downstream to an unnamed slough of the Kuskokwim River (locally known as First Slough or Kalskag Slough), then along the west bank of this unnamed slough downstream to its confluence with the Kuskokwim River, then southeast across the Kuskokwim River to its southerly bank, then along the south bank of the Kuskokwim River upriver to the confluence of a Kuskokwim River slough locally known as Old River, then across Old River to the downriver terminus of the island formed by Old River and the Kuskokwim River, then along the north bank of the main channel of Old River to Igyalleq Creek (Whitefish Creek), then along the south and west bank of Igyalleq Creek to Whitefish Lake, then directly across Whitefish Lake to Ophir Creek, then along the west bank of Ophir Creek to its headwaters at 61ø 10.22' N. lat., 159ø 46.05' W. long., and the drainages flowing into the Bering Sea from Cape Newenham on the south to and including the Pastolik***

WP16–36 Executive Summary	
	River drainage on the north; Nunivak, St. Matthews, and adjacent islands between Cape Newenham and the Pastolik River, and all seaward waters and lands within three miles of these coastlines. *(19) Unit 19. (i)* ~~*Unit 19 consists of the Kuskokwim River drainage upstream from a straight line drawn between Lower Kalskag and Piamiut:*~~ ***Unit 19 consists of the Kuskokwim River drainage upstream, excluding the drainages of Arhymot Lake, from a line starting at the outlet of Arhymot Lake at Crooked Creek (locally known as Johnson River), then along the south bank of Crooked Creek downstream to the northern terminus of Crooked Creek to the Yukon- Kuskokwim Portage (locally known as the Mud Creek Tramway), then along the west side of the tramway to Mud Creek, then along the westerly bank of Mud Creek downstream to an unnamed slough of the Kuskokwim River (locally known as First Slough or Kalskag Slough), then along the west bank of this unnamed slough downstream to its confluence with the Kuskokwim River, then southeast across the Kuskokwim River to its southerly bank, then along the south bank of the Kuskokwim River upriver to the confluence of a Kuskokwim River slough locally known as Old River, then across Old River to the downriver terminus of the island formed by Old River and the Kuskokwim River, then along the north bank of the main channel of Old River to Igyalleq Creek (Whitefish Creek), then along the south and west bank of Igyalleq Creek to Whitefish Lake, then directly across Whitefish Lake to Ophir Creek then along the west bank of Ophir Creek to its headwaters at 61° 10.22' N. lat., 159° 46.05' W. long.;*** (A) ~~Unit 19A consists of the Kuskokwim River drainage downstream from and including the Moose Creek drainage on the north bank and downstream from and including the Stony River drainage on the south bank, excluding Unit 19B.~~ ***Unit 19(A) consists of the Kuskokwim River drainage downstream from and including the Moose Creek drainage on the north bank and downstream from and including the Stony River drainage on the south bank, excluding Unit 19(B);*** (21) *Unit 21.* (i) ~~Unit 21 consists of drainages into the Yukon~~

WP16–36 Executive Summary	
	~~River upstream from Paimiut to, but not including, the Tozitna River drainage on the north bank, and to, but not including, the Tanana River drainage on the south bank; and excluding the Koyukuk River drainage upstream from the Dulbi River drainage:~~ ***Unit 21 consists of drainages into the Yukon River and Arhymot Lake upstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Portage to its intersection with Arhymot Lake, then south along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River) drainage then to, but not including, the Tozitna River drainage on the north bank, and to but not including the Tanana River drainage on the south bank, and excluding the Koyukuk River drainage upstream from the Dulbi River drainage;*** *(E) ~~Unit 21E consists of the Yukon River drainage from Paimiut upstream to, but not including, the Blackburn Creek drainage, and the Innoko River drainage downstream from the Iditarod River drainage.~~* ***Unit 21(E) consists of that portion of Unit 21 in the Yukon River and Arhymot Lake drainages upstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River, then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Portage to its intersection with Arhymot Lake, then along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River) drainage, then to, but not including, the Blackburn Creek drainage, and the Innoko River drainage downstream from the Iditarod River drainage;***
OSM Preliminary Conclusion	**Support**

WP16–36 Executive Summary	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-36

ISSUES

Proposal WP16-36, submitted by the Office of Subsistence Management, requests changes to the existing boundaries for Unit 18, Unit 19, and Unit 21.

DISCUSSION

The proponent states that this proposal was submitted to align the Federal unit boundary descriptions with the boundaries the Alaska Board of Game adopted when it changed the boundaries for Units 18, 19, and 21 at their 2014 meeting. Before the boundaries were changed, public testimony noted that the old boundaries were confusing. People who hunted in the area and law enforcement wanted boundaries established using recognizable landmarks to delineate them more easily.

Existing Federal Regulation

> *(18) Unit 18. (i) Unit 18 consists of that area draining into the Yukon and Kuskokwim Rivers downstream from a straight line drawn between Lower Kalskag and Paimiut and the drainages flowing into the Bering Sea from Cape Newenham on the south to and including the Pastolik River drainage on the north; Nunivak, St. Matthew, and adjacent islands between Cape Newenham and the Pastolik River.*
>
> *(19) Unit 19. (i) Unit 19 consists of the Kuskokwim River drainage upstream from a straight line drawn between Lower Kalskag and Piamiut:*
>
> *(A) Unit 19A consists of the Kuskokwim River drainage downstream from and including the Moose Creek drainage on the north bank and downstream from and including the Stony River drainage on the south bank, excluding Unit 19B.*
>
> (*21) Unit 21. (i) Unit 21 consists of drainages into the Yukon River upstream from Paimiut to, but not including, the Tozitna River drainage on the north bank, and to, but not including, the Tanana River drainage on the south bank; and excluding the Koyukuk River drainage upstream from the Dulbi River drainage:*
>
> *(E) Unit 21E consists of the Yukon River drainage from Paimiut upstream to, but not including, the Blackburn Creek drainage, and the Innoko River drainage downstream from the Iditarod River drainage.*

Proposed Federal Regulation

(18) *Unit 18.* (i) ~~Unit 18 consists of that area draining into the Yukon and Kuskokwim Rivers downstream from a straight line drawn between Lower Kalskag and Paimiut and the drainages flowing into the Bering Sea from Cape Newenham on the south to and including the Pastolik River drainage on the north; Nunivak, St. Matthew, and adjacent islands between Cape Newenham and the Pastolik River.~~

Unit 18 consists of that area draining into the Yukon and Kuskokwim Rivers westerly and downstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Paimiut Portage to its intersection with Arhymot Lake, then south along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River), then along the south bank of Crooked Creek downstream to the northern terminus of Crooked Creek to the Yukon-Kuskokwim Portage (locally known as the Mud Creek Tramway), then along the west side of the tramway to Mud Creek, then along the westerly bank of Mud Creek downstream to an unnamed slough of the Kuskokwim River (locally known as First Slough or Kalskag Slough), then along the west bank of this unnamed slough downstream to its confluence with the Kuskokwim River, then southeast across the Kuskokwim River to its southerly bank, then along the south bank of the Kuskokwim River upriver to the confluence of a Kuskokwim River slough locally known as Old River, then across Old River to the downriver terminus of the island formed by Old River and the Kuskokwim River, then along the north bank of the main channel of Old River to Igyalleq Creek (Whitefish Creek), then along the south and west bank of Igyalleq Creek to Whitefish Lake, then directly across Whitefish Lake to Ophir Creek, then along the west bank of Ophir Creek to its headwaters at 61ø 10.22' N. lat., 159ø 46.05' W. long., and the drainages flowing into the Bering Sea from Cape Newenham on the south to and including the Pastolik River drainage on the north; Nunivak, St. Matthews, and adjacent islands between Cape Newenham and the Pastolik River, and all seaward waters and lands within three miles of these coastlines.

(19) Unit 19. (i) ~~*Unit 19 consists of the Kuskokwim River drainage upstream from a straight line drawn between Lower Kalskag and Piamiut:*~~

Unit 19 consists of the Kuskokwim River drainage upstream, excluding the drainages of Arhymot Lake, from a line starting at the outlet of Arhymot Lake at Crooked Creek (locally known as Johnson River), then along the south bank of Crooked Creek downstream to the northern terminus of Crooked Creek to the Yukon- Kuskokwim Portage (locally known as the Mud Creek Tramway), then along the west side of the tramway to Mud Creek, then along the westerly bank of Mud Creek downstream to an unnamed slough of the Kuskokwim River (locally known as First Slough or Kalskag Slough), then along the west bank of this unnamed slough downstream to its confluence with the Kuskokwim River, then southeast across the Kuskokwim River to its southerly bank, then along the south bank of the Kuskokwim River upriver to the confluence of a Kuskokwim River slough locally known as Old River, then across Old River to the downriver terminus of the island formed by Old River and the Kuskokwim

River, then along the north bank of the main channel of Old River to Igyalleq Creek (Whitefish Creek), then along the south and west bank of Igyalleq Creek to Whitefish Lake, then directly across Whitefish Lake to Ophir Creek then along the west bank of Ophir Creek to its headwaters at 61° 10.22' N. lat., 159° 46.05' W. long.;

(A) ~~Unit 19A consists of the Kuskokwim River drainage downstream from and including the Moose Creek drainage on the north bank and downstream from and including the Stony River drainage on the south bank, excluding Unit 19B.~~

Unit 19(A) consists of the Kuskokwim River drainage downstream from and including the Moose Creek drainage on the north bank and downstream from and including the Stony River drainage on the south bank, excluding Unit 19(B);

(21) *Unit 21.* (i) ~~Unit 21 consists of drainages into the Yukon River upstream from Paimiut to, but not including, the Tozitna River drainage on the north bank, and to, but not including, the Tanana River drainage on the south bank; and excluding the Koyukuk River drainage upstream from the Dulbi River drainage:~~

Unit 21 consists of drainages into the Yukon River and Arhymot Lake upstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Portage to its intersection with Arhymot Lake, then south along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River) drainage then to, but not including, the Tozitna River drainage on the north bank, and to but not including the Tanana River drainage on the south bank, and excluding the Koyukuk River drainage upstream from the Dulbi River drainage;

(E) ~~Unit 21E consists of the Yukon River drainage from Paimiut upstream to, but not including, the Blackburn Creek drainage, and the Innoko River drainage downstream from the Iditarod River drainage.~~

Unit 21(E) consists of that portion of Unit 21 in the Yukon River and Arhymot Lake drainages upstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River, then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Portage to its intersection with Arhymot Lake, then along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River) drainage, then to, but not including, the Blackburn Creek drainage, and the Innoko River drainage downstream from the Iditarod River drainage;

Existing State Regulation

Game Management Unit 18 consists of that area draining into the Yukon and Kuskokwim Rivers westerly and downstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Paimiut Portage to its intersection with Arhymot Lake, then south along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River), then along the south bank of Crooked Creek downstream to the northern terminus of Crooked Creek to the Yukon-Kuskokwim Portage (locally known as the Mud Creek Tramway), then along the west side of the tramway to Mud Creek, then along the westerly

bank of Mud Creek downstream to an unnamed slough of the Kuskokwim River (locally known as First Slough or Kalskag Slough), then along the west bank of this unnamed slough downstream to its confluence with the Kuskokwim River, then southeast across the Kuskokwim River to its southerly bank, then along the south bank of the Kuskokwim River upriver to the confluence of a Kuskokwim River slough locally known as Old River, then across Old River to the downriver terminus of the island formed by Old River and the Kuskokwim River, then along the north bank of the main channel of Old River to Igyalleq Creek (Whitefish Creek), then along the south and west bank of Igyalleq Creek to Whitefish Lake, then directly across Whitefish Lake to Ophir Creek, then along the west bank of Ophir Creek to its headwaters at 61° 10.22′ N. lat., 159° 46.05′ W. long., and the drainages flowing into the Bering Sea from Cape Newenham on the south to and including the Pastolik River drainage on the north; Nunivak, St. Matthews, and adjacent islands between Cape Newenham and the Pastolik River, and all seaward waters and lands within three miles of these coastlines;

Game Management Unit 19 consists of the Kuskokwim River drainage upstream, excluding the drainages of Arhymot Lake, from a line starting at the outlet of Arhymot Lake at Crooked Creek (locally known as Johnson River), then along the south bank of Crooked Creek downstream to the northern terminus of Crooked Creek to the Yukon- Kuskokwim Portage (locally known as the to Mud Creek Tramway), then along the west side of the tramway to Mud Creek, then along the westerly bank of Mud Creek downstream to an unnamed slough of the Kuskokwim River (locally known as First Slough or Kalskag Slough), then along the west bank of this unnamed slough downstream to its confluence with the Kuskokwim River, then southeast across the Kuskokwim River to its southerly bank, then along the south bank of the Kuskokwim River upriver to the confluence of a Kuskokwim River slough locally known as Old River, then across Old River to the downriver terminus of the island formed by Old River and the Kuskokwim River, then along the north bank of the main channel of Old River to Igyalleq Creek (Whitefish Creek), then along the south and west bank of Igyalleq Creek to Whitefish Lake, then directly across Whitefish Lake to Ophir Creek then along the west bank of Ophir Creek to its headwaters at 61° 10.22′ N. lat., 159° 46.05′ W. long.;

Unit 19(A) consists of the Kuskokwim River drainage downstream from and including the Moose Creek drainage on the north bank and downstream from and including the Stony River drainage on the south bank, excluding Unit 19(B);

Game Management Unit 21 consists of drainages into the Yukon River and Arhymot Lake upstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Portage to its intersection with Arhymot Lake, then south along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River) drainage then to, but not including, the Tozitna River drainage on the north bank, and to but not including the Tanana River drainage on the south bank, and excluding the Koyukuk River drainage upstream from the Dulbi River drainage;

Unit 21(E) consists of that portion of Unit 21 in the Yukon River and Arhymot Lake drainages upstream from a line starting at the downriver boundary of Paimiut on the north bank of the Yukon River, then south across the Yukon River to the northern terminus of the Paimiut Portage, then south along the Portage to its intersection with Arhymot Lake, then along the northern and western bank of Arhymot Lake to the outlet at Crooked Creek (locally known as Johnson River) drainage, then to, but not including, the Blackburn Creek drainage, and the Innoko River drainage downstream from the Iditarod River drainage;

Extent of Federal Public Lands

Federal public lands comprise approximately 66% of Unit 18 and consist of 63% U.S. Fish and Wildlife Service (USFWS) managed lands and 3% Bureau of Land Management (BLM) managed lands.

Federal public lands comprise approximately 21% of Unit 19 and consist of 70% USFWS managed lands, 16% BLM managed lands, and 5% National Park Service (NPS) managed lands.

Federal public lands comprise approximately 49% of Unit 21 and consist of 27% USFWS managed lands and 22% BLM managed lands (**see maps for Units 18, 19, and 21**).

Customary and Traditional Use Determination

Residents of Unit 18, Aniak, Chuathbaluk, St. Michael, St, Stebbins, and Upper Kalskag have a customary and traditional use determination for moose in various areas of Unit 18. Residents of Unit 18, Manokotak, St. Michael, Stebbins, Togiak, Twin Hills, and Upper Kalskag have a customary and traditional use determination for caribou in Unit 18. Rural residents of Akiachak, Akiak, Eek, Goodnews Bay, Kwethluk, Mountain village, Napaskiak, Platinum, Quinhagak, St. Marys and Tuluksak have a customary and traditional use determination for brown bear in Unit 18. Residents of Unit 18, Unit 19A, Holy Cross, Stebbins, Togiak, and Twin Hills, have a customary and traditional use determination for black bear in Unit 18.

Residents of Units 19 and 18 have a customary and traditional use determination for moose in Unit 19A. Residents of Units 19A, 19B, 18, Marshall, Pilot Station, Russian Mission, and St. Marys have a customary and traditional use determination for caribou in Unit 19A.

Residents of Units 21A, 21E, Aniak, Crooked Creek, McGrath, and Takotna have a customary and traditional use determination for moose in Unit 21A. Residents of Units 21A, 21D, 21E, Aniak, Chuathbaluk, Crooked Creek, McGrath, and Takotna have a customary and traditional use determination for caribou in Unit 21A. Residents of Units 21 and 23 have customary and traditional use determination for brown bear in Unit 21.

Regulatory History

The boundaries for Unit 18, Unit 19, and Unit 21 were changed under State regulations. The Alaska Board of Game adopted Proposal 10 in March of 2014, stating that the boundaries, as delineated at the time, were confusing and unclear. The State wanted boundaries based on landmarks and features that could be easily identified.

Effects of This Proposal

If this Proposal is adopted, the unit boundaries for Unit 18, Unit 19, and Unit 21, will be changed establishing new boundaries using recognizable landmarks to delineate them more easily. This will also parallel changes made by the Alaska Board of Game in 2014, reducing regulatory complexity by making the unit descriptions the same under State and Federal regulations. If this Proposal is adopted, there should be no impacts to wildlife populations. There may be impacts to subsistence users, but these impacts are being addressed in WP16-33.

OSM Preliminary Conclusion

Support Proposal WP16-36.

Justification

This proposal would make the boundary descriptions for Units 18, 19, and 21, as listed in the Code of Federal Regulations, consistent with the State unit boundaries. Adopting this proposal will eliminate regulatory complexity for Federally qualified subsistence users, regarding unit boundaries, and assist law enforcement.

WP16–27/28 Executive Summary	
General Description	Proposal WP16–27/28 requests that the timeframe when the *Up to a 31-day season* for moose can be announced in Unit 17A be changed from Dec. 1–Jan. 31 to Dec. 1–end of Feb. and that the harvest limit be changed from up to 2 moose with no antler restrictions, to up to 2 moose with a limit of one antlered bull and one antlerless moose. *Submitted by Togiak Fish and Game Advisory Committee and Nushagak Fish and Game Advisory Committee.*
Proposed Regulation	**Units 17A—Moose** *Unit 17A – up to 2 moose* ***(one antlered bull and one antlerless)*** *by State registration permit* — *Up to a 31-day season may be announced between Dec. 1–~~Jan. 31~~****end of Feb.***
OSM Preliminary Conclusion	**Support** Proposal WP16–27 **with modification** to specify the antler restrictions and **Take no action** on Proposal WP16-28. The modified regulation should read: **Unit 17A—Moose** *Unit 17A – up to 2 moose****; one antlered bull by State registration permit, one antlerless moose*** *by State registration permit.* — *Up to a 31-day season may be announced between Dec. 1–~~Jan. 31~~****end of Feb.***
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	

WP16–27/28 Executive Summary	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-27/28

ISSUES

Proposal WP16-27, submitted by the Togiak Fish and Game Advisory Committee, and Proposal WP16-28, submitted by the Nushagak Fish and Game Advisory Committee, request that the timeframe when the *Up to a 31-day season* for moose can be announced in Unit 17A be changed from Dec. 1–Jan. 31 to Dec. 1–end of Feb. and that the harvest limit be changed from up to 2 moose with no antler restrictions, to up to 2 moose with a limit of one antlered bull and one antlerless moose.

DISCUSSION

This change would mirror State regulations and provide the Federal manager a longer window for the may-be-announced season to occur. With a longer window, the manager can be more adaptive by setting winter season dates in response to weather and travel conditions that can limit subsistence hunting opportunities. The proposed limit change is intended to keep the population healthy and productive by adjusting moose harvest limits.

Existing Federal Regulation

Unit 17A—Moose

Unit 17A – up to 2 moose by State registration permit	*Up to a 31-day season may be announced between Dec. 1–Jan. 31*

Proposed Federal Regulation

Unit 17A—Moose

Unit 17A – up to 2 moose ***(one antlered bull and one antlerless)*** *by State registration permit*	*Up to a 31-day season may be announced between Dec. 1~~–Jan. 31~~****end of Feb.***

Existing State Regulation

Unit 17A—Moose

*Unit 17A – Two moose (one antlered bull and one antlerless) by permit may be announced available in person in Dillingham and Togiak, (up to a 31-day season may be announced Dec.-end of Feb.)**

Extent of Federal Public Lands

Federal public lands comprise approximately 87% of Unit 17A and consist entirely or U.S. Fish and Wildlife Service managed lands (**Unit 17 Map**).

Customary and Traditional Use Determinations

The Board has recognized the customary and traditional uses of moose by residents of Kwethluk in Unit 17A and Unit 17B, those portions north and west of a line beginning from the Unit 18 boundary at the northwestern 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 the Unit 17 boundary intersects the Shotgun Hills.

In Unit 17A, that portion north of Togiak Lake that includes Izavieknik River drainages, residents of Akiak and Akiachak have a positive customary and traditional use determination for moose.

In Unit 17A remainder, residents of Unit 17, Goodnews Bay and Platinum; excluding residents of Akiachak, Akiak, and Quinhagak, have a positive customary and traditional use determination for moose.

Regulatory History

The Federal Subsistence Board (Board) approved Special Action S97-03 in 1997 to open a temporary moose season from Aug. 20-Sept. 15 based on a healthy and growing population.

Special Action SW00-05 was approved by the Board to temporarily change regulations from *No Federal Open Season* to a season from Aug. 20-Sept. 15, 2000, with a one bull harvest limit by State registration permit because of the continued moose population growth.

In 2001, the Board approved Proposal WP01-20 with modification to establish a season aligned with the State season from Aug. 25-Sept. 15 and required a State registration permit for one bull.

Special Action WSA02-11, requesting a winter hunt, was approved by the Board with modification to require the use of a State registration permit for the Federal hunt. The Board adopted the request because of the robust moose population.

In 2004, Proposal WP04-46 was adopted by the Board and established a winter season of up to 14 days during the period of Dec. 1-Jan. 31 and required a State registration permit for the harvest of one bull in the portion of Unit 17A to the area east of the west shore of Nenevok Lake, west bank of the Kemuk River, and west bank of the Togiak River south from the confluence of the Togiak and Kemuk Rivers. The season could be opened or closed by the Togiak National Wildlife Refuge Manager after consultation with the Alaska Department of Fish and Game (ADF&G) and local users. The Board supported this action to minimize regulatory complexity and provide a greater opportunity for Federally qualified subsistence users to harvest moose in Unit 17A.

In 2012, the Board adopted Proposal WP12-40 to open all of Unit 17A to the winter moose hunt, because it limited complexity between Federal and State regulations and provided greater opportunity to harvest from an expanding moose population. The season and harvest limit remained unchanged from a winter season to be announced with a harvest limit of 1 antlered bull.

In February 2015, the Alaska Board of Game adopted Proposal 49 to change the harvest limit for the winter registration hunt in Unit 17A. That action changed the harvest limit from one bull and one antlerless moose to one antlered bull and one antlerless moose, and added the month of February to the possible 31 day hunt season, a season of up to 31 days which may be announced to occur between Dec. 1 and the end of February. These changes were made in response to an increasing moose population and concerns over a potential population crash, in addition to unpredictable travel conditions that occur during the winter hunting seasons. The harvest limit changes were intended to help keep the moose harvest within sustainable limits by providing additional protection for both cow and bull moose and to better achieve the desired population objective for the bull:cow ratio. The harvest limits would add that protection by reducing potential mistaken harvest of cows after the cow quota has been met and by reducing the potential harvest of large breeding bulls that may have dropped their antlers, shifting potential bull harvest to younger bulls that still carry antlers (ADF&G 2015).

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 2010). Local residents harvested moose opportunistically, but other species such as caribou, bears, and beaver were the main sources of wild meat in the area. ADF&G began collecting data on the moose population in 1971 and eventually established a minimum population objective of 300 moose and a target population of 1,100–1,750 for moose (Woolington 2010). The target objective has since been adjusted by refinement of the estimate of the moose winter habitat map that indicated a more realistic carrying capacity estimate of 900 to 1,350 moose (ADF&G, et. al. 2012).

Late-winter minimum counts for Unit 17A show an increase from 652 moose in 2002 to 1,166 moose in 2011 (**Table 1**). In the neighboring Goodnews River drainage (southern Unit 18), moose numbers increased from 2 in 2002 to 196 in 2011 (Aderman 2011, pers. comm.). Currently, the moose population in Unit 17A is increasing and is nearing the upper limit of the population objectives (ADF&G 2015).

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 radio-tracking 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 2013 of 127.5 calves per 100 cows with an average twinning rate of 64.4% over the same period. Calf survival from birth to November during this time averaged 47.8%, with an average recruitment of approximately 63 calves per 100 cows (Aderman 2014). A May 2015 radio-tracking survey observed calf survival and recruitment both higher than long term averages (Aderman 2015 pers. comm.). Other composition data has not been collected recently, but bull:cow ratios have historically been high in all areas of Unit 17 (Woolington 2010).

Table 1. Moose population minimum counts from winter surveys in Unit 17A from 1991-2011 (Aderman 2014).

Unit 17A Moose Survey Results[a]	
Year	**Minimum Count**
1991	4
1992	6
1993	-
1994	84
1995	136
1996	-
1997	234
1998	429
1999	511
2000	422
2001	471
2002	652
2003	-
2004	777
2005	-
2006	1023
2007	-
2008	1070
2009	-
2010	-
2011	1166

[a] Surveys were not conducted in all years.

Harvest History

Between 2003 and 2014, fall harvest ranged from 7-40 moose, with an average harvest of 25 moose (**Table 2**). The average harvest during winter for this time period was 11 moose and ranged from 2-22 moose. For the same time period, the total harvest of both fall and winter hunts averaged 36 moose and ranged from 11-54 moose.

The State winter hunt is managed using a registration permit for an antlered bull and a separate permit for antlerless moose with a small quota (approximately 10 moose) for antlerless animals (ADF&G 2015). Marginal snow conditions in recent years have prevented hunters from accessing hunt areas with snowmachines which are the main means of transport during the winter moose season (ADF&G 2015).

Table 2. Moose harvest during fall and winter hunts in Unit 17A from 1997-2014 (Aderman 2015, pers. comm.; Barten 2015, pers. comm.; Woolington 2010)

Unit 17A Moose Harvest			
Year	**Fall Harvest**	**Winter Harvest**	**Total Harvest**
1997	15	-	15
1998	10	-	10
1999	10	-	10
2000	10	-	10
2001	7	-	7
2002	8	-	8
2003[a]	7	4	11
2004	10	10	20
2005	21	3	24
2006	24	12	36
2007[b]	32	9	41
2008	24	21	45
2009	29	2	31
2010	27	10	37
2011	28	22	50
2012	29	16	45
2013	22	12	34
2014[c]	40	17	57

[a] Winter hunt began in 2003. [b] Beginning in 2007, winter hunt included a western portion of Unit 17C. [c] Preliminary reported harvest for 2014.

Effects of the Proposal

If adopted, this proposal would add an extra month to the time frame in which the up to 31 day season could be announced should weather conditions dictate a later season opening. Expanding the range of possible season dates will provide greater flexibility to managers in setting seasons and may allow increased hunting opportunity to Federally qualified subsistence users when the travel conditions are more favorable.

If adopted, this proposal would also change the harvest limit from up to two moose with no antler restrictions, to up to two moose with a limit of only one antlered bull and only one antlerless moose. Federal and State moose regulations will be aligned which would reduce regulatory complexity for Federally qualified subsistence users, managers and law enforcement officers. Adoption of the proposed limit changes, will help managers keep the moose harvest within sustainable limits by providing additional protection for both cow and bull moose and to better achieve the desired population objective for the bull:cow ratio. The limits will help reduce potential mistaken harvest of cows after the cow quota has been

met. The limit changes will also reduce the potential harvest of large breeding bulls that have dropped their antlers while shifting potential bull harvest to younger bulls that still carry antlers.

OSM PRELIMINARY CONCLUSION

Support Proposal WP16-27 **with modification** to specify the antler restrictions and **Take no action** on Proposal WP16-28.

The modified regulation should read:

Unit 17A—Moose

*Unit 17A – up to 2 moose**; one antlered bull by State registration permit, one antlerless moose** by State registration permit.*	*Up to a 31-day season may be announced between Dec. 1~~ Jan. 31~~**end of Feb.***

Justification

The moose population in Unit 17A is healthy, continuing to increase in numbers, and is expanding westward into Unit 18. Adoption of the proposal's limit changes, will help managers keep the moose harvest within sustainable limits by providing additional protection for both cow and bull moose and to better achieve the desired population objective for the bull:cow ratio. The limits will help reduce potential mistaken harvest of cows after the cow quota has been met. The limit changes will also reduce the potential harvest of large breeding bulls that have dropped their antlers while shifting potential bull harvest to younger bulls that still carry antlers. The modified regulation would clarify that the harvest limit is set at two moose though only one may be an antlered bull and the other would have to be an antlerless moose. In addition, by adopting the modified proposal, Federal and State Unit 17A moose regulations will be aligned which would reduce regulatory complexity for Federally qualified subsistence users, managers and law enforcement officers.

The proposal will add an extra month to the time frame in which the up to 31 day season could be announced, should the weather conditions dictate a later season opening. Expanding the range of possible season dates will provide greater flexibility to managers in setting seasons and may allow increased hunting opportunity to Federally qualified subsistence users when the travel conditions are more favorable.

The two proposals, WP16-27 and WP16-28 request the same regulatory changes. The recommendation is to take no action on WP16-28 because that request can be fully addressed through action on WP16-27.

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WP16–29/30 Executive Summary	
General Description	Proposal WP16–29/30 requests that the caribou seasons in Unit 9B and portions of Unit 17 be extended from Aug. 1 – Mar. 15 to Aug. 1 – Mar. 31. *Submitted by Nushagak Fish and Game Advisory Committee and Togiak Fish and Game Advisory Committee.*
Proposed Regulation	**Unit 9—Caribou** *Unit 9B— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.* — *Aug. 1-Mar. ~~15~~31* **Unit 17—Caribou** *Unit 17A all drainages west of Right Hand Point— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31. The season may be closed and harvest limit reduced for the drainages between the Togiak River and Right Hand Point by announcement of the Togiak National Wildlife Refuge Manager.* — *Aug. 1-Mar. ~~15~~31* *Unit 17A remainder and 17C remainder— selected drainages; a harvest limit of up to 2 caribou by State registration permit will be determined at the time the season is announced. Season, harvest limit, and hunt area to be announced by the Togiak National Wildlife Refuge Manager.* — *Season may be announced between Aug. 1-Mar. ~~15~~31* *Unit 17B and 17C— that portion of 17C east of the Wood River and Wood River Lakes— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.* — *Aug. 1-Mar. ~~15~~31*
OSM Preliminary Conclusion	**Support with modification** to remove regulatory language referencing season openings and closures, harvest limits and hunt areas and delegate

WP16–29/30 Executive Summary	
	authority to the Togiak National Wildlife Refuge Manager to determine the season, harvest limits and hunt areas via a delegation of authority letter and **Take no action** on Proposal WP16-30. The modified regulation should read: **Unit 9—Caribou** *Unit 9B— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.* — *Aug. 1-Mar. ~~15~~31* **Unit 17—Caribou** *Unit 17A all drainages west of Right Hand Point— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31. ~~The season may be closed and harvest limit reduced for the drainages between the Togiak River and Right Hand Point by announcement of the Togiak National Wildlife Refuge Manager.~~* — *Aug. 1-Mar. ~~15~~31* *Unit 17A remainder and 17C remainder— selected drainages; a harvest limit of up to 2 caribou by State registration permit will be determined at the time the season is announced. ~~Season, harvest limit, and hunt area to be announced by the Togiak National Wildlife Refuge Manager.~~* — *Season may be announced between Aug. 1-Mar. ~~15~~31* *Unit 17B and 17C— that portion of 17C east of the Wood River and Wood River Lakes— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou from Aug. 1-Jan. 31.* — *Aug. 1-Mar. ~~15~~31*
Bristol Bay Subsistence Regional Advisory Council Recommendation	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	

WP16–29/30 Executive Summary	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-29/30

ISSUES

WP16-29, submitted by the Nushagak Fish and Game Advisory Committee, and WP16-30, submitted by the Togiak Fish and Game Advisory Committee, request that the caribou seasons in Unit 9B and portions of Unit 17 be extended from Aug. 1 – Mar. 15 to Aug. 1 – Mar. 31.

DISCUSSION

The proponent states that this change would allow Federally qualified subsistence hunters a slightly longer season in which to harvest the Mulchatna Caribou Herd (MCH) on Federal public lands within Unit 9B and in portions of Unit 17. In addition, the proponent states that this change would mirror State regulations and reduce regulatory complexity for subsistence users.

Existing Federal Regulation

Unit 9—Caribou

Unit 9B— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.	*Aug. 1-Mar. 15*

Unit 17—Caribou

Unit 17A all drainages west of Right Hand Point— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31. The season may be closed and harvest limit reduced for the drainages between the Togiak River and Right Hand Point by announcement of the Togiak National Wildlife Refuge Manager.	*Aug. 1-Mar. 15*
Unit 17A remainder and 17C remainder— selected drainages; a harvest limit of up to 2 caribou by State registration permit will be determined at the time the season is announced. Season, harvest limit, and hunt area to be announced by the Togiak National Wildlife Refuge Manager.	*Season may be announced between Aug. 1-Mar. 15*
Unit 17B and 17C— that portion of 17C east of the Wood River and Wood River Lakes—2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou from Aug. 1-Jan. 31.	*Aug. 1-Mar. 15*

Proposed Federal Regulation

Unit 9—Caribou

Unit 9B— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.	*Aug. 1-Mar. ~~15~~31*

Unit 17—Caribou

Unit 17A all drainages west of Right Hand Point— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31. The season may be closed and harvest limit reduced for the drainages between the Togiak River and Right Hand Point by announcement of the Togiak National Wildlife Refuge Manager.	*Aug. 1-Mar. ~~15~~31*
Unit 17A remainder and 17C remainder— selected drainages; a harvest limit of up to 2 caribou by State registration permit will be determined at the time the season is announced. Season, harvest limit, and hunt area to be announced by the Togiak National Wildlife Refuge Manager.	*Season may be announced between Aug. 1-Mar. ~~15~~31*
Unit 17B and 17C— that portion of 17C east of the Wood River and Wood River Lakes— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.	*Aug. 1-Mar. ~~15~~31*

Existing State Regulation

Unit 9—Caribou

Unit 9B— 2 caribou by permit. No more than one bull may be taken; no more than one caribou may be taken Aug. 1-Jan. 31.	*Aug. 1-Mar. 31*

Unit 17—Caribou

Unit 17A— all drainages that terminate east of Right	*May be announced*

Hand Point— 2 caribou by permit.	
Unit 17A remainder, 17B and 17C— east of the east banks of the Wood River, Lake Aleknagik, Agulowak River, Lake Nerka and the Agulukpak River— 2 caribou by permit; no more than one bull may be taken; no more than one caribou may be taken from Aug. 1-Jan.31.	*Aug. 1-Mar. 31*
Unit 17C remainder— 2 caribou by permit.	*May be announced*

Extent of Federal Public Lands

Federal public lands comprise approximately 44% of Unit 9B and consist of 26% National Park Service (NPS) managed lands and 18% Bureau of Land Management (BLM) managed lands (**Unit 9 Map**).

Federal public lands comprise approximately 28% of Unit 17 and consist of 21% U.S. Fish and Wildlife Service (FWS) managed lands, 4% BLM managed lands and 3% NPS managed lands (**Unit 17 Map**).

Customary and Traditional Use Determinations

Residents of Units 9B, 9C, and 17 have a customary and traditional use determination for caribou in Units 9A and 9B.

In Unit 17A— that portion west of the Izavieknik River, Upper Togiak Lake, Togiak Lake, and the main course of the Togiak River— residents of Goodnews Bay, Platinum, Quinhagak, Eek, Tuntutuliak, and Napakiak have a customary and traditional use determination for caribou.

In Unit 17A— that portion north of Togiak Lake that includes Izavieknik River drainages— residents of Akiak, Akiachak, and Tuluksak have a customary and traditional use determination for caribou.

Residents of Kwethluk have a customary and traditional use determination for caribou in Units 17A and 17B— those portions north and west of a line beginning from the Unit 18 boundary at the northwestern 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 the Unit 17 boundary intersects the Shotgun Hills.

In Unit 17B—that portion of Togiak National Wildlife Refuge within Unit 17B—residents of Bethel, Goodnews Bay, Platinum, Quinhagak, Eek, Akiak, Akiachak, Tuluksak, Tuntutuliak, and Napakiak have a customary and traditional use determination for caribou.

In Unit 17 remainder, residents of Units 9B, 17, Lime Village, and Stony River have a customary and traditional use determination for caribou.

Regulatory History

State and Federal regulations for the MCH were liberalized during the dramatic population increase that occurred in the 1990s. Numerous modifications were made to the Federal subsistence regulations for various management units as the MCH population increased and expanded into new range. In 1994, the Federal Subsistence Board (Board) adopted P94-35 that changed the limit from 4 to 5 caribou and no more than 2 bulls. In 1997, by adopting P97-45, the Board removed the no more than 2 bull restriction.

Following a population decline, the season and harvest limit regulations became more restricted in 2006 and 2007.

In March 2006, the Alaska Board of Game adopted new 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 from Aug. 1–Jan. 31.

In 2007, the Board adopted Proposal WP07-23 with modification to reduce the harvest limits in Unit 9B, a portion of Unit 17A, Unit 17B, a portion of Unit 17C, Unit 18, a portion of Unit 19A, and Unit 19B; from five to three caribou due to the large population decline.

In March 2009, the Alaska Board of Game adopted Proposal 57 that eliminated the nonresident harvest on the MCH to ensure subsistence opportunity was being provided.

In 2010, the Bristol Bay Subsistence Regional Advisory Council submitted two proposals, WP10-51 and WP10-53. Proposal WP10-51 requested that the Federal caribou seasons be made consistent in Units 9A, 9B, 17B, a portion of 17C, 18, 19A, and 19B with an Aug. 1–Mar. 31 season. Proposal WP10-53 requested a harvest limit of two caribou, with no more than one bull to be taken and no more than one caribou to be taken Aug. 1–Jan. 31 in Units 9A, 9B, a portion of 9C, 17A, 17B, 17C, 18, 19A, and 19B (excluding Lime Village). The Board adopted Proposal WP10-51 with modification to make the season ending date Mar. 15 for all units, including the remainder of Units 17A and 17C, and also adopted Proposal WP10-53 as submitted. In addition, Proposal WP10-60, which requested the harvest limit for caribou in Unit 18 be reduced from three to two caribou, was adopted by the Board with modification to include restriction harvest limit of one bull and extend the one caribou restriction from Aug. 1–Nov. 30 to Aug. 1–Jan. 31, consistent with the actions taken on WP10-51 and WP10-53.

In 2012, the Board adopted Proposal WP12-42 with modification to maintain the two caribou harvest limit, but changed the harvest season to Aug. 1–Sept. 30 and Dec. 20– to the last day of February in that portion of Unit 18 south of the Kuskokwim River (FSB 2012). The remainder of Unit 18 retained the Aug. 1–Mar. 15 harvest season. However, Federally qualified subsistence users were still able to harvest caribou from Aug. 1–Mar. 15 throughout Unit 18 under State regulations.

Wildlife Special Action WSA11-10/11 was submitted by the Yukon Delta National Wildlife Refuge in February 2012. WSA11-10 requested a two week season reduction for caribou in Unit 18, and

WSA11-11called for Federal public lands in Unit 18 south and east of the Kuskokwim River to be closed to the harvest of caribou to all users starting March 1, 2012. The Board rejected these Special Action requests because it felt current information suggested there was not an emergency situation with the MCH necessitating such an action.

In February 2013, the Alaska Board of Game adopted Proposal 45A which changed the caribou hunt in Units 9A, 9B, portions of 9C, 17, 18, 19A and 19B from a general hunt to a registration hunt, with seasons and harvest limits aligned within the entire range of the MCH. These changes were made to better assess harvest and to better respond to in-season adjustments to season dates and harvest limits, while also helping to assess the response of the caribou population to ongoing intensive management programs.

In July 2013, Federal permit requirements and seasons dates were temporarily aligned with State regulations when the Board approved Temporary Special Action WSA13-02, which requested that a State registration permit be required for Federally qualified subsistence users to harvest caribou in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A and 19B; and shortened the to-be-announced season in Units 17A remainder and 17C remainder from Aug. 1–Mar. 31 to Aug. 1–Mar. 15.

The Association of Village Council Presidents submitted Temporary Special Action WSA13-03 in 2013 to close Federal public lands to the harvest of caribou, except by Federally qualified subsistence users. The Board rejected the temporary special action because the MCH population was still within State management objectives with composition data improving as well.

In 2014, the Board adopted Proposal WP14-22 with modification requiring hunters in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B to use a State registration permit to provide better and more timely harvest reporting. Unit specific regulatory language found in portions of Units 17A and 17C was removed and a delegation of authority letter was issued to the Togiak National Wildlife Refuge Manager for specific in-season management authorities that included: open and close the season and set the harvest limit, including any sex restrictions for caribou on Federal public lands in Unit 17A—all drainages west of Right Hand Point; and, open and close the season, set the harvest limit and identify the hunt area for the may-be-announced season in Units 17A remainder and 17C remainder.

In February 2015, the Alaska Board of Game adopted Proposal 47 to extend the caribou season by two weeks in Units 9B and 17, with a season end date of Mar. 31. The proponent cited that in some years, poor weather and difficult travel conditions prevented hunters from utilizing the full Aug. 1-Mar. 15 season and sometimes caribou were only available in the last few days of March. Caribou is a highly valued food source for Nushagak River villages and members of those villages have often requested season extensions.

Biological Background

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 the 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 2004/2005, much of the herd wintered in Unit 18, and another large part of the herd wintered in the middle Mulchatna River drainage. During 2005/2006, large numbers of caribou wintered near the lower Kvichak River (Woolington 2009).

The State's management objectives for the MCH have changed as population numbers have fluctuated. Prior to 2001, the management objective was to maintain a minimum population of 25,000 adults with a minimum ratio of 35 bulls:100 cows, manage the herd for maximum opportunity to hunt caribou, and manage the herd in a manner that encouraged range expansion west and north of the Nushagak River (Woolington 2001). In 2001, the Alaska Board of Game modified the population objective to maintain a population of 100,000–150,000 caribou (Woolington 2003). In 2009, the population objective was reduced to 30,000–80,000 caribou, which was thought to be more realistic for the herd (ADF&G 2009). Harvest objectives were also reduced from 6,000–15,000 caribou to 2,400–8,000 caribou (ADF&G 2009).

The MCH increased at an average annual rate of 17% between 1981 and 1996, and approximately 28% from 1992 to 1994. Overall herd size peaked in 1996, at approximately 200,000 animals and a peak of 42 bulls:100 cows (Woolington 2007). The dramatic population growth is attributed to mild winters, movements into 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 has declined. A 2008 photo census provided a minimum count of 30,000 caribou, which is as the low end of the State's population objective (**Table 1**) (Woolington 2012). A recent presentation to the Alaska Board of Game suggested the population may now be around 26,000 caribou (Barten 2015). Possible signs of stress in the MCH when the population level was high included an outbreak of hoof rot in 1998 and low calf:cow ratios in the fall 1999 (Woolington 2001).

Estimated bull:cow ratios have been below the management objective since 2001, but recent composition surveys have shown some improvement (**Table 1**). The proportion of bulls classified as large during composition surveys (24%–27%) between 2010 and 2012 has increased from lows observed in 2004 (7%) and 2006 (9%) (**Table 1**). In addition, preliminary data shows the number of pregnant 2- and 3-year old cows increased in 2013 and calf weights have been good, suggesting that caribou are not nutritionally stressed (Butler 2013, pers. comm.). While the MCH is managed as a single herd, some segments of the population appear to be faring better than others, as estimated bull:cow and calf:cow ratios have been consistently higher in the western portion of the MCH range (**Figures 1 and 2**). Fall 2014 composition counts found that the bull:cow ratio met the management objective and calf:cow ratios were at management objectives in two of the past three years (Barten 2015). Data from 2011-2013 shows that calf survival is high (76% avg.) in the Kemuk Mountain area (western portion), which has an active intensive management program for wolves, while calf survival is lower (50% avg.) in the Tundra Lake area (eastern portion), which has no active intensive management (Barten 2015). Wolf removal under intensive management is planned to continue during spring of 2015. Individuals from eastern and western portions of the MCH range appear to have readily mixed prior to 2007 and 2008, but there has recently been more isolation between caribou in the two areas (Woolington 2011a, 2012).

Table 1. Mulchatna Caribou Herd composition counts and population estimates, 1974-2012 (Woolington 2012).

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]
2011/12[q]	21.7	19.0	13.5	71.1	32.2	41.3	26.5	15.4	5,282	---[b]
2012/13[r]	23.2	29.8	19.5	65.3	38.3	38.1	23.6	15.2	4,853	---[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 7/8/1999.
[d] Estimate based on photocensus conducted 6/30/2002.
[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 7/7/2004.
[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 7/11/2006.
[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 7/7/2008.
[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.
[q] Based on pooling data 10/9/2011-10/11/2011.

[r] Based on pooling data from surveys conducted 10/5-10/6/2012.

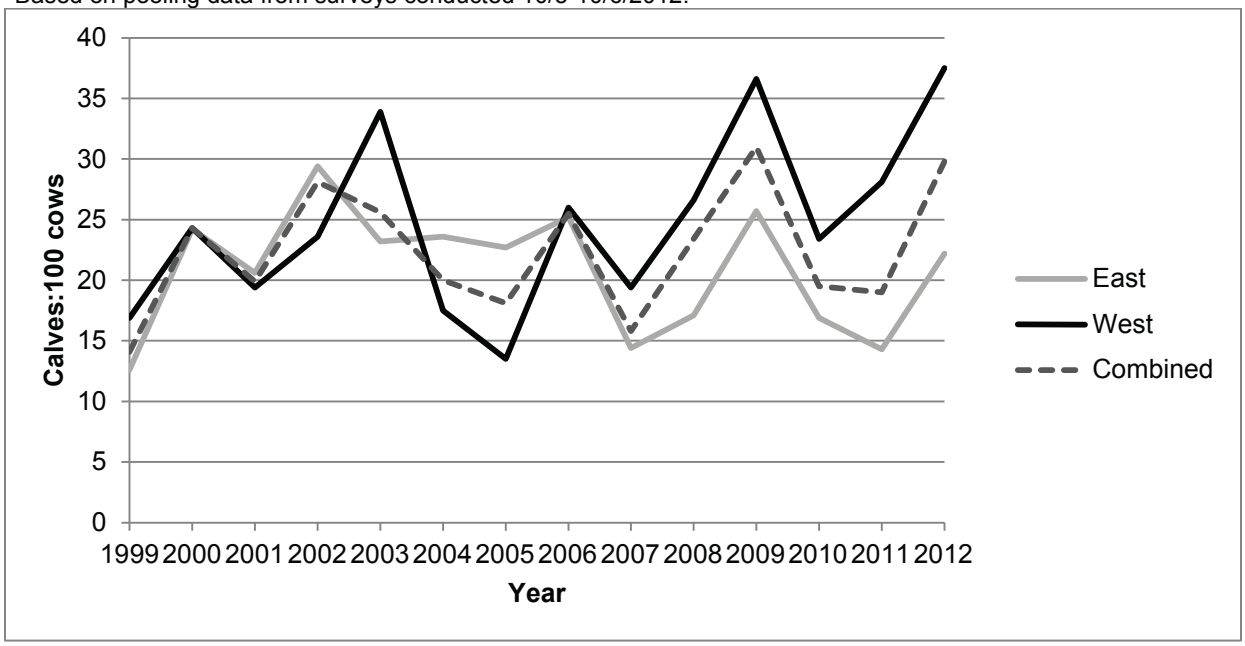

Figure 1. Calf:cow ratio estimates for the Mulchatna Caribou Herd during fall (October) population composition surveys (Woolington 2012). Surveys were conducted on the east (Unit 17B and the eastern portion of Unit 19B) and west (Unit 18 and the western portion of Unit 19B) sides of the herd's range. Combined composition data also includes survey data from Units 19A and 17C and a small group of caribou in the upper Tikchik River basin.

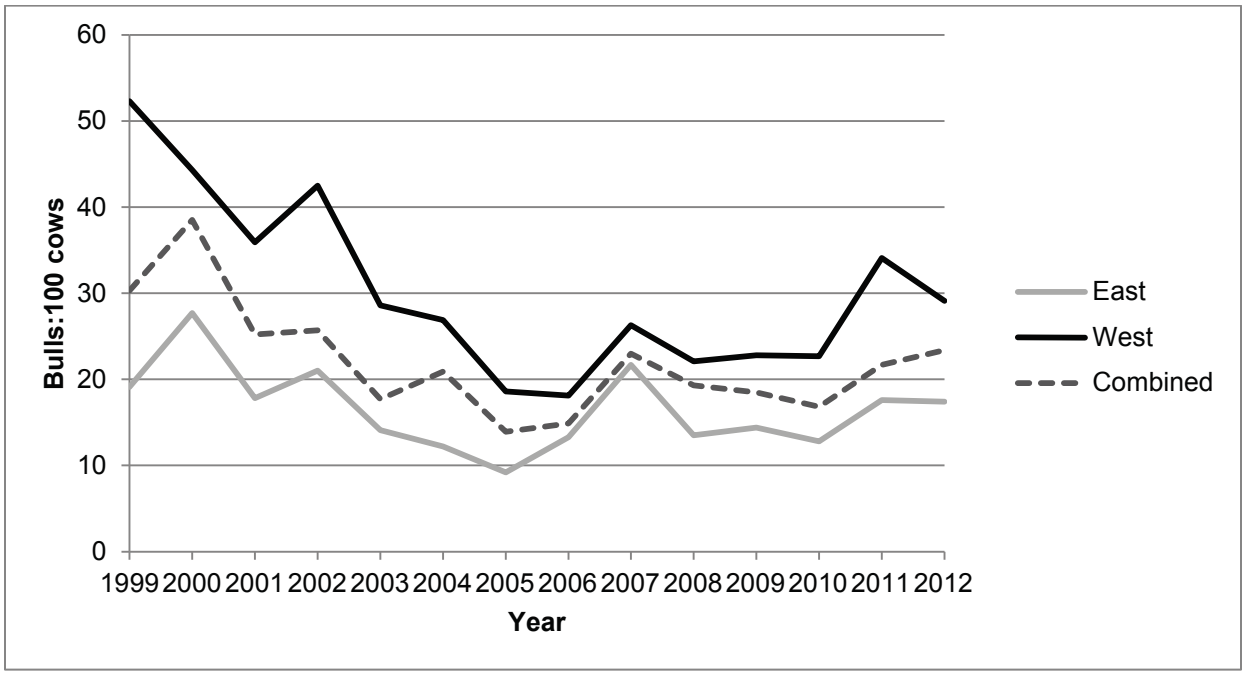

Figure 2. Bull:cow ratio estimates for the Mulchatna Caribou Herd during fall (October) population composition surveys (Woolington 2012). Surveys were conducted on the east (Unit 17B and the eastern portion of Unit 19B) and west (Unit 18 and the western portion of Unit 19B) sides of the herd's range.

Combined composition data also includes survey data from Units 19A and 17C and a small group of caribou in the upper Tikchik River basin.

Habitat

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 had 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 herd's range showed signs of heavy use during periods of high caribou abundance, with extensive trailing evident along major travel routes. Woolington (2011b) reported that some of the summer and fall range of the MCH in the Nushagak Hills and elsewhere was trampled and showed 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

Reported caribou harvest by all users within the range of the MCH has declined from 3,924 caribou in 2000/2001 to 450 caribou in 2010/2011 (**Table 2**). However, a significant amount of unreported harvest has likely occurred (Woolington 2011b). Annual reported harvest by Federally qualified subsistence users increased between 2000 and 2005, but has since declined (**Table 2**). Reported harvest by non-Federally qualified users (nonlocal Alaska residents and nonresidents) declined significantly between 2000 and 2010 (**Table 2**). Nonresident seasons were closed in State regulations in 2009 in the affected areas. Until recently, most of the harvest has occurred in August and September (66% in 2004/2005 and 47% in 2005/2006) (Woolington 2011b). Since 2007/2008, an increasing percentage of the total annual harvest has occurred during February and March (54% in 2007/2008, 55% in 2008/2009, and 42% in 2009/2010) (Woolington 2011b). Harvest of the MCH over the past five years has averaged 347 animals per year (Barten 2015).

Table 2. Reported harvest of caribou and sex composition of the harvest by Federally qualified subsistence users and non-Federally qualified users in Units 9A, 9B, 9C, 17A, 17B, 17C, 18, 19A, and 19B using State harvest tickets, 2000–2010 (OSM 2013). Federally qualified subsistence users are residents of communities with a positive customary and traditional use determination for the respective Federal hunt areas.

	Federally qualified subsistence users			Nonlocal residents			Nonresidents		
		Percent of harvest			Percent of harvest			Percent of harvest	
Year	Harvest	Bulls	Cows	Harvest	Bulls	Cows	Harvest	Bulls	Cows
2000	431	67%	31%	1,462	67%	32%	2,031	93%	6%
2001	645	60%	39%	1,512	56%	43%	1,659	91%	8%
2002	352	64%	34%	1,061	58%	42%	1,284	89%	10%
2003	795	54%	44%	1,227	48%	51%	1,076	91%	8%
2004	601	60%	39%	914	34%	66%	778	78%	21%
2005	835	52%	47%	713	30%	69%	488	67%	33%
2006	423	59%	41%	264	44%	56%	275	62%	36%
2007	403	58%	41%	104	48%	49%	128	63%	36%
2008	257	58%	41%	74	45%	55%	58	66%	34%
2009	247	69%	28%	63	62%	38%	0	0%	0%

2010	381	53%	46%	69	45%	55%	0	0%	0%

Effects of the Proposal

If adopted, the proposal will lengthen the caribou season in Unit 9B and Unit 17 by 16 days providing Federally qualified subsistence users additional opportunity to harvest caribou. Poor weather and difficult winter travel conditions often limit hunting opportunity and the added season length will provide more opportunities for subsistence users. The current harvest objective is 2,400 to 8,000 caribou. Recent reported harvest averaged 347 animals over the past 5 years and an increase in harvest is possible with a longer season. The proposed regulatory change will reduce regulatory complexity between State and Federal regulations.

OSM PRELIMINARY CONCLUSION

Support Proposal WP16-29 **with modification** to remove regulatory language referencing season openings and closures, harvest limits and hunt areas and delegate authority to the Togiak National Wildlife Refuge Manager to determine the season, harvest limits and hunt areas via a delegation of authority letter (**Appendix 1**) and **Take no action** on Proposal WP16-30.

The modified regulation should read:

Unit 9—Caribou

Unit 9B— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31.	*Aug. 1-Mar. ~~15~~31*

Unit 17—Caribou

Unit 17A all drainages west of Right Hand Point— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou may be taken Aug. 1-Jan. 31. ~~The season may be closed and harvest limit reduced for the drainages between the Togiak River and Right Hand Point by announcement of the Togiak National Wildlife Refuge Manager.~~	*Aug. 1-Mar. ~~15~~31*
Unit 17A remainder and 17C remainder— selected drainages; a harvest limit of up to 2 caribou by State registration permit will be determined at the time the season is announced. ~~Season, harvest limit, and hunt area to be announced by the Togiak National Wildlife Refuge Manager.~~	*Season may be announced between Aug. 1-Mar. ~~15~~31*

Unit 17B and 17C— that portion of 17C east of the Wood River and Wood River Lakes— 2 caribou by State registration permit; no more than 1 caribou may be a bull, and no more than 1 caribou from Aug. 1-Jan. 31.	*Aug. 1-Mar. ~~15~~31*

Justification

Fall composition counts have shown that objectives were met for calves in two of the past three years and suggest improved herd recruitment. In 2014, the bull:cow ratio was met suggesting there are surplus bulls available for harvest. Poor weather and difficult winter travel conditions often limit hunting opportunity and the added season length will provide more options for subsistence users. Lengthening the season from Aug.1- Mar. 15 to Aug. 1-Mar. 31 will provide Federally qualified subsistence users 16 additional days of harvest opportunity for caribou. Harvest by non-Federally qualified subsistence users has decreased substantially and there is no nonresident caribou season in these units. Recent reported harvest averaged 347 animals over the past 5 years which is well below the State's current harvest objective of 2,400 to 8,000 caribou and the MCH should be able to withstand the additional harvest by Federally qualified subsistence users should this proposal be adopted. The proposed regulatory change will reduce complexity between State and Federal regulations.

The two proposals, WP16-29 and WP16-30 request the same regulatory changes. The recommendation is to take no action on WP16-30 because that request can be fully addressed through action on WP16-29.

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Appendix 1

Refuge Manager
Togiak National Wildlife Refuge
P.O. Box 270 MS 569
Dillingham, Alaska 99576

Dear Refuge Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the manager of the Togiak National Wildlife Refuge to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of the population. This delegation only applies to the Federal public lands subject to Alaska National Interest Lands Conservation Act (ANILCA) Title VIII jurisdiction within all drainages west of Right Hand Point in Unit 17A and Units 17A remainder and 17C remainder for the management of caribou on these lands.

It is the intent of the Board that actions related to management of caribou by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G), the Bureau of Land Management, and the Chair of the Bristol Bay Subsistence Regional Advisory Council (Council) to the extent possible. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair, and applicable Council members to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

1. Delegation: The Togiak National Wildlife Refuge Manager is hereby delegated authority to issue emergency or temporary special actions affecting caribou on Federal lands as outlined under the **Scope of Delegation** below. Any action greater than 60 days in length (temporary special action) requires a public hearing before implementation. Special actions are governed by Federal regulation at 36 CFR 242.19 and 50 CFR 100.19.

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

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

- To open and close the season and set the harvest limit, including any sex restrictions, for caribou on Federal public lands in Unit 17A—all drainages west of Right Hand Point.

- To open and close the season, set the harvest limit and identify the hunt area for the may-be-announced season in Unit 17A remainder and 17C remainder.

This delegation may be exercised only when it is necessary to conserve caribou populations, to continue

subsistence uses, for reasons of public safety, or to assure the continued viability of the population.

All other proposed changes to codified regulations, such as customary and traditional use determinations, adjustments to methods and means of take, customary trade, or closures and restrictions for take for only non-Federally qualified users shall be directed to the Federal Subsistence Board.

The Federal public lands subject to this delegated authority are those within Unit 17A—all drainages west of Right Hand Point, and those portions within Units 17A remainder and 17C remainder.

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

5. Guidelines for Delegation: You will become familiar with the management history of the wildlife species relevant to this delegation in the region, with current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will review special action requests or situations that may require a special action and all supporting information to determine: (1) consistency with 36 CFR 242.19, (2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected subsistence users and non-Federally qualified users. Requests not within your delegated authority will be forwarded to the Federal Subsistence Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in the Office of Subsistence Management (OSM) no later than sixty days after development of the document.

You will notify OSM and coordinate with local ADF&G managers, the Bureau of Land Management, and the Chair of the Bristol Bay Subsistence Regional Advisory Council regarding special actions under consideration. You will issue decisions in a timely manner. Before the effective date of any decision, reasonable efforts will be made to notify the public, OSM, affected State and Federal managers, law enforcement personnel, and Council representatives. If an action is to supersede a State action not yet in effect, the decision will be communicated to the public, OSM, affected State and Federal Managers, and the local Council representatives at least 24 hours before the State action would be effective. If a decision to take no action is made, you will notify the proponent of the request immediately. A summary of special action requests and your resultant actions must be provided to the coordinator of the appropriate Subsistence Regional Advisory Council(s) at the end of each calendar year for presentation to the Council(s).

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

6. Support Services: Administrative support for regulatory actions will be provided by the Office of Subsistence Management, U.S. Fish & Wildlife Service, and the Department of the Interior.

Sincerely,

Tim Towarak
Chair, Federal Subsistence Board

cc: Commissioner, Alaska Department of Fish and Game
Assistant Regional Director, Office of Subsistence Management
Deputy Assistant Regional Director, Office of Subsistence Management
Chair, Bristol Bay Subsistence Regional Advisory Council
Subsistence Council Coordinator, Office of Subsistence Management
Federal Subsistence Liaison Team Leader, Alaska Department of Fish and Game
Federal Subsistence Board
Interagency Staff Committee
Administrative Record

WP16–38 Executive Summary	
General Description	Proposal WP16-38 requests that the one-half mile corridor along the Innoko and Yukon Rivers be opened to moose hunting during the winter season in Unit 21E. *Submitted by Alfred Demientieff, Jr. on behalf of the Holy Cross Tribal Council.*
Proposed Regulation	**Unit 21E—Moose** *Unit 21E—1 moose; however, only bulls may be taken from Aug. 25-Sept. 30. During the Feb. 15-Mar.15 season, a Federal registration permit is required. The permit conditions and any needed closures for the winter season will be announced by the Innoko NWR manager and after consultation with the ADF&G area biologist and the Chairs of the Western Interior Regional Advisory Council and the Middle Yukon Fish and Game Advisory Committee as stipulated in a letter of delegation. Moose may ~~not~~ be taken ~~within one-half mile of the Innoko or Yukon River~~* ***anywhere on federal land*** *during the winter season.* — *Aug. 25-Sept. 30* *Feb. 15-Mar. 15*
OSM Preliminary Conclusion	**Support with modification** to delete the language specifying where moose may be taken during the winter season and remove the regulatory language referring to permit conditions and season closures for the winter season and delegate authority to set permit conditions and announce season closures via a delegation of authority letter only. The modified regulation should read: **Unit 21E—Moose** *Unit 21E—1 moose; however, only bulls may be taken from Aug. 25-Sept. 30. During the Feb. 15-Mar.15 season, a Federal registration permit is required. ~~The permit conditions and any needed closures for the winter season will be announced by the Innoko NWR manager and after consultation with the ADF&G area biologist and the Chairs of the Western Interior Regional Advisory Council and the Middle Yukon Fish and Game Advisory Committee as~~* — *Aug. 25-Sept. 30* *Feb. 15-Mar. 15*

WP16–38 Executive Summary	
	~~*stipulated in a letter of delegation*. *Moose may not be taken within one-half mile of the Innoko or Yukon River during the winter season.*~~
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**None**

DRAFT STAFF ANALYSIS
WP16-38

ISSUES

Proposal WP16-38, submitted by Alfred Demientieff, Jr. on behalf of the Holy Cross Tribal Council, requests that the one-half mile corridor along the Innoko and Yukon Rivers be opened to moose hunting during the winter season in Unit 21E (**Map 1**).

DISCUSSION

The proponent states that climate change is negatively impacting hunters' ability to harvest moose and that the moose hunting restriction in the half mile corridor is confusing to users, especially because of the many river islands in the area. The proponent claims that removal of the half mile hunting restriction will benefit users by increasing their chances of harvesting a moose during the winter season and that the existing Federal subsistence registration hunt will preclude any impact to the moose population.

Existing Federal Regulation

Unit 21E—Moose

Unit 21E—1 moose; however, only bulls may be taken from Aug. 25-Sept. 30. During the Feb. 15-Mar.15 season, a Federal registration permit is required. The permit conditions and any needed closures for the winter season will be announced by the Innoko NWR manager and after consultation with the ADF&G area biologist and the Chairs of the Western Interior Regional Advisory Council and the Middle Yukon Fish and Game Advisory Committee as stipulated in a letter of delegation. Moose may not be taken within one-half mile of the Innoko or Yukon River during the winter season.	*Aug. 25-Sept. 30* *Feb. 15-Mar. 15*

Proposed Federal Regulation

Unit 21E—Moose

Unit 21E—1 moose; however, only bulls may be taken from Aug. 25-Sept. 30. During the Feb. 15-Mar.15 season, a Federal registration permit is required. The permit conditions and any needed closures for the winter season will be announced by the Innoko NWR manager and after consultation with the ADF&G area biologist and the Chairs of the	*Aug. 25-Sept. 30* *Feb. 15-Mar. 15*

Western Interior Regional Advisory Council and the Middle Yukon Fish and Game Advisory Committee as stipulated in a letter of delegation. Moose may ~~not~~ be taken ~~within one-half mile of the Innoko or Yukon River~~ ***anywhere on federal land*** *during the winter season.*

Existing State Regulation

Unit 21E—Moose

Resident: One antlered bull by permit available in person at license vendors in Units 21E and ADF&G in McGrath beginning Aug. 13	*RM836*	*Sept. 5-Sept. 25*
Nonresident: One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side by permit	*DM837/ 839*	*Sept. 5-Sept. 25*

Extent of Federal Public Lands

Federal public lands comprise approximately 60% of Unit 21E and consist of 48% Bureau of Land Management (BLM) managed lands and 12% U.S. Fish and Wildlife Service (USFWS) managed lands.

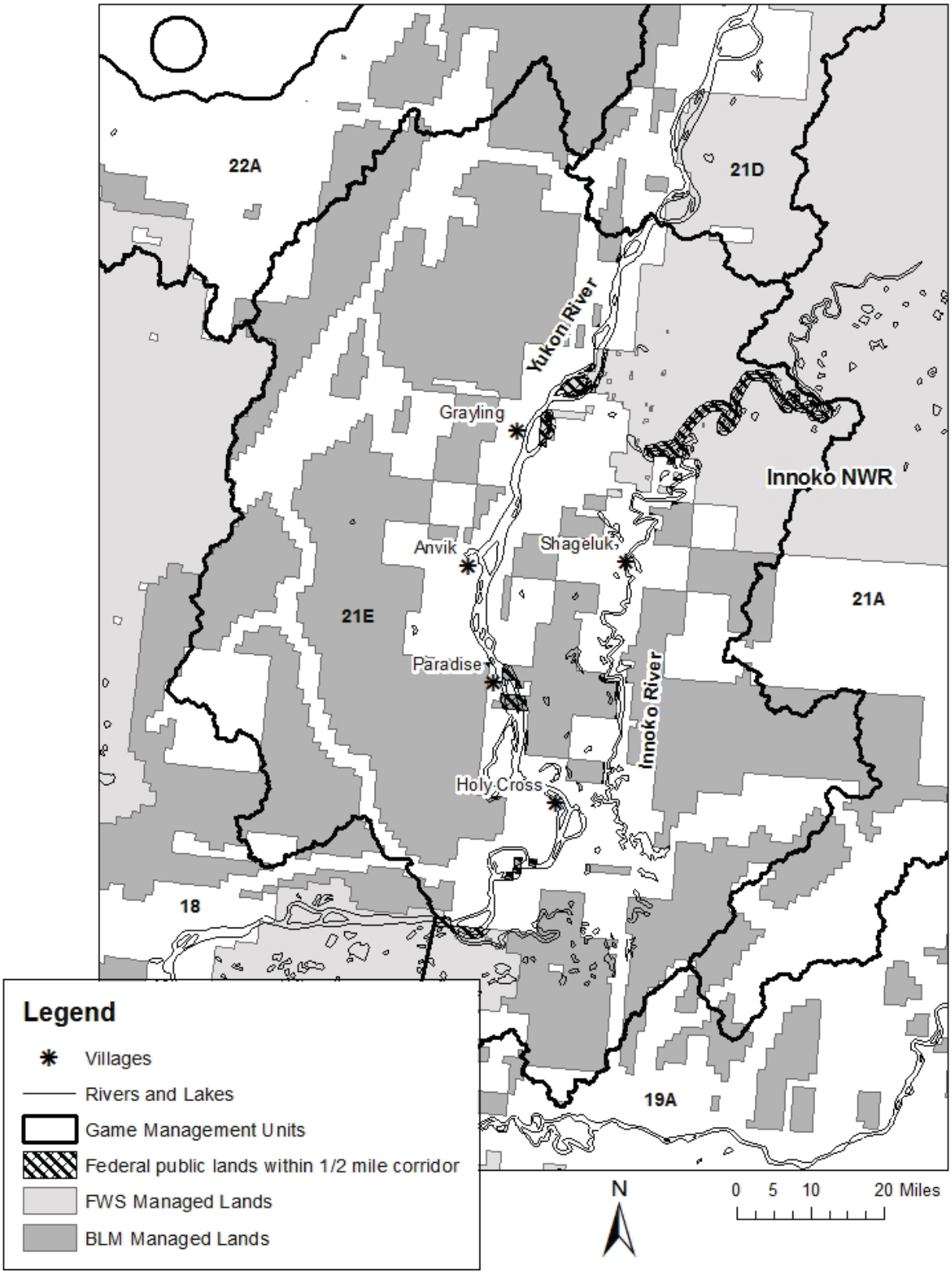
Customary and Traditional Use Determinations

Rural residents of Unit 21E, Aniak, Chuathbaluk, Kalskag, Lower Kalskag, and Russian Mission have a customary and traditional use determination for moose in Unit 21E south of a line beginning at the western boundary of Unit 21E near the mouth of Paimiut Slough, extending easterly along the south bank of Paimiut Slough to Upper High Bank, and southeasterly in the direction of Molybdenum Mountain to the juncture of Units 19A, 21A, and 21E.

Rural residents of Unit 21E and Russian Mission have a customary and traditional use determination to harvest moose in the remainder of Unit 21E.

Regulatory History

The Paradise Controlled Use Area (CUA) is almost entirely within Unit 21E. It was established in 1978 by the Alaska Board of Game in response to concerns that hunter success rates favored non-rural users and that the total harvest of moose in the area was threatening the population. The Paradise CUA regulations placed a restriction on fly-in hunting for moose, air transport of hunters and hunting-related equipment, and the air transport of moose meat from the field. The Paradise CUA access restriction and the State's moose seasons for Units 21E were adopted by the Federal Subsistence Board (Board) in 1990.



Map 1. Federal public lands within the half mile corridor along the Yukon and Innoko Rivers in Unit 21E.

In 1993, the Alaska Department of Fish and Game (ADF&G) submitted a request for reconsideration, R93-08, requesting a half mile restriction for moose hunting along the Yukon River in Unit 21E. R93-08 was deferred to the 1994-1995 regulatory cycle as Proposal P94-58. The Federal Subsistence Board (Board) deferred P94-58 at its spring 1994 meeting due to the oversight of including all affected regional advisory councils in the review process (FSB 1994). The Board adopted P94-58 at its meeting in November 1994. The intent of proposal P94-58 was to protect overwintering moose and to align State and Federal regulations in order to alleviate law enforcement concerns as distinguishing land status in the area was impracticable (OSM 1994).

In 1995, the Board adopted Proposal P95-40, establishing the half mile restriction for moose hunting along the Innoko River due to concerns over hunting disturbance to moose concentrated on critical winter feeding grounds.

In 1999, Proposal P99-045 sought to close the islands in the Innoko and Yukon Rivers to moose hunting during the winter season to protect the moose population, which concentrate on these islands during the winter. This proposal was rejected as hunting was already restricted within one half mile of these rivers, including islands, under the existing Federal subsistence regulations.

In 2003, the Alaska Board of Game adopted Proposal 172, eliminating the winter moose hunting season (Feb. 1-Feb. 10) in Unit 21E. This closure occurred based on recommendations from the Grayling-Anvik-Shageluk-Holy Cross Fish and Game Advisory Committee (GASH AC) and concern that the moose population was declining and could not sustain a large cow harvest and a winter hunt open to all Alaska residents (ADF&G 2003, ADF&G 2006).

In 2010, the Board adopted Proposal WP10-65, which changed the winter moose season from Feb. 1-Feb. 10 to Feb. 15-Mar. 15 and delegated authority to the Innoko National Wildlife Refuge (NWR) manager to establish permit conditions and closures. The Board determined that the longer winter season would provide hunters with more opportunity and flexibility and that a registered hunt would provide more accurate harvest data to inform management decisions.

The Board also adopted Proposal WP10-66, which changed the fall season dates from Aug. 20-Sept. 25 to Aug. 25-Sept. 30 in order to provide users greater opportunity to harvest moose later in the season when moose are moving around more.

In 2012, the Board approved deferred Proposal WP10-69, which gave a customary and traditional use determination for moose to the communities of Aniak, Chuathbaluk, Kalskag, and Lower Kalskag in the Paimiut Slough area in Unit 21E.

In 2014, the Board adopted Proposal WP14-32 to extend the boundary for the Paradise CUA two miles to the east, paralleling the Innoko River. This was done to lessen user conflicts between local and non-local users who were circumventing restrictions by accessing lakes via aircraft within two miles of the Paradise CUA to hunt moose.

Biological Background

In January 2005, a cooperative moose planning effort called the Yukon-Innoko Moose Management Working Group was launched. The goal of the planning effort was to develop a proactive management plan to help maintain the moose population while also providing for high levels of human consumptive uses of moose in Units 21A and 21E (ADF&G 2006). The working group included representatives of the GASH and Lower Yukon Fish and Game Advisory Committees, the Western Interior Alaska and Yukon-Kuskokwim Delta Subsistence Regional Advisory Councils, as well as non-local hunters and representatives who had commercial interests associated with hunting in the area.

The result of the planning effort was the Yukon-Innoko Moose Management Plan (Management Plan), which was completed in March 2006. The Federal Subsistence Board endorsed the Management Plan in May 2006 through Resolution 06-0201. The Management Plan presented recommendations for harvest management at different moose population levels and levels of hunting pressure, predation management, and habitat management (ADF&G 2006). The Management Plan also listed goals, objectives, and strategies for cooperative moose management and information needs.

Current State management and harvest objectives for moose in Unit 21E are the same as those in the 2006 Management Plan and are as follows (ADF&G 2006, Peirce and Seavoy 2010):

- Manage to achieve the IM (intensive management) objective of 9,000-11,000 moose in Unit 21E.
- Maintain a minimum post hunt bull:cow ratio of 25-30 bulls:100 cows in Units 21A and 21E.
- Maintain a minimum post hunt calf:cow ratio of 30-40 calves:100 cows in Units 21A and 21E.
- Maintain at least 20% calves in the late winter moose population in Unit 21E.
- Maintain a harvest of ≤4% of the estimated moose population in Unit 21E until the IM population objective has been met.
- Provide for a sustained harvest of up to 40 antlerless moose in a winter season in Unit 21E.
- Provide for the harvest of approximately 310 moose in Unit 21E by residents of Unit 21E and other Alaska residents.

Population estimates have been sporadically conducted using Geospatial Population Estimation (GSPE) Surveys (Kellie and Delong 2006). The 5,070 mi^2 GSPE survey area included mainly that portion of Unit 21E east of the Yukon River and includes portions of the Innoko and Yukon Delta National Wildlife Refuges, as well as BLM lands.

Between 2000 and 2012, the winter moose population in Unit 21E remained relatively stable, with population estimates ranging from 4,673-6,218 moose (**Figure 1**). These estimates are well below management objectives.

Four moose composition surveys were conducted in Unit 21E between 2007 and 2011; however, it is important to note that the surveys did not follow a rigid survey design (Peirce 2010). Therefore, variation in the number of observed moose could be attributed to actual changes in moose abundance or survey methodology.

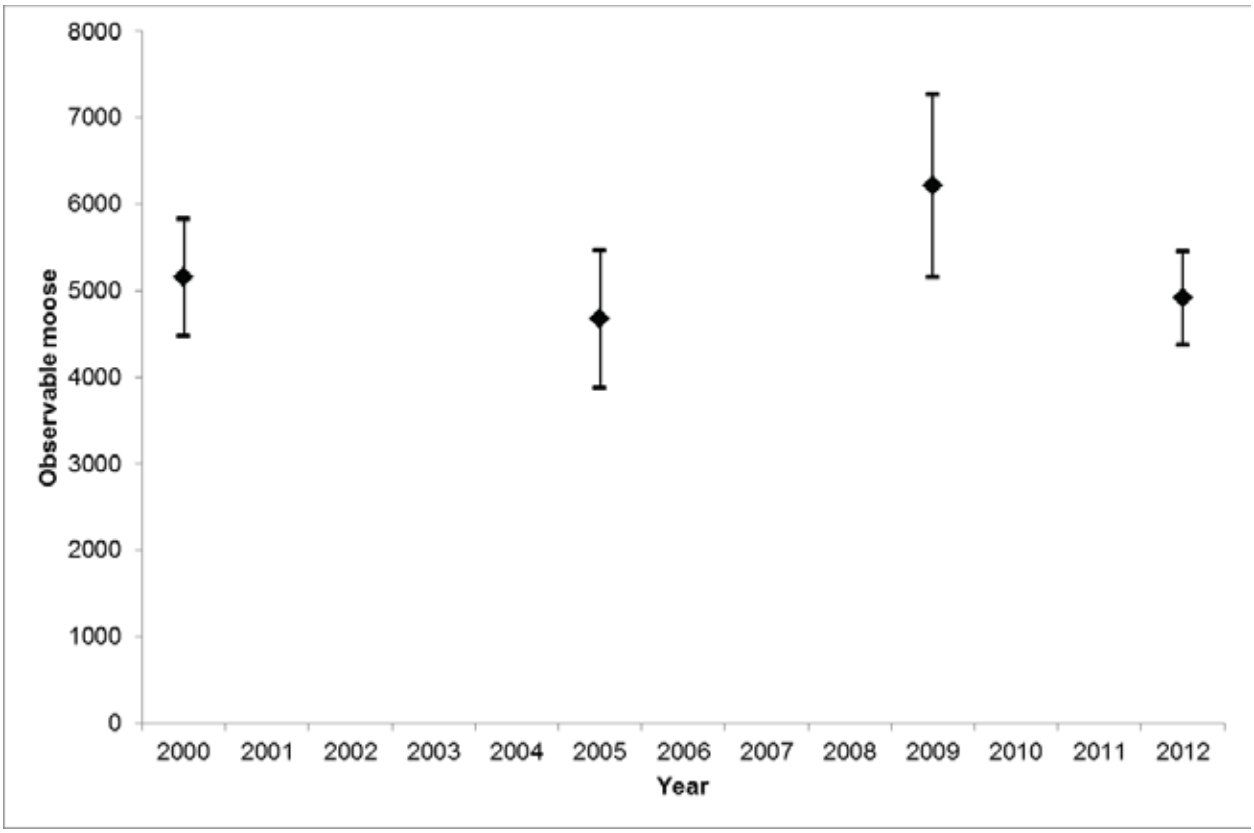


Figure 1. Unit 21E population estimates (± 90% CI) from Geospatial Population Estimation surveys conducted during March, 2000-2012 (Peirce 2010, 2012).

Bull:cow ratios have generally been high (61–74 bulls:100 cows) and well above the management objective (**Table 1**). The lower ratio in 2009 (**Table 1**) may be due to differences in survey area, as weather precluded biologists from including an area where high numbers of bulls have been observed during previous surveys (Peirce and Seavoy 2010).

Calf:cow ratios met the State management objectives in all years surveyed, except for 2009 (**Table 1**).

Based upon spring surveys, twinning rates showed an increasing trend between 2007 and 2009, but decreased to 32% in the 2013 survey (**Table 2**). There is ongoing moose collaring study by the ADF&G that should help address some of the moose survey data limitations in Unit 21E.

Habitat

Habitat is not considered a limiting factor for moose in Unit 21E (ADF&G 2006, Peirce and Seavoy 2010, Peirce 2012). Browse surveys conducted by ADF&G in 2006 noted abundant felt leaf willow (typical winter browse) in riparian areas and abundant diamond leaf willow (typical summer/autumn browse) in meadows (ADF&G 2006). Based on browse removal and twinning rates, nutrition is considered adequate to support moose population growth in Unit 21E, suggesting other, non-habitat factors are limiting the population (Boertje et al. 2007, 2009 *in* Peirce and Seavoy 2010).

Table 1. Fall composition surveys conducted in Unit 21E, 2007-2011 (Peirce 2012).

Year	Moose observed	Ratios		
		Bulls:100 cows	Yearling bulls:100 cows	Calves:100 cows
2007	84	74	26	66
2008	186	62	29	37
2009	153	32	21	18
2010	287	61	15	51
2011	201	64	22	47

Table 2. Spring moose twinning surveys conducted in Unit 21E, 2007-2013 (Peirce 2012, Seavoy 2013).

Year	Total Moose	Cows with 1 calf	Cows with 2-3 calves	Twinning rate (%)
2007	148	18	7	28
2008	194	17	15	47
2009	182	12	12	50
2010	256	32	22	41
2013	339	38	18	32

Harvest History

Over the past 15 years, the percentage of the moose population harvested fell well within the management objective of ≤ 4% (**Table 3**). The total reported moose harvest ranged between 94 and 204 moose/year, which is well below the management objective (ADF&G 2015b, OSM 2015, **Figure 2**).

Household survey data available for the GASH communities reveals the estimated harvest to be 4-10% greater than the reported harvest for 2002-2004 and 33% greater for the baseline survey year, 1990 (ADF&G 2015a, **Table 4**).

Federally qualified subsistence users harvested 2-7 moose/year during the Federal winter season between 2010 and 2013, roughly half of which were cows (OSM 2015, **Table 5**). These numbers are well below the winter harvest threshold of 40 antlerless moose/year.

The Yukon-Innoko Moose Management Plan recommends maintaining a cow harvest not to exceed 0.5% of the population (ADF&G 2006). Based on the 12-year average population (5,239 moose), 26 cow moose can be sustainably harvested during the winter season. The number of cows harvested between 2010 and 2013 fell well below this recommended level (**Table 5**).

Table 3. Percentage of the Moose Population Harvested in Unit 21E (ADF&G 2015b, OSM 2015, Peirce 2010, 2012).

Year	Moose Population (GPSE est)	Reported Moose Harvested	% of Population Harvested
2000	5151	202	3.9
2005	4673	124	2.7
2009	6218	106	1.7
2012	4914	105	2.1

Table 4. Reported and estimated harvest by GASH communities (ADF&G 2015a)

Year	Reported Harvest	Estimated Harvest	% Difference
1990	169	252	32.9
2002	119	133	10.5
2003	113	118	4.2
2004	89	94	5.3

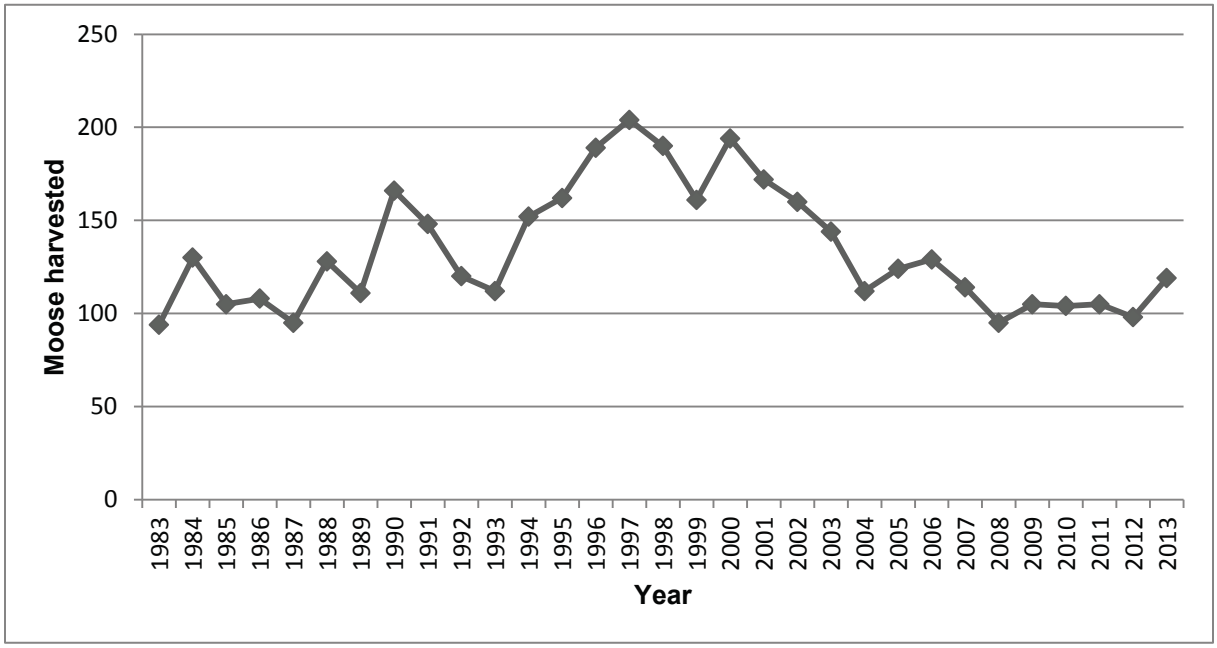


Figure 2. Reported harvest of moose under State harvest regulations in Unit 21E; 1983-2013 (ADF&G 2015b, OSM 2015).

Table 5. Winter season permits issued by Innoko NWR and moose harvested in Unit 21E (OSM 2015).

Year	Permits Issued	Total Harvest	Bulls Harvested	Cows Harvested
2010	24	6	2	4
2011	14	4	2	2
2012	15	7	3	4
2013	17	2	1	1
Total	70	19	8	11

Effects of the Proposal

If this proposal is adopted, the ½ mile restriction along the Innoko and Yukon Rivers would be lifted during the winter season in Unit 21E. Adoption of this proposal would simplify the hunting area for users who have a difficult time determining whether they are within the half mile corridor or not.

Adoption of this proposal would also improve harvest opportunity and access for Federally qualified subsistence users, increasing their chances of a successful hunt and the number of animals harvested. Although the total population is below management objectives, harvest rates are well within management objectives and could sustain an increase in harvest.

The number of moose harvested and permits issued during the Federal winter season has been low (**Table 5**). Even if every issued permit was filled in past years, the harvest would still be well below the harvest objective. Similarly, the number of cows harvested/year is well below the recommended harvest level and can sustain an increase in harvest. While adopting this proposal is likely to increase harvest, these increases are not expected to negatively impact the moose population as harvest would need to increase at least 5 fold to approach management thresholds.

The original intent of the half mile corridor closures in 1994/1995 was to minimize disturbance to moose when they are concentrated on their winter feeding grounds, then considered critical habitat. However, habitat is not currently considered a limiting factor as evidenced by abundant browse and high twinning rates.

Additionally, the majority of lands within the half mile corridor are not Federal public lands. Opening the half mile corridor to winter hunting would only apply to 20% of the area (including islands and water, **Map 1**); the remainder being closed during the Federal winter season and continuing to provide refugia (areas where no hunting is permitted) for overwintering moose.

Both the Innoko NWR (Havener 2015, pers. comm.) and the BLM (Seppi 2015, pers. comm.) have expressed concerns about law enforcement if this proposal is adopted as distinguishing land status in the area is difficult. Users already must distinguish between the open Federal public and closed Non-federal lands during the winter hunt as well as whether or not they are within half a mile of the rivers. However,

hunting pressure is expected to increase if the half mile along the Yukon and Innoko rivers is opened, which could result in more hunting violations and law enforcement issues.

However, barring conservation concerns, Section 802.1 of the Alaska National Interest Lands Conservation Act (ANILCA) mandates, "the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands." As the biology and harvest history indicate the moose population in Unit 21E can sustain an increase in harvest, Federally qualified subsistence users should be afforded additional opportunity and accessibility to subsistence resources.

Additionally, the Board delegated in-season manager of Innoko NWR manager will maintain management authority and flexibility to open/close the season, announce the harvest quota, and the number of permits to be issued, ensuring the moose population is maintained long-term.

OSM PRELIMINARY CONCLUSION

Support Proposal WP16-38 **with modification** to delete the language specifying where moose may be taken during the winter season and remove the regulatory language referring to permit conditions and season closures for the Feb. 15 – Mar. 1 season and delegate authority to set permit conditions and announce season closures via a delegation of authority letter only (**Appendix 1)**.

The modified regulation should read:

Unit 21E—Moose

Unit 21E—1 moose; however, only bulls may be taken from Aug. 25-Sept. 30. During the Feb. 15-Mar.15 season, a Federal registration permit is required. ~~The permit conditions and any needed closures for the winter season will be announced by the Innoko NWR manager and after consultation with the ADF&G area biologist and the Chairs of the Western Interior Regional Advisory Council and the Middle Yukon Fish and Game Advisory Committee as stipulated in a letter of delegation~~. ~~Moose may not be taken within one-half mile of the Innoko or Yukon River during the winter season.~~	*Aug. 25-Sept. 30* *Feb. 15-Mar. 15*

Justification

Adoption of this proposal would increase harvest opportunity for Federally qualified subsistence users and reduce confusion over whether or not they are within a half mile of the rivers.

There are no conservation concerns for moose in Unit 21E. The moose population appears stable and able to sustain an increase in harvest. Habitat is not a limiting factor for this population and moose would still have undisturbed wintering grounds on non-Federal lands within the half mile corridor. The Innoko NWR

manager will maintain authority to establish seasons and permit conditions, ensuring the conservation of the moose population.

Creation of a delegation of authority letter for the Federal in-season manager will serve to simplify regulations and allow for management flexibility through adjustment of in-season hunt parameters. Adoption of this proposal opens all Federal lands within the hunt area to moose hunting, so no additional language specifying where moose may be taken is necessary.

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Appendix 1

Refuge Manager
Innoko National Wildlife Refuge
101 Front Street 287
Galena, Alaska 99741

Dear Refuge Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the Innoko National Wildlife Refuge Manager to issue emergency or temporary special actions if necessary to ensure the conservation of a healthy wildlife population, to continue subsistence uses of wildlife, for reasons of public safety, or to assure the continued viability of a wildlife population. This delegation only applies to the Federal public lands subject to Alaska National Interest Land Conservation Act (ANILCA) Title VIII jurisdiction within Unit 21E as it applies to moose on these lands.

It is the intent of the Board that actions related to management of moose by Federal officials be coordinated, prior to implementation, with the Alaska Department of Fish and Game (ADF&G) and the Chair of the Western Interior Alaska Subsistence Regional Advisory Council (Council) to the extent possible. Federal managers are expected to work with managers from the State and other Federal agencies, the Council Chair, and applicable Council members to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for special action.

DELEGATION OF AUTHORITY

1. Delegation: The Innoko National Wildlife Refuge Manager is hereby delegated authority to issue emergency or temporary special actions affecting moose on Federal lands as outlined under the **Scope of Delegation** below. Any action greater than 60 days in length (temporary special action) requires a public hearing before implementation. Special actions are governed by regulation at 36 CFR 242.19 and 50 CFR 100.19.

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

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

- To set permit conditions and announce any needed closures for the winter season for moose on Federal public lands in Unit 21E.

This delegation may be exercised only when necessary to conserve moose populations, to continue subsistence uses, for reasons of public safety, or to assure the continued viability of the population.

All other proposed changes to codified regulations, such as customary and traditional use determinations, adjustments to methods and means of take, or closures and restriction for take for only non-Federally qualified users shall be directed to the Federal Subsistence Board.

The Federal public lands subject to this delegated authority are those within Unit 21E.

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

4. Guidelines for Delegation: You will become familiar with the management history of the wildlife species relevant to this delegation in the region, with current State and Federal regulations and management plans, and be up-to-date on population and harvest status information. You will review special action requests or situations that may require a special action and all supporting information to determine (1) consistency with 36 CFR 242.19, (2) if the request/situation falls within the scope of authority, (3) if significant conservation problems or subsistence harvest concerns are indicated, and (4) what the consequences of taking an action or no action may be on potentially affected subsistence users and non-Federally qualified users. Requests not within your delegated authority will be forwarded to the Federal Subsistence Board for consideration. You will maintain a record of all special action requests and rationale for your decision. A copy of this record will be provided to the Administrative Records Specialist in the Office of Subsistence Management (OSM) no later than sixty days after development of the document.

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

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

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

Sincerely,

Tim Towarak
Chair, Federal Subsistence Board

cc: Assistant Regional Director, Office of Subsistence Management
Deputy Assistant Regional Director, Office of Subsistence Management
Subsistence Council Coordinator, Office of Subsistence Management
Chair, Western Interior Alaska Regional Advisory Council
Commissioner, Alaska Department of Fish and Game
Federal Subsistence Liaison Team Leader, Alaska Department of Fish and Game
Federal Subsistence Board
Interagency Staff Committee
Administrative Record

WP16–43 Executive Summary	
General Description	Proposal WP16-43 requests closure of Federal public lands to caribou harvest in the Upper Adreafsky drainages in Unit 18 and in the portion of Unit 22 south of the Unalakleet River to prevent incidental harvest of reindeer. *Submitted by the Seward Peninsula Subsistence Regional Advisory Council.*
Proposed Regulation	**Unit 18—Caribou** *Unit 18—that portion to the east and south of the Kuskokwim River—2 caribou by State registration permit* — *Aug. 1 – Mar. 15* ***Unit 18, that portion that includes all upper drainages of the Andreafsky River—Federal public lands are closed to the taking of caribou, but can be opened by the in-season manager if caribou are present*** *Unit 18 remainder—2 caribou by State registration permit* — *Aug. 1 – Mar. 15* **Unit 22—Caribou** *Units 22A, 22B remainder, that portion of Unit 22D in the Kougaruk, Kuzitrin (excluding the Pilgrim River drainage), American, and Agiapuk River Drainages, and Unit 22E, that portion east of and including the Sanaguich River drainage—5 caribou per day; cow caribou may not be taken May 16–June 30.* — *Jul. 1 – Jun. 30* ***Unit 22A, that portion south of the Unalakleet River—Federal public lands are closed to the hunting of caribou, but can be opened by the in-season manager if caribou are present***
OSM Preliminary Conclusion	**Oppose**

WP16–43 Executive Summary	
Yukon-Kuskokwim Delta Subsistence Regional Advisory Council Recommendation	
Western Interior Alaska Subsistence Regional Advisory Council Recommendation	
Seward Peninsula Subsistence Regional Advisory Council Recommendation	
Northwest Arctic Subsistence Regional Advisory Council Recommendation	
Interagency Staff Committee Comments	
ADF&G Comments	
Written Public Comments	**1 Support**

DRAFT STAFF ANALYSIS
WP16-43

ISSUES

Proposal WP16-43, submitted by the Seward Peninsula Subsistence Regional Advisory Council, requests closure of Federal public lands to caribou harvest in portions of Units 18 and 22 to prevent incidental harvest of reindeer.

DISCUSSION

This proposal was submitted in the interest of protecting privately owned reindeer. The proponent asserts that there have been no caribou present in the area for 15-20 years. However, since caribou harvest is allowed, incidental harvest of reindeer occurs at the expense of reindeer herders. The proponent believes that this proposal will affect neither Federally qualified subsistence users, nor nonsubsistence users, since there are no caribou currently present in the area and reindeer harvest is illegal.

Existing Federal Regulation

Unit 18—Caribou

Unit 18—that portion to the east and south of the Kuskokwim River—2 caribou by State registration permit	*Aug. 1 – Mar. 15*
Unit 18 remainder—2 caribou by State registration permit	*Aug. 1 – Mar. 15*

Unit 22—Caribou

Units 22A, 22B remainder, that portion of Unit 22D in the Kougaruk, Kuzitrin (excluding the Pilgrim River drainage), American, and Agiapuk River Drainages, and Unit 22E, that portion east of and including the Sanaguich River drainage—5 caribou per day; cow caribou may not be taken May 16–June 30.	*Jul. 1 – Jun. 30*

Proposed Federal Regulation

Unit 18—Caribou

Unit 18—that portion to the east and south of the Kuskokwim River—2 caribou by State registration permit	*Aug. 1 – Mar. 15*

Unit 18, that portion that includes all upper drainages of the Andreafsky River—Federal public lands are closed to the taking of caribou, but can be opened by the in-season manager if caribou are present

Unit 18 remainder—2 caribou by State registration permit	*Aug. 1 – Mar. 15*

Unit 22—Caribou

Units 22A, 22B remainder, that portion of Unit 22D in the Kougaruk, Kuzitrin (excluding the Pilgrim River drainage), American, and Agiapuk River Drainages, and Unit 22E, that portion east of and including the Sanaguich River drainage—5 caribou per day; cow caribou may not be taken May 16–June 30.	*Jul. 1 – Jun. 30*

Unit 22A, that portion south of the Unalakleet River—Federal public lands are closed to the hunting of caribou, but can be opened by the in-season manager if caribou are present

Existing State Regulation

Unit 18—Caribou

Two caribou by permit available online at http://hunt.alaska.gov and in person in Anchorage, Bethel, Dillingham, Fairbanks, Homer, King Salmon, McGrath, Palmer, Soldotna and at local license vendors beginning July 17. No more than one bull may be taken; no more than one caribou may be taken from Aug. 1 – Jan. 31	*Aug.1 – Mar. 15*

Unit 22—Caribou

Unit 22, remainder

Resident hunters: 5 caribou per day; however, calves may not be taken; cow caribou may not be taken Apr. 1 – Aug. 31; bull caribou may not be taken Oct. 15 – Jan. 31	*Season to be announced by emergency order*
Nonresident hunters: 1 bull; however, calves may not be taken; during the period Aug. 1 – Sept. 30, a season may be announced by emergency order	*Season to be announced by emergency order*

Extent of Federal Public Lands

Unit 18 is comprised of approximately 66% Federal public lands, and consists of 63% U.S. Fish and Wildlife Service (FWS) managed lands and 3% Bureau of Land Management (BLM) managed lands.

Unit 22A is comprised of approximately 68% Federal public lands, and consists of 56% BLM managed lands and 12% FWS managed lands. See Unit Map.

Customary and Traditional Use Determinations

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

Residents of Units 21D (west of the Koyukuk and Yukon rivers), 22 (except St. Lawrence Island), 23, 24, Kotlik, Emmonak, Hooper Bay, Scammon Bay, Chevak, Marshall, Mountain Village, Pilot Station, Pitka's Point, Russian Mission. St. Marys, Nunam Iqua, and Alakanuk have a positive customary and traditional use determination for caribou in Unit 22A.

Regulatory History

There have been several changes in State and Federal caribou regulations for Unit 22 in the past 20 years. Many of these changes address customary and traditional use. The remainder responded to changing caribou distributions, with an eye toward reducing potential conflicts between reindeer and caribou.

In 1996, the Federal Subsistence Board (Board) adopted Proposal P96-049 with modification to provide a customary and traditional use determination for caribou in Unit 22 for rural residents of Unit 21D west of the Koyukuk and Yukon rivers, Units 22 (except St. Lawrence Island), 23, and 24. This Proposal also provided a customary and traditional use determination for caribou in Unit 22A for residents of Kotlik, Emmonak, Marshall, Mountain Village, Pilot Station, Pitka's Point, Russian Mission, St. Mary's, Sheldon Point, and Alakanuk (OSM 1996).

In 1997, the Board adopted Proposal P97-54 with modification to add residents of Hooper Bay, Scammon Bay, and Chevak to the customary and traditional use determinations for caribou in Unit 22A (OSM 1997).

The Board adopted Proposal WP00-53 with modification in 2000, allowing the use of snowmachines to position a hunter to select individual caribou for harvest in Units 22 and 23. This action recognized a customary and traditional practice in the region (OSM 2000).

In 2002, the Alaska Board of Game issued two emergency orders addressing caribou/reindeer conflicts. The first, EO 05-03-02, closed the portion of Unit 22D within the Pilgrim River drainage south of the Pilgrim River bridge to caribou hunting between Aug. 31, 2002 and June 30, 2003. The purpose of this action was to prevent the harvest of reindeer, since no caribou were present in the area during this time. The second, EO 05-04-02, opened this same area to the harvest of caribou from Oct. 17, 2002 through Jun. 30, 2003. This emergency order provided harvest opportunity after caribou had moved into the area (Dau 2005).

In 2003, the Board adopted Proposal WP03-40 with modification to establish a season of Jul. 1 – Jun. 30 with a harvest limit of 5 caribou per day in portions of Units 22D and 22E. This action was in response to the recent range expansion of caribou into these subunits, and provided additional subsistence harvest opportunities, with the expectation that neither caribou nor reindeer herds would be impacted. It also resulted in alignment of State and Federal regulations (OSM 2003).

In 2005, the Alaska Board of Game adopted a proposal creating two new hunt areas for caribou in Units 22B and 22D. This proposal also changed the season for these newly described areas to Oct. 1 – Apr. 15 (OSM 2006).

In 2006, the Board adopted Proposal WP06-37 with modification to designate a new hunt area in Unit 22B with a season of Oct. 1 – Apr. 30 and a may-be-announced season of May 1 – Sep. 30. The intent of this proposal was to provide continued subsistence opportunity when caribou were present, while minimizing incidental take of privately-owned reindeer and reducing user conflict when caribou were not present (OSM 2006).

In 2007, the Board adopted a policy on closures to hunting, trapping, and fishing on Federal public lands and waters in Alaska (Appendix A). The intent of the closure policy was to summarize and clarify the circumstances under which the Board has the authority to restrict or close Federal public lands to the harvest of fish and wildlife under existing statutes and regulations. This policy allows establishment or retention of closures primarily for the conservation of subsistence resources or to ensure continued use of these resources by subsistence users.

In the past 20 years, there have been numerous changes in the State and Federal regulations for caribou harvest in Unit 18. These changes, which have affected seasons, allowable harvest limits, permitting requirements, salvage requirements and methods and means, have responded exclusively to changes in abundance and distribution of the Mulchatna caribou herd. As such, they have little bearing on this proposal and will not be detailed here.

Current Events

In 2013, an aerial photo census indicated significant declines in the Western Arctic Caribou Herd (WACH; Dau 2014). In response to this decline, as well as declines in the Teshekpuk (TCH) and Central Arctic caribou populations, the Alaska Board of Game adopted modified Proposal 202 (RC76) in March 2015 to reduce harvest opportunities for both residents and non-residents within the range of the WACH and the TCH. These regulatory changes took effect on July 1, 2015, and were the result of extensive discussion and compromise among a variety of user groups. In Unit 22A, these regulatory changes included defining a new hunt area in the portion north of the Golsovia River drainage. Changes also include adjustments to harvest seasons, restrictions on bull and cow harvest, and a prohibition on calf harvest.

Proposal WP16-37, which is concurrently under consideration, requests changes to Federal subsistence caribou harvest throughout the ranges of the WACH and TCH. In Unit 22, WP16-37 requests that Unit 22A hunt areas reflect the new State hunt areas, using the Golsovia River drainage as the boundary. It also

proposes new harvest seasons and limits. Reconciling the different hunt area descriptors, seasons and limits proposed by these two proposals will be necessary if both proposal are adopted.

Biological Background

The WACH, the largest herd in Alaska, has a home range of approximately 157,000 mi^2 in northwestern Alaska (**Figure 1**). In the spring, most mature cows move north to calving grounds in the Utukok Hills, while bulls and immature cows lag behind and move toward summer range in the Wulik Peaks and Lisburne Hills. After the calving period, cows and calves move west toward the Lisburne Hills where they mix with the remaining bulls and non-maternal cows. During the summer the herd moves rapidly to the Brooks Range, west of the trans-Alaska pipeline. The caribou rut occurs during fall as the herd migrates south toward their wintering grounds in the northern portion of the Nulato Hills (Dau 2011, WACH Working Group 2011). Satellite collar data show that caribou occur at very low density in the Nulato hills area (no more than 2 caribou/mi^2 between 2002 and 2010) and occur exclusively in the northernmost portion of this region (Dau 2011). These data are consistent with the Seward Peninsula Subsistence Regional Advisory Council's assertion that caribou have not been present in the southern Nulato Hills, the area addressed by this proposal.

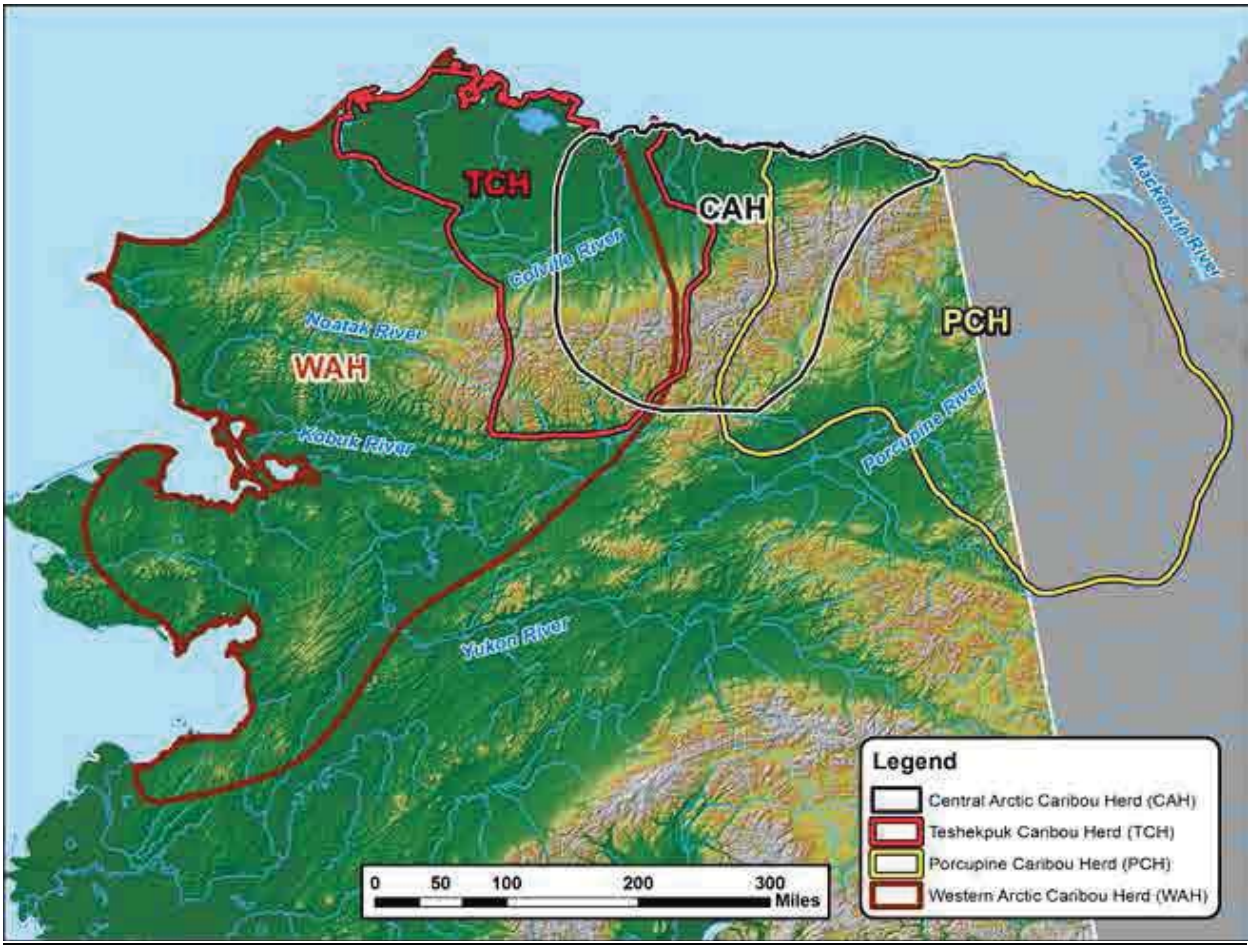

Figure 1. Herd overlap and ranges of the WACH, TCH, CACH and Porcupine caribou herds (WACH 2014).

The State manages the WACH to protect the population and its habitat, provide for subsistence and other hunting opportunities on a sustained yield basis, and provide for viewing and other uses of caribou (Dau 2011). Specific State management objectives for the WACH are presented in the 2011 Western Arctic Caribou Cooperative Management Plan (WACH Working Group 2011, Dau 2011) and include:

- Encourage cooperative management of the WACH and among State, Federal, local entities, and all users of the herd.
- Manage for healthy populations using management strategies adapted to fluctuating population levels and trends.
- Assess and protect important habitats.
- Promote consistent and effective State and Federal regulations for the conservation of the WACH.
- Seek to minimize conflict between reindeer herders and the WACH.
- Integrate scientific information, traditional ecological knowledge of Alaska Native users, and knowledge of all users into management of the herd.
- Increase understanding and appreciation of the WACH through the use of scientific information, traditional ecological knowledge of the Alaska Native users, and knowledge of all other users.

The WACH population declined rapidly in the early 1970s and bottomed out at about 75,000 animals in 1976. Aerial photo censuses have been used since 1986 to estimate population size. The WACH declined at an average annual rate of 4.7% from approximately 490,000 in 2003 to 235,000 in 2013 (Dau 2011, Caribou Trails 2014, Dau 2014; **Figure 2**). Although factors contributing to the decline are not known with certainty, increased adult cow mortality, and decreased calf recruitment and survival played a role (Dau 2011). Other contributing factors include weather (particularly fall and winter icing events), predation, hunting pressure, decline in range condition (including habitat loss and fragmentation), climate change, and disease (Dau 2014). Joly et al. (2007) documented a decline in lichen cover in portions of the wintering areas of the WACH. Dau (2011, 2014) reported that degradation in range condition is not thought to be a primary factor in the decline of the WACH because animals in the WACH have generally maintained good body condition since the decline began. However, the body condition of the WACH in the spring may be a better indicator of the effects of range condition versus the fall when the body condition of the WACH is routinely assessed and when caribou are in prime condition (Joly 2015, pers. comm).

During periods of rapid population growth (1976–1982), fall calf:cow ratios were generally higher than during periods of herd decline (1992–2013; **Table 1**). However, it should be noted that calf:cow ratios may not accurately reflect the status in the population due to spatial and temporal segregation of cows and bulls, and because not all of the population is sampled. The number of bulls:100 cows were greater during the period of population growth (49:100 between 1976-2001) than during the recent period of decline (44:100 between 2004-2014).

The annual mortality rate of collared adult cows increased from an average of 15% between 1987 and 2003, to 25% from 2004–2009 (Dau 2011, 2014). Estimated mortality includes all causes of death including hunting (Dau 2011). Dau (2009) reported that rain–on–snow events and winter thaws may have contributed to the relatively high estimated mortality rates of 23% during 2008-2009 and 27% during 2009-2010. Prior to 2004 – 2005, estimated adult cow mortality only exceeded 20% twice during

regulatory years 1992 and 1999, but has exceeded 20% in 5 of the 6 regulatory years between 2004–2010 (2004, 2005, 2007, 2008, and 2009). As the WACH declined, the percentage of mortality due to hunting increased relative to natural mortality. For example, during the period October 1, 2013 to September 30, 2014, estimated hunting mortality was approximately 42% and estimated natural mortality about 56% (estimates from slide 16, Dau 2014). In previous years the estimated hunting mortality exceeded 30% only once.

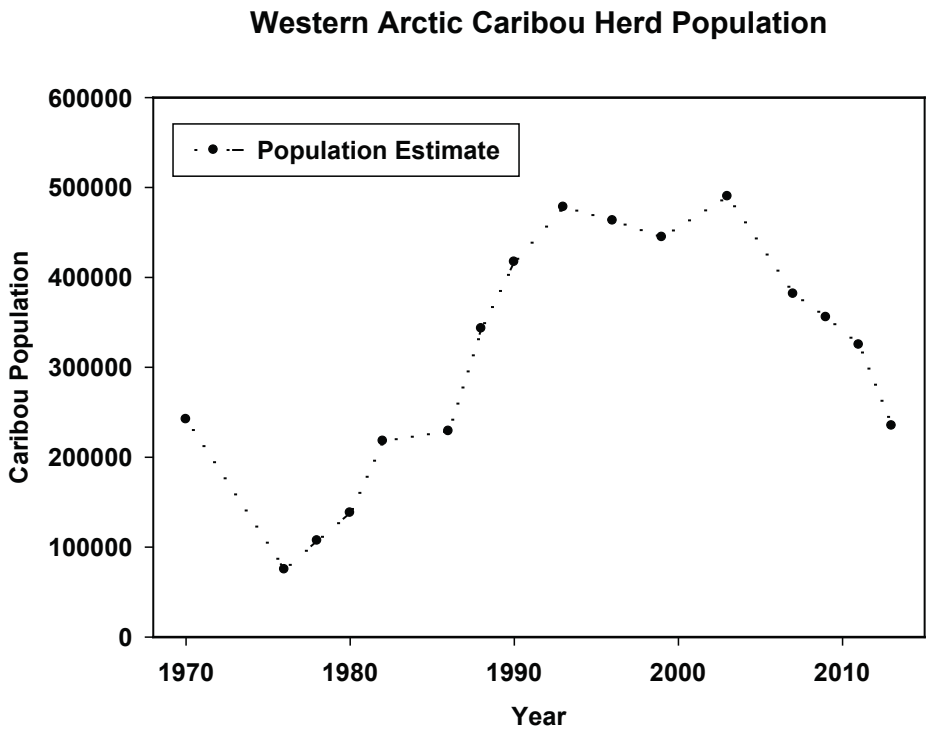

Figure 2. Maximum estimated population estimates of the Western Arctic Caribou Herd from 1970-2013. Population estimates from 1986-2013 are based on aerial photographs of groups of caribou that contained radio–collared animals (Dau 2011, 2014)

Reindeer

Reindeer, originally introduced to Alaska from Siberia in the late 1800s, were once distributed in small herds throughout western Alaska (Stern et al. 1980). More recently, the reindeer industry has been centered in the vicinity of the Seward Peninsula, where there are approximately 15 grazing allotments. Expansion of the WACH onto the Seward Peninsula resulted in the extirpation of many herds, beginning in the 1990s (Finstad et al. 2002). However, a few herds remain outside of the WACH current range, including a herd composed of animals owned by the Stebbins and St. Michael village corporations and by a private individual. This herd was estimated at 2,500 – 3,000 reindeer in 2013 (Blodgett 2015, pers. comm.). The herd currently grazes the areas surrounding the communities of Stebbins and St. Michael, including Stuart Island, though herd managers have expressed an interest in securing grazing permits on State and Federal land south and east of the current grazing area (Sonnen 2015, pers. comm., Thorpe 2015, pers. comm.).

Throughout areas occupied by both reindeer and caribou, there is concern that hunters may harvest reindeer while caribou hunting (Dau 2000). Both the Federal Subsistence Board and the Alaska Board of Game have been responsive to this concern and have periodically modified seasons and hunt areas to prevent intentional or unintentional harvest of reindeer (OSM 2003; Dau 2005; OSM 2006).

Table 1. Western Arctic Caribou Herd fall composition 1976 – 2014 (Dau 2011, 2014).

Regulatory Year	Total bulls: 100 cows[a]	Calves: 100 cows	Calves: 100 adults	Bulls	Cows	Calves	Total
1976/1977	63	52	32	273	431	222	926
1980/1981	53	53	34	715	1,354	711	2,780
1982/1983	58	59	37	1,896	3,285	1,923	7,104
1992/1993	64	52	32	1,600	2,498	1,299	5,397
1995/1996	58	52	33	1,176	2,029	1,057	4,262
1996/1997	51	49	33	2,621	5,119	2,525	10,265
1997/1998	49	43	29	2,588	5,229	2,255	10,072
1998/1999	54	45	29	2,298	4,231	1,909	8,438
1999/2000	49	47	31	2,059	4,191	1,960	8,210
2001/2002	38	37	27	1,117	2,943	1,095	5,155
2004/2005	48	35	24	2,916	6,087	2,154	11,157
2006/2007	42	40	28	1,900	4,501	1,811	8,212
2008/2009	45	48	33	2,981	6,618	3,156	12,755
2010/2011	49	35	23	2,419	4,973	1,735	9,127
2011/2012							
2012/2013	42[b]						
2013/2014							
2014/2015	39						

[a] 40 bulls:100 cows is the minimum level recommended in the WACH Cooperative Management Plan (WACH Working Group 2011)
[b] Estimated from power point presentation presented at the WACH Working Group Meeting December 17-18, 2014 (Dau 2014)

Harvest History

From 1999–2014 the average annual harvest from the WACH was approximately 13,600 caribou, which includes harvest from Units 21, 22, 23, 24, and 26A (Dau 2009, Dau 2014, pers. comm.). Local residents take approximately 94% of the caribou harvest within the range of the WACH, with residents of Unit 23 taking the vast majority of the harvest (**Figure 3**). Residents of Unit 22A, which includes the communities of St. Michael, Shaktoolik, Stebbins and Unalakleet, are responsible for less than 0.5% of the total WACH harvest (**Table 2**). There is no reported harvest from Unit 18 (Dau 2011).

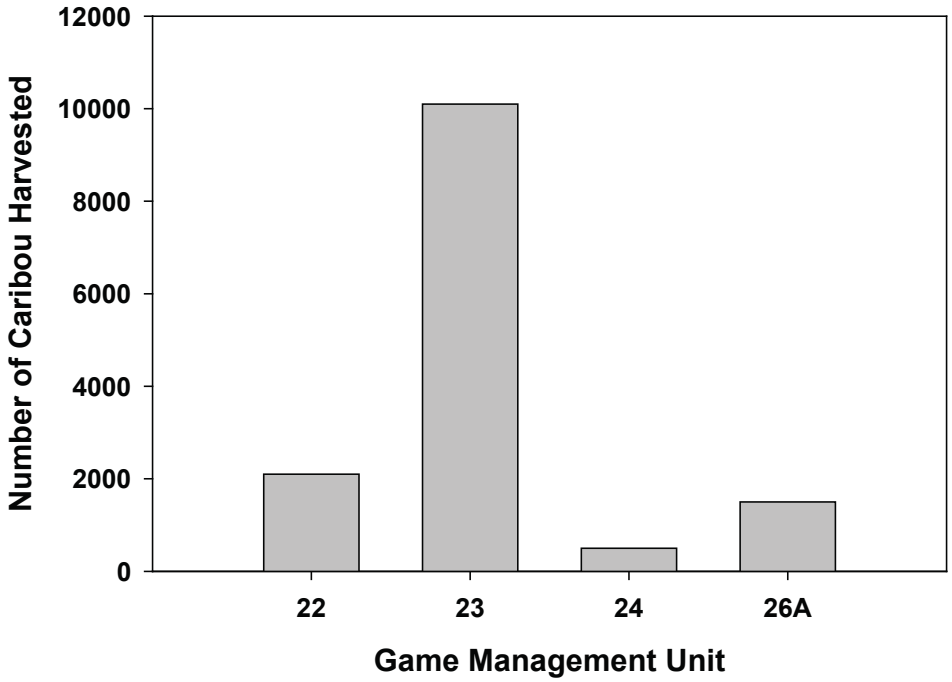

Figure 3. Average annual harvest by residents within the WACH range, RY1998-RY2012 (Dau 2014).

Table 2. Unit 22 caribou harvest by community and subunit. Adapted from Table 10, Dau 2011.

Game Management Unit	Community	Human Population	Relative Distance to Caribou	Estimated Harvest
22A	Saint Michael	444	Far	16
22A	Shaktoolik	214	Far	16
22A	Stebbins	598	Far	16
22A	Unalakleet	724	Far	15
22B	Elim	309	Average	131
22B	White Mountain	215	Average	80
22B	Golovin	167	Average	54
22B	Koyuk	347	Far	16
22C	Nome	3,495	Average	111
22D	Brevig Mission	328	Average	141
22D	Teller	256	Average	102
22E	Shishmaref	608	Average	293
22E	Wales	136	Far	16

Effects of the Proposal

If adopted, this proposal would close Federal public lands to caribou hunting in the upper drainages of the Adreafsky River, located in Unit 18, and the portion of Unit 22 south of the Unalakleet River. Because there have been no caribou in this area for many years, this action would have no effect on the caribou population or on Federally qualified subsistence users or other hunters. It would likely benefit reindeer herders, because it would help prevent the inadvertent harvest of reindeer in the area. The stipulation that the area may be opened by the Federal manager would ensure the opportunity for Federal subsistence harvest if caribou were present in the area.

OSM PRELIMINARY CONCLUSION

Oppose Proposal WP16-43

Justification

Although closing portions of Units 18 and 22A to caribou harvest would have no detrimental effect on subsistence resources or on subsistence users, closures intended solely to protect private property are not allowed by the Board's closure policy. This policy allows establishment or retention of closures primarily for the conservation of subsistence resources or to ensure continued use of these resources by subsistence users. While the Board has a history of considering proposals aimed at minimizing reindeer/caribou conflicts, past proposals have sought changes in seasons, harvest limits, and hunt areas, with the goal of maximizing subsistence opportunity while minimizing risk to reindeer. They have not requested closures of Federal public lands. This proposal is contrary to the Board's closure policy and thus cannot be supported.

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POLICY ON CLOSURES TO HUNTING, TRAPPING AND FISHING ON FEDERAL PUBLIC LANDS AND WATER IN ALASKA

FEDERAL SUBSISTENCE BOARD

Adopted August 29, 2007

PURPOSE

This policy clarifies the internal management of the Federal Subsistence Board (Board) and provides transparency to the public regarding the process for addressing federal closures (closures) to hunting, trapping, and fishing on Federal public lands and waters in Alaska. It also provides a process for periodic review of regulatory closures. This policy recognizes the unique status of the Regional Advisory Councils and does not diminish their role in any way. This policy is intended only to clarify existing practices under the current statute and regulations: it does not create any right or benefit, substantive or procedural, enforceable at law or in equity, against the United States, its agencies, officers, or employees, or any other person.

INTRODUCTION

Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) establishes a priority for the taking of fish and wildlife on Federal public lands and waters for non-wasteful subsistence uses over the taking of fish and wildlife on such lands for other purposes (ANILCA Section 804). When necessary for the conservation of healthy populations of fish and wildlife or to continue subsistence uses of such populations, the Federal Subsistence Board is authorized to restrict or to close the taking of fish and wildlife by subsistence and non-subsistence users on Federal public lands and waters (ANILCA Sections 804 and 815(3)). The Board may also close Federal public lands and waters to any taking of fish and wildlife for reasons of public safety, administration or to assure the continued viability of such population (ANILCA Section 816(b)).

BOARD AUTHORITIES

- ANILCA Sections 804, 814.815(3), and 816.
- 50 CFR Part I00 and 36 CFR Part 242, Section .10(d)(4).

POLICY

The decision to close Federal public lands or waters to Federally qualified or non-qualified subsistence users is an important decision that will be made as set forth in Title VIII of ANILCA. The Board will not restrict the taking of fish and wildlife by users on Federal public lands (other than national parks and park monuments) unless necessary for the conservation of healthy populations of fish and wildlife resources, or to continue subsistence uses of those populations, or for public safety or administrative reasons, or 'pursuant to other applicable law." Any individual or organization may propose a closure. Proposed closures of Federal

public lands and waters will be analyzed to determine whether such restrictions are necessary to assure conservation of healthy populations of fish and wildlife resources or to provide a meaningful preference for qualified subsistence users. The analysis will identify the availability and effectiveness of other management options that could avoid or minimize the degree of restriction to subsistence and non-subsistence users.

Like other Board decisions, closure actions are subject to change during the yearly regulatory cycle. In addition, closures will be periodically re-evaluated to determine whether the circumstances necessitating the original closure still exist and warrant continuation of the restriction. When a closure is no longer needed, actions to remove it will be initiated as soon as practicable. The Office of Subsistence Management will maintain a list of all closures.

Decision Making

The Board will:

- Proceed on a case – by – case basis to address each particular situation regarding closures. In those cases for which conservation of healthy populations of fish and wildlife resources allows, the Board will authorize non-wasteful subsistence taking.

- Follow the statutory standard of "customary and traditional uses." Need is not the standard. Established use of one species may not be diminished solely because another species is available. These established uses have both physical and cultural components, and each is protected against all unnecessary regulatory interference.

- Base its actions on substantial evidence contained within the administrative record, and on the best available information; complete certainty is not required.

- Consider the recommendations of the Regional Advisory Councils, with due deference (ANILCA § 805 (c)).

- Consider comments and recommendations from the State of Alaska and the public (ANILCA § 816(b)).

Conditions for Establishing or Retaining Closures

The Board will adopt closures to hunting, trapping or fishing by non-Federally qualified users or Federally qualified subsistence users when one or more of the following conditions are met:

- Closures are necessary for the conservation of healthy populations offish and wildlife:

  a) When a fish or wildlife population is nor sufficient to provide for both Federally qualified subsistence users and other users, use by non-Federally qualified users may be reduced or prohibited, or

b) When a fish or wildlife population is insufficient to sustain all subsistence uses, the available resources shall be apportioned among subsistence users according to their:

1) Customary and direct dependence upon the populations as the mainstay of livelihood.

2) Local residency, and

3) Availability of alternative resources, or

c) When a fish or wildlife population is insufficient to sustain any use, all uses must be prohibited.

- Closures are necessary to ensure the continuation of subsistence uses by Federally qualified subsistence users.
- Closures are necessary for public safety.
- Closures are necessary for administrative reasons.
- Closures are necessary "pursuant to other applicable law."

Considerations in Deciding on Closures

When acting upon proposals recommending closure of Federal public lands and waters to hunting, trapping, or fishing. The Board may take the following into consideration to the extent feasible:

- The biological history (data set) of the fish stock or wildlife population.
- The extent of affected lands and waters necessary to accomplish the objective of the closure.
- The current status and trend of the fish stock or wildlife population in question.
- The current and historical subsistence and non-subsistence harvest, including descriptions of harvest amounts effort levels, user groups, and success levels.
- Pertinent traditional ecological knowledge.
- Information provided by the affected Regional Advisory Councils and Alaska Department of Fish and Game.

- Relevant State and Federal management plans and their level of success as well as any relationship lo other Federal or State laws or programs.

- Other Federal and State regulatory options that would conserve healthy populations and provide a meaningful preference for subsistence, but would be less restrictive than closures.

- The potential adverse and beneficial impacts of any proposed closure on affected fish and wildlife populations and uses of lands and waters both inside and outside the closed area.

- Other issues that influence the effectiveness and impact of any closure.

Reviews of Closures

A closure should be removed as soon as practicable when conditions that originally justified the closure have changed to such an extent that the closure is no longer necessary. A Regional Council a State or Federal agency, or a member of the public may submit, during the nom1al proposal period, a proposal requesting the opening or closing of an area. A closure may also be implemented, adjusted, or lifted based on a Special Action request according to the criteria in 50 CFR 100.19 and 36 CFR 242.19.

To ensure that closures do not remain m place longer than necessary, all future closures will be reviewed by the Federal Subsistence Board no more than three years from the establishment of the closure and at least every three years thereafter. Existing closures in place at the time this policy is implemented will be reviewed on a three-year rotational schedule, with at least one-third of the closures reviewed each year.

Closure reviews will consist of a written summary of the history and original justification for the closure and a current evaluation of the relevant considerations listed above. Except in some situations which may require immediate action through the Special Action process, closure review analyses will be presented to the affected Regional Cowlcil(s) during the normal regulatory proposal process in the form of proposals to retain, modify or rescind individual closures.

Chair, Federal Subsistence Board

Board Member, U.S. Fish and Wildlife Service

Board Member, Bureau of Indian Affairs

Board Member, U.S. Forest Service

Board Member, National Park Service

Board Member, Bureau of Land Management

WRITTEN PUBLIC COMMENTS

May 28,2015

Federal Subsistence Board
ATTN: Theo Matuskowitz
Office of Subsistence Management
U.S. Fish & Wildlife Service
1011 E. Tudor Road, MS 121
Anchorage, AK 99503

Dear Federal Subsistence Board:

Kawerak, Inc. is the regional non-profit tribal consortium of the Bering Strait Region. Kawerak's Board of Directors is comprised of the Presidents of the 20 tribes of the Bering Strait Region. Kawerak offers numerous programs and services to the 16 communities in the region. Kawerak, Inc. promotes economic development that is both responsible and sustainable.

We are offering suggestions for Federal Wildlife Proposals that are up for your review.

We are in support of Federal Wildlife Proposal WP16-43 to open caribou hunting by Emergency Order on Federal Public Lands when the caribou are present in Game Management Unit (GMU) 18 and the southern portion of Game Management Unit 22A; however we request the following amendment. Instead of GMU 22A "South of the Unalakleet River" we recommend that it be changed to GM U 22A "South of the Golsovia River". In doing so this will align both the Federal and State boundary lines and hopefully this will eliminate any confusion as to what area is open and what area is closed. The Alaska Department of Fish & Game (ADF&G) data indicates that the Western Arctic Caribou Herd has not migrated south of the Unalakleet River in 15-20 years. Another issue of concern in northern portion of GMU 18 and the southern portion of GMU 22A is that individuals mistaking privately owned reindeer for caribou because the season for caribou is open in both Units. This causes immense hardship on the reindeer herd owners by having to take time to go out into the field to confirm what has happened then report to Law Enforcement on theft of privately owned reindeer.

Please contact Subsistence Resources Program Director Brandon Ahmasuk to obtain details and more information at 1-907-443-4265. Thank you for your consideration.

Sincerely,

Kawerak, Inc.
Melanie Bahnke, President

FISHERIES RESOURCE MONITORING PROGRAM

BACKGROUND

Beginning in 1999, the Federal government assumed expanded management responsibility for subsistence fisheries on Federal public lands in Alaska under the authority of Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA). Expanded subsistence fisheries management introduced 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. 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 (OSM). 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.

Biennially, the Office of Subsistence Management announces a funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The 2016 Notice of Funding Availability focused on priority information needs developed either by strategic planning efforts or subject matter specialist input, followed by review and comment by the Subsistence Regional Advisory Councils. The Monitoring Program is administered through regions, which were developed to match subsistence management regulations, as well as stock, harvest, and community issues common to a geographic area. The six Monitoring Program regions are shown in **Figure 1**.

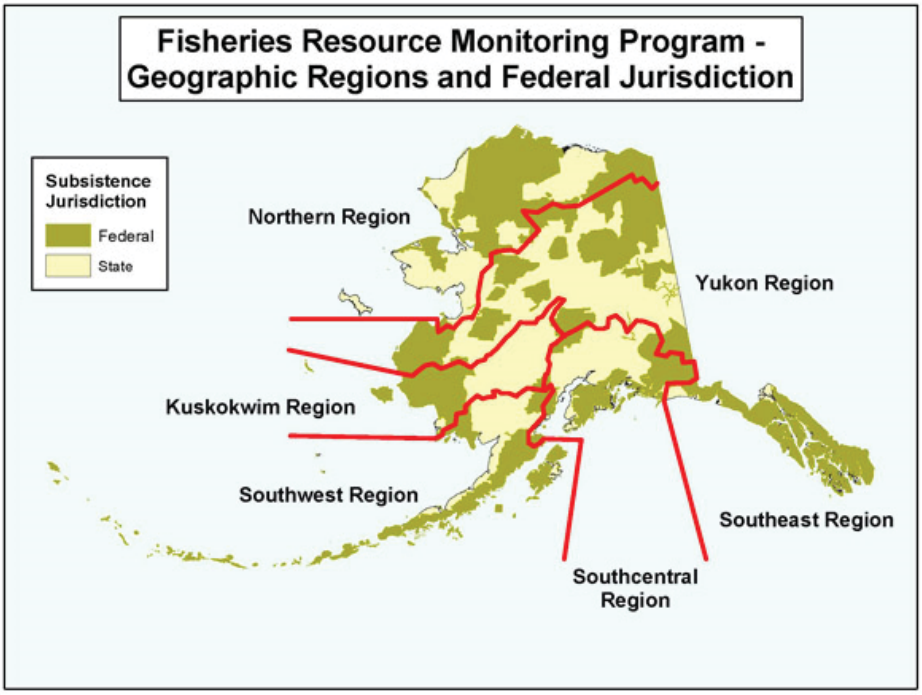

Figure 1. Geographic Regions for the Fisheries Resource Monitoring Program.

To implement the Monitoring Program, a collaborative approach is utilized in which five Federal agencies (U.S. 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 investigation plans submitted for funding consideration. 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 forwards a Monitoring Plan to the Assistant Regional Director of OSM for final approval.

Strategic plans sponsored by the Monitoring Program have been developed by workgroups of fisheries managers, researchers, Federal Subsistence Regional Advisory Councils, and by 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 are available for viewing on the Federal Subsistence Management, Fisheries Resource Monitoring Program website (http://www.doi.gov/subsistence/index.cfm). Individual copies of plans are available by placing a request to the Office of Subsistence Management. 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 experts on the Regional Advisory Councils, the Technical Review Committee, Federal and State managers, and staff from the Office of Subsistence Management. Finally, a strategic plan specifically 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 (Yukon and Kuskokwim Coregonid Strategic Plan). Currently, all regional strategic plans need to be updated. The OSM, in collaboration with Regional Advisory Councils and agency partners, will be exploring methods to update these plans, develop a schedule into the future and ensure they are current and represent the most up-to-date information about subsistence needs and concerns throughout the state.

HISTORICAL OVERVIEW

The Monitoring Program was first implemented in 2000, with an initial allocation of $5 million. Since 2001, a total of $103.6 million has been allocated for the Monitoring Program to fund a total of 431 projects (**Figure 2; Figure 3**).

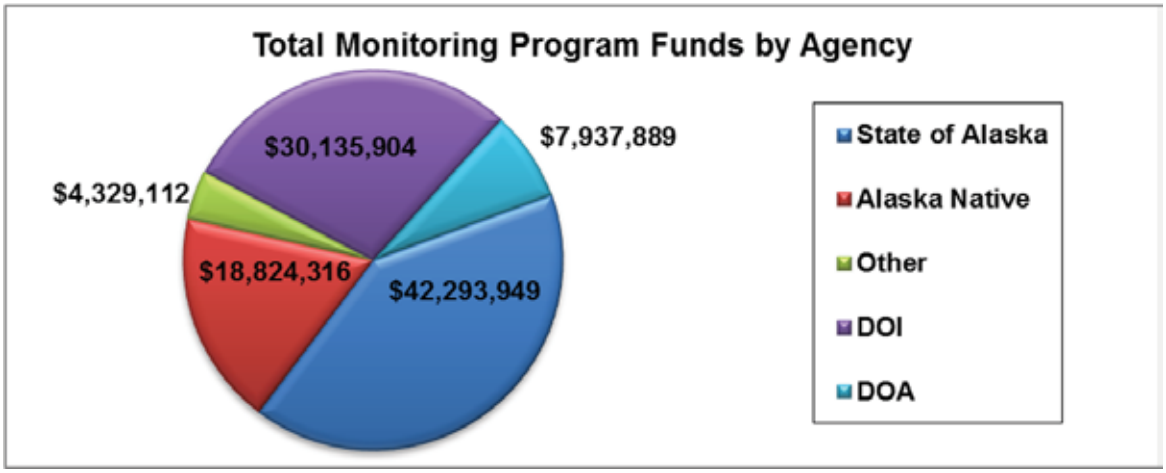

Figure 2. Total Project funds through the Monitoring Program from 2000 through 2014 listed by the organization of the Principal Investigator for projects funded. The funds listed are the total approved funds from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture.

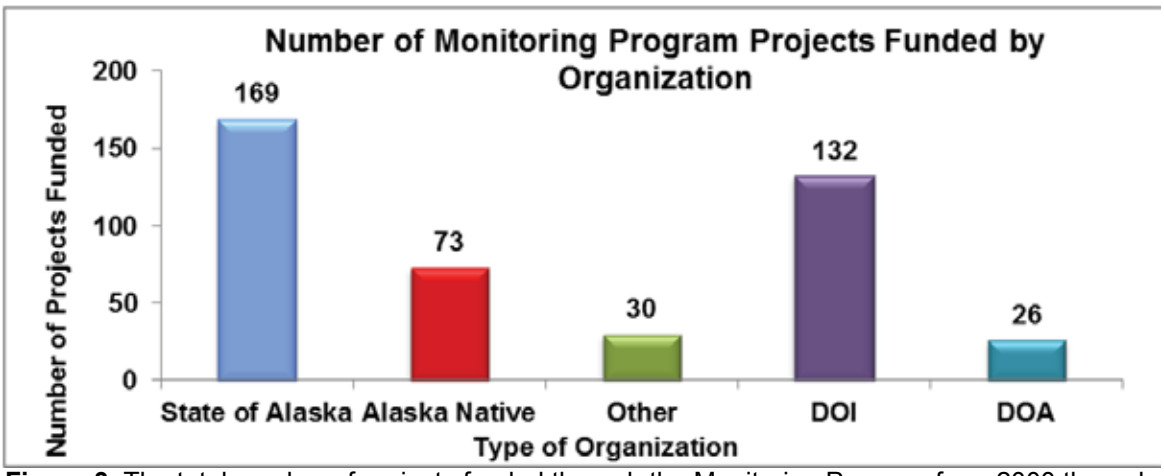

Figure 3. The total number of projects funded through the Monitoring Program from 2000 through 2014 listed by the organization of Principal Investigator. DOI = Department of Interior and DOA = Department of Agriculture.

During each biennial funding cycle, the Monitoring Program budget funds ongoing multi-year projects (2, 3 or 4 years) as well as new projects. Budget guidelines are established by geographic region (**Table 1**) and data type. The regional guidelines were developed using six criteria that included level of risk to species, level of threat to conservation units, amount of subsistence needs not being met, amount of information available to support subsistence management, importance of a species to subsistence harvest and level of user concerns with subsistence harvest. Budget guidelines provide an initial target for planning; however they are not final allocations and will be adjusted annually as needed (**Figure 5; Figure 6**).

Table 1. Regional allocation guideline for Fisheries Resource Monitoring Funds.

Region	Department of Interior Funds	Department of Agriculture Funds
Northern	17%	0%
Yukon	29%	0%
Kuskokwim	29%	0%
Southwest	15%	0%
Southcentral	5%	33%
Southeast	0%	67%
Inter-regional	5%	0%

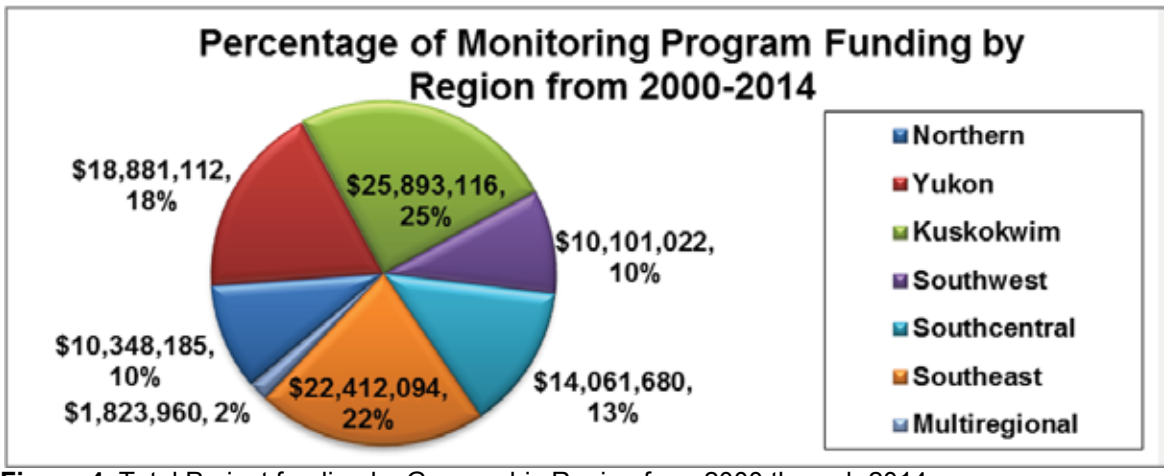

Figure 4. Total Project funding by Geographic Region from 2000 through 2014.

Two primary types of research projects are solicited for the Monitoring Program including Harvest Monitoring/Traditional Ecological Knowledge (HMTEK) and Stock, Status and Trends (SST), although projects that combine these approaches are also encouraged. Project funding by type is shown in **Figure 5**. Definitions of the two project types are listed below:

- **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.

- **Harvest Monitoring and Traditional Ecological Knowledge (HMTEK) -**These projects address assessment of subsistence fisheries including quantification of harvest and effort, and description and assessment of fishing and use patterns.

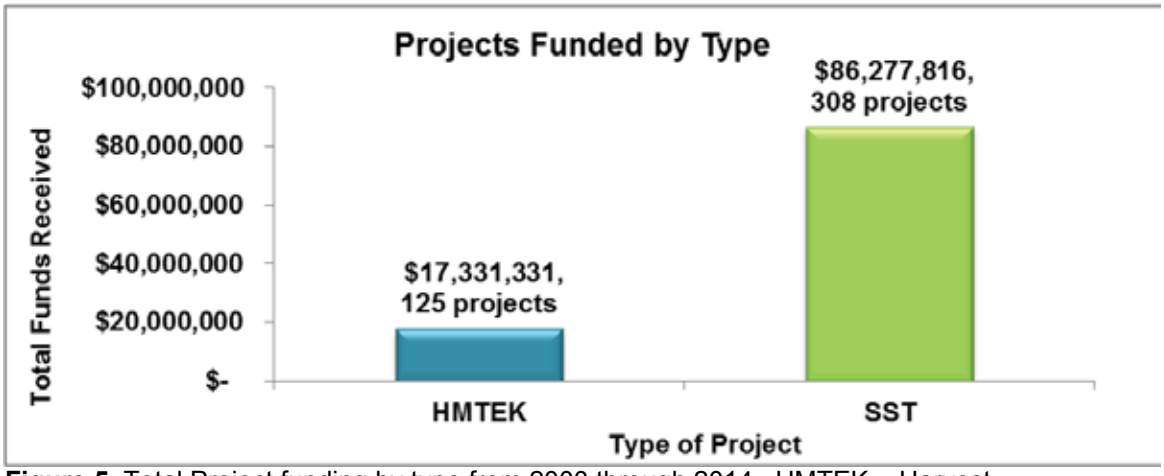

Figure 5. Total Project funding by type from 2000 through 2014. HMTEK = Harvest Monitoring/Traditional Ecological Knowledge and SST = Stock, Status and Trends.

PROJECT EVALUATION PROCESS

In the current climate of increasing conservation concerns and subsistence needs, it is imperative that the Monitoring Program prioritizes high quality projects that address critical subsistence questions. Several changes were implemented in the 2016 Monitoring Program to address the challenges facing Federal subsistence users across the state. These changes will enhance the Monitoring Program by increasing overall program transparency, identifying and funding high quality and high priority research projects and maximizing funding opportunities. This will allow the Monitoring Program to make substantial contributions to Federal subsistence users and to the Federal Subsistence Management Program.

Projects are selected for funding through an evaluation and review process that is designed to advance projects that are strategically important for the Federal Subsistence Program, technically sound, administratively competent, promote partnerships and capacity building, and are cost effective. Projects are evaluated by a panel called the Technical Review Committee (TRC). This committee is a standing interagency committee of senior technical experts that is foundational to the credibility and scientific integrity of the evaluation process for projects funded by the Monitoring Program. The TRC reviews, evaluates, and make recommendations about proposed projects, consistent with the mission of the Monitoring Program. Fisheries and Anthropology staff from the OSM provide support for the TRC. Recommendations from the TRC provide the basis for further comments from Councils, the public, the Interagency Staff Committee (ISC), and the Federal Subsistence Board, with final approval of the Monitoring Plan by the Assistant Regional Director of OSM.

The 2016 Monitoring Program changes involve how projects are submitted and also how they are reviewed. To be considered for funding under the Monitoring Program, a proposed project must have a linkage to Federal subsistence fishery management. This means that a proposed project must have a direct association to a Federal subsistence fishery, and that either the subsistence fishery or fish stocks in question must occur in or pass through waters within or adjacent to Federal public lands. Complete project packages need to be submitted on time and must address five specific criteria (see below) in order to be considered a high quality project. Addressing only some of the criteria will not guarantee a

successful project submission. Additionally, project review has been changed to aid transparency and consistency throughout the process. Key modifications include specific guidelines for assessing how and whether a proposed project has addressed each of the five criteria, receiving a single consolidated review from each participating agency, and requiring that agencies recuse themselves from providing reviews for projects involving their agency.
Five criteria are used to evaluate project proposals:

1. **Strategic Priority -** Studies must be responsive to identified issues and priority information needs. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must include a synthesis of project findings in their investigation plans. This synthesis should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management.

    a. *Federal linkage* – Study must have a direct association to a subsistence fishery within Federal Subsistence Management Program jurisdiction. That is, the subsistence fishery or stocks in question must occur in waters within or adjacent to Federal public lands (National Wildlife Refuges, National Forests, National Parks and Preserves, National Conservation Areas, National Wild and Scenic River Systems, National Petroleum Reserves, and National Recreation Areas).

    b. *Conservation Mandate* – Risk to the conservation of species and populations that support subsistence fisheries and risk to public lands purposes.

    c. *Allocation Priority* – Risk of failure to provide for Federal subsistence uses.

    d. *Data Gaps* – Amount of information available to support Federal subsistence management. A higher priority is given where a lack of information exists.

    e. *Management Application* – The application of proposed project data must be clearly explained and linked to current Federal management strategies and needs.

    f. *Role of Resource* – Importance of a species or a population to a Federal subsistence harvest (e.g. number of subsistence users affected, quantity of subsistence harvest), and qualitative significance (e.g. cultural value, unique seasonal role).

    g. *Local Concern* – Level of user concern over Federal subsistence harvests (e.g., allocation, competing uses, changes in populations).

2. **Technical-Scientific Merit -** Technical quality of the study design must meet accepted standards for information collection, compilation, analysis, and reporting. Studies must have clear

objectives, appropriate sampling design, correct analytical procedures, and specified progress, annual and final reports.

3. **Investigator Ability and Resources -** Investigators must demonstrate that they are capable of successfully completing the proposed study by providing information on the ability (training, education, and experience) and resources (technical and administrative) they possess to conduct the work. Applicants who have received funding in the past will be evaluated and ranked on their past performance, including meeting deliverable deadlines. A record of failure to submit reports or delinquent submittal of reports will be taken into account when rating investigator ability and resources.

4. **Partnership-Capacity Building -** Partnerships and capacity building are priorities of the Monitoring Program. ANILCA mandates that rural residents be afforded a meaningful role in the management of Federal subsistence fisheries, and the Monitoring Program offers opportunities for partnerships and participation to local residents in monitoring and research. Investigators are requested to include a strategy for integrating local capacity development in their investigation plans. Investigators must not only inform communities and regional organizations in the area where work is to be conducted about their project plans, but must also consult and communicate with local communities to ensure that local knowledge is utilized and concerns are addressed. 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. This includes a plan to facilitate and develop partnerships so that investigators, communities, and regional organizations can pursue and achieve the most meaningful level of involvement.

   Investigators are encouraged to develop the highest level of tribal, community and regional involvement that is practical. Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development. Ideally, a strategy to increase capacity to higher levels will be provided in the project proposal, recognizing, however, that in some situations sustainable or higher level involvement may not be desired or feasible by the local organizations. Successful capacity building requires developing trust and dialogue among investigators, tribes, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building should emphasize reciprocity and sharing of knowledge and information.

5. **Cost Benefit**

   Cost/Price Factors – Applicant's cost/price proposal will be evaluated for reasonableness. For a price to be reasonable, it must represent a price to the government that a prudent person would pay when consideration is given to prices in the market. Normally, price reasonableness is

established through adequate price competition, but may also be determined through cost and price analysis techniques.

Selection for Award – Applicant should be aware that the government shall perform a "best value analysis" and the selection for award shall be made to the Applicant whose proposal is most advantageous to the government, taking into consideration the technical factors listed above and the total proposed price across all agreement periods. Matching funds will be factored into the review process based on overall value to the government.

POLICY AND FUNDING GUIDELINES

Several policies have been developed to aid in implementing funding. These policies include:

1. Projects of up to four years duration may be considered in any year's monitoring plan.
2. Studies must not duplicate existing projects.
3. A majority of Monitoring Program funding will be dedicated to non-Federal agencies.
4. Long term projects will be considered on a case by case basis.
5. Activities that are not eligible for funding include:
   a) habitat protection, mitigation, restoration, and enhancement;
   b) hatchery propagation, restoration, enhancement, and supplementation;
   c) contaminant assessment, evaluation, and monitoring; and
   d) projects where the primary or only objective is outreach and education (for example, science camps, technician training, and intern programs), rather than information collection, are not eligible for funding under the Monitoring Program.

The rationale behind these policy and funding guidelines is to ensure that existing responsibilities and efforts by government agencies are not duplicated under the Monitoring Program. Land management or regulatory agencies already have direct responsibility, as well as specific programs, to address these activities. However, the Monitoring Program may fund research to determine how these activities affect Federal subsistence fisheries or fishery resources.

The Monitoring Program may fund assessments of key Federal subsistence fishery stocks in decline or that may decline due to climatological, environmental, habitat displacement, or other drivers; however applicants must show how this knowledge would contribute to Federal subsistence fisheries management. Similarly, the Monitoring Program may legitimately fund projects that assess whether migratory barriers (e.g. falls, beaver dams) significantly affect spawning success or distribution; however, it would be inappropriate to fund projects to build fish passes, remove beaver dams, or otherwise alter or enhance habitat.

2016 FISHERIES RESOURCE MONITORING PLAN

For 2016, a total of 46 investigation plans were received and 45 are considered eligible for funding (**Table 1**). One project was not eligible for funding because the project falls under habitat mitigation, restoration, and enhancement. Of the projects that are considered for funding, 33 are SST projects and 13 are HMTEK projects.

In 2016, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide up to $2.0 million in funding and up to $2.7 million for ongoing projects that were initially funded in 2014. The Department of Agriculture, through the U.S. Forest Service, has historically provided $1.8 million annually, but the amount of 2016 funds available projects is uncertain. If the Department of Agriculture funding is not provided, none of the proposed projects submitted for the Southeast Region will be funded.

FISHERIES RESOURCE MONITORING PROGRAM
KUSKOKWIM REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, 96 projects have been undertaken in the Kuskokwim Region for a total of $25.9 million (**Figure 1**). Of these, the State of Alaska conducted 55 projects, Alaska Native organizations conducted 16 projects, the Department of Interior conducted 21 projects, the Department of Agriculture conducted one project, and other organizations conducted three projects (**Figure 2**). Sixty-six projects were Stock, Status, and Trends (SST), and 30 projects were Harvest Monitoring and Traditional Ecological Knowledge (HMTEK).

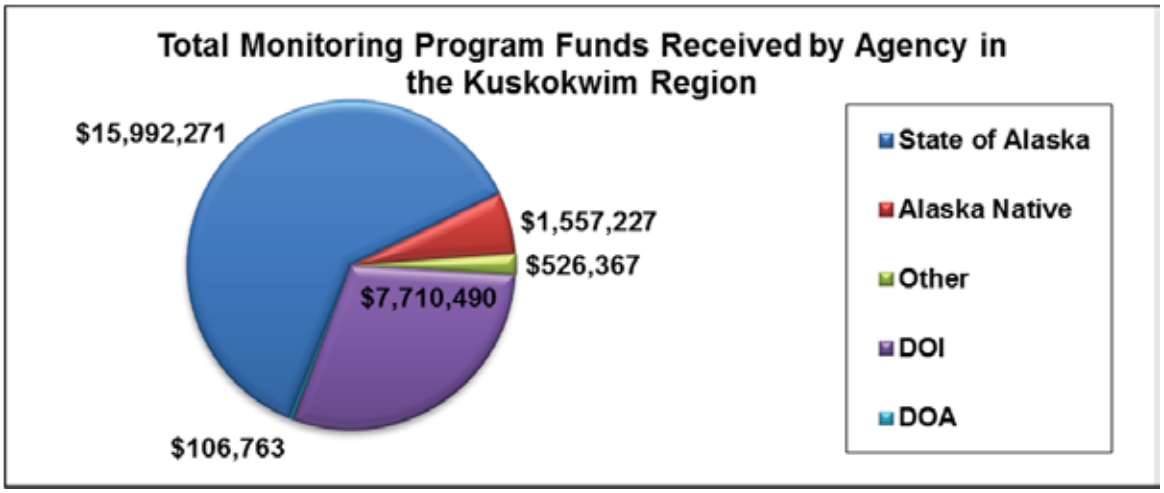

Figure 1. Monitoring Program funds received by agencies for projects in the Kuskokwim Region. The funds listed are the total approved funds from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture.

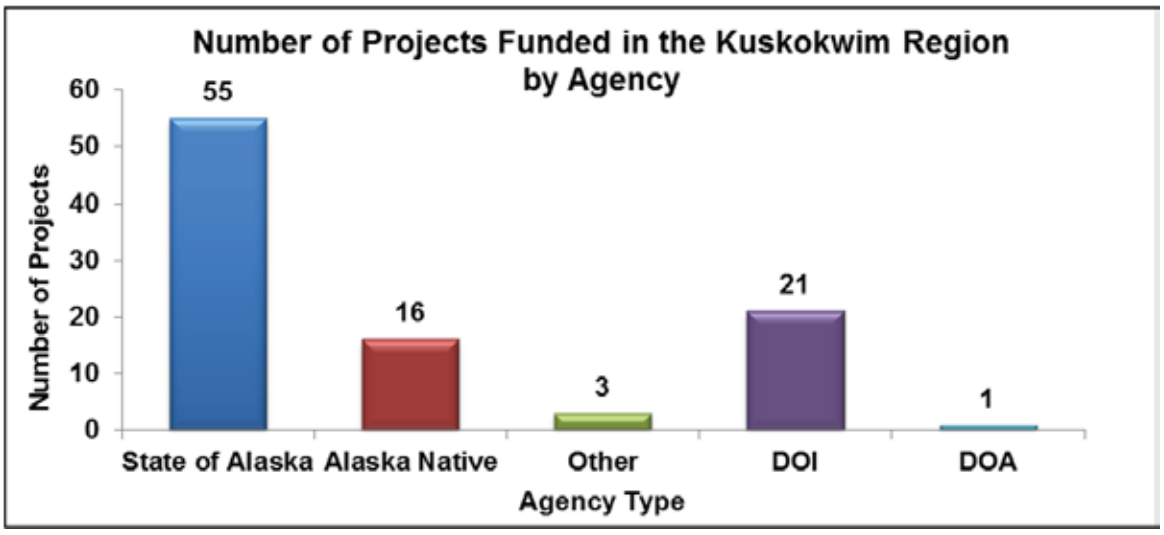

Figure 2. Total number of Monitoring Program projects funded, by agency, in the Kuskokwim Region from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture.

2016 DRAFT MULTI-REGIONAL FISHERIES RESOURCE MONITORING PLAN

OVERVIEW

Priority Information Needs

The 2016 Notice of Funding Opportunity for the Multi-regional category identified seven priority information needs:

- Reliable estimates of Chinook, Chum, Sockeye, and Coho Salmon escapement (for example, projects using weir, sonar, mark-recapture methods).
- Methods for including "quality of escapement" measures (for example, potential egg deposition, sex and size composition of spawners, spawning habitat utilization) in establishing Chinook Salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements.
- Estimate the size and growth of the sport fishery over the next 30 years, including the impacts of the sport fishery on cultural values and social systems.
- An understanding of the meaning and significance of sharing in the context of the social, cultural, and economic life of people in the lower Kuskokwim Area.
- Local knowledge of whitefish species to supplement information from previous research in central Kuskokwim River drainage communities. Groups of communities might include Kalskag, Lower Kalskag, Aniak, and Chuathbaluk or Red Devil, Sleetmute, and Stony River.
- Local knowledge of whitefish species to supplement information from previous research in lower Kuskokwim River drainage communities. A group of communities might include Kwethluk, Akiachak, and Tuluksak.
- An indexing method for estimating species-specific whitefish harvests on an annual basis for the Kuskokwim drainage. 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.

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 final allocations. Prior commitments to the 2014 Monitoring Program are up to $2.7 million. The anticipated funding available for the 2016 Monitoring Program is up to $2.0 million.

Technical Review Committee Proposal Ranking

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2016 Monitoring Program, six proposals were submitted for the Kuskokwim Region. The Technical Review Committee evaluated and scored each proposal for Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit. The final score determined the ranking of each proposal within the region (**Table 1**). Projects that rate higher comprise a strong Monitoring Plan for the region by addressing strategically important information needs based on sound science and promote cooperative partnerships and capacity building. The projects listed are currently being considered for Funding in the 2016 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included. For more information on projects submitted to the 2016 Fisheries Resource Monitoring Program please see the Executive Summaries in **Appendix A**.

Table 1. Technical Review Committee (TRC) ranking for projects in the Kuskokwim Region. Projects are listed by TRC ranking and include the total matching funds, total funds requested, and the average annual request for each project submitted to the 2016 Monitoring Program within the Kuskokwim Region. The projects listed are currently being considered for Funding in the 2016 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included.

TRC Ranking	Project Number	Title	Total Matching Funds	Total Project Request	Average Annual Request
1	16-301	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL Composition	$41,079	$157,108	$78,554
2	16-302	Salmon River Weir, Pitka Fork	$298,838	$466,469	$116,617
3	16-303	Enumeration and spawning area characterization of sheefish in the Upper Kuskokwim River	$255,000	$299,600	$99,867
4	16-351	Middle Kuskokwim River Inseason Subsistence Salmon Harvest Monitoring and Estimation	$79,159	$429,983	$107,496
5	16-304	Assessment of Chinook Salmon freshwater production in the Kwethluk River	$0	$623,802	$155,951
6	16-305	Kuskokwim River Broad Whitefish harvest cataloging and spawning demographics	$166,221	$387,722	$129,241
		Total	**$840,297**	**$2,364,684**	**$687,725**

2016 PROJECT SUMMARY AND TRC JUSTIFICATION FOR PROJECT RANKING

TRC Ranking: 1
Project Number: 16-301
Project Title: Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL Composition

Project Summary: The principle investigator is requesting two years of funding for continuing the collection and analysis of biological age, sex, and length samples from the subsistence Chinook Salmon harvest in the lower Kuskokwin River, from Eek Island to Tuluksak. The project began in 2001 and has been supported by the Fisheries Resource Monitoring Program since 2005. The stated goal of this project is to collect high quality age, sex, and length samples from Chinook Salmon harvested in the lower Kuskokwim River subsistence fishery, such that samples are reasonably representative of the total subsistence harvest of Chinook Salmon. This project addresses one of the Kuskokwim Region priority information needs listed in the 2016 Notice of Funding Availability, namely: *Reliable estimates of Chinook, Chum, Sockeye, and Coho Salmon escapement (for example, projects using weir, sonar, mark-recapture methods).*

TRC Justification: The TRC considers this a strong project because it 1) addresses one of the Kuskokwim Region priority information needs listed in the 2016 Notice of Funding Availability, 2) will collect important and needed data for the conservation and management of Kuskokwim River subsistence salmon resources, 3) has clear, measurable, and achievable objectives, 4) will be implemented and managed by well-qualified and experienced investigators, 5) involves a strong, long-standing partnership between the ADF&G and ONC, and 6) is much more cost effective than current project 12-302.

TRC Ranking: 2
Project Number: 16-302
Project Title: Salmon River Weir, Pitka Fork

Project Summary: The principle investigator is requesting three years of funding to operate a weir on the Salmon River of the Pitka Fork to index Chinook Salmon (*Oncorhynchus tshawytsch)* escapement to the headwaters of the Kuskokwim River, upriver from McGrath. There are currently no ground-based salmon assessment projects operated in the headwaters of the Kuskokwim River. Local and traditional knowledge, combined with eight years of intensive mark–recapture studies, indicate that the Salmon River of the Pitka Fork may be the best location for indexing Chinook Salmon escapement to the headwaters. The technical and outreach potential of this project were recognized by State of Alaska Chinook Salmon Research Initiative Technical Steering Committee, and startup funds for this weir were provided through that program for the 2015 and 2016 field seasons. The principle investigator is proposing to continue the project for the 2017 – 2019 field seasons with funding from OSM.

TRC Justification: The proposal addresses one of the 2016 priority information needs and the need for a salmon monitoring project in the upper Kuskokwim River drainage. Information and data collected from the project will be applied to management of important subsistence fisheries resources. The proposed investigation plan is technically sound and the project objectives are clear, measurable, and achievable.

The ADF&G investigators have successfully led and managed other similar salmon weir projects in the Kuskokwim region funded by OSM within the past four years.

There is a rural, Alaska Native organization as a co-investigator on the project. However, the partnership does not contribute significantly to the research aspect of the proposal. In the proposal the investigators state they "hope" to hire a student and "plan" to work out a cooperative agreement – working out these aspects in advance would strengthen the project. This project has added value because it is high up in the watershed and would help in the on-going mark/recapture projects in the lower river. Telemetry data indicate that Chinook Salmon utilize this up-river watershed for spawning. The cost of the project is reasonable to achieve objectives. This is one of the more affordable weirs in the Kuskokwim River drainage

TRC Ranking: 3
Project Number: 16-303
Project Title: Sheefish in the Upper Kuskokwim River.

Project Summary: The principle investigator seeks three years of funding to 1) deploy and operate a Dual frequency IDentification SONar (DIDSON) at the mouth of Big River to enumerate sheefish that spawn in this drainage during 2016-2018. The DIDSON will be used to enumerate post-spawning sheefish during their compressed two-week outmigration in early to mid-October, 2) verify a suspected sheefish spawning area on the South Fork of the Kuskokwim River by conducting a site visit and capturing sheefish to assess their spawning condition, and 3) identify and document upwelling groundwater and/or hyporheic zones in four known sheefish spawning areas in the upper Kuskokwim River drainage by deploying temperature, conductivity, and dissolved oxygen data loggers. This project addresses two of the research priorities for Inconnu stated in the OSM Whitefish Research Strategic Plan for the Yukon and Kuskokwim Rivers.

TRC Justification: The project addresses two of the research priorities for Inconnu in the OSM Whitefish Research Strategic Plan for the Yukon and Kuskokwim Rivers, and indirectly addresses one of the 2016 priority information needs for whitefish for the Kuskokwim area. The project does not address any immediate subsistence or conservation concerns. However, due to low runs of Chinook Salmon in recent years, whitefish species have received increased harvest pressure. This project would provide important information to fisheries managers to help determine the level of (sustainable) exploitation of inconnu. The objectives are clear, measurable, and achievable and have a proven ability to achieve technical results. The project has a rigorous sampling design that includes clear data collection, compilation, analysis and reporting procedures. The principal investigator is experienced and has a proven project management track record for OSM-funded projects. The cost of the project appears reasonable to achieve the objectives.

TRC Ranking: 4
Project Number: 16-351
Project Title: Middle Kuskokwim River In-season Subsistence Salmon Harvest Monitoring and Estimation

Project Summary: Through this four-year project, investigators will provide an index of relative abundance of salmon in a stretch of the middle Kuskokwim River, and further investigate the feasibility of estimating the in-season Chinook Salmon harvest. The size of recent Chinook Salmon runs were some of the lowest on record. In 2012 and 2014, fishery managers implemented restrictions aimed at preventing the directed harvest of Chinook Salmon while minimizing its incidental harvest during times when fishers were permitted to target Chum and Sockeye Salmon for subsistence. This management strategy required stock assessment projects providing run timing and relative stock abundance information in-season. In-season management decisions are currently informed by a limited number of data sources, including one test fishery at Bethel, a developing inriver radio telemetry mark-recapture survey, and in-season qualitative harvest reports from a small portion of subsistence fishers (Project OSM14-354). The proposed project will supplement these data sources by providing an additional index of relative salmon abundance. The study communities are Lower Kalskag, Kalskag, Aniak, Chuathbaluk, Crooked Creek, Red Devil, Sleetmute, and Stony River. The principle investigator conducted a similar feasibility study with residents of Napakiak and Oscarville in 2014 that is likely to be expanded to some tundra villages in 2015.

TRC Justification: The four-year project addresses an information need that is considered of high strategic priority by fishery managers, staff, and the public. The project has a clear Federal linkage. In collaboration with the Kuskokwim Native Association and eight villages, ADF&G Division of Subsistence staff will investigate if it is possible to recruit subsistence fishers as collaborators in data collection, and is it possible that analysis of these data can provide estimates of salmon run timing and stock abundance in an area of the middle Kuskokwim River. The principle goal is to support the development of a new research program that will provide accurate in-season harvest estimates in the Kuskokwim River drainage by using a similar sampling design and expanding the results to the entire subsistence fishery. Investigators are qualified to conduct the study and have requested a reasonable budget. However, the objectives of the study are not clearly defined, and the investigation plan does not include a detailed budget for the Kuskokwim Native Association.

TRC Ranking: 5
Project Number: 16-304
Project Title: Kwethluk River Chinook Salmon Freshwater Production

Project Summary: The principle investigator seeks four years of funding to conduct a Chinook Salmon smolt capture-recapture project through the operation of a rotary-screw trap, in conjunction with the Kwethluk River weir project, from mid-May through September. Data collected from this project will be utilized to assess smolt outmigration timing, estimate outmigration, and freshwater smolt survival using the number of spawning female Chinook Salmon, by size composition (potential egg deposition),

collected by the USFWS Kenai FWFO through OSM-funded Project 14-308. Information gathered will have direct applicability to understanding the freshwater habitat carrying capacity and quality of escapement parameters and contribute to the management of Kuskokwim River Chinook Salmon.

TRC Justification: The proposed project addresses one of the priority information needs identified in the 2016 Monitoring Program Notice of Funding Availability and is technically sound. The objectives are clear, measurable, and achievable. The project would occur within the boundaries of the Yukon Delta National Wildlife Refuge and involves subsistence fish resources that are harvested by Federally-qualified subsistence users. This is a worthwhile project to conduct, as the information gathered will have direct applicability to understanding the freshwater habitat carrying capacity and quality of escapement parameters and will contribute to the management of Kuskokwim River Chinook Salmon. However, the cost of the project is excessive to accomplish the objectives. More than half of the proposed budget each year would be utilized to support a full-time term biologist. No other U.S. Fish and Wildlife Service managed Spring/Summer field season project funded by OSM has a full-time position associated with it.

Some TRC members commented that the strategic priority is low because of a focus on smolts, and low river capture of smolts might not inform much about adult salmon. Counting smolts will not separate out fresh water vs marine water survival. The weir is relatively high in the Kuskokwim River drainage and has only limited utility. Management occurs based on in-season abundance. This type of project does little to inform the management process

TRC Ranking: 6
Project Number: 16-305
Project Title: Kuskokwim River Broad Whitefish.

Project Summary: The principle investigator seeks three years of funding to continue collecting mature broad whitefish destined for spawning areas above McGrath. Data will be collected and recorded on the age, sex, length and weight of these fish. In addition, investigators will utilize mark-recapture techniques to estimate population abundance.

TRC Justification: This project addresses the priority information need listed for whitefish in the Kuskokwim Region; *"An indexing method for estimating species-specific whitefish harvests on an annual basis for the Kuskokwim drainage…"* In addition, the project will continue to address 1) the priority information need in the 2014 Request for Proposals regarding Broad whitefish population assessment in the Kuskokwim River drainage and 2) a priority research need identified in the OSM-funded *Strategic Plan for Research of Whitefish Species in the Yukon and Kuskokwim River Drainages*. The objectives are clear, measurable, and achievable. The investigators are experienced Broad Whitefish field researchers and they are fully-qualified to carry out this project.

In the TRC review of project 14-301, the TRC wrote "*In the investigation plan, the principal investigator needs to address the sensitivity of Broad whitefish to electrofishing, including conducting a literature review and providing the results."* This has not been done to date. The principal investigator now has one

year of experience electrofishing Broad Whitefish to draw upon to address this issue. It is essential that the principal investigator address the issue of mortality rates associated with electrofishing, especially since the stated goal of project 16-305 is *"…to sample and mark (i.e., t-bar tag) as many Broad Whitefish as possible."*

There is no partnership or capacity building associated with this project. The investigation plan does not show any evidence that the principal investigator heeded the TRC's recommendation for project 14-301 for this category, *"The investigators need to be proactive to improve on the low rating by developing a local partnership and/or securing local hires for this project."* The investigation plan does not address the use of local hires or ANSEP students.

Results of project 14-301 should be the basis for any follow-on work or study and 14-301 is incomplete. The final report for 14-301 is scheduled to be completed in May 2016.

The cost of the project appears excessive to achieve the objectives.

It is unclear whether funds are being replicated or double funding is occurring in consideration of Project 14-301, which is currently addressing the same or similar issues. It is difficult to determine what is being funded and what isn't. The TRC previously recommended that the principal investigator include a literature review on the mortality rates of electro-shocking whitefish. No information or further analysis is provided. The methodology should include recapture. This project will only provide a qualitative assessment and does not really determine abundance.

APPENDIX A

The following Executive Summaries were written by the Principle Investigators and submitted to the Office of Subsistence Management as part of the proposal package. The statements and information contained in the Executive Summaries were not altered and they may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. The Executive Summaries listed are for projects that are currently being considered for Funding the 2016 Fisheries Resource Monitoring Program. Projects which were not considered for funding were not eligible due to the nature of the activity and are not included in this appendix.

Project Number: 16-301
Project Title: Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL Composition
Geographic Region: Kuskokwim
Data Type: Stock Status and Trends

Principal Investigator Zachary W. Liller, Alaska Department of Fish and Game
Co-Investigator: Greg Roczicka, Orutsararmiut Native Council

Project Cost:	**2016:** $114,467	**2017:** $42,641	**2018:** $0	**2019:** $0

Total Cost: $157,108

Issue Addressed: This project is designed to characterize the annual age, sex, and length (ASL) composition of the Lower Kuskokwim River Chinook salmon (*Oncorhynchus tshawytscha*) subsistence harvest for years 2016 and 2017. Currently, this project provides the only quantitative assessment of Kuskokwim River subsistence harvest patterns such as timing and methods (i.e., gear type) and the resulting Chinook salmon harvest composition by age, sex, and size.
This proposal has direct relevence to Federal subsistence management. The subsistence fishery is the largest harvester of Kuskokwim River Chinook salmon, and has the single greatest influence on the number and quality of returning adult Chinook salmon that escape each year. Much of the Kuskokwim River drainage is contained within Federal Conservation System Units – specifically the Yukon Delta National Wildlife Refuge. All residents of Kuskokwim River communities are federally qualified subsistence users.

Goal: The goal of this project is to collect high quality age, sex, and length samples from Chinook salmon harvested in the lower Kuskokwim River subsistence fishery, such that samples are reasonably representative of the total subsistence harvest of Chinook salmon.

Objectives:
1. Recruit and train 50 subsistence samplers from the Bethel area to sample their annual harvest of Chinook salmon.
2. Estimate the annual ASL composition of Chinook salmon in the lower Kuskokwim River.

3. Characterize the annual ASL composition of Chinook salmon in the lower Kuskokwim River subsistence harvest by gear type.

Methods/Specific project activities: Chinook salmon ASL information will be collected by non-agency participants, primarily subsistence fishermen and household members that will sample from their annual harvest. Recruitment of non-agency participants will occur in all 13 lower Kuskokwim River communities, however, efforts will be focused on subsistence fishermen who have fish camps located between the community of Napaskiak (rkm 97) and the mouth of the Gweek River (rkm 135). Agency staff will provide training to all participants to ensure that sampling procedures and data meet minimum standards consistent with ADF&G procedures. ONC staff will visit participating samplers in the Bethel area on a weekly basis to ensure data quality. Project activities will be monitored inseason by ADF&G and ONC staff stationed in Bethel. ADF&G will be responsible for final data quality evaluation, data analysis, reporting, and archiving. ADF&G and ONC staff will collaborate on community outreach and capacity building including presentations at stakeholder meetings and public service announcements.

Anticipated outputs and outcomes: This project will result in several key products that will be of direct benefit for sustainable management of Kuskokwim River Chinook salmon. Through this project, we will continue the effective working relationship between ADF&G, ONC, and lower Kuskokwim River subsistence fishermen. We will collect approximately 2,000 high quality ASL samples each year and produce annual ASL estimates of lower Kuskokwim River Chinook salmon subsistence harvest. Results will be published in the Kuskokwim Area ASL Catalog as part of the ADF&G Regional Information Report Series. Raw data will be made publicly available through the Arctic Yukon Kuskokwim Database Management System. We will also produce two project-related articles submitted to an appropriate Kuskokwim Area news outlet to increase public awareness of this project. Data will be communicated to the Kuskokwim River Salmon Management Working group and other stakeholders through regular fisheries management meetings and community meetings.

Project Number: 16-302
Project Title: Salmon River Weir, Pitka Fork
Geographic Region: Kuskokwim
Data Type: Stock Status and Trends

Principal Investigator: Brittany Blain, Alaska Department of Fish and Game
Co-Investigators: Vicki Otte, MTNT Energy, Inc.
Kevin Whitworth, MTNT Energy, Inc.
Zach Liller, Alaska Department of Fish and Game

Project Cost:	**2016:** $52,015	**2017:** $154,184	**2018:** $154,844	**2019:** $105,426

Total Cost: $466,469

Overview of need: We propose to operate a weir on the Salmon River of the Pitka Fork to index Chinook salmon escapement to the headwaters of the Kuskokwim River, upriver from McGrath from 2017-2019. This projects inception will begin in 2015 and in addition, is currently anticipated to operate in 2016 with funding from the Chinook Salmon Research Initiative. While two years of data will provide managers a good picture of escapement to the headwaters, additional years will assist in providing a more robust picture of headwater Chinook salmon escapement. Our proposal is in response to the priority information needs identified in the 2016 FRMP request for proposals, by providing reliable estimates of Chinook salmon (*Oncorhynchus tshawytsch)* escapements and age, sex, length composition in a data limited portion of the Kuskokwim River drainage. There are currently no ground based salmon assessment projects operated in the Kuskokwim River. Local and traditional knowledge combined with eight years of intensive mark–recapture studies indicate that the Salmon River of the Pitka Fork is the best location for indexing Chinook salmon escapement to the headwaters.

Goal: To continue operations of a ground based monitoring project that will adequately index escapement to the headwaters of the Kuskokwim River.

Objectives:

1) Estimate daily and total annual Chinook escapement in the Salmon River of the Pitka Fork using a fixed picket fish weir from 1 June to 15 August;
2) Collect and estimate age, sex, length (ASL) composition of annual Chinook salmon escapement such that 95% confidence intervals of age composition will be no wider than ±10% (a=0.05, d=0.10); and
3) Serve as a platform for future research projects such as tagging studies, collection of genetics data, and monitoring of environmental data.

Methods/Specific project activities: We propose to operate a weir on the Salmon River of the Pitka Fork to index Chinook salmon escapement to the headwaters of the Kuskokwim River from 1 June through 15 August (2017, 2018, 2019). Fish will be counted throughout the daytime by trained technicians. Visual counts will take place through a clear plastic viewing window placed on the stream surface. Age, sex, and length data will be collected in proportion to run timing using live fish trap that is integrated into the weir

design. The crew will record daily fish passage numbers of each salmon species in field logs and report the information to ADF&G/CF staff in Bethel or Anchorage. ADF&G/CF staff will be responsible for maintaining the information physically and electronically in tabular and graphical formats for the use of various managers and advisory groups engaged in inseason management. In addition, escapement counts and estimates will be updated daily in the Arctic Yukon Kuskokwim Database Management System and ADF&G Fish Counts Page.

Anticipated outputs and outcomes: Restrictions to federally qualified subsistence fishers similar to 2014 is anticipated in future years and gathering an understanding of ground based escapement in years of no restrictions in comparison to years of restrictions has the potential to provide managers valuable information to contribute to their decision making in the future. Long-term collection of data at this project will also assist in determining the effectiveness and accuracy of aerial surveys conducted during peak spawning periods. Results from data collected will be reported annually in both a Kuskokwim Area Salmon Escapement Monitoring report and a Kuskokwim River ASL Catalogue.

Project Number: 16-303
Project Title: Enumeration and spawning area characterization of sheefish in the Upper Kuskokwim River
Geographic Region: Kuskokwim
Data Type: Stock Status and Trends

Principal Investigator Lisa Stuby, Alaska Department of Fish and Game, Sport Fish Division

Project Cost:	**2016:** $0	**2017:** $113,200	**2018:** $94,200	**2019:** $92,200

Total Cost: $299,600

Issues: A priority information need in the 2016 Fisheries Resource Monitoring Program is to estimate species-specific whitefish harvests within the Kuskokwim River drainage. Little is known about stock composition of the harvest or the abundance or productivity of the four sheefish spawning populations, and this information is essential for evaluating sustainability of the fishery. To fully evaluate the sustainability of a fishery, harvest values need to be compared to population abundance(s). Sheefish (*Stenodus leucichthys*) 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. The greatest use of sheefish in the Kuskokwim River drainage has been for subsistence with the majority of this harvest occurring in the lower and middle Kuskokwim River within the boundaries of the Yukon Delta National Wildlife Refuge.

A dual-frequency identification sonar (DIDSON produced by Sound Metrics Corp.) will be deployed near the Big River mouth during 2016-2018 to acquire inriver estimates of spawning sheefish. Approximately 80% of radiotagged sheefish from a 5-year telemetry study travelled to the Big River to spawn (Stuby 2012). Given these fish were tagged at major lower and middle Kuskokwim River tributaries, it can be assumed that the Big River spawning stock represents a significant proportion of the total sheefish population. This proposed study will be used to develop a method to index abundance of the spawning population in the Kuskokwim River drainage.

Radiotagged sheefish were detected on the South Fork of the Kuskokwim River near the Little Tonzona River at an area not previously noted for spawning activity (Stuby 2013). However, locating aggregations of radiotagged 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. Therefore, a site visit will be made in 2017 to collect age, sex, and length data, record habitat characteristics, and collect fin clips for genetics analysis. In addition, temperature, conductivity, and dissolved oxygen data loggers will be deployed at this and the Big River and Middle Fork spawning locations to better understand the specialized habitat needs of sheefish, especially overwintering areas that require upwelling and hyporheic flow.

Development of methods to estimate the abundance of sheefish spawning populations in the Kuskokwim River drainage was also identified as priority research needs by the strategic plan for research of whitefish species in the Yukon and Kuskokwim River Drainages (Brown, et al. 2012). Management of sheefish

populations for long-term sustainability requires a better understanding of their reproductive biology, life history traits, and their population size and composition.

Objectives:

1. Enumerate outmigrating, post spawning sheefish in the lower Big River during 2016-2018 using DIDSON sonar system.
2. Verify a suspected sheefish spawning area on the South Fork of the Kuskokwim River and describe its habitat characteristics by conducting a site visit and capturing sheefish to assess their spawning condition.
3. Identify and document upwelling groundwater or hyporheic exchange water in four documented sheefish spawning areas in the upper Kuskokwim River drainage by deploying temperature, conductivity, and dissolved oxygen data loggers.

Methods: A DIDSON sonar will be deployed to enumerate post-spawning outmigrating sheefish at the mouth of Big River, which is located in the upper Kuskokwim River drainage. Efforts will focus on the relatively compressed fall outmigration in late September to mid-October. The DIDSON will be operated from 25 September until 15 October unless river ice forces earlier stopping dates. Abundance and migration timing data will be collected 24 hours a day, 7 days a week, in 20-minute sample periods. Humpback whitefish, least cisco, and round whitefish also spawn on the Big River in proximity to the sheefish and may share similar post-spawning outmigrating timing to the sheefish. However, due to considerable size disparities between these four species, size bias will be negligible. The number of outmigrating non-sheefish whitefish will also be recorded and documented.

A site visit to verify the sheefish spawning area on the South Fork of the Kuskokwim River will be made in late September 2017. A minimum of 10 sheefish will be collected. Extrusion of gametes will confirm spawning readiness and no more than 5 fish will be sacrificed because this is assumed to be a small spawning population. For each sacrificed sheefish, gonadosomatic indices will be calculated to quantify maturity, both saggital otoliths will be removed for aging and sex and length will be recorded. Sacrificed fish will be donated to residents of Nikolai. Habitat characteristics including water temperature, channel characteristics, spawning substrate, flow, pH, and turbidity will be recorded for later comparisons with the other Kuskokwim River sheefish spawning areas. Temperature, dissolved oxygen, and conductivity data loggers will be deployed into key upwelling areas and retrieved the following year. These three data logger types will also be deployed at the Big River and Middle Fork spawning areas to better characterize their overwintering habitat.

Partnerships and Capacity Development/Consultations: The project biologist hopes to hire a student(s) who is part of the Alaska Native Science and Engineering Program (ANSEP). Preference will be given to a student from an upper Kuskokwim River village. The project biologist will work closely with MTNT to garner ANSEP college interns to help operate the DIDSON sonar and/or local hires in the event no ANSEP student is available. The project biologist plans to contract with a resident from Nikolai for travel up the South Fork Kuskokwim River to near the confluence of the Little Tonzona River to sample sheefish at this spawning location and note habitat characteristics.

The project biologist has discussed sheefish project results from FIS 06-305, FIS 10-305 and OSM Project 12-312 with numerous people who live on the Kuskokwim River, the McGrath Native Village Council (MNVC), representatives of the Kuskokwim Native Association (KNA), McGrath, Takotna, Nikolai, and Telida (MTNT Limited), and Nikolai Edenzo Village Council (NEVC). The project biologist will continue to do so with this project and will encourage local participation from Upper Kuskokwim River drainage villages. She has found local knowledge to be invaluable to the success of previous sheefish and Chinook salmon projects. All knowledge gathered from this project will be shared with local and agency representatives.

The project biologist will also coordinate logistics such as storage, etc. with ADF&G Commercial Fisheries Division who will be running a weir on the Pitka Fork Kuskokwim River. She will present at the Kuskokwim Area staff meetings where representatives from various native associations, federal and state agencies, and other pertinent parties will be in attendance. She will give project presentations to residents of Nikolai and McGrath and put together an update pamphlet describing project results. She will also look into other avenues for capacity development with Upper Kuskokwim River residents such as giving school presentations and radio updates.

Project Number: 16-304
Project Title: Assessment of Chinook Salmon freshwater production in the Kwethluk River
Geographic Region: Kuskokwim
Data Type: Stock Status and Trends

Principal Investigator: Ken Harper, U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field Office, Soldotna, AK
Co-Investigator: Lew Coggins, U.S. Fish and Wildlife Service, Yukon Delta National Wildlife Refuge, Bethel, Alaska

Project Cost:	**2016:** $161,363	**2017:** $152,524	**2018:** $154,195	**2019:** $155,720

Total Cost: $623,802

Issue Addressed: This project specifically addresses priority information needs of Chinook Salmon *Oncorhynchus tshawytscha* to develop methods for determining escapement quality, and potential egg deposition through the linkage of adult female spawners and subsequent smolt production. The current management is based upon a Ricker spawner recruit analysis that has reduced the spawning escapement to level for the Kuskokwim River below any experienced historically.
Multiple declines in Chinook Salmon returns have occurred over the past two decades. The reasons for these declines that have directly impacted subsistence harvests are unknown because little information is available to partition survival during the freshwater and marine life stages. This project will assess smolt outmigration timing, estimate outmigration, and freshwater smolt survival using number of spawning female Chinook Salmon by size composition (potential egg deposition) collected by the USFWS Kenai FWFO through OSM project 14-308. Information gathered will have direct applicability to understanding the freshwater habitat carrying capacity and quality of escapement parameters. The ability to partition mortality between freshwater and marine life stages will provide information to identify influential life stages in population trends.

Objectives:

1. To estimate numbers of Chinook Salmon smolts emigrating from the Kwethluk River through time such that estimates are within 25% of the true value 90% of the time;
2. To estimate the age and size composition of Chinook Salmon smolts in the Kwethluk River such that simultaneous 90% confidence intervals have a maximum width of 0.20;
3. To estimate adult female spawner to smolt production in the Kwethluk River above the weir such that the simultaneous 90% confidence intervals have a maximum width of 0.20

Methods: We will use a rotary-screw trap fished in the Kwethluk River to capture out-migrating smolts from mid-May through September. The trap will be located just upstream the adult fish weir FIS 14-308 located approximately 45 RKM upstream of the confluence with the Kuskokwim River. To estimate numbers of Chinook Salmon smolts emigrating up to 130 Chinook Salmon smolt each day will be anesthetized measured for length (fork length, mm), marked. All marked fish will be released at least 150 m above the trap to allow marked fish to mix with unmarked fish. Lengths of all recaptured fish will be measured to investigate size selectivity of the trap. To estimate the age and size composition, Objective

2, scale samples will be collected from a daily sub-sample of marked fish placed in individual coin envelopes and labeled with capture date, crew, capture method, location, species, length, and smolt stage. All other non-marked and non-target fish captured in the smolt trap will be identified to species and smolt stage, counted, and released once fish have recovered from handling. We will note any mortality prior to release.

To estimate adult female Chinook Salmon spawner to smolt production Objective 3, we will use the estimated escapements of Chinook Salmon by sex, and size in the Kwethluk River from Project FIS 2014-308. Percent survival of Chinook Salmon smolt will be determined using estimates of potential egg deposition (PED; the maximum number of eggs brought into the system by spawning females) and the estimated abundance of Chinook smolt salmon passing the trap site. The estimate of PED is based on the number of female Chinook Salmon and their length distributions as determined at the weir and literature values of length-specific fecundity After each field season, we will use the estimated smolt number in conjunction with the previous (parental year) female escapement-fecundity estimate to calculate the survival. The survival estimate is calculated as:

$$\%\,Survival = \left(\frac{estimated\ smolt\ abundance}{Potential\ Egg\ Deposition}\right) * 100$$

Partnerships and Capacity Building: OVK has been a co-investigator with the Kwethluk River weir project (2000−2013). We are currently in negotiations with OVK to cooperatively operate the Kwethluk Weir again in 2015. Tribal members from Kwethluk have comprised the majority of staff operating the Kwethluk River weir. OVK members that work at the weir and those employed at this project will be trained by the USFWS in biological techniques, computer skills, and safety (e.g. bear and firearms, watercraft, aircraft). Administrative support for the weir project is also provided by OVK. Village council members are encouraged to visit project sites. OVK and Tuluksak Native Community technicians have been exchanged intermittently between weir projects during the season and have been incorporated into other Kuskokwim River projects to expand the understanding of fisheries projects in the drainage. Kenai Fish and Wildlife Field Office will continue to mentor and train residents hired by the villages to work at the weirs and other projects.

Project Number: 16-305
Project Title: Kuskokwim River Broad Whitefish harvest cataloging and spawning demographics
Geographic Region: Kuskokwim
Data Type: Stock Status and Trends

Principal Investigator Kenneth S. Gates, U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field Office , Soldotna, AK
Co-Investigator: Ken Harper, U.S. Fish and Wildlife Service, Kenai Fish and Wildlife Field, Soldotna, AK

Project Cost:	**2016:** 198,930	**2017:** $151,438	**2018:** $37,354	**2019:** $0

Total Cost: $387,722

Issue Addressed: Harvest and basic life-history information is needed for Broad Whitefish *Coregonus nasus* to establish population baselines, assess future population status, and develop management strategies. Current federal subsistence regulations are limited and allow for unlimited year-round harvest for Broad Whitefish within the Kuskokwim River region. Broad Whitefish are an important subsistence species in the Kuskokwim River region and are harvested within the Yukon Delta National Wildlife Refuge including Whitefish Lake in the Ophir Creek drainage and other locations along the Kuskokwim River including a spawning area identified above McGrath. There has been a growing concern from area residents along the Kuskokwim River that fewer whitefish are available for harvest today compared to recent history, particularly larger whitefish. This project will assist the U.S. Fish and Wildlife Service (Service) in meeting the legislative intent of Section 303 (7) (B) of ANILCA. Section 303 sets forth the purpose for which the Yukon Delta National Wildlife Refuge (Refuge) was established, and mandates the Service to: (i) conserve fish and wildlife populations and habitats in their natural diversity, and (ii) provide, in a manner consistent with the purposes set forth in paragraph (I), the opportunity for continued subsistence uses by local rural residents. The project will address the need to collect population-specific length and age data identified by Brown et al. (2012) which carried forward as a specific priority information need outlined by the 2014 Federal Subsistence Fisheries Resource Monitoring Program.

Objectives:

1. Estimate the proportional age and sex composition of mature Broad Whitefish spawning above McGrath, Alaska such that estimates are within 5% of the actual true population proportions 95% of the time.
2. Estimate the mean length and weight of mature Broad Whitefish spawning above McGrath, Alaska such that estimate are within 10% of the actual population means 95% of the time.
3. Identify times and areas of Broad Whitefish harvests throughout the Kuskokwim drainage by cataloging the reported harvests of Floy® t-bar anchor tagged Broad Whitefish.

The project will also address two tasks in addition to the above objectives:

a. a continued feasibility assessment of future studies using mark-recapture techniques to estimate spawning abundance. Capture methods for a mark-recapture study would

likely be similar to methods used in this study and would require a standardized measure of catch per unit effort, identification of areas important for marking and recapturing tagged fish, knowledge of Broad Whitefish run timing past the study area, and the ability to capture sufficient numbers of fish to be marked and recaptured for marks, and;

b. the feasibility of a dead mark-recapture study to estimate total Broad Whitefish subsistence harvest. All handled fish in this study will be marked with a Floy tag labeled with contact information and a unique tag number. If sufficient numbers of tagged Broad Whitefish are caught and reported a future estimate of harvest abundance could be obtained using information collected from subsistence fishers.

Methods: This study will use boat mounted electrofishers as the primary sampling method to apply Floy® t-bar anchor tags and collect age, sex, length, and weight from mature Broad Whitefish destined for spawning areas above McGrath. Broad Whitefish will be sampled between 15 August and 10 October during 2016 and 2017. Two boats outfitted with electrofishing units and three person crews will be used to sample Broad Whitefish above and below McGrath. A standardized catch per unit effort (CPUE) will be measured in terms of fish caught per hour. A number of variables known to influence the effectiveness of the capture methods will be measured and recorded to standardize CPUE through time.

All captured Broad Whitefish will be sampled for age, sex, length, and weight. Fin rays will be the primary appendage collected for aging purposes and will be taken from the left pectoral fin. All Broad Whitefish will be measured for fork length from the tip of the nose to the fork in the tail to the nearest one mm. Sex will be determined using visible external characteristics. Once all data are collected, sampled fish will receive a Floy® T-Bar anchor tag applied near the base of the dorsal fin to indentify sampled fish and to facilitate information regarding future time and area of subsistence harvested fish.

Basic data summaries, scatter plots, and statistical analysis will be used to describe the age, sex, length, and weight of Broad Whitefish spawning above McGrath, Alaska. Reports of harvested fish will be included and matched to the appropriate demographic information in the master database. Information on general harvest location (e.g., village and/or river kilometer) and time (e.g., mm/dd/year) will be added to the database. All locations of harvested tagged Broad Whitefish will be displayed on maps using ArcGIS 10.1 software to identify patterns and clusters of harvested fish.

Partnerships and Capacity Building: The KFWFO gained full support from residents of McGrath for the feasibility study conducted during 2012 and were well received in the community during 2014. The investigators have consulted/coordinated with staff from the Koyukuk/Nowitna/Innoko National Wildlife Refuge Complex, Alaska Department of Fish and Game, and Yukon Delta National Wildlife Refuge. Field crews have routinely discussed the project with numerous boaters, anglers, hunters, and residents of McGrath, Alaska who have expressed interest and support in the project. Our discussions often times include but are not limited to training in whitefish identification, sampling protocols, operation of electrofishing boats, and radio telemetry techniques.

Project Number: 16-351
Project Title: Middle Kuskokwim River Inseason Subsistence Salmon Harvest Monitoring and Estimation
Geographic Region: Kuskokwim
Data Type: Harvest monitoring, Stock status and trends

Principal Investigator: David Runfola, Alaska Department of Fish and Game, Division of Subsistence
Co-Investigator: Daniel Gillikin, Kuskokwim Native Association, Fisheries Department

Project Cost:	**2016:** $18,470	**2017:** $124,406	**2018:** $118,246	**2019:** $168,861

Total Cost: $429,983

Issue Addressed: Recent declines in Kuskokwim River Chinook salmon stocks have resulted in severe restrictions on subsistence harvests of this species by the region's residents. Since 2012, Kuskokwim Area fishery resource managers have implemented restrictions that have aimed to prevent the directed harvest of Chinook salmon while minimizing its incidental harvest during times when fishers were permitted to target chum and sockeye salmon for subsistence. This management strategy requires stock assessment projects that provide run timing and relative stock abundance information in-season. Inseason management decisions in the Kuskokwim Area are currently informed by a limited number of data sources, including one test fishery at Bethel, a developing inriver radio telemetry mark-recapture survey, and sporadic and often qualitative harvest reports from a small number of subsistence fishers. Systematic harvest monitoring methods that estimate harvests in-season would supplement these data sources by providing an additional index of relative stock abundance. This would result in increased accuracy and timeliness of management decisions that allow subsistence fishing opportunity while minimizing incidental harvest of Chinook salmon. These would also support an inseason evaluation of the State of Alaska's ability to provide for annual amounts of salmon reasonably necessary for subsistence in the Kuskokwim Area and the U.S. Federal government's ability to provide opportunity for qualified rural residents to harvest salmon in the Kuskokwim River.

This project proposes to establish an inseason subsistence salmon harvest monitoring program in the middle Kuskokwim River area. The project has two primary goals: 1) to develop a fishery-dependent index of run-timing and relative inriver abundance of salmon stocks in the middle Kuskokwim River area during the salmon fishing season; and 2) to monitor salmon harvests by federally qualified subsistence fishers who reside within and adjacent to the Yukon Delta National Wildlife Refuge (YDNWR) and who harvest salmon species that migrate through the YDNWR. Secondary goals include providing necessary agency outreach to area residents inseason, developing the capacity of a regional Alaska Native non-profit organization to provide local fishery resource monitoring and management support, evaluating the feasibility of estimating total subsistence harvest with an inseason monitoring program, and recruiting additional data contributions from subsistence catches to current salmon stock age-sex-length projects. A partial match for this project will be funded through the Alaska Department of Fish and Game Chinook Salmon Research Initiative.

Objectives:

1) Record active fishing fleet size and record a daily sample of subsistence salmon harvest and fishing effort data among the fishing fleets in a section of the middle Kuskokwim River area
2) Record a weekly sample of fishing households' qualitative assessments of their progress toward achieving their annual subsistence needs for salmon among households
3) Test the effectiveness of inseason harvest and fishing effort monitoring by comparing cumulative inseason total catch data to post season subsistence harvest survey data from another project
4) Train participating fishers in collection of age, sex, and length samples from subsistence harvests to assist other projects with monitoring of salmon stock status and trends

Methods: The project will recruit two samples of participating subsistence fishers in two sections, one lower and one upper, of the middle Kuskokwim River area. Fishers in the lower river section will be selected from residents of the communities of Lower Kalskag, Kalskag, Aniak, and Chuathbaluk. Fishers in the upper river section will be selected from residents of the communities of Napaimute, Crooked Creek, Georgetown, Red Devil, Sleetmute, and Stony River. Participating fishers will keep daily records of their total catches of Chinook, chum, and sockeye salmon and various aspects of their fishing effort. Harvest and effort data recorded by participating fishers will be provided to Alaska Department of Fish and Game (ADF&G) Kuskokwim Area and U.S. Fish and Wildlife Service (USFWS) YDNWR fishery management staff for use as a daily index of run timing and relative inriver abundance of Chinook, chum, and sockeye salmon stocks. Cumulative records of harvest and effort data from the samples in conjunction with information from qualitative seasonal harvest assessment questionnaires will also be provided to fishery managers as an inseason estimation of area fishers' progress toward meeting their household's annual needs for salmon. Inseason harvest index numbers will be examined for a correlation to reported post-season survey harvest amounts to determine the quality of the inseason data for inseason management.

Partnerships and Capacity Building: The primary methods through which this project will build professional capability in the field of fishery resource management among rural Alaska Native organizations will be realized through ADF&G's proposed contractual agreement with KNA, an Alaska Native non-profit organization based in Aniak, AK. The KNA Fisheries Department operates fisheries resource monitoring, internship, and educational programs in the middle Kuskokwim River area through the support of Federal Partners Program grants. It also assists with operation of several ADF&G fisheries monitoring projects, employing a number of fisheries interns and technicians for work in these operations. The proposed contractual agreement will provide funding for the Fisheries Department Director for logistical support, data analysis, and report-writing. The contractual agreement will also provide funding for 2 technicians for 4 weeks of salary in July 2016, July 2017, and July 2018.

Technicians will receive valuable professional experience in fisheries science research during the field data collection operations for this project. In addition to assistance with daily operations and data management, relevant field experience for technicians will include a variety of activities related to deploying a fisheries research project, communicating research goals and operational objectives to participating fishers and the general public, and answering questions and providing information for the general public regarding the project and pertinent fisheries regulatory issues.

Participating fishers recruited for harvest and fishing effort data collection will receive training in research protocols prior to each field season. Training sessions will include use of data sheets, basic data management skills, data reporting responsibilities, and research integrity and data quality assurance. Participants will also receive regular assistance with data management and problem resolution. They will receive a small stipend of $200 at the end of each field season to recognize their important contribution of time and expertise to this project.

Additionally, informal but critical partnerships will develop in the relationships that research staff will establish with tribal governments, fishers, and the general public in the region. During the 2014 salmon fishing season many individuals expressed their gratitude that ADF&G staff were deployed to their communities for the purpose of recording their concerns and monitoring their fishing progress. The PI expects that these relationships will continue and improve during this project, with the potential to develop into lasting partnerships as salmon management and regulatory issues progress into the future.

APPENDIX B

Table B.1. Fisheries Resource Monitoring Program projects funded in the Kuskokwim Region from 2000 to 2014.

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

Continued on next page

Table B.1 continued

Project Number	Project Title	Investigators
	Kuskokwim River Salmon (continued)	
04-359	Kuskokwim Postseason Salmon Subsistence Harvest Surveys	ADFG, KNA, ONC
05-302	Kuskokwim River Chinook Salmon Inriver Abundance	ADFG
05-304	George and Takotna River Salmon Weirs	ADFG
05-305	Kuskokwim Chinook Salmon Genetic Stock Identification	ADFG
05-306	Kuskokwim River Inseason Subsistence Harvest Data Collection	ADFG, ONC
05-307	Lower Kuskokwim Subsistence Fisheries Catch Monitoring	ONC
05-356	Kuskokwim Area Postseason Subsistence Salmon Harvest Survey	ADFG
06-306	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
07-303	Kuskokwim River Salmon Age-Sex-Length Assessment	ADFG
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	Lower Kuskokwim Subsistence Chinook Salmon Age-Sex-Length	ADFG
08-303	George River Salmon Weir	ADFG
08-304	Takotna River Salmon Weir	ADFG
08-351	Tuluksak River Subsistence Chinook Salmon Age-Sex-Length	USFWS
08-352	Bethel and Aniak Postseason Subsistence Salmon Harvest Surveys	ADFG
10-303	Kuskokwim River Salmon Age Sex Length Assessment	ADFG
10-304	Tatlawiksuk River Salmon Assessment	ADFG
10-306	Kwethluk River Salmon Assessment	USFWS
10-307	Tuluksak River Salmon Assessment	USFWS
10-352	Kuskokwim Salmon Postseason Harvest Monitoring	ADFG
10-353	Kuskokwim Salmon Working Group Support	ADFG
10-354	Kuskokwim Salmon Inseason Harvest Monitoring	ADFG
12-302	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADFG, ONC
12-303	George River Salmon Weir	ADFG, KNA
12-304	Takotna River Salmon Weir	ADFG, TCA
12-309	Kwethluk River Salmon Weir	USFWS
14-302[b]	Tatlawiksuk River Salmon Weir	ADFG
14-303[b]	George River Salmon Weir	ADFG
14-306[b]	Tuluksak River Salmon Weir	USFWS

Continued on next page

Table B.1 continued

Project Number	Project Title	Investigators
	Kuskokwim Bay Salmon	
14-308[b]	Kwethluk River Salmon Weir	ADFG
14-351[b]	Kuskokwim Delta Chinook Salmon Non-local Harvesters	USFS
14-352[b]	Kuskokwim Area Salmon Post-season Subsistence Harvest Surveys	ADFG
14-353[b]	Kuskokwim River Salmon Inseason Subsistence Survey	ADFG
14-354[b]	Kuskokwim River Support for Cooperative Management	ADFG
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
07-305	Kanektok-Goodnews River Salmon and Dolly Varden Weirs	ADFG
10-300	Kanektok and Goodnews River Salmon Assessment	ADFG
	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	Kuskokwim River Sheefish Spawning, Distribution and Timing	ADFG
12-312	Status of sheefish in Highpower Creek and Upper Kuskokwim River	ADFG
12-313	Location, Migration Timing, and Description of Kuskokwim River Bering Cisco Spawning Origins	KNA, USFWS
12-352	Whitefish Trends on the Upper Kuskokwim, Alaska	ADFG
14-301[b]	Kuskokwim River Broad Whitefish Spawning above McGrath	USFWS
14-307[b]	Upper Kuskokwim River Sheefish Enumeration	USFWS
14-356[b]	Lower Kuskokwim Villages Whitefish	UAA

[a] = Final Report in Preparation.
[b] = On-going projects during 2016.
Abbreviations: **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, **TCA** = Takotna Community Association, **TNC** = Tuluksak Native Community, **UAA** = University of Alaska Anchorage, **USFS** = U.S. Forest Service, and **USFWS** = U.S. Fish and Wildlife Service.

2016 DRAFT FISHERIES RESOURCE MONITORING PLAN
YUKON REGION OVERVIEW

History of Projects Funded Under the Fisheries Resource Monitoring Program

Since the inception of the Monitoring Program in 2000, 106 projects have been undertaken in the Yukon Region for a total of $18.7 million (**Figure 1**). Of these, the State of Alaska conducted 20 projects, the Department of the Interior conducted 51 projects, Alaska Native organizations conducted 10 projects, and other organizations conducted 25 projects (**Figure 2**). Seventy-one projects were Stock, Status, and Trends (SST), and 35 projects were Harvest Monitoring and Traditional Ecological Knowledge (HMTEK).

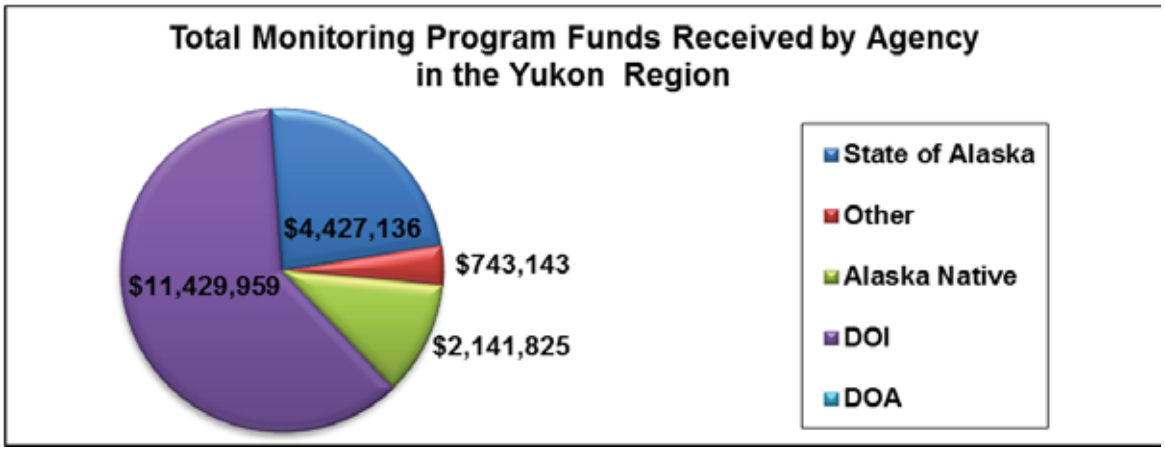

Figure 1. Monitoring Program funds received by agencies for projects in the Yukon Region. The funds listed are the total approved funds from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture.

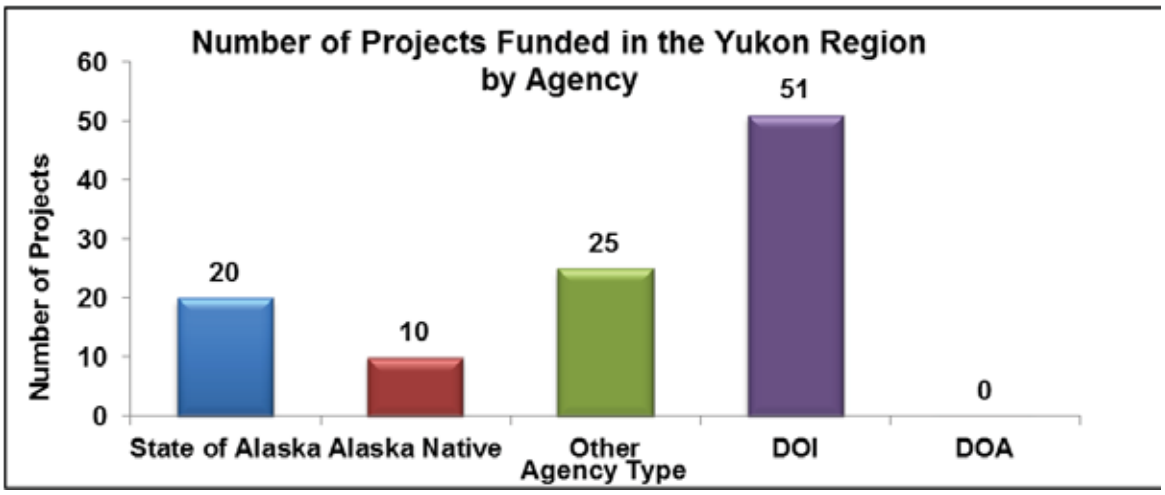

Figure 2. Total number of Monitoring Program projects funded, by agency, in the Yukon Region from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture.

2016 DRAFT YUKON REGION FISHERIES RESOURCE MONITORING PLAN

Priority Information Needs

The 2016 Notice of Funding Opportunity for the Yukon Region identified the following priority information needs:

- Reliable estimates of salmon escapements (for example, projects using weir, sonar, or mark-recapture methods).
- Geographic distribution of salmon and whitefish species. Of specific interest are the Nulato River, Salmon Fork of the Black River, Porcupine River and Chandalar River.
- An indexing method for estimating species-specific whitefish harvests on an annual basis for the Yukon drainage. 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.
- Methods for including "quality of escapement" measures (for example, potential egg deposition, sex and size composition of spawners, spawning habitat utilization) in establishing Chinook Salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements.
- A review of escapement data collection methods throughout the Yukon drainage to ensure that test fisheries are accurately accounting for size distribution and abundance of fishes (e.g., are smaller Chinook Salmon being counted accurately).
- Assessment of incidental mortality with gillnets, with particular consideration for delayed mortality from entanglement or direct mortality from drop-outs (e.g. loss of Chinook salmon from 6" mesh chum fisheries).
- Harvest and spawning escapement changes through time in relation to changes in gillnet construction and use (for example, set versus drift fishing, mesh size changes) for Chinook Salmon subsistence harvests in the mainstem Yukon River.
- Bering cisco population assessment and monitoring.
- Burbot population assessments in lakes and rivers known to support subsistence fisheries.

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 final allocations. Prior commitments to the 2014 Monitoring Program are up to $2.7 million. The anticipated funding available for the 2016 Monitoring Program is up to $2.0 million.

Technical Review Committee Proposal Ranking

The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands for rural Alaskans through a multidisciplinary and collaborative program. It is the responsibility of the Technical Review Committee to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2016 Monitoring Program, nine proposals were submitted for the Yukon Region. The Technical Review Committee evaluated and scored each proposal on Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit. The final score determined the ranking of each proposal within the region (**Table 1**). Projects that rate higher comprise a strong Monitoring Plan for the region by addressing strategically important information needs based on sound science and promote cooperative partnerships and capacity building. The projects listed are currently being considered for Funding in the 2016 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included. For more information on projects submitted to the 2016 Fisheries Resource Monitoring Program please see the Executive Summaries in **Appendix A**.

Table 1. Technical Review Committee (TRC) Ranking for projects in the Yukon Region. Projects are listed by TRC Ranking and include the total matching funds, total funds requested, and the average annual request for each project submitted for 2016 Monitoring Program within the Yukon Region. The projects listed are currently being considered for Funding in the 2016 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included.

Project Ranking	Project Number	Title	Total Matching Funds	Total Project Request	Average Annual Request
1	16-256	In-Season Salmon Management Teleconferences	$0	$74,015	$18,504
2	16-255	Yukon River In-Season Community Surveyor Program	$0	$282,661	$70,665
3	16-204	Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska	$48,800	$637,035	$212,345
4	16-205	Burbot Population Assessments in lakes of the Upper Tanana and Upper Yukon River Drainages, within the Boundaries of Wrangell-St. Elias National Park and Preserve	$39,500	$103,947	$25,987
5	16-251	Characterization of seasonal habitats, migratory timing and spawning populations of mainstem Yukon River burbot and their subsistence use in the communities of Pilot Station, Galena and Fort Yukon Alaska	$158,200	$387,850	$96,963
6	16-203	Estimation of Bering Cisco Spawning Abundance in the Upper Yukon Flats using a 2-Sample Mark-Recapture Experiment, 2016-2017	$247,380	$361,930	$120,643
7	16-206	Abundance and Run Timing of Adult Salmon in Nulato River, Alaska.	$75,040	$888,224	$222,056
8	16-201	Yukon Drainage Coho Radio Telemetry	$40,000	$327,183	$81,796
9	16-202	Spatial and temporal variability in thermal refugia for fall chum salmon in Yukon River tributary streams: development of an integrated spawner and habitat monitoring program	$0	$1,012,676	$253,169
		Total	**$608,920**	**$4,075,521**	**$1,102,127**

2016 PROJECT SUMMARY AND TRC JUSTIFICATION FOR PROJECT RANKINGTRC

Ranking: 1
Project Number: 16-256
Project Title: In-Season Salmon Management Teleconferences

Project Summary: The principal investigator is requesting four years of funding for continuing the weekly teleconferences conducted during the salmon fisheries season, June – August. This project addresses a listed priority need by providing a forum for subsistence users in the Yukon River drainage in the United States and Canada to come together once a week and provide information concerning the state of the salmon fisheries in their area, with special emphasis on the Chinook salmon fishery. The Yukon River drainage area includes a nexus to Federal lands where salmon is an important resource for subsistence users. This teleconference has been in existence for 15 years and subsistence users, Tribal entities, processors, and resource managers who participate in the call can find out from others in the group how the salmon stocks are doing as they enter the river and migrate up to Canada. Information gained helps fisheries managers manage the salmon fisheries by providing current information on a time critical basis so adjustments can be made if necessary to harvest levels or allocation priorities. This project will help to incorporate local knowledge into fisheries management decisions.

TRC Justification: This project hosts weekly teleconferences, bringing people together from remote and rural villages that share salmon resources. They share information with each other, and also share firsthand knowledge about what is happening on the fishing grounds with the fisheries managers of the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service. The project has operated for 15 years and has become a fixture of in-season salmon management along the Yukon River. Study design is appropriate for involving local subsistence users and providing them a voice to participate in the management of the Chinook fishery. The budget and project duration are reasonable for the proposed work and to accomplish project objectives. Investigators are highly qualified and fully capable of addressing and achieving the objectives, and reporting results in a timely manner.

TRC Ranking: 2
Project Number: 16-255
Project Title: Yukon River In-Season Community Surveyor Program

Project Summary: The principal investigator is requesting four years of funding to conduct in-season surveys in ten rural villages which harvest fish in Federal waters under the subsistence priority. This project addresses the need to monitor the harvest of Chinook in the Yukon Region and the priority information need of the Multi-Regional Priority Information Need *"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. Information gathered will help with in-season management of the Chinook fishery."* This project will address these priority information needs by documenting subsistence fisher observations, and

their customary and traditional ecological knowledge related to their decreasing harvests of Chinook salmon and increasing harvests of other available species. The ten villages chosen for the project are spread out over a large area of the Alaskan Yukon drainage area.

TRC Justification: This project addresses the need for inclusive in-season management for Chinook salmon fisheries on the Yukon River. During the Chinook salmon season, YRDFA will hire community surveyors in 10 villages who will expand communication with fishers in their communities about important fishery information and will gather information from their fishermen that will provide managers with weekly information about fishers' concerns, observations, and ability to harvest salmon throughout the Alaskan portion of the Yukon River drainage. This project will encourage community members, from the ten villages to be surveyed, to become involved with the in-season teleconferences focused on gathering information in-season about the Chinook fishery. This project has the potential to involve many subsistence users at a minimal cost. Objectives are clear, measurable, and achievable.

TRC Ranking: 3
Project Number: 16-204
Project Title: Abundance and Run Timing of Adult Salmon in Henshaw Creek, Alaska

Project Summary: The principal investigator is requesting three years of funding, starting in 2017, for continuing the operation of the Henshaw Creek weir to monitor salmon escapement. Project 14-209 funds the project through 2016. This weir will be operated to determine daily escapement, run timing, and age, sex, and length composition of adult salmon. This project would also determine the number of resident fish passing the weir during the study period and serve as an outreach platform for Kanuti National Wildlife Refuge Staff and Tanana Chiefs Conference Partners Program fisheries biologists in the form of an onsite science camp.

TRC Justification: The proposal addresses one of the Yukon Region priority information needs listed in the 2016 Notice of Funding Availability. Information and data collected from the project will be applied to management of important subsistence salmon fisheries resources. The proposed investigation plan is technically sound and the project objectives are clear, measurable, and achievable. The TCC investigator has successfully led and managed this weir project funded by OSM under projects 12-202 and 14-209 within the past four years. The principal investigator is an Alaska Native organization. The cost of the project is somewhat high to achieve objectives comparable to the cost of other OSM-funded weirs in the Yukon Region. However, the TRC recognizes that the higher budget is due to the negotiated overhead rate of the TCC, considered as part of the price of capacity building.
This project is an example of how a rural Alaskan Native organization has increased its capacity in subsistence management. The Tanana Chiefs Conference serves as the primary investigator and hires and trains local residents as technicians on the project. Both of these actions have allowed rural residents and local communities a continued role in the management of important subsistence fisheries resources.
The cost of operating the weir is high, with much of the budget attributed to staffing. It seems there are more technicians than necessary for just one weir. If the cost of weir operation continues to rise, additional sources of funding (cost sharing) may need to be identified in future years.

TRC Ranking: 4
Project Number: 16-205
Project Title: Burbot Population Assessments in Lakes of Upper Yukon River Drainage

Project Summary: The principal investigator is requesting four years of funding to acquire baseline Burbot abundance and population characteristics data for lakes of the Upper Tanana River and Upper Yukon River Drainages that lie within the northeastern portion of Wrangell-St. Elias National Park and Preserve and are known to support, or have the potential of supporting, subsistence Burbot fisheries. These lakes include, but not limited to, Grizzly, Beaver, Ptarmigan, Rock, Braye, and Carden Lakes. There is currently no baseline data of Burbot populations in any of these lakes, except for Grizzly Lake, where population assessments were performed in 2011 and 2014. The only other data available on fish in the other lakes is from a freshwater fish inventory from 2001. This project addresses one of the Yukon Region priority information needs listed in the 2016 Notice of Funding Availability, namely: *"Burbot population assessments in lakes and rivers known to support subsistence fisheries."*

TRC Justification: This project directly addresses one of the Yukon Region priority information needs listed in the 2016 Notice of Funding Availability and an immediate conservation concern. The objectives are clear, measurable, and achievable. The methods have a rigorous sampling design that includes clear data collection, compilation, analysis and reporting procedures. These methods and have been successfully utilized for other Burbot abundance projects in the area. The cost of the project is reasonable to accomplish the objectives.
The TRC questioned the 2015 and 2016 assessments that are already planned; is it still a strategic priority in light of SAC funding? The investigation plan should have a better description of what lakes will be investigated and when. The plan is written loosely in this aspect and should have more detail.

TRC Ranking: 5
Project Number: 16-251
Project Title: Characterization of seasonal habitats, migratory timing and spawning populations of mainstem Yukon River burbot and their subsistence use in the communities of Pilot Station, Galena and Fort Yukon Alaska

Project Summary: The principal investigator is requesting four years of funding to characterize the scale of burbot migrations for those fish captured and tagged from the lower and middle Yukon River. In addition, this project will document TEK of burbot life history, and harvest and use practices in three mainstem Yukon River communities, Pilot Station, Galena, and Fort Yukon. This project has linkage to Federal public land and waters through the Yukon Delta and Yukon Flats National Wildlife Refuges and directly addresses the Yukon Region Priority Information Need for *burbot population assessments in lakes and rivers known to support subsistence fisheries*. Burbot are harvested for subsistence use throughout the Yukon drainage and their value for Federally-qualified subsistence users may increase as salmon runs decline.

TRC Justification: The project directly addresses priority information needs and involves a documented subsistence resource utilized by Federally-qualified subsistence users. The interdisciplinary nature of this

project is notable and the technical and scientific merit is high, as is principal investigator capacity. In addition, while not required, there is significant match in funding and existing resources that improves the cost/benefit of the project. The partnership and capacity building portion of the project is low to middling, and there are no other partners listed in the investigation plan. The project will contract local research assistants and proposes the hire of an ANSEP or college intern.

TRC Ranking: 6
Project Number: 16-203
Project Title: Bering Cisco Spawning Abundance in the Upper Yukon Flats

Project Summary: The principal investigator is requesting funding to conduct a two-year study to estimate abundance, and sex, age and length compositions of Bering Cisco in the Upper Yukon Flats area of the Yukon River, utilizing two-event Petersen mark-recapture techniques for a closed population. This project addresses 1) a specific recommendation for Bering cisco research outlined in the OSM whitefish strategic plan: priority #6, *"Quantitative spawning population abundance estimates with mark and recapture or DIDSON sonar projects,"* and 2) a priority information need for the Yukon Area in the 2016 Monitoring Program Notice of Funding Availability: *"Bering cisco population assessment and monitoring."*

TRC Justification: This project addresses both a specific recommendation for Bering cisco research listed in the OSM whitefish strategic plan and a priority information need for the Yukon Area in the 2016 Notice of Funding Availability. The objectives are clear, measurable and achievable. The proposed mark-recapture methods have a proved ability to achieve the expected technical results. There is a rigorous sampling design. The project addresses important Bering Cisco subsistence and conservation issues and is responsive to past TRC recommendations. The cost appears appropriate to achieve project objectives.

The project has opportunities to strengthen capacity building and partnership – it ranked lower because opportunities to work with local, rural communities were not (fully) developed.

TRC Ranking: **7**
Project Number: 16-206
Project Title: Abundance and Run Timing of Adult Salmon in the Nulato River

Project Summary: The principal investigator is requesting four years of funding for the purchase, delivery and operation a resistance board weir to monitor salmon escapement in the Nulato River. The weir will be operated to determine daily escapement, run timing, and age, sex, and length composition of adult salmon.

This project addresses two of the Yukon Region priority information needs listed in the 2016 Notice of Funding Availability, namely: "*Reliable estimates of salmon escapements (for example, projects using weir, sonar, or mark-recapture methods)",* AND *"Geographic distribution of salmon and whitefish*

species. Of specific interest are the Nulato River, Salmon Fork of the Black River, Porcupine River and Chandalar River."

TRC Justification: The proposal addresses two Yukon Region priority information needs. Information and data collected from the project will be applied to management of important subsistence salmon fisheries resources. The proposed investigation plan is technically sound and the project objectives are clear, measurable, and achievable. The TCC investigator has successfully led and managed a similar salmon weir project funded by OSM within the past four years. The principal investigator and co-investigator are from Alaska Native organizations. The cost of the project is reasonable to achieve the objectives and comparable to the cost of other OSM-funded weirs project in the Yukon Region.
The investigation plan does not address the selected type of weir and the justification for its use, which is contrary to the recommendation from the 2010 feasibility study (project 10-206).

This is a new weir project with a high startup cost requiring extended funding for return in investment. The project is not using the correct type of weir; the TRC recommends a more efficient weir for the project's needs.

TRC Ranking: 8
Project Number: 16-201
Project Title: Assisting a Radio Telemetry Investigation of the Distribution of Coho Salmon in the Yukon River Drainage.

Project Summary: The Principal investigator from the U.S. Fish and Wildlife Service is requesting four years of funding to assist the Alaska Department of Fish and Game in a drainage-wide, Coho Salmon radio telemetry project. Staff from the Fairbanks Fish and Wildlife Field Office would participate in the radio tagging operations in the lower Yukon River, as well as, logistical and telemetry flight support in the upper Yukon River. The project's main focus will be to identify drainage-wide migratory distribution patterns, run timing, and spawning areas of Yukon River Coho Salmon.

TRC Justification: The proposal appeared to be incomplete and in draft form, and not ready to rate. The proposal is tied to, and dependent on, the results of an ADF&G funding proposal to the AKSSF. The principal investigator should have included a copy of the 2015 ADF&G proposal to the AKSSF, but was unable to do so because the ADF&G proposal was not fully written at the time of submission of the investigation plan. The principal investigator provided project methods listed in a draft 2009 ADF&G proposal, with an implied assumption that the methods will be the same in the 2015 ADF&G proposal.

The TRC believes the investigators have the capacity to conduct (their proposed portion of) the project. However, there are no immediate subsistence or conservation concerns regarding Coho Salmon in the Yukon River drainage. The ADF&G is currently conducting a Yukon River summer Chum Salmon radio telemetry project without USFWS participation.

TRC Ranking: 9

Project Number: 16-202
Project Title: Fall Chum Spawner and Habitat Monitoring

Project Summary: The principal investigator is requesting four years of funding to accomplish the following: 1) map historic and current thermal refugia within core Fall Chum Salmon spawning areas in three Yukon River tributaries (Chandalar, Sheenjek, Tanana), 2) validate and calibrate Forward-Looking Infrared (FLIR) remote sensing imagery through measurement of in situ physicochemical conditions within core salmon spawning areas, 3) quantify spatiotemporal relationships between salmon spawning locations and thermal refugia/upwellings, and 4) develop an integrated adult salmon and spawning habitat monitoring plan to detect changes in the number of spawners and distribution of spawning habitats through time.

TRC Justification: This project was ranked low due primarily to a lack of partnerships and capacity building and high cost of operation. In addition, the investigator ability was difficult to fully assess because the PhD candidate was not identified. The investigators have no track record with the Monitoring Program, although other principal investigator expertise was evident and easy to assess. The hourly charge for aircraft and affiliated costs seemed high. The project could have been strengthened with the addition of local knowledge. The TRC agreed that there was value in mapping the upwellings, but to add detailed habitat and spawning abundance assessment seems to be taking on too much. The mapping of upwellings would be enough value. This is a bloated project, budget wise, with no capacity building. The costs are unreasonable.

APPENDIX A

The following Executive Summaries were written by the Principle Investigators and submitted to the Office of Subsistence Management as part of the proposal package. The statements and information contained in the Executive Summaries were not altered and they may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee. The Executive Summaries listed are for projects that are currently being considered for Funding the 2016 Fisheries Resource Monitoring Program. Projects which were not considered for funding were not eligible due to the nature of the activity and are not included in this appendix.

Project Number: 16-201
Project Title: Assisting a Radio Telemetry Investigation of the Distribution of Coho Salmon in the Yukon River Drainage
Geographic Region Yukon Region
Data Type: Stock Status and Trends
Principal Investigator: Raymond Hander
U.S. Fish and Wildlife Service (USFWS), Fairbanks
Co-Investigator: Randy J. Brown, USFWS

Project Cost:	**2016:** $62,525	**2017:** $126,155	**2018:** $104,320	**2019:** $34,183

Total Cost: $327,183

Issue Addressed: Federal conservation system units adjacent to and within the Yukon River drainage are mandated by the Alaska National Interest Lands Conservation Act to conserve fish and wildlife populations and habitat in their natural diversity and provide opportunity for continued subsistence uses by local residents. This project addresses the priority information need of determining the geographic distribution of salmon species and more specifically, Coho Salmon *Oncorhynchus kisutch* in the Yukon River drainage. The U.S. Fish and Wildlife Service seeks to partner and assist the Alaska Department of Fish and Game (ADF&G) in conducting a Coho Salmon radio telemetry project to investigate their distribution in U.S. waters of the Yukon River drainage. This project will benefit from information provided by previous FRMP projects 04-231 and 05-203.

This project is needed to identify drainage-wide migratory distribution patterns, run timing, and spawning areas of Yukon River Coho Salmon. This information is critical to both habitat protection and sustainability of Coho Salmon in the Yukon River drainage for subsistence use. Currently the most basic information needed for fisheries and land management is lacking or incomplete. An issue of particular concern is the urbanization and associated resource development occurring in the Tanana River drainage, which is thought to provide the largest contributions of Coho Salmon to the Yukon River drainage. Also, with poor returns of Chinook Salmon in the Yukon River, subsistence, commercial, and sport users may become more reliant on other species, such as Coho Salmon.

Objectives:

1. Assist in locating migration routes of Coho Salmon in the Yukon River using radio telemetry;
2. Assist in locating important spawning areas of Coho Salmon in the upper Yukon River;
3. Assist in identifying areas to add to the genetic baseline;
4. Assist in estimating stock specific run timing, migration rate, and movement patterns;
5. Assist in determining the relative contributions of spawners to the overall Yukon River Coho Salmon population.

Methods: The Fairbanks Fish and Wildlife Field Office (FFWFO) will assist ADF&G in a drainage-wide Coho Salmon radio telemetry project. The project will follow methods based on a 2009 ADF&G Alaska Sustainable Salmon Fund (AKSSF) proposal and Eiler (1995 and 2014).

Fairbanks Fish and Wildlife Field Office Participation
FFWFO is requesting funds to participate in the radio tagging operations in the lower Yukon River, as well as, logistical and telemetry flight support in the upper Yukon River.

Personnel–One fisheries biologist and two fisheries technicians (one will be a local hire) will participate in the radio tagging operations in the lower river from approximately 1 August–15 September of 2017 and 2018.

Remote tracking stations–During 2016-18 the FFWFO will repair and maintain RTS located at Circle, Porcupine River, and Black River in the upper Yukon River. These stations require repair and testing in preparation for the ADF&G's Coho Salmon telemetry trial (n=100 radio tags) in 2016 and will need additional maintenance in the summers of 2017 and 2018 prior to the larger scale radio tagging efforts. Each RTS is accessible by boat and foot travel. Funds for 2019 will be used to deactivate the RTS.

Telemetry flight support–During 2016-18 the FFWFO will coordinate with USFWS fixed-wing aircraft based from National Wildlife Refuges in Fairbanks and Galena to conduct telemetry flights in the upper Yukon River. Fishery biologists will conduct the telemetry flights in coordination with ADF&G for the most efficient survey coverage. Search areas will be refined based on the most recent timing of Coho Salmon moving past RTS sites.

Materials and Supplies–During 2016-18, the FFWFO will supply gill nets, food, fuel, and freight for lower river radio tagging operations, as well as, fuel for RTS repair and maintenance in the upper river.

Partnerships and Capacity Building: Both Mr. Hander and Mr. Brown have considerable experience working with village local hires. Mr. Hander has worked with residents of St. Mary's on the East Fork Andreafsky River weir (FRMP 03-034) and with Selawik residents on the Selawik River Inconnu Spawning Population Abundance (FRMP 04-104 and 12-100). Similarly, Mr. Brown worked closely with local residents on his Yukon and Kuskokwim Coregonid Strategic Plan (FRMP 08-206), as well as conducting field work with local fishers on FRMP 12-207 (Yukon River Bering Cisco Spawning Origins Telemetry Investigation). For the proposed Yukon River Coho Salmon telemetry project, Mr. Hander will

partner with FFWFO's Subsistence Fisheries Branch to extend the employment season of local hires from St. Mary's, who currently work on the East Fork Andreafsky River weir, to assist with the radio tagging portion of the project. Safety and technical training to address agency requirements, boat operations, and sampling procedures will be conducted for individuals prior to initiating sampling.

Project No: 16-202
Project Title: Spatial and temporal variability in thermal refugia for fall chum salmon in Yukon River tributary streams: development of an integrated spawner and habitat monitoring program
Geographic Region: Yukon
Data Type: Stock Status and Trends

Principal Investigator Jeffrey A. Falke, U.S. Geological Survey, Alaska Cooperative Fish and Wildlife Research Unit, University of Alaska Fairbanks (UAF)
Co-Investigators: Jessica Cherry, International Arctic Research Center, UAF
Lisa Wirth, Geographic Information Network of Alaska, UAF

Project Cost:	**2016:** $216,439	**2017:** $269,354	**2018:** $263,604	**2019:** $263,279

Total Cost: $1,012,676

Issue: Salmon are a vital subsistence resource for residents throughout the Yukon River Basin However, mechanisms behind variable fall chum salmon recruitment are currently poorly understood but knowledge regarding these factors is crucial for efficient management of this important subsistence resource. For example, limited information is available on the size, magnitude, distribution and temporal variation of critical thermal habitats (e.g., upwellings), and importantly, the relationship between spawning locations and upwellings across spatial scales and through time. Gaining a better understanding of the relationship between upwellings and salmon spawning in this region will provide significant insight into future effects of natural and anthropogenic change in these northern latitudes. Along with our agency collaborators, we believe there is a need to develop a long-term monitoring plan of spawning and rearing habitat (i.e., thermal refugia, upwellings) for Yukon River tributaries which will allow resource managers to detect and better understand potential effects of future climate change in the region.

Objectives: Our main goal is to better understand multi-scale relationships between spawning salmon and thermal refugia in the Yukon River basin. Based on rigorously-collected, continuous salmon habitat and spawner surveys across space and through time we will develop a peer reviewed long-term, multi-agency monitoring plan for these essential salmon spawning/rearing habitats in Yukon River tributaries. The specific objectives for this proposal are to: 1) map historic and current thermal refugia within core fall chum salmon spawning areas in three Yukon River tributaries (Chandalar, Sheenjek, Tanana), 2) validate and calibrate FLIR imagery through measurement of in situ physicochemical conditions within core salmon spawning areas, 3) quantify spatiotemporal relationships between salmon spawning locations and thermal refugia/upwellings, and 4) develop an integrated adult salmon and spawning habitat monitoring plan able to detect changes in the number of spawners and distribution of spawning habitats through time.

Methods: We will use a combination of remote sensing technology and traditional on-the-ground fish and water quality sampling to meet our objectives. Historic patterns in thermal refugia will be assessed using Landsat and SAR imagery. Current patterns within and among rivers will be quantified using FLIR and orthoimagery, over 2-3 years per river. Location and abundance of spawners will be assessed across 3 years for each river. We will use a dynamic multi-state occupancy model to quantify the relationship between fall chum salmon and the presence of groundwater discharge zones across the three study years for each of the three study rivers.

Partnerships and Capacity Building: We will work directly with state and federal agencies, as well as local organizations, to plan and carry out this project. Specifically, this proposed research will support Region 7 USFWS ability to plan proactively and maintain the resilience and adaptive capacity of Tier 1 Priority Species and their habitats across interior Alaska. We have and continue to work closely with USFWS on the Chandalar River project (see above for details) and we expect them to remain highly involved with the proposed work should it be funded. We will work directly with USFWS to provide outreach and engagement activities to local communities such as the Village of Venetie. By working closely with USFWS on this project the resulting monitoring plan will be tailored to their specification. As a result, we fully expect that the monitoring plan, or some aspects of it, will be implemented. We will also work with Alaska Department of Fish and Game. They have conducted aerial surveys of spawning fall chum on the Sheenjek River. They would like to collaborate through this project to identify upwelling areas by using FLIR imagery and to identify the stability of the areas through time using a satellite platform. ADFG will direct collaboration for data collection for the Sheenjek River study site and the acquisition of previously collected radio-telemetry tagging data throughout the Yukon River drainage. We will work with ADFG to provide outreach and engagement activities to local communities such as Fort Yukon.

Project Number: 16-203
Title: Estimation of Bering Cisco Spawning Abundance in the Upper Yukon Flats using a 2-Sample Mark-Recapture Experiment, 2016-2017.
Geographic Region: Yukon Region
Data Type: Stock Status and Trends
Principal Investigator: Klaus Wuttig, Alaska Department of Fish and Game, Division of Sport Fish, Fairbanks, AK
Co-Investigator: Randy J. Brown, U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Fairbanks, AK

Project Cost:	**2016:** $169,166	**2017:** $169,166	**2018:** $23,598	**2019:** $0

Total Cost: $361,930

Issue Addressed: Bering cisco *Coregonus laurettae* are anadromous salmonids with three known spawning populations, one each in the Yukon, Kuskokwim, and Susitna rivers. The Yukon River population is known to spawn in main-stem reaches of the upper Yukon Flats and rear in coastal habitats in western Alaska. Annual subsistence harvest data for Bering cisco have not been collected, however, harvest is assumed to be substantial. Bering cisco are specifically targeted in many coastal communities in western Alaska, are incidentally harvested in fish wheel salmon fisheries in the Yukon and Kuskokwim River drainages, and are the primary non-salmon species taken in a commercial gillnet fishery at the mouth of the Yukon River. The Yukon Delta commercial Bering cisco fishery is growing and has reported annual catches averaging more than 12,900 fish since its inception in 2005. The commercial fishery provides an important and developing economic opportunity; however some coastal subsistence users are concerned about its potential impact on their harvests, particularly as the fishery expands.
A recent telemetry project provided substantial new information on the run timing and spawning distribution of Begin cisco in the Yukon River, and moreover, it identified an exceptional opportunity to cost effectively estimate spawning abundance for a large majority (i.e. 80%) of the entire Yukon River spawning population between Circle and Fort Yukon. The opportunity to assess such a high proportion of a fish population is a rare circumstance for any species and could provide an excellent and repeatable index of population health, especially in a river as large as the Yukon River. The road to Circle affords easy access for a capture gear, boat electrofishing, that has proven to be very effective in assessing whitefish populations in the Tanana and Chatanika rivers, and a high probability of success. This proposal addresses a specific recommendation for Bering cisco research outlined in the whitefish strategic plan (Brown et al. 2012a): priority #5, development of Bering cisco population monitoring programs in the Yukon and Kuskokwim Rivers, and is specifically identified as a priority information need for the Yukon River in the current FRMP call for proposals: Bering cisco population assessment and monitoring.

Objectives:
The research objectives for this study will be to:

1) estimate the abundance of spawning Bering cisco in a 125-km reach of the Upper Yukon Flats in early October of 2016 and 2017; and,
2) Estimate length, sex and age compositions of spawning Bering cisco in a 125-km reach of the Upper Yukon Flats such that all proportion estimates are within 5 percentage points of the true proportion values 95% of the time.

Methods:
Study area
The study area, approximately 125 km in length, extends from a point approximately 10 km upstream of Circle to Fort Yukon at the mouth of the Porcupine River, which is functionally the entire Upper Yukon Flats. Abundance, sex, age and length compositions of Bering cisco in the defined 125-km sampling area will be estimated using two-event Petersen mark-recapture (M-R) techniques for a closed population. Achieving a true random sample of fish is difficult, even with the best sampling strategy. Generally a combination of mixing and systematic sampling is required to satisfy the assumptions of the M-R experiment. The approach will be for the first event to occur during early to mid-September when most (i.e. >80%) BC have entered the study area but are still moving upstream, and for the second event to occur during early October when fish are at their spawning areas and just beginning to spawn. The hiatus (~10 days) well greatly help to promote partial mixing and help to ensure the assumptions are satisfied. The first sampling event will occur during ~September 8-18, and the second event will occur during ~September 28-October 8. The second event will occur prior to any emigration of any radio tagged BC observed in 2012-2013 (~range = Oct. 15 – Nov 1). Delaying the second event any later also runs the risk of encountering weather conditions cold enough to prevent boat operation. Sampling dates will be adjusted slightly (e.g. ±3 days) to accommodate personnel scheduling.

Two boats equipped with electrofishing gear will be used to capture Bering cisco. Each boat will have a three-person crew; two to capture fish with dip nets, and one to pilot the boat and operate the electrofishing gear. Bering cisco are known to aggregate near shore and in slack water areas of the primary channel, which corresponds to those areas most effectively sample by an electrofishing boat. In the large, braided Tanana River, humpback whitefish, broad whitefish, and sheefish have all been effectively sampled by fishing the slackwater areas with electrofishing boats in the fall. Sampling will progress downstream sampling cover 12.5 km of river per day. Because workdays will be long, and daylight will be relatively short, a third crew will be tasked with erecting and dismantling camp, cooking meals, hauling camping gear to maximize sampling time.

Consultations: We have spoken with numerous individuals and organizations about this project and have received only favorable responses. Letters of support have been written by The Yukon Flats and Yukon Delta Wildlife refuges, CATG, and Gwichyaa Zhee Gwich'in Government. Regional Advisory Councils and Advisory Councils within the geographic scope of the project have been notified during meetings the week of March 9-13 where the project was favorably received.

Partnerships and Capacity Building: ADF&G and USFWS will be working closely on this project, including reviews of all planning documents, sharing sampling strategies, and reporting. In Fort Yukon, CATG will be contracted to periodically deliver fuel to the sampling crew, which will provide excellent logistical support. The Yukon Flats wildlife refuge will coordinate this effort. We have been in discussion with Beth Spangler and an ANSEP intern will be recruited for field sampling with this project and will be assigned to work on other projects funded by ADF&G and OSM in an effort to provide a full season of work. Progress reports will be presented and distributed to fisheries managers, researchers, local community groups and other interested parties. A presentation of the study finding will be presented in Fort Yukon at the completion of the field work.

Project Number: 16-204
Title: Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska.
Geographic Region: Yukon Region
Data Type: Stock Status Trends (SST)
Principal Investigator: Brian McKenna, Tanana Chiefs Conference (TCC)
Co-Investigator: Aaron Martin, U.S. Fish & Wildlife Fairbanks Field Office (USFWS-FFWFO)

Project Cost:	**2016:** $0	**2017:** $202,556	**2018:** $212,186	**2019:** $222,293

Total Cost: $637,035

Issue: Management of the Koyukuk River salmon fishery is complex. The Alaska Department of Fish and Game, Division of Commercial Fisheries (ADF&G-DFC) has conducted aerial surveys within this drainage since 1960, but the usefulness and reliability of that information is limited. This project addresses the priority information needs outlined for Yukon River salmon, including maintaining reliable estimates of Chinook and chum salmon escapement over time, and assessment of trends in Chinook age, sex and length.

Both Chinook *Oncorhyncus tshawytscha* and chum *O. keta* salmon from Henshaw Creek contribute to the harvests of subsistence and commercial fisheries occurring in the Yukon River. Information collected at Henshaw Creek weir is important to fisheries managers who possess the difficult task in 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. 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 (Berkbigler and Elkin 2006). In more recent years, subsistence and commercial harvesters have identified a concern with the apparent decrease in the size of Chinook salmon (JTC 2013). The continuation of reliable escapement estimates and the collection of age, sex, and length 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 (KNWR) in meeting objectives outlined in the 1993 KNWR Fishery Management Plan, and addresses the priority information needs outlined for Yukon Region salmon by providing reliable estimates of Chinook and chum escapements. With the Tanana Chiefs Conference (TCC) as the primary investigator and through the hire of local residents, this project will enhance capacity building to allow local communities a continued role in the management of the resources.

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 species passing through the weir;
4) Consult with and provide outreach and communication for the village of Allakaket; and

5) Serve as an outreach platform for KNWR staff and TCC staff to conduct an on-site science camp.

Methods: A resistance board weir will be installed and operated on Henshaw Creek located 721 km upriver from the mouth of the Koyukuk River in north central Alaska. A live trap, installed near mid-channel, will allow salmon and resident species to move through the weir. Their passage will be enumerated daily and will provide an area where fish will be sampled to collect biological information. The daily counting period will begin at midnight and end at midnight the following day. Sampling will begin at the beginning of each week and will be conducted over a 3-4 day period to collect 160 fish per week for each species. Sample size goals were established so that simultaneous 90% interval estimates of the sex and age composition for each week have maximum widths of 0.20 (Bromaghin 1993). The sample size obtained using this method was increased to account for the expected number of unreadable scales. Lengths of Chinook salmon will be measured to the nearest 1 mm and chum measured to the nearest 5mm from mid-eye to fork of the caudal fin (MEFL). Sex ratios will be determined by visual inspection of secondary sexual characteristics. Scales will be used for aging salmon, with ages being reported using the European technique (Foerster 1968). Three scales will be collected from Chinook salmon and one scale will be collected from summer chum salmon. Scales will be taken from the area located on the left side of the fish, two rows above the lateral line on a diagonal line from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (Price, ADF&G, personal communication). Once the scales are removed, they will be placed on scale gum cards for later analysis with ADF&G.

The staff at KNWR and TCC will continue to work with the local schools to identify students from each of the four villages, Bettles/Evansville, Allakaket, Alatna, and Hughes to be participants in the Henshaw Creek science camp. Students will be exposed to the operations of a weir and will receive lessons in fisheries management, stream ecology, aquatic invertebrates, fish identifications, natural resources career opportunities, the plants and wildlife in the KNWR, and traditional and cultural knowledge.

Partnerships/Capacity Building: The partnerships the TCC has developed with the USFWS, KNWR, ADF&G and local tribal councils presents a great opportunity to build capacity within the TCC and the local communities of the Upper Koyukuk River. The relationships TCC already has with Federal and state resource management agencies will continue to be strengthened through the continuation of this project and will be an important asset to the fishery program at TCC. The local communities of the Upper Koyukuk River will be strengthened through this project as well. TCC plans to continue to hire weir staff within these communities, which will provide much needed employment opportunities and will expose people to the project and different aspects of fishery management. Additionally, the annual science camp will engage local youth with the issues facing fishery resource managers and will provide elders a chance to interact with the students and teach them traditional skills. TCC is also in the process of developing a partnership with ANSEP to hire ANSEP students as a technician on the project. TCC will have their first ANSEP student during the 2015 field season.

Project Number: 16-205
Title: Burbot Population Assessments in lakes of the Upper Tanana and Upper Yukon River Drainages, within the Boundaries of Wrangell-St. Elias National Park and Preserve.
Geographic Region: Yukon Region
Data Type: Stock Status and Trends
Principal Investigator: Dave Sarafin, Wrangell-St. Elias National Park and Preserve

Project Cost:	**2016:** $25,884	**2017:** $26,038	**2018:** $25,679	**2019:** $26,346

Total Cost: $103,947

Issue Addressed: Several lakes of the Upper Tanana and Upper Yukon River Drainages that lie within the northeastern portion of Wrangell-St. Elias National Park and Preserve (WRST) are known to support, or have the potential of supporting subsistence burbot (Lota lota) fisheries. These lakes include: Grizzly, Beaver, Ptarmigan, Rock, Braye, and Carden Lakes (additional burbot fisheries that staff are presently unaware of, may exist). There is currently no baseline data of burbot populations in any of these lakes, except for Grizzly Lake where population assessments were performed in both 2011 and 2014. WRST managers have conservation concerns for the burbot population in the relatively small Grizzly Lake. Results of the population assessments performed, as well as reports of recent large increases in harvests support these concerns. We have extremely limited information on fishing pressure, user types (sport or subsistence), or harvests on the other lakes mentioned above. Establishing baseline data for the populations in these lakes is a necessary initial step required for responsible future management.

Objectives:

1. Estimate abundance of fully recruited adult burbot (≥450 mm TL) in each lake with mark-recapture techniques, utilizing at least 25 baited hoop traps (aircraft cargo capacity limited) for 48 hour fishing periods.
2. Estimate mean catch per unit effort (CPUE) of fully recruited adult burbot (≥450 mm TL) in each lake.
3. Establish baseline length-frequency data for all burbot handled in each lake.

Methods: The lakes involved in this study are extremely remote with difficult summertime accessibility. To keep the project within a minimal budget, methods are designed in a manner limited by the payload capacity of a single Beaver floatplane flight; 2 person crew, 11 ft. inflatable boat, 6 hp outboard, 25-30 hoop traps, and misc. camp gear and supplies.

For this proposed project, we will perform two-event mark-recapture investigations to establish baseline data of the burbot populations of one lake each field season. The initial capture/tagging events will be scheduled in mid-June to mid-July, or soon after ice out of the lake. A subsequent recapture event will occur later in the season (mid-August to early-September) to allow dispersal of marked fish throughout the population. Twenty-five or more (up to cargo capacity of air charter) baited hoop traps will be set dispersed across the bottom of the lake and allowed to fish for approximately 48 hours. During the

tagging event, all captured fish will be tagged with a numbered floy tag, fin clipped as a secondary mark, measured, and released. In the recapture event, all fish will be inspected for tags (new tags will be deployed on unmarked fish), measured, and released.
Statistical analysis will include a Lincoln-Petersen (N=(K x n) / k) estimate for abundance, length-frequency histogram, and basic Catch per Unit Effort (CPUE) for the baited hoop traps fished for the standard 48 hour period.

Partnerships and Capacity Building: All WRST staff involved in this project will be of Local Hire designation. The Park has and will continue to consult with local staff of ADFG regarding this project. Presently, an offer to Co-Investigate on this project has been extended to local staff of ADFG. In 2014, staff of ADFG directly participated in the re-assessment study conducted in Grizzly Lake.

Project Number: 16-206
Title: Abundance and Run Timing of Adult Salmon in Nulato River, Alaska.
Geographic Area: Yukon River
Information Type: Stock Status and Trends (SST).
Principal Investigator: Brian McKenna, Tanana Chiefs Conference (TCC)
Co-Investigator: Arnold Demoski, Nulato Tribal Council (NTC)

Project Cost:	**2016:** $375,270	**2017:** $163,146	**2018:** $170,858	**2019:** $178,950

Total: $888,224

Issue: Chinook salmon *Oncorhyncus tshawytscha* and summer chum salmon *O. keta* returns in the Yukon River Basin have demonstrated an overall decline in productivity since 1997 (Bergstrom et al. 2001; JTC 2013). These declines have led to harvest restrictions, fishery closures, and spawning escapements below management goals (Kruse 1998; JTC 2013). In 2014 Native Alaskan communities and subsistence fishers passed a moratorium on the harvest of Chinook salmon in an attempt to conserve and protect their salmon resources (TCC 2014). These conservative management actions coupled with the user imposed Chinook moratorium have resulted in increased hardships for Native Alaskans who rely heavily upon salmon as a subsistence food resource as well as a means to continue to practice their ancestral, cultural, and traditional way of life. Because of the state of the Yukon River Chinook salmon and the complexity of mixed stock fisheries for both Chinook salmon and chum salmon, responsible management of these resources is paramount. To ensure proper management strategies are enacted, fishery managers need high quality data describing Chinook and chum salmon escapements and demographic data including age, sex, and length data (ASL). This project directly addresses two priority information needs for the Yukon River region set forth by the Office of Subsistence Management (OSM) Fisheries Resource Monitoring Program (FRMP) call for proposals: 1) to obtain reliable estimates of salmon escapements, and 2) to determine quality of escapement such as sex and size composition of spawners.

Both Chinook and chum salmon from the Nulato River contribute to the subsistence and commercial harvests of Yukon River communities between the mouth of the Yukon River and the mouth of the Nulato River, as they migrate through the Yukon Delta and Innoko National Wildlife Refuges (INWR), as well as state management areas. The escapement information collected from the Nulato River Weir has been and will continue to be an important assessment tool that assists fisheries managers with making difficult management decisions regarding the mixed stock subsistence and commercial fisheries in the Yukon River. Lastly, with the TCC serving as primary investigator, the NTC serving as co-investigator, and through the hiring of local resident technicians, this project will enhance capacity building and strengthen the local community's involvement in the management of these salmon resources.

Objectives 2016-2019:

1) Consult with the Nulato Tribal Council prior to each season;
2) Provide outreach for community members informing them on the project prior to each season;
3) Hire local fish technicians from Nulato to accomplish objectives 4, 5, 6, and 7;
4) Install and operate a resistance board weir to achieve objectives 5, 6, and 7;

5) Determine daily escapement and run timing of adult salmon;
6) Determine age, sex and length (ASL) composition of adult salmon;
7) Determine the number of resident fish species passing through the weir;
8) Consult with the Nulato Tribal Council after completion of each season; and
9) Provide outreach for community members informing them on project results each post season.

Methods: A resistance board weir will be installed and operated on the main stem Nulato River, located approximately 7 km upriver from the its confluence with the Yukon River. A live trap, installed near mid-channel, will allow salmon and resident species to move through the weir. Their passage will be enumerated daily and will provide an area where fish will be sampled to collect biological information. The daily counting period will begin at midnight and end at midnight the following day. Sampling will begin at the beginning of each week and will be conducted over a 3-4 day period to collect 160 fish per week for each species. Sample size goals were established so that simultaneous 90% interval estimates of the sex and age composition for each week have maximum widths of 0.20. The sample size obtained using this method was increased to account for the expected number of unreadable scales. Lengths of Chinook salmon will be measured to the nearest 1 mm and chum measured to the nearest 5mm from mid-eye to fork of the caudal fin (MEFL). Sex ratios will be determined by visual inspection of secondary sexual characteristics. Scales will be used for aging salmon, with ages being reported using the European technique (Foerster 1968). Three scales will be collected from Chinook salmon and one scale will be collected from summer chum salmon. Scales will be taken from the area located on the left side of the fish, two rows above the lateral line on a diagonal line from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin. Once the scales are removed, they will be placed on scale gum cards for later analysis with the Alaska Department of Fish and Game.

Partnerships and Capacity Building: This project will allow the Nulato Tribal Council and local community members to participate in a meaningful salmon fisheries monitoring and abundance project that will directly benefit the management and conservation of their salmon resources. This project will provide employment opportunities for local residents from Nulato to work as seasonal fishery technicians. These positions will introduce the necessary skills and experience required salmon escapement monitoring projects. Additionally, this project will allow the NTC to further develop the skills of Tribal members through local training and project participation. Furthermore, community involvement with this project will expose local youth residents to fisheries management, and encourage their engagement with fisheries and natural resource management. This project will serve to further develop and foster existing working relationships between a regional non-profit organization, the TCC, a tribal government, the NTC, and the federal and state resource management agencies, the U. S. Fish and Wildlife Service (USFWS) and the ADF&G. Additionally, this project will help to build capacity within the NTC and promote active and long term engagement of the NTC into fisheries management within their region.

Project Number: 16-251
Title: Characterization of seasonal habitats, migratory timing and spawning populations of mainstem Yukon River burbot and their subsistence use in the communities of Pilot Station, Galena and Fort Yukon Alaska.
Geographic Region: Yukon Region (Yukon Delta to Yukon Flats)
Information Type: Stock Status and Trends (SST), TEK and Harvest Monitoring (HM)
Principal Investigator: Klaus Wuttig**,** Alaska Department of Fish and Game
Co-investigator: Caroline Brown, Alaska Department of Fish and Game

Project Cost:
2016: $32, 339 **2017:** $145,657 **2018:** $106,262 **2019:** $103,592

Total Cost: $387,850

Issue Addressed: This study addresses the Yukon Region Priority Information Need: burbot population assessments known to support subsistence. Burbot *Lota Lota* are an important subsistence resource along the length of the Yukon River and are an essential source of fresh meat. Comprehensive harvest estimates for the Yukon River are lacking, but recent harvest surveys indicate that harvests between ~500 and 4,500 lbs per community are common. No biological information on these mainstem burbot has been collected aside from sampling a few catches for length. A basic understanding of fish population characteristics, such as migration timing, seasonal habitats, home ranges and spawning areas is essential for management. For example, a recent telemetric study on the Kuskokwim River demonstrated that these mainstem burbot can undertake extensive (i.e. >1,300 km) upstream migrations from the mouth to a relatively few upriver spawning areas near McGrath, and may in fact constitute a single stock. In the Yukon River, the geographic scale at which fish populations are defined can be considerable, such as the sheefish *Stenodus leucichthys* populations migrating between the Yukon Delta and the Yukon Flats. Yukon River burbot may have similar ranges despite their eel-like body form. Defining population characteristic would be essential for evaluating sustainable harvest levels, protection of critical habitats, and designing any future stock assessments. With increasingly poor runs of salmon and low salmon harvests, it is likely that harvests of important non-salmon species will increase. In light of this, and because there exists little biological or ethnographic data on Yukon River burbot populations, this work is timely.

Objectives:

1. Describe the seasonal distributions and their overlap for burbot radiotagged during fall of 2017 within the Galena and Dalton study section, and in the spring near pilot station;
2. Identify probable spawning areas of burbot in the mainstem of the Yukon River during late January;
3. Describe run-timing past stationary tracking stations positioned at Galena and Rapids when operable;
4. Determine travel distances between aerial surveys and the range of distances traveled between seasonal habitats;

5. For each aerial tracking survey, esitmate the proportion of radiotagged bubot from each tagging section that have overlapping ranges;
6. Describe the length composition of all burbot captured;
7. Document traditional ecological knowledge related to traditional and contemporary patterns of subsistence harvest including methods and timing of harvest, gear types used, spatial mapping of harvest areas and other important habitats, and documenting fish-related placenames and taxonomic lexicon; and
8. Estimate the subsistence harvest of burbot for the calendar year 2017 by season by Pilot Station, Galena, and Fort Yukon residents.

Methods:
During the fall of 2017 and spring of 2018, 240 burbot will be radiotagged to collect spatial data: 80 tags will be deployed in the Galena section, 80 in the Dalton section, and 80 near Pilot Station. Radio tags will be monitored over a 2-year period using a combination of 8 aerial tracking surveys and 3 tracking stations. Within the middle Yukon River, fish will be tagged during late September and early October. Near Pilot Station, fish will be captured in spring utilizing community/private fish traps fished through the ice. In the Middle Yukon, one 3-person crew will travel by boat from the Dalton Highway to the community of Galena and base operations there. Another 3-person crew will be based near the Dalton Highway crossing. Burbot will be captured in commercially available hoop traps. In the Pilot Station section crews will arrive in spring when subsistence fishers plan and utilize these subsistence traps. Radio tags will be surgically implanted into all burbot.

During these telemetric activities, PIs will also describe the human dimensions of Yukon River burbot fisheries using standard anthropological methods of ethnographic interviews, participant-observation, and surveys. Traditional Ecological Knowledge will be documented in several ways. The primary data collection method will be through interviews with key respondents. The primary harvest data collection method will be systematic household surveys. Local research assistants will administer these with assistance from ADF&G staff. Participation in the survey will be voluntary and household information will remain confidential.

Consultations/Capacity Building: This project has received favorable responses. We are in the process of soliciting letters of support for this project from the Yukon Delta NWR, Yukon Flats NWR, and Regional Advisory Councils within the geographic scope of the project. Capacity building for this project will occur in 3 primary ways. First, PIs will hire a college intern with the ANSEP program to assist with telemetry sampling. In the event this cannot occur, a local resident will be hired for this work. Secondly, local fishers will be contracted to operate fish traps in Pilot Station. Lastly, PIs will build on earlier research efforts to contribute capacity building in study communities through research partnerships with local tribal or village councils in the identified study communities and will seek to hire local project assistants or community partners to help select key respondents, assist the investigators in all aspects of fieldwork, and administer the short harvest survey.

Project Number: 16-255
Title: Yukon River In-Season Community Surveyor Program
Geographic Region: Yukon Region
Information Type: Customary Knowledge and traditional ecological knowledge (CK/TEK)
Principal Investigator: Catherine Moncrieff, Yukon River Drainage Fisheries Association
Co-Investigator: Gerald Maschmann, U.S.Fish and Wildlife Service, Fairbanks Field Office

Project Cost:
2016: $69,741 **2017:** $71,908 **2018:** $70,853 **2019:** $70,429

Total Cost: $ 282,661

Issue Addressed: This project addresses the need for inclusive in-season management for Chinook 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. The community surveyor reports address the need to have consistent reporting to fisheries managers and the public about subsistence harvests, run strength, fishing conditions, and fishermen's concerns. The in-season community surveyor program is an important communication 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 number of fishers to meet their subsistence needs. This project addresses the priority information need of the Multi-Regional Priority Information Need changes in subsistence fishery resources and uses in the context of climate change by documenting subsistence fisher observations, and their customary and traditional ecological knowledge related to their decreasing harvests of Chinook salmon and increasing harvests of other available species. The information collected will be applied to in-season fisheries management by the Alaska Department of Fish and Game (ADF&G) and the U.S. Fish and Wildlife Service (USFWS) federal fisheries managers.

Project Goal: To contribute local information into fisheries management discussions and build capacity along the river to participate in fisheries management.

Objectives:
1. Hire 10 community surveyors in 10 Yukon River drainage villages to work in-season to gather fisheries information on an annual basis;
2. Build capacity of community surveyors in 10 Yukon River villages to participate in inseason fisheries management;
3. Conduct annual reviews pre-season and post-season to evaluate community surveyor program and design for next season to maximize effectiveness of program.

Project Activities: During the Chinook salmon season, YRDFA will hire community surveyors in 10 villages who will expand communication with fishers in their communities about important fishery information and gather information from their fishermen that will provide managers weekly with information about fishers' concerns, observations, and ability to harvest salmon throughout the Alaskan portion of the Yukon River drainage. These reports will be sent to fisheries managers for their review and use in decision-making and also shared on the teleconferences for the benefit of managers and other fishermen.

Anticipated Outcomes: The community surveyor program outcomes will include enhanced communication for the in-season salmon management teleconferences and capacity building in 10 Yukon River communities. Other outcomes include weekly surveys, annual Interim Performance reports, and a final report.

Project Number: 16-256
Title: In-Season Salmon Management Teleconferences
Geographic Region: Yukon Region
Information Type: Harvest Monitoring and Traditional Ecological Knowledge
Principal Investigator: Jill Klein, Yukon River Drainage Fisheries Association
Co-Investigator: Wayne Jenkins, Yukon River Drainage Fisheries Association

Project Cost:
2016: $19,914 **2017:** $17,800 **2018:** $18,031 **2019:** $18,270

Total Cost: $74,015

Overview of the need for the project: The Yukon River is the longest river in Alaska, stretching from the western coast of the Bering Sea through interior Alaska and into the Canadian headwaters. There are approximately 45 Tribal Councils and 10 First Nations in Canada that harvest salmon along the Yukon River. This project brings together these remote and rural villages that share the salmon resource. They share information with each other and also share firsthand knowledge about what is happening on the fishing grounds with the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service that manage the fisheries. This project is a cost-effective method of bringing people together on a regular and consistent basis to speak together weekly via teleconference. The project is long-standing for 15 years now and has become a fixture of in-season salmon management along the Yukon River. Changes are taking place along the Yukon River due to environmental conditions and management actions. This project is needed to continue to gather information related to these changes. To specifically address the multi-regional priority needs, this project will focus on learning about changes taking place in the subsistence fishery resources and uses during the summer and fall fishing seasons. Fishermen will be asked all along the river to discuss the species they are targeting, their fishing locations, the fish quality, their harvest methods and means and methods of preservation. The Yukon River Panel, a non-federal funding source has funded this project for over ten years. We have applied for additional funding this year, but it is not yet committed and not entered as a match in the budget. People from the Yukon River join the call each week in a non-paid capacity that can be considered an in-kind match but again is not entered officially into the budget as a match.

Goal : The goal is to provide a forum for people from the Yukon River to engage with fisheries managers on sharing information about subsistence harvests in-season.

Objectives:

1. Host in-season salmon management teleconferences during the salmon fishing season;
2. Attend federal regional advisory council meetings to report on the teleconferences.

Project activities: The project activities include planning for and hosting weekly teleconferences for people who live along the Yukon River to participate in. Data will be collected from fishermen participating in the calls and reporting at federal regional advisory council (RAC) meetings will take place.

Anticipated outputs and outcomes: Data collected on the changes taking place in the subsistence fishery resources and uses during the summer and fall fishing seasons. Fishermen will be asked all along the river to discuss the species they are targeting, their fishing locations, the fish quality, their harvest methods and means and methods of preservation. Reporting on these outcomes will be done at RAC meetings, one in-person and two via teleconference, will take place in the fall after each fishing season.

APPENDIX B

Table B.1. Fisheries Resource Monitoring Program projects funded in the Yukon Region from 2000 to 2014.

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	ADF&G
00-022	Hooper Bay Test Fishing	ADF&G, 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	ADF&G, EMV
01-141	Holitna River Chinook, Chum and Coho Telemetry	ADF&G
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, ADF&G, 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

Continued on next page

Table B.1 continued

Project Number	Project Title	Investigators
	Yukon River Salmon Projects (continued)	
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
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	ADF&G
04-231	Yukon River Chinook Salmon Telemetry	ADF&G
04-234	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
04-251	Fort Yukon Traditional Ecological Knowledge Camp	TCC,CATG, ADF&G
04-255	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	ADF&G, HBTC
05-203	Yukon River Coho Salmon Genetics	USFWS
05-208	Anvik River Salmon Sonar Enumeration	ADF&G
05-210	Tanana River Fall Chum Salmon Abundance	ADF&G
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	ADF&G
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	Kaltag Chinook Salmon Age-Sex-Length Sampling	COK
08-201	Henshaw Creek Salmon Weir	TCC

Continued on next page

Table B.1 continued

Project Number	Project Title	Investigators
	Yukon River Salmon Projects (continued)	
08-202	Anvik River Chum Salmon Sonar Enumeration	ADF&G
08-253	Yukon River Teleconferences and Inseason Management	YRDFA
10-200	Yukon River Chinook Salmon Run Reconstruction	BUE
10-205	Yukon River Chum Salmon Mixed-stock Analysis	USFWS
10-206	Nulato River Salmon Assessment	TCC
10-207	Gisasa River Chinook and Summer Chum Salmon Assessment	USFWS
12-202	Henshaw Creek Abundance and run timing of adult salmon	TCC
12-204	Anvik River Sonar Project	ADF&G
12-205	Kaltag Chinook Salmon Sampling Project	KAL
12-251	In-season Salmon Teleconferences and Interviews	YRDFA
14-201[b]	Gisasa R Salmon Video	USFWS
14-202[b]	E Fork Andreafsky Salmon	USFWS
14-203[b]	Gisasa R Salmon	USFWS
14-206[b]	Yukon R Coho Salmon	USFWS
14-207[b]	Yukon R Chum Salmon	USFWS
14-208[b]	Koyukuk R Chum Salmon	USFWS
14-209[b]	Henshaw Crk Salmon	TCC
	Yukon River Non-Salmon Projects	
00-004	Humpback Whitefish/Beaver Interactions	USFWS, CATG
00-006	Traditional Ecological Knowledge Beaver/Whitefish Interactions	ADF&G, CATG
00-021	Dall River Northern Pike	ADF&G, SV
00-023	Upper Tanana River Humpback Whitefish	USFWS
01-003	Old John Lake TEK of Subsistence Harvests and Fish	ADF&G, AV, USFWS
01-011	Arctic Village Freshwater Fish Subsistence Survey	ADF&G, AV, USFWS
01-100	Koyukuk Non-salmon Fish TEK and Subsistence Uses	ADF&G, TCC
01-140	Yukon Flats Northern Pike	ADF&G, SV
01-238	GASH Working Group	USFWS
02-006	Arctic Village Freshwater Fish Subsistence	ADF&G, NVV
02-037	Lower Yukon River Non-salmon Harvest Monitoring	ADF&G, TCC
02-084	Old John Lake Oral History and TEK of Subsistence	USFWS, AV, ADF&G
04-253	Upper Tanana Subsistence Fisheries Traditional Ecological Knowledge	USFWS,UAF, ADF&G

Continued on next page

Table B.1 continued

Project Number	Project Title	Investigators
	Yukon River Non-Salmon Projects (continued)	
04-269	Kanuti NWR Whitefish TEK and Radio Telemetry	USFWS, RN
06-252	Yukon Flats Non-salmon Traditional Ecological Knowledge	ADF&G, BLM, USFWS, CATG
06-253	Middle Yukon River Non-salmon TEK and Harvest	ADF&G, LTC
07-206[a]	Innoko River Inconnu Radio Telemetry	USFWS, ADF&G
08-206	Yukon and Kuskokwim Coregonid Strategic Plan	USFWS, ADF&G
08-250	Use of Subsistence Fish to Feed Sled Dogs	RN, AC
08-300	Aniak River Rainbow Trout Seasonal Distribution	ADF&G
10-209	Yukon Delta Bering Cisco Mixed-stock Analysis	USFWS
10-250	Yukon Climate Change Impacts on Subsistence Fisheries	RN
12-200	Alatna River Inconnu Population Structure	USFWS
12-207	Yukon Bering Cisco Spawning Origins Telemetry	USFWS
14-252[b]	Lower Yukon Whitefish	ADF&G
14-253[b]	Upper Yukon Custormary Trade	YRDFA

[a] = Final Report in Preparation.
[b] = On-going projects during 2016.
Abbreviations: **AC** = Alaskan Connections, **ADF&G** = Alaska Department of Fish and Game, **AVCP** = Association of Village Council Presidents, **AV** = Arctic Village, **BF** = Bill Fliris, **BUE** = Bue Consulting, **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, **KAL** = City of Kaltag, **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.

FISHERIES RESOURCE MONITORING PROGRAM
MULTI-REGIONAL OVERVIEW

Since the inception of the Monitoring Program in 2000, 16 projects have been undertaken in the Multi-regional category for a total of $1.7 million (**Figure 1**). Of these, the State of Alaska conducted 10 projects, the Department of Interior conducted three projects, the Department of Agriculture conducted one project, and other organizations conducted two projects (**Figure 2**). Nine projects were Stock, Status, and Trends (SST), and seven projects were Harvest Monitoring and Traditional Ecological Knowledge (HMTEK). For more information on Multi-Regional projects completed from 2000 to 2014, please see appendix 1.

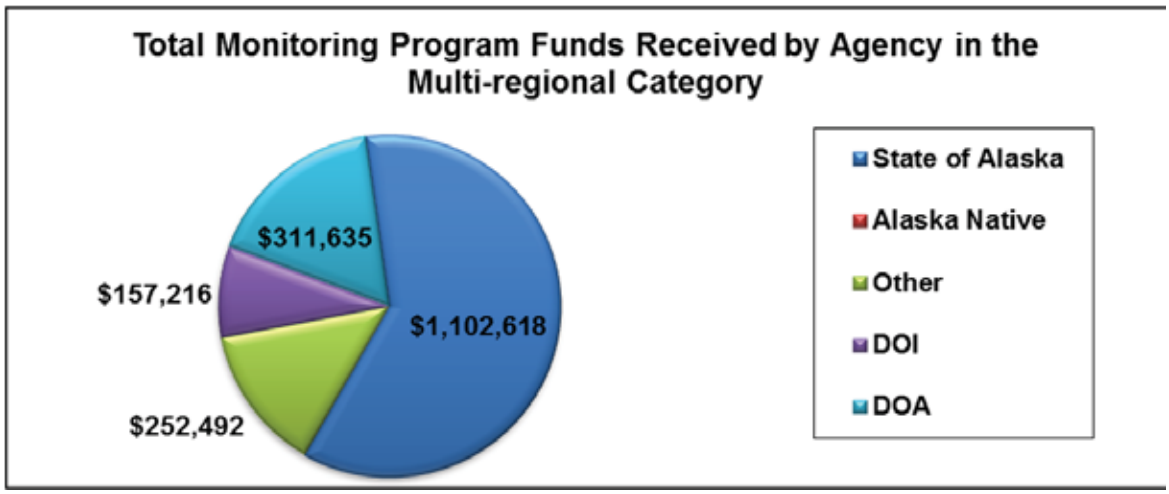

Figure 1. Monitoring Program funds received by agencies for projects in the Multi-regional category. The funds listed are the total approved funds from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture.

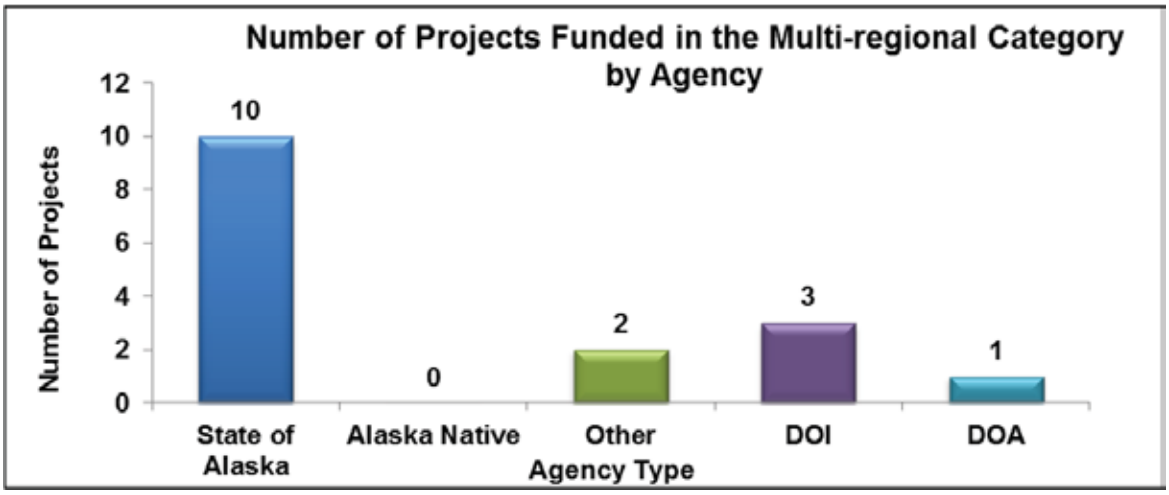

Figure 2. Total number of Monitoring Program projects funded, by agency, in the Multi-regional category from 2000 to 2014. DOI = Department of Interior and DOA = Department of Agriculture

2016 DRAFT MULTI-REGIONAL FISHERIES RESOURCE MONITORING PLAN

OVERVIEW

Priority Information Needs

The Multi-regional category is for projects that are applicable in more than one region. For the Multi-regional category, the 2016 Notice of Funding Availability is focused on the following 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.
- Effects of the Bering Sea and Gulf of Alaska Pollock fishery on Federal Chinook and Chum Salmon subsistence resources throughout Alaska.
- Changes in subsistence fishery resources, in the context of climate change, including but not limited to fish movement and barriers including permafrost slump, water quality and temperature, draining of tundra lakes, changing patterns of precipitation both snow and rain, changing freeze-up and break-up.

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 final allocations. Prior commitments to the 2014 Monitoring Program are up to $2.7 million. The anticipated funding available for the 2016 Monitoring Program is up to $2.0 million.

Technical Review Committee Proposal Ranking

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.

For the 2016 Monitoring Program, two proposals were submitted in the Multi-regional category. The Technical Review Committee evaluated and scored each proposal for Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit. The final score determined the ranking of each proposal within the region (**Table 1**). Projects that rate higher comprise a strong Monitoring Plan for the region by addressing strategically important information needs based on sound science and promote cooperative partnerships and capacity building. The projects

listed are currently being considered for Funding in the 2016 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included. For more information on projects submitted to the 2016 Fisheries Resource Monitoring Program please see the Executive Summaries in **Appendix A**.

Table 1. Technical Review Committee (TRC) ranking for projects in the Multi-regional category. Projects are listed by TRC ranking and include the total matching funds, total funds requested, and the average annual request for each project submitted to the 2016 Monitoring Program within the Multi-regional category. The projects listed are currently being considered for Funding in the 2016 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included.

TRC Ranking	Project Number	Title	Total Matching Funds	Total Project Request	Average Annual Request
1	16-752	YK Delta Coastal Communities Non-Salmon Harvest and Use Pattern	$0	$445,216	$148,405
2	16-751	Kuskokwim and Yukon the Meaning and Context of Sharing within the Subsistence Fisheries	$0	$549,672	$183,224
		Total	**$0**	**$994,888**	**$331,629**

2016 PROJECT SUMMARY AND TRC JUSTIFICATION FOR PROJECT RANKING

TRC Ranking: 1
Project Number: 16-752
Project Title: Subsistence Harvest and Use Patterns of Nonsalmon Fishes by Yukon-Kuskokwim Delta Region Coastal Communities

Project Summary: During the three-year project, investigators will collaborate with five study communities to document their harvests and uses of nonsalmon fishes for subsistence. The nonsalmon subsistence fisheries in coastal communities of the Yukon-Kuskokwim delta are among the least documented subsistence fisheries in the state. Limited harvest data and ethnographic information indicate that regional harvest and use patterns have changed dramatically in recent years in response to factors that include changing weather patterns. Lack of harvest and use information precludes a meaningful analysis of changes in the fisheries over time and prevents an understanding of the potential future and ongoing impacts of climate change. The study will update information collected during previous studies that include Nunivak Island in 2008 (Project OSM05-353), Scammon Bay in 2011, Nelson Island in the 1980s and early 1990s, and Hooper Bay and Kwigillingok in 1983. The study communities are Scammon Bay, Mekoryuk, Tooksook Bay, Kipnuk, and Quinhagak.

TRC Justification: Over three years, investigators will document the harvest and use of nonsalmon fishes in five coastal communities in the Yukon-Kuskokwim delta. The project addresses priority information needs, the Federal linkage is clear, investigators are qualified to conduct the work, and the budget is reasonable. Partnership and capacity building will be collaborating with five participating communities and hiring five to ten local assistants to help with the research and provide Yup'ik-English language interpretation. Investigators do not describe mapping protocols such as the specific information they are seeking and how it will be analyzed. Also, investigators do not explain why a statistical design requiring a 60% random sample of households in communities with over 100 households is being used, but the omissions do not significantly take away from the overall completeness and quality of the investigation plan.

TRC Ranking: 2
Project Number: 16-751
Project Title: The Meaning and Context of Sharing within the Subsistence Fisheries of the Kuskokwim and Yukon River Drainages.

Project Summary: Through this three-year study investigators will document traditional and contemporary practices of sharing and other forms of exchange in seven Kuskokwim and Yukon river communities with particular attention to understanding the nature and scope of sharing and its role in a larger continuum of exchange practices and how they relate to the harvest of salmon. The proposed project builds on earlier sharing network research in the region. For 2009–2013, ADF&G Division of Subsistence conducted subsistence harvest and use surveys of all fish and wildlife, including a sharing and exchange network analysis, in 21 Kuskokwim River communities and 10 Yukon River communities.

Comparing the two regions may yield insights into how resources are exchanged considering socio-cultural and economic factors that differ between the two river systems. The proposed project will address data gaps in previous research by examining factors such as the ceremonial context of exchange, perceptions of change, and the role of obligation in harvest and sharing relationships. Investigators will collaborate in research with seven communities and Tribes, four situated along the Kuskokwim River and three along the Yukon River.

TRC Justification: The three-year study aims to address data gaps in previous sharing network research by collecting data on social dimensions of salmon production in communities along the Yukon and Kuskokwim rivers. Comparing communities from different parts of each river will strengthen the potential for understanding variable responses to changing salmon abundance and regulatory actions. The Federal linkage is clear, the study is well thought out, and the objectives are clear, measurable, and achievable. Investigator ability and resources are highly rated. Proposed partnership and capacity building are appropriate for the type of research. The cost is reasonable for the work being proposed.

APPENDIX A

Project Number: 16-751
Title: The Meaning and Context of Sharing Within the Subsistence Fisheries of the Kuskokwim and Yukon River Drainage
Geographic Region: Multi-Regional: Kuskokwim River and Yukon River Drainages
Data Type: Harvest Monitoring and Traditional Ecological Knowledge
Principal Investigator: Hiroko Ikuta, Ph.D., Division of Subsistence, Alaska Department of Fish and Game
Co-Investigator: Caroline Brown, Division of Subsistence, Alaska Department of Fish and Game

Project Cost:	**2016**: $277,314	**2017**: $185,828	**2018**: $86,530	**2019**: $0

Total Cost: $549,672

Issue: This proposal addresses a Kuskokwim Region Priority Information Need: an understanding of the meaning and significance of sharing in the context of the social, cultural, and economic life of people in the lower Kuskokwim Area. Sharing subsistence-caught fish and wildlife is a fundamental characteristic of subsistence based communities in Alaska as a means of distributing food and other resources between households and communities. Subsistence activities are highly cooperative endeavors that few individuals undertake alone. The food and materials gained through a person's efforts are usually distributed along kinship lines or through other social relationships. Forms of exchange, including sharing, barter, and customary trade, can be understood as occupying a single continuum of subsistence activities rather than as discreet fundamentally separate activities. Between 2010 and 2013 (study years 2009–2012), the Alaska Department of Fish and Game (ADF&G), Division of Subsistence conducted comprehensive subsistence harvest and use surveys in 21 Kuskokwim River communities. Results indicated that 92% of households received wild resources from other households, and 74% of households gave wild resources to other households. The proposed project builds on earlier research on sharing networks in the region, focusing on an ethnographic understanding of the social, cultural, and economic significance of exchange practices, especially regarding salmon, in Kuskokwim River communities. It will also compare results to similar analyses of exchange in Yukon River communities. This comparison may yield insights into how resources are exchanged based on cultural, political-legal, environmental, and economic factors that differ between the two river systems. This project will document traditional and contemporary practices of sharing and other forms of exchange in Kuskokwim and Yukon river communties with particular attention to understanding the nature and scope of sharing and its role in a larger continuum of exchange practices.

Objectives: This three-year study will develop case studies, addressing the following objectives:

1. Using the existing social network data as an empirical framework, conduct indepth ethnographic interviews about exchange practices. Interviews will include questions about a) the amounts and types of fish or other resources shared; b) the relationships between people who shared wild food; c) decision making factors that structure sharing; d) the ceremonial context of exchange; e) forms of exchange, such as sharing, barter, and customary trade; and f) perceptions of change in

exchange practices in order to describe how these practices fit within the overall social, cultural, and economic life in the Kuskokwim and Yukon river areas.

2. Using a short network survey, update the existing network data and document the scope of and local characteristics of exchange in 7 Kuskokwim and Yukon river communities. Surveys will investigate both a) distribution of resources between households and b) relative exchange levels of resources in relation to each other; and
3. Contribute to local capacity building by utilizing a framework of community involvement in research.

Methods: This study will take place in 4 communities along the Kuskokwim River and 3 communities along the Yukon River. The tribal councils of each community will be approached in summer 2016 to participate in the research. ADF&G staff will provide a presentation of the proposed research to each tribal council and be available to answer questions. The ethnographic research for this project will include anthropological methods of semi-structured key respondent interviews and surveys. Researchers will attempt to interview 5-10 individuals per community, a sample size based on researchers' previous research experience with the proposed communities and residents' collective subsistence use practices. PIs will also use a short, confidential survey to describe exchange networks. The survey will have 2 basic parts. The first part of the survey will update the network data from earlier research. For the top 5-10 resources ranked by estimated edible pounds for each community, every respondent will be asked if they exchanged the resources with another household (including those in other communities or in non-rural areas outside of the region) in 2016 using questions in both the harvest/use format and the network format described in the Background section of the full proposal. The second part of the survey will record different types of exchanges (barter and customary trade). These questions will be directed toward both individual household activities (recorded as "actual" exchanges), as well as the community in general (recorded as "typical" exchanges).

Partnerships/Capacity Building: The principal investigators will work with tribal councils in the study communities to hire local project assistants, to select key respondents, and facilitate community meetings. The local research assistants will be trained in anthropological sampling methods. This increases coordination between agencies, Tribal entities, and community members – working together in data collection increases communication and leads to better understanding of local issues and local understanding of science and management issues.

Project Number: 16-751
Title: Subsistence Harvest and Use Patterns of Nonsalmon Fishes by Yukon-Kuskokwim Delta Region Coastal Communities
Geographic Region: Multi-Regional: Kuskokwim River and Yukon River Drainages
Data Type: Harvest Monitoring and Traditional Ecological Knowledge
Principal Investigator: Andrew Brenner, Division of Subsistence, Alaska Department of Fish and Game
Co-Investigator(s): David Runfola, Division of Subsistence, Alaska Department of Fish and Game,

Project Cost:	**2016**: $137,548	**2017**: $189,787	**2018**: $117,881	**2019**: $0

Total Cost: $445,216

Issue: This project will address the multiregional priority need for more information on changes in subsistence fishery harvests and uses in the context of climate change. The nonsalmon subsistence fisheries in coastal communities of the Yukon Kuskokwim Delta and vicinity (hereafter YKD) are among the least documented subsistence fisheries in the state. Limited harvest data and ethnographic information indicate that regional harvest and use patterns have changed dramatically in recent years in response to factors that include changing climate conditions and weather patterns. The lack of non-salmon subsistence fisheries harvest and use information for this area precludes a meaningful analysis of changes in the fisheries over time, prevents an understanding of the potential future and ongoing impacts of climate change, and likewise impedes effective management decisions related to these fisheries. Although the importance of Pacific salmon is often emphasized in Western Alaska subsistence fisheries, for YKD coastal communities, nonsalmon fish species are often of equal or greater importance in terms of their edible weight contribution to subsistence harvests. This importance may increase during periods of weakened salmon returns and associated declines in harvests and sharing networks. Given the paucity of subsistence harvest and stock assessment data for nonsalmon fish species that are used by YKD coastal communities, it is unwise to assume that nonsalmon fish populations in the region will remain healthy and sustain current and future harvest levels.

In this data limited environment, it is of critical importance to develop a baseline understanding of harvest and use patterns as well as local knowledge of fish stocks. Without this information, it is not possible to assess whether management of subsistence fisheries in these refuges adequately provides for subsistence needs, conservation of fish populations, conservation of wildlife resources that have dietary overlap with subsistence users, and priority consumptive use of fisheries resources for qualified subsistence users. This is particularly relevant for fish species that may be vulnerable to overharvest, the potential effects of future climate change, and that are desirable for sport harvest by non-federally qualified fishers. To address these information needs, this project will collaborate with YKD coastal communities to develop an overview of area nonsalmon fisheries. This overview will provide updated information on harvest quantities and use patterns, local and traditional knowledge related to the various nonsalmon fisheries and the surrounding environment, and documentation of

local observations of change in these fisheries over respondents' lifetimes in the context of climate change.

Objectives: Collect updated qualitative information on subsistence harvest and use patterns for nonsalmon fish by species for 5 YKD Coastal subregions (Nunivak Island, Nelson Island, North Kuskokwim Bay, North Central Bering Sea Coast, South Central Bering Sea Coast) in 2016.

a. Document key aspects of nonsalmon fishing patterns for Yukon Kuskokwim Coastal Communities including harvest areas, gear types used, harvest methods, processing methods, local terminology, influence of weather, and seasonality of harvests through key respondent interviews and participant observation.
b. Record key respondent observations of changes in subsistence harvest and use patterns over time in the context of climate change.
c. Collect information on local nonsalmon fish taxonomies and use this information to develop an identification guide that will be used in harvest surveys (objective 2).
d. Strengthen relationships between agencies and local governments. Specifically, identify and address community concerns related to subsistence harvest surveys and other aspects of fisheries management.

Collect updated quantitative subsistence harvest and use information (during 2017) for nonsalmon fish by species for one community in each of 5 Y-K Delta Coastal subregions.

a. Estimate annual community harvest use levels of nonsalmon fish by species for Scammon Bay, Quinhagak, Mekoryuk, Toksook Bay, and Kipnuk. Assess whether subsistence needs for nonsalmon fish species are being met and impacts to households when needs are not met.
b. Systematically record household estimates of changes in subsistence harvest and use patterns over time for nonsalmon fisheries by species in study communities listed above. Collect contextual information on factors that have influenced changes in harvest and use patterns, including climate change, resource population levels, health of resources, and changing food preferences.

Methods: This study will take place in 5 communities within the YKD Region: Quinhagak, Kipnuk, Mekoryuk, Toksook Bay, and Scammon Bay. These communities were selected to provide a representative sample of 5 YKD coastal subregions. Objective 1 (Updating qualitative information) will be completed through consultations with local governments, key respondent interviews, and participant observation. In summer 2016, an ADF&G investigator will travel to each community to consult with local tribal governments and to seek community research approval and feedback. Following tribal consultation, one investigator and one fish and wildlife technician will return to each community at times identified as ideal for participating in a key nonsalmon fishery. Accompanied by local research assistants, ADF&G staff will complete 5-10 semi-structured interviews during year 1 with local residents knowledgeable about past and more recent nonsalmon fishing practices in the community. Investigators will participate in key fishing activities with the goal of gaining a better understanding of how fishing occurs in each region and community, specifically harvest areas, gear types used, harvest and processing methods, local fisheries terminology, and influence of weather patterns on harvests.

Objective 2 **(**collecting updated quantitative subsistence harvest and use information for nonsalmon fish by species), will be completed through standard Division of Subsistence household surveys that record harvest numbers, locations, and harvest timing of nonsalmon fish by species. Surveys will additionally include several sections specific to this project, including questions designed to assess whether subsistence needs are being met, household descriptions of changes that have occurred in subsistence harvest and use patterns over time, and factors identified as influencing such changes (including climate change, resource population levels, health of resources, changing food preferences, and effects of current management or resource allocation practices). Surveys will be completed in each community in the second year of research.

Partnerships and Capacity Development: The principal investigators will work with tribal councils in the study communities to hire local project assistants to select key respondents and facilitate community meetings. The local research assistants will be trained in sampling methods. This adds to local involvement in and local capacity for participating in federal fisheries management.

APPENDIX B

Table B.1. Fisheries Resource Monitoring Program projects funded in the Multi-regional category from 2000 to 2014.

Project Number	Project Title	Investigators
00-016	Information Access of AYK Fish Data	ADF&G
00-017	Statewide Subsistence Harvest Strategy	ADF&G, AITC
01-010	Regulatory History of Alaska Salmon Regulations	ADF&G, EA
01-106	Validity and Reliability of Fisheries Harvest	ADF&G, AITC, NPS
01-107	Implementation of Statewide Fisheries Harvest Strategy	ADF&G, AITC
01-154	Project Information and Access System	ADF&G
02-043	Alaska Subsistence Fisheries Database GIS Integration	ADF&G
02-069	Shared Fishery Database	ADF&G
04-701	Develop Shared Fishery Database	ADF&G
04-703[a]	Hatching Success of Eulachon Eggs	USFS
04-751	Subsistence Harvest Database Update and Report	ADF&G
05-702	Whitefish Genetic Species Markers	USFWS
06-701	Dolly Varden Stock Composition	USFWS
08-701	Stream Temperature Monitoring	ARRI
12-700	Genetic Baseline for Inconnu from the Yukon and Kuskokwim Rivers	USFWS
14-701[b]	Stream Temperature Monitoring	ARRI

[a] = Final Report in preparation.
[b] = On-going projects during 2016.
Abbreviations used: ADF&G=Alaska Department of Fish and Game, AITC=Alaska Inter-Tribal Council, ARRI=Aquatic Restoration and Research Institute, EA=Elizabeth Andrews, NPS=National Park Service, USFWS=U.S. Fish and Wildlife Service.

ANNUAL REPORTS

Background

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

Report Content

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

Report Clarity

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

Report Format

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

Federal Subsistence Board

1011 East Tudor Road, MS121
Anchorage, Alaska 99503

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

FOREST SERVICE

FWS/OSM 15044.CJ

AUG 24 2015

Lester Wilde, Sr., Chair
Yukon-Kuskokwim Delta Subsistence
Regional Advisory Council
c/o U.S. Fish and Wildlife Service
1011 E. Tudor Road, MS 121
Anchorage, Alaska 99503

Dear Chairman Wilde:

This letter responds to the Yukon-Kuskokwim Delta Subsistence Regional Advisory Council's (Council) fiscal year 2014 Annual Report. The Secretaries of the Interior and Agriculture have delegated to the Federal Subsistence Board (Board) the responsibility to respond to these reports. The Board appreciates your effort in developing the Annual Report. Annual Reports allow the Board to become aware of the issues outside of the regulatory process that affect subsistence users in your region. We value this opportunity to review the issues concerning your region.

1. Beaver Dams

The Council would like to again express its concerns over the impact of abandoned beaver dams on subsistence resources and opportunities. It seems at times that the entire Delta is overrun by beaver. Abandoned beaver dams clog up tributary streams, hindering the movement of anadromous fish. They are also impacting the populations of other species such as whitefish and pike. The presence of these dams also impedes access to fish camp sites and impairs local residents' ability to engage in other subsistence activities such as berry picking. For many people, they can no longer access traditional areas and have to find new locations.

Under Section 805(a)(3)(D)(iii), this Council is encouraged to recommend a strategy for the management of fish and wildlife populations within the region and to accommodate subsistence uses and needs. Under that direction, the Council recommends that personnel and funding be allocated to identify and remove abandoned beaver dams in the region to enhance and restore suitable fish habitat and provide for subsistence uses. Given the breadth of this problem, it would be unfair and inappropriate to ask the users to rectify it.

Response:

Over the years, in response to several of the Council's Annual Reports, the Board has explained the Federal Subsistence Management Program's limitations regarding abandoned beaver dam removal. We do know that beaver dams provide important rearing areas for many species of fish in freshwater such as rearing Coho Salmon. As such, beaver ponds are likely significant factors in the overall returns of Coho Salmon to the Kuskokwim River each year. There are potentially hundreds of abandoned beaver dams in the Yukon-Kuskokwim Delta Region, and the Yukon Delta National Wildlife Refuge does not have the staff, equipment, or funding to remove them. There is no Federal or State agency that specifically removes beaver dams blocking public waterways. The Council should consider a strategy that targets the removal of abandoned dams that are blocking specific waterways and threatening public safety. The Board encourages individuals to contact the Division of Habitat, Alaska Department of Fish and Game, before attempting to remove any beaver dam to discuss the location of the dam in question, methods of removal and environmental impacts.

The Board acknowledges that there is a continuing issue with abandoned beaver dams in your region. The Board made a strategic planning and policy decision at the onset of the Fisheries Resource Monitoring Program in 2000 that funds would be utilized for three types of studies in the following categories; harvest monitoring, traditional ecological knowledge, and stock status and trends. Stream restoration projects are a modification of habitat and do not fall within these categories.

2. Concerns about Moose Counts

The Council has several concerns related to the status of moose populations and the manner in which moose surveys are conducted. It is the Council's understanding that aerial surveys do not include tributaries, and the Council would like to know why. The Council would also like to know why surveys are only concentrated in the area between Kalskag and Bethel. The Council believes that there are more moose than the surveys show. Local residents report a lot of moose in Unit 18 south, but the harvest limit of 100 does not seem to match the increased moose population in that area as a result of the moratorium and subsequent management. The Council would like an accurate survey and report on the current population of moose in Unit 18. If lack of snow is a hindrance to conducting surveys, then the appropriate agencies need to come up with a new way of conducting them.

Local residents rely heavily on moose for food. Yet, the permitting process as it stands does not recognize the unique needs of locals and instead opens up the area to all residents of the state, many of whom are sport hunters. Moose are a mainstay of the local people's way of life, not a trophy. As members of a Federal Subsistence Regional Advisory Council, the number one thing

that people talk to us about is subsistence, and their concerns about subsistence resources like moose. We live off the land and respect it deeply, and we do not see the current permitting structure as providing that same respect to the resources when it encourages trophy hunting.

Response:

The U.S. Fish and Wildlife Service (USFWS) does not set the quota for moose harvest on the main stem of the Kuskokwim River. The Alaska Department of Fish and Game (ADF&G) has set the quota at 81 moose in the most recent years, while the USFWS has a set quota of 19 moose for Federal public lands that are on tributaries of the Kuskokwim. The collective State and Federal quota has been set at 100 moose since 2012. Although the total quota has been set at 100 moose, the actual harvest has been closer to 140 moose, some of which have been cow moose. These harvest numbers play an important role when managers set quotas, particularly when cow moose have been subject to harvest.

The USFWS and ADF&G recently completed moose surveys on the main stem of the Kuskokwim and the data is being analyzed. Managers acknowledge that moose have expanded their range since the last survey was conducted and in response, they have expanded their survey area to include the area from Bethel, downstream past the Johnson River and up the Johnson River itself. In addition, the USFWS has just completed a moose survey on the Kuskokwim River tributaries, which marks the second time that these areas have been surveyed. This data is currently being analyzed. Once the analyses are completed, managers will determine if they can make changes to the current quotas. Although snow conditions were not ideal for these surveys, managers wanted to be responsive to the public in the hope that enough data could be gathered to determine if quotas need to be adjusted.

3. Musk Ox on Nelson Island

The Council is concerned about the current state of the musk ox population on Nelson Island. Local observations suggest that the wolf population has increased considerably and is engaging in heavy predation on the musk ox population. The Council therefore requests that several efforts be made to address this. First, the Council would like to know the current status of the musk ox population on Nelson Island. Second, the Council would like to see personnel directed to study the impact of predation by wolves on the musk ox population. Finally, if such a study shows that wolves are adversely impacting the population, the applicable member of the Board in his or her capacity as the regional director for the agency should direct the appropriate land manager to explore predator control measures.

Response:

The last muskox population survey conducted on Nelson Island was in July2012, with 761 muskoxen being counted. The survey showed an increase of 200 animals since the last survey in 2010. Current population levels are well above the State's management objectives for the island. In March of 2014, the Alaska Board of Game removed the upper limit on the number of registration permits that can be issued. This increased permit structure is scheduled to take effect in the regulatory year of 2015-2016.

Natural predation by wolves on Nelson Island is thought to be low, according to recent reports by the Alaska Department of Fish and Game. The vast majority of mortality for muskox on Nelson Island comes from human harvest. Recent high population numbers on Nelson Island are probably a result of cessation of emigration of animals to the mainland, a decrease in accidental deaths, and limits on the number of permits available for hunting. The Federal Subsistence Board acknowledges the value of local knowledge of the resources on Nelson Island, but at this time, muskox numbers appear to be increasing beyond the State's management objectives for the population, rather than being limited by predators.

4. Communication with Communities over New Regulations

The Council would like to encourage the Board and any applicable agency staff to communicate better with communities regarding regulatory changes. Many of the land management agencies make visits to villages. When staff visit villages, it would be helpful if staff apprise the communities of any pending regulatory changes. Communities want to be more involved in the process and better informed, so they feel like they have a more meaningful role in subsistence resource management. The Council recommends that if agencies are considering changes through proposals, they should consult with the affected communities prior to submitting the proposal.

Response:

The Board believes strongly in doing all that is possible to maximize public participation in the regulatory process. Currently, the Office of Subsistence Management (OSM) conducts a broad public outreach campaign every regulatory cycle. Press releases are distributed announcing the availability of proposed regulations, and the proposal book is distributed state-wide and posted on the Federal Subsistence Management Program website. In connection with the Regional Advisory Council meetings, OSM distributes a press release announcing the meeting dates and locations, publishes display ads in regional papers announcing the individual meeting dates and locations, and issues public service announcements for broadcast on local radio stations. Additionally, Council Coordinators work with Council members and regional communities to provide information on meetings and proposed changes, both through the regular process and

special action requests. For each proposed change that is considered, the OSM Native Liaison conducts Tribal and ANCSA Corporation consultations to solicit input from affected tribes and corporations. Under Department of the Interior and Board consultation policies, agencies are directed to engage in consultation prior to implementing any changes. The manner in which consultation is conducted for the Federal Subsistence Management Program is detailed in the *Implementation Guidelines* the Board adopted at its January 2015 meeting. Also, recognizing the value and use of Facebook to Alaska's rural communities, the Federal Subsistence Management Program maintains an official Facebook page that is routinely updated by the OSM Subsistence Outreach Coordinator, including proposed regulatory changes and proposed special actions.

Additionally, the public can find information on the Federal Subsistence Management Program by visiting the program's Facebook page (www.facebook.com/subsistencealaska) and emailing fws-fsb-subsistence-request@lists.fws.gov to subscribe for regular updates.

Finally, for all outreach regulatory information, OSM staff has invited the locally hired refuge information technicians (RITs) to be involved in outreach efforts in their respective regions. They already have the working relationship with Refuge staff and they have the local knowledge and connections that we at OSM are not aware of and can reach local contacts, such as tribal leaders and residents in villages we may have missed. The Board is always open to any specific suggestions on how its outreach efforts can be improved.

In closing, I want to thank you and your Council for their continued involvement and diligence in matters regarding the Federal Subsistence Management Program. I speak for the entire Board in expressing our appreciation for your efforts and our confidence that the subsistence users of the Yukon-Kuskokwim Delta Region are well represented through your work.

Sincerely,

Tim Towarak
Chair

cc: Yukon-Kuskokwim Delta Subsistence Regional Advisory Council
Federal Subsistence Board
Eugene R. Peltola, Jr., Assistant Regional Director, OSM
Chuck Ardizzone, Deputy Assistant Regional Director, OSM
Carl Johnson, Council Coordination Division Chief, OSM
Interagency Staff Committee
Administrative Record

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Togiak National Wildlife Refuge
P.O. Box 270
Dillingham, Alaska 99576
Phone 907-842-1063
Fax 907-842-5402

INFORMATION BULLETIN - August 2015

Cooperative Salmon Escapement Monitoring Projects. Contact: Mark Lisac
In 2014 the Federal Subsistence Board cancelled the funding for the salmon escapement monitoring projects (weirs) on the Kanektok (KRW) and Middle Fork Goodnews (MFGRW) Rivers. ADF&G and Coastal Villages Seafood provided the bulk of the funding to operate both projects although counting for the coho salmon spawning season was cancelled due to the lack of Federal funding.

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 funds the project operation. Togiak Refuge provided staff support; one intern from the Careers Discovery Internship Program (CDIP) for the MFGRW. The MFGRW began operation June 25.

On the Kanektok River, ADF&G, Native Village of Kwinhagak, Coastal Villages and Togiak Refuge have worked cooperatively to monitor salmon and Dolly Varden runs since 2001. This project is currently funded by Coastal Villages Region Fund and ADF&G. Escapement goal ranges have not been established for the Kanektok River because the weir has not been operational for enough years. This weir began operation June 25.

Preliminary escapement counts (http://www.adfg.alaska.gov/sf/FishCounts) for the MFGRW and KRW thru August 11, 2015 are:

	Chinook	Sockeye	Chum	Coho	Pink	Dolly V.
MFGRW	1,376	53,837	10,373	76	na	na
KRW	10,100	105,240	14,548	1,643	na	na

na=not available

Arctic Char Population Inventory Contact: Mark Lisac

Togiak Refuge has developed a multi-year study to inventory Arctic char populations throughout the Refuge. This species is confirmed to occur in 27 lakes and are likely to be found in many more. In 2014 we visited eleven lakes and documented Arctic char in 9. We collected size and genetic information from 254 fish and provided the UAF museum with voucher specimens. A similar effort for 2015 is ongoing. If you have any first hand knowledge of small or unique Arctic char populations and would be willing to share that information please contact Mark Lisac at the Refuge office.

Mulchatna Caribou Contact: Andy Aderman
Togiak Refuge assisted ADF&G with telemetry monitoring flights, radiocollar deployment, satellite data acquisition, data entry and database management. Results of a photocensus conducted June 25, 2015 are forthcoming. A composition survey is planned for October 2015.

Nushagak Peninsula Caribou Contact: Andy Aderman
A photocensus on June 29, 2015 found a minimum of 1,313 caribou on the Nushagak Peninsula. The June 2014 photocensus found a minimum of 1,018 caribou. For the 2015 fall hunt, 328 permits were made available and hunters reported harvesting 15 caribou (14 bulls and 1 cow) as of Aug 12. Permits issued for the fall hunt (Aug 1-Sep 30) are also valid for the winter hunt (Dec 1–Mar 31). Additional permits will be available in November for the winter hunt. A composition survey is planned to occur in October.

Moose Contact: Andy Aderman
During the January 1-February 28, 2015 winter hunt in Unit 17A, 17 moose (12 cows, 4 bulls, and 1 unknown sex) were reported harvested (Neil Barten, ADF&G, personal communication). A teleconference was held in June to discuss how Togiak Refuge and others might incorporate changes to moose survey protocols during winters with low, incomplete, or no snow cover. Participants included staff from the Alaska Department of Fish, U. S. Fish and Wildlife Service, Bureau of Land Management, and University of Alaska-Fairbanks. In October, we plan to deploy radiocollars on 20 bulls spread out over the refuge. These collared bulls, along with previously collared cows, will be used in developing sightability correction factors during moose population surveys. Population surveys in the Unit 18 portions of Togiak Refuge are planned for October 2015 and for the Unit 17 portions in February-March 2016.

The relationships of wolf and brown bear predation with moose population density and growth at Togiak National Wildlife Refuge and BLM Goodnews Block, Alaska Contact: Pat Walsh
In summer 2014, Togiak Refuge, the USFWS Conservation Genetics Lab, ADF&G, and BLM initiated a study to understand the effects of wolf and brown bear predation in regulating the population dynamics of moose on Togiak Refuge, BLM Goodnews Block, and adjacent areas. The study relies on radio telemetry and stable isotope analysis. Our approach will be to relate the predation impact by wolves and bears on moose at varying levels of moose population density. We will use existing population estimates for brown bears, and through the use of radio telemetry, we will estimate the number and composition of wolf packs on the Refuge. We will model wolf and bear predation on moose based on the quantity of wolves and bears and diet composition of both species determined through analysis of carbon and nitrogen stable isotopes occurring in bear and wolf hair. Hair will be collected from wolves when captured during radio collaring operations, and will be collected from brown bears using break-away hair snares. We

captured and radioed four wolves from two packs in March 2015. During July-August 2014, we deployed approximately 200 snares, and collected approximately 100 hair samples. A similar hair snare effort is ongoing for 2015.

Walrus Contact: Pat Walsh
The Togiak Refuge has annually monitored the number of Pacific walruses at haul-outs since 1985, using ground counts (1985-2008), aerial surveys (2003-2011) and time lapse photography (2010-2015). The objectives of the surveys are to monitor the number and timing of haul-outs and to estimate the peak haul-out at Cape Peirce, Hagemeister Island and Cape Newenham. The use of Reconyx remote cameras has improved the understanding of haul-out timing, capturing an image every hour during the day, throughout the year. Using these survey methods, the number of walrus hauling out at Cape Peirce has declined from 1985 through 2011, while no significant trend was detected at Hagemeister Island from 2005 through 2011. Walrus using haul-outs in Bristol Bay are typically recorded from late spring to late fall but have been observed at Cape Newenham every month since cameras were deployed in fall of 2014.

Seabirds Contact: Pat Walsh
The abundance and reproductive success of black-legged kittiwakes, common murres, and pelagic cormorants was monitored annually at Cape Peirce from 1990-2014, and intermittently at Cape Newenham from 1990-2009. During this period, the estimated number of kittiwakes and murres at Cape Peirce decreased, while the number of pelagic cormorants remained relatively constant. From 1991-2009, the number of kittiwakes counted at Cape Newenham averaged 2,132 birds (range 1,676-2,424), the mean number of murres was 5,815 (range 4,964-6,790), and the mean number of cormorants was 15 birds (range = 5-30). The long-term productivity of kittiwakes, murres, and cormorants at Cape Peirce averaged 24%, 42%, and 53% respectively between 1990 and 2014. No seabird monitoring was conducted in 2015.

Water Temperature Monitoring Contact: Pat Walsh
Stream temperature was monitored at 18 sites on 14 rivers in Togiak Refuge between 2001 and 2015. Temperature was recorded on an hourly basis using Onset TidbiT dataloggers and the data were successfully recovered from the field ~75% of the time. Over 1.8 million hourly temperature records have been collected, quality-graded, and entered into a relational database. Maximum daily mean temperature readings varied from 11.5—19.6° C between sites, with the Kukaktlim Lake outlet site being the warmest and the Weary River the coldest.

Quantifying River Discharge Contact: Mark Lisac
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 gages 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 gage is instrumented with pressure sensors that measure water level every 15 minutes. Discharge measurements are made in the field 3 to 6 times a year. In 2014 satellite transmitters were added to the stream gages that allow remote monitoring of the equipment.

Education and Outreach Contact: Terry Fuller
Togiak Refuge has an active education and outreach program including the Migratory Bird Calendar; National Wildlife Refuge Week; career fairs; production of Bristol Bay Field Notes (a new episode airs several times a week on KDLG); and numerous teacher requested classroom presentations in 12 villages in the Southwest Region, Lower Kuskokwim, Dillingham City school districts and the Dillingham 7th Day Adventist School. Field trips with area students for the 2013-2014 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. Togiak Refuge has a very active Facebook page which disseminates information on a daily basis to a rapidly growing global audience. Also, the refuge partners with others to conduct three environmental education camps described below:

Cape Peirce Marine Science and Yup'ik Culture Camp Contact: Terry Fuller
July 2015 saw an enthusiastic group of eight area junior high students representing three villages travel to Cape Peirce for this camp. 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 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, archery, bear safety, Leave No Trace camping practices and careers with USFWS. Traditional councils and school districts from throughout western Bristol Bay are cooperators with this camp.

Southwest Alaska Science Academy Contact: Terry Fuller
This past July (2015), Togiak Refuge helped with the 14th 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. This year Togiak Staff were able to share with camp students about the following: identifying the different species of Pacific salmon at various stages in their development, the salmon life cycle, jobs associated with the fishing industry, salmon in art (fish taxidermy) and archery.

Summer Outdoor Skills and River Ecology Float Camp Contact: Terry Fuller
The 2015 Float Camp took place on the Pungokepuk River. At this camp, students learned about river ecosystems and how to enjoy them safely and responsibly while taking part in a float trip conducted on a refuge river. Students observed and learned about the many fish, wildlife and plant species found on the Pungokepuk. Rafting skills, water safety, different angling practices (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 animal tracking (plaster casting tracks, with several nice bear tracks cast) and wilderness survival skills. This camp helps 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 weir 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. Quinhagak Resident Charlie Roberts was hired for summer 2015 to work as a River Ranger on the Kanektok River with Refuge Information Technician (RIT) John Mark. Togiak Resident Keemuel Kenrud was hired as well (last year he worked with the refuge as an intern through the Bristol Bay Economic Development Corporation) and was assigned to the Togiak River to work with RIT Pete Abraham.

Staff Changes
In March, Pilot/Law Enforcement Officer Jeff Hicks was hired. In July, Wildlife Biologist Michael Swaim accepted a promotion with the Migratory Bird Management office in Anchorage. During 2015, Togiak Refuge hosted Directorate Fellow Chelsea Collins, Career Discovery Interns Perry Miller and Mirsaides Raber-Dunning, and Bristol Bay Economic Development Corporation Interns Cody Miller, Hayden Johansen, and Connor Ito. In addition, two Pathways students, Jennifer Gregory and Dustin Carl, assisted with the biological program. Their project work on Togiak NWR will provide each of them research that they can use toward obtaining Master of Science degrees, and we expect both of them to return next summer. Long-time Service volunteer Jim Robbins helped for a month at Togiak, in June and July assisting with the maintenance program.

Alaska Department of Fish and Game
Bethel Area Office
P.O. Box 1467 / Bethel, AK 99559
Telephone 907-543-2433 / Fax 907-543-2021

Department of Interior/U.S. Fish and Wildlife Service
Yukon Delta National Wildlife Refuge
P.O. Box 346 / Bethel, AK 99559
Telephone 907-543-3151 / Fax 907 543-4413

Lower Kuskokwim Moose

Two surveys within the Lower Kuskokwim Hunt area were completed in March 2015: One survey was completed along the main stem of the Kuskokwim River and the other along the Kuskokwim tributaries. Both surveys indicated an increase in the moose population and therefore an increase in hunting opportunities.

Poor snow conditions made observing moose difficult. However, the survey data is being utilized to adjust the moose quotas.

In cooperation with the Alaska Department of Fish and Game (ADF&G), the Yukon Delta National Wildlife Refuge (YDNWR) conducted a moose survey within the Lower Kuskokwim River Survey Unit. The survey area for 2015 was expanded as the moose expanded down the Kuskokwim River. Our GeoSpatial survey estimate was 1,378 (95% CI = ±12%) moose for a density of 1.11 moose/mi^2. Since 2011, the estimated moose population has more than doubled (105% increase) (Table 1). However the survey in 2011 was in a smaller area.

Table 1. Lower Kuskokwim moose population estimates.

Year	Area (mi^2)	Estimate and 95% CI	Density (mi^2)	Census Technique
1993	648	216 ± 44.6%	0.33	Gassaway method
2000	907	86 ± 26.4%	0.09	Spatial method
2002	907	117 ± 18.3%	0.13	Spatial method
2002	869	94 ± 23.0%	0.11	Spatial method
2004	849.8	70 ± 32.4%	0.08	Spatial method
2008	869.3	516 ± 17.55%	0.59	Spatial method
	869.3	668 ± 34.1%	0.77	Spatial method w/ SCF
2011	869.3	672 ± 21.3%	0.77	Spatial method
2015	1241.4	1378 ± 12.0%	1.11	Spatial method

The YDNWR conducted a moose survey within the Kuskokwim Mountain drainages, which is mainly on Federal public lands. Our Distance sampling estimate was 508 (95% CI = 350-738) moose for a density

of 1.80 moose/mi^2. Since 2010, the estimated moose population has increased by 44% for the Kuskokwim tributaries (Table 2).

Table 2. Kuskokwim tributaries moose population estimates.

Year	Area (mi^2)	Estimate and 95% CI	Density (mi^2)	Census Technique
2010	281.8	352 (237-540)	1.25	Distance
2015	281.8	508 (350-738)	1.80	Distance

During the population estimate on the main river, data was also collected on the number of calves and adults. The calf to adult ratio was 43 calves to 100 adults. Twinning Surveys in the main stem of the Kuskokwim have also been conducted in the past several years. In May of 2015, thirty cow moose were observed with calves and 12 had twins with them for an observed twinning rate of 40%. The high twinning rates and calf to adult ratio indicate a population that is continuing to grow.

Taking both the 2015 population surveys that indicated a population increase and the other information that indicates high productivity into account, ADF&G and YDNWR increased the quotas to 110 for State-managed lands and 45 for Federal public lands. An ADF&G registration harvest permit (RM615) is still required for hunting within the Unit 18 Lower Kuskokwim area for both Federal and State-managed lands. There is a 72-hour reporting requirement for successful hunters instead of a 24-hour reporting requirement as in the past. This should allow more time for hunters to travel back from the field to report their harvest. Unsuccessful hunters have to report by September 25.

After consultation with the affected tribes on August 11, 2015 within the Lower Kuskokwim hunt area, the YDNWR received support on managing the moose hunt on Federal public lands to have a fixed September 1-8 season in order to reach the quota of 45 bull moose for 2015. The staff at YDNWR believe that a September 1-8 fixed season will allow hunters to reach the quota and to better plan their hunts. In the past years, the season closure was announced 24-hours in advance depending on the anticipation of the quota being met. The YDNWR believed that this caused difficulty for hunters to plan their hunts, particularly for those that wanted to travel long distances to Federal public lands, where communication and determining a season closure can be difficult.

On State-managed lands, the season closure continues to be announced 24-hours in advance when the quota is anticipated to be met. In 2014, the 100 moose quota was exceeded by about 24 moose in 4 days. Its anticipate that the state managed lands will be closed by Emergency order in 4 or 5 days in anticipation of reaching the 110 bull quota.

Office of Subsistence Management

Fall 2015 Regional Advisory Council Report

Staffing Update

Robbin La Vine joined the Office of Subsistence Management (OSM) in October 2014. She is an anthropologist with extensive experience conducting subsistence research and building collaborative partnerships with Alaska Tribal, State, and Federal entities since 2002. Before joining OSM, she worked as a researcher for the Togiak National Wildlife Refuge, served as Social Scientist for the Bristol Bay Native Association Partners Program in Dillingham, and was a Subsistence Resource Specialist for the Alaska Department of Fish and Game, Division of Subsistence. Robbin is delighted to serve rural Alaskans while strengthening partnerships to ensure the continuation of the subsistence way of life.

Amee Howard joined OSM as the new Subsistence Policy Coordinator in July 2015. Prior to OSM, she worked as an Environmental Protection Specialist for the Pacific West Region of the National Park Service in Boulder City, Nevada. Previously, she worked for the Alaska Department of Fish and Game, Division of Commercial Fisheries, as a Fish and Game Program Technician in Sitka. Amee also spent time working as the Coastal Monitoring Coordinator for the Sitka Tribe of Alaska. She earned her Bachelors of Science in Natural Sciences, with minors in Environmental Studies and Geology, from the University of Alaska, Anchorage. Amee possesses a well-rounded background gained from previous work experience and is a valuable addition to the OSM team.

Efforts are currently underway to hire the following positions: Council Coordinator, Anthropologist, Anthropologist (Pathways), Fisheries Biometrician, Fisheries Biologist (2), Fisheries (Pathways) Grants Management Specialist, IT Specialist, and Administrative Assistant.

The North Pacific Fishery Management Council adopts measures to reduce Chinook Salmon bycatch in the Bering Sea Pollock fishery

At its April 2015 meeting in Anchorage, the North Pacific Fishery Management Council (NPFMC) took action to reduce bycatch of both Chinook and Chum Salmon in the Bering Sea commercial Pollock fishery. Recognizing the precarious state of Western Alaska's Chinook Salmon stocks, the NPFMC took a combination of actions which lower the caps in times of low abundance, combine Chinook and Chum Salmon bycatch management, place additional requirements on industry incentive plans and reapportion the Pollock catch between seasons. Taken together, these actions are anticipated to reduce bycatch of both Chinook and Chum Salmon, and ensure that additional measures, including lower caps, are in place in years of low Chinook Salmon abundance.

Much of the attention from stakeholders from both Western Alaska and the Pollock fishery focused on the option of lowering the Chinook Salmon bycatch hard cap and the performance standard, currently 60,000 and 47,591 fish, respectively. Western Alaskan stakeholders asked for a 60% reduction in both the hard cap and performance standard during testimony at the meeting and in several hundred letters and resolutions submitted prior to the meeting. The

Pollock industry advocated that no reductions be enacted. The State of Alaska led the effort to provide protections for Western Alaska Salmon stocks. Newly-appointed Alaska Department of Fish and Game Commissioner Sam Cotten introduced a motion calling for a 35% reduction in the performance standard and a 33% reduction in the hard cap. Commissioner Cotten's motion was amended by the Bill Tweit, NPFMC representative from Washington State, to a 25% reduction in the hard cap and a 30% reduction in the performance standard. This lesser reduction was passed by the NPFMC unanimously (10-0).

The results of the NPFMC action are as follows: In years of low Chinook Salmon abundance (defined as years in which the cumulative total Chinook Salmon runs of the Kuskokwim, Upper Yukon and Unalakleet Rivers is at or below 250,000 fish), the hard cap will be 45,000 and the performance standard will be 33,318 Chinook Salmon. The Pollock fishery manages to the performance standard, so the reduction in this number is important. The Council also made it very clear that they expect bycatch to remain well below the caps, and would take additional action if warranted. It should be noted that, in recent years, bycatch has averaged around 15,000 Chinook Salmon.

In addition to the reductions in the cap levels, the NPFMC's action contains several other, important measures. The other pieces of the motion apply in all years – not just when Salmon abundance is low. Alternative 2 combines Chinook and Chum Salmon bycatch management programs, ensuring a coordinated approach. It also requires information sharing with Western Alaska groups. Alternative 3 adds five new requirements for the industry Incentive Plan Agreements (IPA) to meet, including requiring Salmon excluders, restrictions on bycatch rates in October (a time of historically high bycatch) and significant penalties (no fishing) for boats with repeatedly bad bycatch performance. The options the Council selected under Alternative 4 provide the Pollock fishery with the flexibility to catch more of its harvest in the late A season, potentially shifting harvest effort away from the high bycatch times later in the year.

In summary, the NPFMC's action puts in place measures to further reduce bycatch in all times of abundance, and to ensure that in periods of low Chinook Salmon abundance the Pollock fishery would be limited to a lower level of bycatch.

Bridging the Gap between Native Communities, Conservation, and Natural Resource Management: Grant Update

The U.S. Fish and Wildlife Service and the Alaska Native Science and Engineering Program (ANSEP) were awarded a National Fish and Wildlife Foundation grant to help re-establish a lost connection between Federal resource managers and rural communities in the Yukon-Kuskokwim and Doyon Regions. Members of these communities rely on subsistence resources within six National Wildlife Refuges for both cultural and nutritional needs. Continued resource declines in both the Yukon and Kuskokwim River drainages have led to immense hardships for local residents as well as numerous challenges for resource managers to provide sufficient subsistence harvest opportunities, while ensuring adequate conservation efforts.

Funds from this grant are used to increase outreach opportunities and foster collaborative solutions by expanding the Refuge Information Technician (RIT) Program. Outreach and education contribute significantly to the overall success of resource management. Language barriers and cultural obstacles often stand in the way of achieving effective communication. The RIT program employs Alaska Native residents to serve as liaisons between the Yukon Delta National Wildlife Refuge and local communities. The RITs' regional experience, traditional ecological knowledge, Yup'ik language skills, and cultural sensitivity enhance their role as intermediaries. Expanding the capabilities of the RIT program will significantly increase and improve important connections between the Yukon Delta National Wildlife Refuge and local communities. These relationships are fundamental for local residents to become more involved in the management and conservation of the resources on which they depend.

Funds from this grant are also supporting ANSEP students participating in biological internships within the Yukon-Kuskokwim and Doyon Regions. ANSEP strives to increase the number of Alaska Natives employed in the fields of science, technology, engineering and mathematics (STEM) by increasing the number of individuals on a career path to leadership in STEM fields. The U.S. Fish and Wildlife Service is partnering with ANSEP to provide meaningful summer internships that expose students to careers in resources management. These internships provide an opportunity for students to experience resource monitoring and management while developing knowledge and skills allowing them to succeed in professional resource management positions.

Changes to Appointment Process

The Office of Subsistence Management has submitted requests to the Secretary of the Interior to make the following changes to the appointment process: shift from 3-year to 4-year appointment terms, allow for appointment of alternates, and provide for a 120-day carryover term for incumbents in the event that appointment letters are not timely issued. Dan Ashe, Director, U.S. Fish and Wildlife Service, has provided his support of these changes. As of the writing of this report, OSM is waiting to hear back from the Secretary's office to initiate the direct final rule making that would be necessary to change the appointment terms to 4 years. The new Senior Advisor for Alaska Affairs, Michael Johnson, will be assisting in moving this through the Secretary's office. OSM is moving ahead with plans to implement all changes for the current appointment cycle.

In order to switch from 3-year to 4-year appointment terms, as well as switch from having one-third of Council seats up for appointment each year to one-fourth of the seats being up for appointment, appointment terms will be staggered in order to complete the transition by the 2019 appointment cycle. This means that some Council members, even incumbents, may receive 2, 3 or 4-year appointments in the next few years. By 2019, however, all Council appointments will be for 4-year terms. If you have any questions, contact Carl Johnson, Council Coordination Division Chief, at (907) 786-3676 or carl_johnson@fws.gov.

All-Council Meeting

Anchorage, Alaska – Location TBD
March 7-11, 2016

Meeting Committee: RAC Chairs, Council Coordinators, Orville Lind (Native Liaison), Deborah Coble (Subsistence Outreach Specialist)

Joint Session

Monday, March 7, 2015
Invocation
Keynote Speaker:

Joint Agenda Items: Common issues from annual reports (i.e., bycatch, budget, other agency actions that impact subsistence, food security, climate change)

Concurrent Sessions

One full day for each of the Councils to address their regional issues

Tuesday – three Councils
Wednesday – three Councils
Thursday – three Councils
Friday – one Council

Training

Sessions repeat throughout the week to allow all Council members opportunity to attend.

- Title VIII of ANILCA
- Robert's Rules of Order
- Federal Indian Law (with ANCSA implications)
- Cross-Cultural communication
- C&T versus 804
- Regulatory Process (State and Federal)

Reports and Panels

- Western Arctic Caribou Herd
- Yukon River salmon
- Kuskokwim River salmon
- Public Processes for Fish & Wildlife Management (RAC, SRC, AC, AMBCC)
- Holistic management – discussion and explanation of how agencies manage resources (BLM, USFWS, NPS, USFS)
- Tribal Consultation
- Different Federal Subsistence Programs (Migratory Birds, Marine Mammals, Halibut)
- Understanding Dual Management

Important to note: this one meeting will encompass the entire meeting cycle for winter 2016

JOINT FEDERAL SUBSISTENCE REGIONAL ADVISORY COUNCILS

Venue TBD
Anchorage, Alaska
March 7, 2016
8:30 a.m.

TELECONFERENCE: call the toll free number: 1-866-[number], then when prompted enter the passcode: [number]

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

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

AGENDA

*Asterisk identifies action item.

1. Invocation

2. Keynote Address

3. Roll Call and Establish Quorum *(Council Coordination Division Chief)*.....

4. Call to Order *(Chair)*

5. Welcome and Introductions (*Chair*)

6. Review and Adopt Agenda* (*Chair)* .....

7. Regional Reports

8. Business *(Chair)*

a. Climate Change .....

b. Food Security .....

c. Federal Subsistence Budget.....

d. Revisions to FRMP .....

e. Hunter Education.....

f. Youth Engagement.....

9. Agency Reports

a. **NPFMC** – Pollock Bycatch Update.....

b. Status on Magnuson-Stevens Act Renewal.....

c. Fisheries Management Overview .....

d. **OSM** – Processes .....

Closing Comments

10. Adjourn (*Chair*)

To teleconference into the meeting, call the toll free number: 1-866-[number], then when prompted enter the passcode: [number]

Reasonable Accommodations
The Federal Subsistence Board is committed to providing access to this meeting for all participants. Please direct all requests for sign language interpreting services, closed captioning, or other accommodation needs to [name], 907-786-XXXX, [email], or 800-877-8339 (TTY), by close of business on [date].

DRAFT

All-Council Meeting Schedule

	Monday 3/7	Tuesday 3/8	Wednesday 3/9	Thursday 3/10	Friday 3/11
Main Room	All day Joint Session of the Councils	Morning Training: Title VIII of ANILCA Afternoon Training: Cross-cultural communication	Morning Training: Regulatory Process Afternoon: Training: Federal Indian Law	Morning Report: Yukon River Salmon Afternoon Panel: Tribal Consultation	Morning Training: Robert's Rules of Order Afternoon Panel: Understanding Dual Management
Small Room 1		All day RAC 1 – Concurrent Session YKDRAC	All day RAC 4 – Concurrent Session EIRAC	All day RAC 7 – Concurrent Session SERAC	All day RAC 10 – Concurrent Session KARAC
Small Room 2		All day RAC 2 – Concurrent Session WIRAC	All day RAC 5 – Concurrent Session SCRAC	All day RAC 8 – Concurrent Session BBRAC	Morning Afternoon Panel: Tribal Consultation
Small Room 3		All day RAC 3 – Concurrent Session SPRAC	All day RAC 6 – Concurrent Session NWARAC	All day RAC 9 – Concurrent Session NSRAC	All day SERAC Day 2 (if needed)
Small Room 4		Morning Training: Robert's Rules of Order Afternoon Panel: Public Processes for Fish & Wildlife Management	Morning Training: C&T versus Section 804 Afternoon Training: Cross-Cultural Communication	Morning Panel: Understanding Dual Management Afternoon Training: C&T versus Section 804	Morning Training: C&T versus Section 804 Afternoon Panel: Public Processes for Fish & Wildlife Management
Small Room 5		Morning Afternoon Panel: Holistic management	Morning Training: Title VIII of ANILCA Afternoon Panel: Public Processes for Fish & Wildlife Management	Morning Training: Cross-Cultural Communication Afternoon Panel: Holistic management	Morning Report: WACH Afternoon Training: Title VIII of ANILCA
Small Room 6		Morning Training: Regulatory Process Afternoon Panel: Different Federal Subsistence Programs	Morning Training: Robert's Rules of Order Afternoon Panel: Different Federal Subsistence Programs	Morning Training: Federal Indian Law Afternoon Report: Kuskokwim Salmon	Morning Training: Regulatory Process Afternoon

TRAINING	PANELS	REPORTS (ONCE EACH)
Title VIII of ANILCA (x3) *Provide an overview of Title VIII and key provisions that govern Federal subsistence management.*	**Public Process for Fish & Wildlife Management (AC, RAC, SRC, AMBCC)** (x3) *Panel consisting of one member of an AC, RAC, SRC and AMBCC to explain how each of their processes work and how public can participate.*	**Western Arctic Caribou Herd** *Report from State and Federal managers on status of herd and current management objectives and approaches.*
Cross-Cultural Communication (x3) *Training to help State and Federal staff improve communication with Alaska Natives.*	**Holistic Management** (x2) *Conceptual panel to discuss how fish and wildlife among various agencies can be managed in a more holistic way.*	**Yukon Salmon** *Report from State and Federal managers on status of salmon stocks and current management objectives and approaches.*
Robert's Rules of Order (x3) *Training to benefit RAC members in the conduct of their meetings under Robert's Rules.*	**Tribal Consultation** (x2) *Panel consisting of Native Liaisons from R7 and OSM and Tribal leaders to discuss current consultation process and how it should work. Emphasis on what consultation means from Tribal perspective.*	**Kuskokwim Salmon** *Report from State and Federal managers on status of salmon stocks and current management objectives and approaches.*
Regulatory Process (x3) *Explain the regulatory process under both State and Federal systems and provide information on how to submit proposals.*	**Different Federal Subsistence Programs (Halibut, Marine Mammals, Mig Birds, OSM)** (x2) *Panel consisting of representatives from the various Federal programs that regulate certain subsistence activities to discuss their jurisdiction, legal authority, and approach to management.*	
Federal Indian Law (x2) *Basic principles of Federal Indian law including how it is affected by the Alaska Native Claims Settlement Act and related case law in State and Federal courts.*	**Understanding Dual Management** (x2) *State and Federal managers explain their jurisdictional role in managing fish and wildlife resources, how the two sometimes work together and sometimes separately.*	
C&T versus Section 804 (x3) *Provide instruction on how C&T determinations and Section 804 determinations are made, how applied, where they differ.*		

Winter 2016 Regional Advisory Council Meeting Calendar

March 2016 current as of 3/24/2015

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Feb. 7	*Feb. 8* *Window Opens*	*Feb. 9*	*Feb. 10*	*Feb. 11*	*Feb. 12*	*Feb. 13*
Feb. 14	*Feb. 15* ***PRESIDENT'S DAY*** ***HOLIDAY***	*Feb. 16*	*Feb. 17*	*Feb. 18*	*Feb. 19*	*Feb. 20*
Feb. 21	*Feb. 22*	*Feb. 23*	*Feb. 24*	*Feb. 25*	*Feb. 26*	*Feb. 27*
Feb. 28	*Feb. 29*	*Mar. 1*	*Mar. 2*	*Mar. 3*	*Mar. 4*	*Mar. 5*
Mar. 6	*Mar. 7*	*Mar. 8*	*Mar. 9*	*Mar. 10*	*Mar. 11*	*Mar. 12*
	All Council Meeting - Anchorage					
Mar. 13	*Mar. 14*	*Mar. 15*	*Mar. 16*	*Mar. 17*	*Mar. 18* *Window Closes*	*Mar. 20*

Fall 2016 Regional Advisory Council Meeting Calendar

August–November 2016

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 21	*Aug. 22* **WINDOW OPENS**	*Aug. 23*	*Aug. 24*	*Aug. 25*	*Aug. 26*	*Aug. 27*
Aug. 28	*Aug. 29*	*Aug. 30*	*Aug. 31*	*Sept. 1*	*Sept. 2*	*Sept. 3*
Sept. 4	*Sept. 5* **HOLIDAY**	*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*	*Oct. 1*
Oct.2	*Oct. 3*	*Oct. 4*	*Oct. 5*	*Oct. 6*	*Oct. 7*	*Oct. 8*
Oct. 9	*Oct. 10*	*Oct. 11*	*Oct. 12*	*Oct. 13*	*Oct. 14*	*Oct. 15*
Oct. 16	*Oct. 17*	*Oct. 18*	*Oct. 19*	*Oct. 20*	*Oct. 21*	*Oct. 22*
Oct. 23	*Oct. 24*	*Oct. 25*	*Oct. 26*	*Oct. 27*	*Oct. 28*	*Oct. 29*
Oct. 30	*Oct. 31*	*Nov. 1*	*Nov. 2*	*Nov. 3*	*Nov. 4* **WINDOW CLOSES**	*Nov. 5*

Department of the Interior
U. S. Fish and Wildlife Service

Yukon-Kuskokwim Delta Subsistence Regional Advisory Council

Charter

1. **Committee's Official Designation.** The Council's official designation is the Yukon-Kuskokwim Delta Subsistence Regional Advisory (Council).

2. **Authority.** The Council is reestablished by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (16 U.S.C. 3115 (1988)) Title VIII, and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is established in accordance with the provisions of the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. Appendix 2.

3. **Objectives and Scope of Activities**. The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.

4. **Description of Duties.** The Council possesses the authority to perform the following duties:

    a. Recommend the initiation of, review, and evaluate proposals for regulations, policies, management plans, and other matters relating to subsistence uses of fish and wildlife on public lands within the Region.

    b. Provide a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife on public lands within the Region.

    c. Encourage local and regional participation in the decisionmaking process affecting the taking of fish and wildlife on the public lands within the Region for subsistence uses.

    d. Prepare an annual report to the Secretary containing the following:

        (1) An identification of current and anticipated subsistence uses of fish and wildlife populations within the Region.

        (2) An evaluation of current and anticipated subsistence needs for fish and wildlife populations within the Region.

        (3) A recommended strategy for the management of fish and wildlife populations within the Region to accommodate such subsistence uses and needs.

(4) Recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

e. Make recommendations on determinations of customary and traditional use of subsistence resources.

f. Make recommendations on determinations of rural status.

g. Provide recommendations on the establishment and membership of Federal local advisory committees.

5. **Agency or Official to Whom the Council Reports.** The Council reports to the Federal Subsistence Board Chair, who is appointed by the Secretary of the Interior with the concurrence of the Secretary of Agriculture.

6. **Support.** The U.S. Fish and Wildlife Service will provide administrative support for the activities of the Council through the Office of Subsistence Management.

7. **Estimated Annual Operating Costs and Staff Years.** The annual operating costs associated with supporting the Council's functions are estimated to be $160,000, including all direct and indirect expenses and 1.15 staff years.

8. **Designated Federal Officer.** The DFO is the Subsistence Council Coordinator for the Region or such other Federal employee as may be designated by the Assistant Regional Director – Subsistence, Region 7, U.S. Fish and Wildlife Service. The DFO is a full-time Federal employee appointed in accordance with Agency procedures. The DFO will:

- Approve or call all of the advisory committee's and subcommittees' meetings,
- Prepare and approve all meeting agendas,
- Attend all committee and subcommittee meetings,
- Adjourn any meeting when the DFO determines adjournment to be in the public interest, and
- Chair meetings when directed to do so by the official to whom the advisory committee reports.

9. **Estimated Number and Frequency of Meetings.** The Council will meet 1-2 times per year, and at such times as designated by the Federal Subsistence Board Chair or the DFO.

10. **Duration.** Continuing.

11. **Termination.** The Council will terminate 2 years from the date the Charter is filed, unless, prior to that date, it is renewed in accordance with the provisions of Section 14 of the FACA. The Council will not meet or take any action without a valid current charter.

12. **Membership and Designation.** The Council's membership is composed of representative members as follows:

Thirteen members who are knowledgeable and experienced in matters relating to subsistence uses of fish and wildlife and who are residents of the Region represented by the Council. To ensure that each Council represents a diversity of interests, the Board in their nomination recommendations to the Secretary will strive to ensure that nine of the members (70 percent) represent subsistence interests within the Region and four of the members (30 percent) represent commercial and sport interests within the Region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

Members will be appointed for 3-year terms. A vacancy on the Council will be filled in the same manner in which the original appointment was made. Members serve at the discretion of the Secretary.

Council members will elect a Chair, a Vice-Chair, and a Secretary for a 1-year term.

Members of the Council will serve without compensation. However, while away from their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under Section 5703 of Title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any specific party matter in which the member has a direct financial interest in a lease, license, permit, contract, claim, agreement, or related litigation with the Department.

14. **Subcommittees.** Subject to the DFO's approval, subcommittees may be formed for the purpose of compiling information and conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full Council for consideration. Subcommittees must not provide advice or work products directly to the Agency. The Council Chair, with the approval of the DFO, will appoint subcommittee members. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.

15. **Recordkeeping.** Records of the Council, and formally and informally established subcommittees or other subgroups of the Council, shall be handled in accordance with General Records Schedule 26, Item 2, and other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

Sally Jewell

Secretary of the Interior

NOV 2 5 2013

Date Signed

DEC 0 3 2013

Date Filed

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