WESTERN INTERIOR ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Meeting Materials

October 10 - 11, 2017
Fairbanks

What's Inside

On the cover...

Caribou in the Gates of the Arctic National Park and Preserve

NPS photo by Zak Richter

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WESTERN INTERIOR ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Pike's Waterfront Lodge
Fairbanks

October 10-11, 2017
9:00 a.m. to 5:00 p.m. daily

TELECONFERENCE: call the toll free number: **1-877-638-8165**, then when prompted enter the passcode: **9060609**.

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

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

AGENDA

*Asterisk identifies action item.

1. **Invocation**
2. **Call to Order** (*Chair*)
3. **Roll Call and Establish Quorum** (*Secretary*).....4
4. **Welcome and Introductions** (*Chair*)
5. **Review and Adopt Agenda*** (*Chair*) 1
6. **Review and Approve Previous Meeting Minutes*** (*Chair*) 5
7. **Reports**
   - Council Member Reports
   - Chair's Report
8. **Service Awards**
9. **Public and Tribal Comment on Non-Agenda Items** (available each morning)
10. **Old Business** (*Chair*)
    a. Caribou Working Group (*DFO*)
    b. Kuskokwim Partnership Project – Status Update
11. **New Business** (*Chair*)
    a. Wildlife Proposals* (*OSM Wildlife/Anthropology*) ..... Supplemental

Regional Proposals

WP18-32: Modify season dates to align with State for caribou in Units 21D, 22, 23, 24, 25A (west), 26A, and 26B

WP18-33/36: Shorten season date to align with State and requite State registration permit for moose in Unit 21E

WP18-34: Extend trapping season by one month for lynx in Unit 24

WP18-35: Align hunt boundaries and season with State, and remove Federal permit requirement for moose in Unit 24B

Crossover Proposals

WP18-21: Change harvest limit to 2 caribou throughout the Mulchatna caribou herd's range and consolidate hunt areas for caribou in Units 9A, 9B, 9C in the Alagnak drainage, 17A drainages west of Right Hand Point, 17B, 17C east of Wood River, 19A, and 19B

WP18-22: Rescind Federal lands closure for caribou on the Nushagak Peninsula in Units 17A, 17C, Nushagak Peninsula

WP18-28: Addition of winter may-be-announced season for moose in Unit 18, Goodnews

WP18-43: Increase harvest limit and make season year-round for brown bear in Unit 23.

WP18-44: Allow sale of skulls/hides and or skulls for brown bear in Unit 23

WP18-45: Decrease harvest limit from 5 to 3 caribou per day in Unit 23

WP18-46/47: Close hunt to non-Federally qualified users for caribou in Unit 23

WP18-48/49: Establish registration permit hunt for caribou in Units 22, 23, and 26A

WP18-57: Close the caribou hunt to non-Federally qualified users in Units 25A and 26B

Statewide Proposals

WP18-51: Align bear baiting restrictions with State regulations

b. 2018 Fisheries Resource Monitoring Program (*OSM Fisheries/Anthropology*) 17

c. Identify Issues for FY2017 Annual Report* (*DFO*) 87

d. Revised Delegation of Authority Letter for Kuskokwim In-Season Manager (*Frank Harris*) 101

12. Agency Reports

(Time limit of 15 minutes unless approved in advance)

Tribal Governments

Native Organizations

Yukon River Drainage Fisheries Association (*Wayne Jenkins*)

Pew Charitable Trusts (*Suzanne Little*)

U.S. Fish and Wildlife Service

a. Kanuti, Arctic, and Yukon Flats National Wildlife Refuges (*Vince Matthews*)

b. Koyukuk, Nowitna, and Innoko National Wildlife Refuges (*Jeremy Havener*)

c. Yukon Salmon Season Overview (*Gerald Maschmann and Fred Bue*)

Alaska Department of Fish and Game

a. Yukon Summer Season Summary

b. Salmon Plan Update

Bureau of Land Management

a. Central Yukon Field Office (*Tim LaMarr*)

National Park Service

a. Gates of the Arctic National Park and Preserve Subsistence Update (*Marcy Okada*)

b. Subsistence Study on Ambler Access Project (*Anette Watson*)

North Pacific Fishery Management Council

a. Report on Bering Sea Fishery bycatch

Office of Subsistence Management

a. Special Actions

13. Future Meeting Dates*

Confirm Winter 2018 meeting date and location 106

Select Fall 2018 meeting date and location 107

14. Closing Comments

15. Adjourn (*Chair*)

To teleconference into the meeting, call the toll free number: 1-877-638-8165, then when prompted enter the passcode: 9060609.

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 Zach Stevenson, 907-786-3674, zachary_stevenson@fws.gov, or 800-877-8339 (TTY), by close of business on September 22, 2017.

REGION 6
Western Interior Subsistence Regional Advisory Council

Seat	Year Appointed *Term Expires*	Member Name and Community	
1	2016 ***2019***	**Shirley J. Clark** Grayling	
2	2004 ***2019***	**Donald V. Honea Jr.** Ruby	
3	1993 ***2019***	**Pollock Simon Sr.** Allakaket	
4	1993 ***2017***	**Raymond L. Collins** McGrath	**Vice-Chair**
5	1993 ***2017***	**Jack L. Reakoff** Wiseman	**Chair**
6	2014 ***2017***	**Darrel M. Vent, Sr.** Huslia	
7	2008 ***2017***	**Timothy P. Gervais** Ruby	
8	2015 ***2018***	**Dennis R. Thomas, Sr.** Crooked Creek	
9	2006 ***2018***	**Jenny K. Pelkola** Galena	**Secretary**
10	2015 ***2018***	**Fred W. Alexie** Kaltag	

WESTERN INTERIOR ALASKA SUBSISTENCE REGIONAL ADVISORY COUNCIL

Meeting Minutes

February 21-22, 2017
Westmark Fairbanks Hotel and Conference Center, Fairbanks

Call to Order

The winter meeting of the Western Interior Alaska Subsistence Regional Advisory Council was called to order on 21 February 2017 at 0900 AKST.

Roll Call

A roll call was conducted, with the following members present: Jack Reakoff, Fred Alexie, Shirley Clark, Raymond Collins, Timothy Gervais, Don Honea (telephonic), Jenny Pelkola, Pollock Simon, Sr., Dennis Thomas, Sr., and Darrel Vent, Sr.

Additional Participants

Additional participants attended some portion of the Western Interior Subsistence Regional Advisory Council meeting either in person, or by teleconference (indicated with an asterix "*"). The following abbreviations are used including ADFG (Alaska Department of Fish and Game); BIA (Bureau of Indian Affairs); BLM (Bureau of Land Management); and USFWS (U. S. Fish and Wildlife Service). The additional participants included:

Name, Title (Where stated on the record)	Agency
Deena Jallen, Summer Season Assistant Manager for the Yukon River*	ADF&G
Holly Carroll, Summer Season Manager for the Yukon Area*	
Jeff Ensten, Fall Season Manager for the Yukon Area*	
Jill Klein, Anchorage*	
Dr. Glenn Chen, Fisheries Biologist and Subsistence Branch Chief	BIA
Bruce Seppi, Anchorage	BLM
Dan Sharp, Anchorage*	
Erin Julianus, Field Biologist, Central Yukon Field Office	
Mark Spencer, Anchorage District Manager	
Tim LaMarr, Field Manager	
Aaron Poe, Science Coordinator, Aleutian and Bering Sea Islands Landscape Conservation Cooperative, Region 7*	USFWS
Frank Harris, Fish Biologist, OSM	
Fred Bue, Yukon River Inseason Manager and Subsistence Fisheries Branch Chief	
Gary Decosas, Kuskokwim Area Fish Biologist, OSM*	
Gene Peltola, Jr., Assistant Regional Director, OSM	
Gerald Maschmann, Assistant Federal In-Season Mgr., Fairbanks Subsistence Office	
Jeremy Havener, Refuge Subsistence Coordinator, Koyukuk/Nowitna/Innoko NWR	
Joanne Bryant, Tribal Communication and Outreach Specialist, Arctic NWR	
Hollis Twitchell, Assistant Refuge Manager, Arctic NWR	

Kenton Moos, Refuge Manager for Koyukuk, Nowitna, and Innoko Refuges	
Matt Keyse, Subsistence Branch	
Mike Spindler, Refuge Manager, Kanuti NWR	
Palma Ingles, OSM*	
Stewart Cogswell, Acting Deputy Assistant Regional Director, OSM*	
Tina Moran, Deputy Manager, Kanuti NWR	
Tom Kron, Office of Subsistence Management	
Vince Matthews, Subsistence Coordinator, Kanuti, Arctic, and Yukon Flats NWR	
Zach Stevenson, Subsistence Council Coordinator, OSM	
Marcy Okada, Subsistence Coordinator, Yukon-Charley and Gates of the Arctic NPP	NPS
Anette Watson, PhD, College of Charleston, South Carolina*	Public
Catherine Moncrieff, Yukon River Drainage Fisheries Association*	
Chris Stark, Bering Sea Fishermen's Association*	
Danielle Stickman, Yukon River Drainage Fisheries Association*	
Deanna Tritt, Arctic Village	
Laonna Dewilde, Originally from Huslia, Alaska	
Pollack (P.J.) Simon, Jr., First Chief of Allakaket Village	
Suzanne Little, Pew Charitable Trusts	
Wayne Jenkins, Director, Yukon River Drainage Fisheries Association	

Review and Adopt Agenda

Several items were discussed as possible additions to the agenda, as follows:

- Chair Reakoff requested the following modifications to the agenda:
  - Requested Bureau of Land Management (BLM) present on the first day of the meeting because BLM has a (Central Yukon) Resource Management Plan under review and staff availability prevents BLM from delivering their report on the second day of the meeting under agency reports.
  - Requested the Yukon River Drainage Fisheries Association (YRDFA) to present their comments on the BLM (Central Yukon) Resource Management Plan too, to be addressed earlier in the agenda, following Council Reports and public and tribal comments.
  - Requested the Council review the State Board of Game proposals. Note the Board of Game is meeting tight now at Pikes and attending their meeting yesterday. Expressed concern regarding proposal 105, re4garding the Central Arctic Caribou Herd which inhabit the upper portion of the region in Unit 24.
  - Delivered written comments to the Board of Game regarding proposal 105. Would like to see what the Council feels regarding this proposal. The Council could transmit its comments to the Board of Game. The Council has done this in the past when its meetings are held concurrently with the Board of Game.
  - The Coordinator clarified that per the direction of the Council Coordination Division Chief, any written materials in the form of a letter (i.e. submitted by the Regional Advisory Council) with the Chair's signature on it, are subject to the Federal Subsistence Board's Correspondence Policy.

  - The Coordinator clarified the sign-on letter (regarding the non-subsistence take of wildlife) would be addressed under agenda item 9(b).
  - The Chair requested the review of a letter presented to the Council by Kora Andros of Kaltag.
  - The Chair requested the presentation from Dr. Anette Watson be addressed under agenda item 9(d) along with information to be shared by Marcy Okada of the Gates of the Arctic National Park and Preserve.
  - The Chair requested an opportunity to address the review of State of Board of Game proposals, emphasizing the urgency of this task, as the Board quickly moves through proposals. The Chair emphasized the Council needs to discuss the effects.

- Council Member Gervais requested the following be added to the agenda:
  - Following up on ideas addressed at the previous meeting in McGrath, would like the Council to discuss some of the effects of the new proposals that the Board of Fish approved in January 2016 relating to new fisheries, expanded areas, and identifying gear type specifications for the beach seine and gillnet. Unclear whether this falls under old or new business.
  - Council needs to discuss the effects of those changes and make some recommendations to Commissioner Cotton and the Board of Fish on trying to understand and quantify the effects of these changes.
  - Specifically Proposals 118, 121, 122, 123, 125, and 128.
  - Chair Reakoff responded, noting a review of various effects could fall under U.S. Fish and Wildlife Service Yukon River Preseason Management Review. Council Member Gervais was amenable to this recommendation.

Chair Reakoff addressed the formation of a working group and requested a conference call with the Western Interior Subsistence Regional Advisory Council, North Slope Regional Advisory Council, Northwest Arctic Subsistence Regional Advisory Council, and Seward Peninsula Regional Advisory Council to discuss caribou. He noted the formation of a working group is needed because the Western Arctic, Teshepuk, and Central Arctic the three primary caribou herds, have fallen by 50 percent of their population size from 10 years ago. He emphasized there is a need for additional protections for cow caribou and seasons set for protections of caribou at certain times of the year and that he feels a Federal wildlife regulatory "placeholder" proposal should be submitted regarding caribou. Specifically, caribou should be harvested throughout the whole year, but bulls should only be harvested from February 1 to October 1 and from October 1 to February 1, when bulls are not good to eat or not best, cows should be harvested from October 1 to February 1. He noted that the State of Alaska should have same align regulations to avoid confusion. Stated there are multiple reasons for increased protections of caribou in the affected regions.

- Fred Bue, Yukon River Inseason Manager and Subsistence Fisheries Branch Chief, U.S. Fish and Wildlife Service, requested the following amendment to the agenda:

  - Expressed the desire to coordinate fisheries discussions with the Alaska Department of Fish and Game. The issues to be addressed include the

Comprehensive Salmon Plan and Artificial Propagation. The Chair suggested moving the Yukon River Comprehensive Plan to the discussion of Yukon River Preseason Management and Artificial Propagation. The Council affirmed.

- Mike Spindler, Refuge Manager, Kanuti National Wildlife Refuge, U.S. Fish and Wildlife Service, suggested the following amendment to the agenda:

    - Requested clarification on the agenda item addressing Landscape Conservation Cooperatives (LCCs), specifically, whether an update from the Northwest Boreal LCC was wanted.
    - The Coordinator clarified the intent of the LCC presentation was to address the Coastal Resilience Initiative that's underway in the Aleutian-Pribilof Islands LCC.

Chair Reakoff entertained a motion to adopt the agenda as amended. Council Member Pelkola moved to adopt the agenda. Council Member Gervais seconded the motion. Council Member Pelkola called the question on the agenda. The Council voted unanimously to adopt the agenda as amended.

Election of Officers

All of the Council Members were not present to vote on the morning of February 21, 2017 to participate in the election of officers. Chair Reakoff entertained a motion to move the election of officers to the second day of the meeting. Council Member Simon seconded the motion. Council Member Simon called the question to move the election of officers to the second day of the meeting. The vote was unanimous to move the election of officers to the second day of the meeting.

One the second day of the meeting the election of officers was held. Council Member Pelkola nominated Mr. Reakoff as Chair. Council Member Alexie seconded the nomination for Mr. Reakoff to serve as Chair. Council Member Vent closed the nominations. There were no objections and Mr. Reakoff was unanimously voted Chair.

The Council proceeded with nominations for Vice Chair. The Chair noted that Council Member Collins experienced health problems that impact his ability to continue serving as Vice Chair. The Chair noted Council Member Collins has been an asset to the Council and would like to continue serving on the Council, health permitting. The Chair expressed the possibility of Council Member Collins participating in future meetings via teleconference to accommodate his medical needs. Council Member Alexie nominated Council Member Vent to the position of Vice Chair. Council Member Pelkola seconded the nomination for Council Member Vent to serve as Vice Chair. Council Member Alexie moved to close the nominations for Vice Chair. Council Member Thomas seconded to close the nominations for Vice Chair. Chair Reakoff called the question. The Council voted unanimously, electing Council Member Vent to the position of Vice Chair.

Chair Reakoff then opened nominations for the position of Secretary. Council Member Alexie nominated Council Member for the position of Secretary. Council Member Thomas

seconded the nomination for Council Member Pelkola to serve as Secretary.

Review and Approval of Previous Meeting Minutes

Council Member Gervais requested the following change to the minutes:

- On Page 15, under Item 6, the minutes state, "minimize the effects of salmon bycatch in the Bering Sea on Federally qualified subsistence users of the Koyukuk and Yukon River." The next sentence states, "The Council reiterated its concern that the Aleutian Island Pollock trawl fleet. The needs to be defined differently. It's considered the Bering Sea/Aleutian Islands trawl fleet. If it's left as only Aleutian Islands, that doesn't really classify the fishery correctly.
- Four sentences down, there's the same reference to Aleutian Island Pollock trawl fleet. It should be Bering Sea/Aleutian Island trawl fleet or can be condensed to say BSAI.

Council Member Alexie requested the following change to the minutes:

- The sonar station location is incorrectly stated to be in Nulato. Residents of Kaltag and the Yukon area call the area Bishop Mountain, but the U.S. Fish and Wildlife Service refers to the area as Bishop Rock. The sonar station location should be stated as "Bishop Mountain".

Council Member Alexie moved to adopt the Meeting Minutes as amended. Council Member Simon seconded the motion. Council Member Alexie called the question to adopt the Meeting Minutes as amended. Vote: 9 in-favor, 0 opposed, and 1 absent. The Council voted unanimously to adopt the Meeting Minutes as amended.

Reports

Ms. Clark, who is a new member, introduced herself to the Council, noting she is currently serving on the U.S./Canadian Committee as an advisor for 13 years and with the Yukon River Drainage Fisheries Association (YRDFA). She also noted she is running the Grayling Store and owns a bed and breakfast, and that she has strong knowledge of the area and people of the region. She noted there is a healthy moose population in the area, but that there are a lot of wolves and wished that the Feds would put a bounty on wolves.

Council Member Simon reported that the moose population is doing well and people have been successful with hunts. In contrast, he noted that people have not been seeing caribou near the village (it's been ten years since they came through Allakaket), but as far away as 50 miles. Sport hunting of caribou on the Dalton Highway corridor has pushed caribou away from the Koyukuk River valley. There seems to be increased wolf populations, with wolves harvested in Henshaw River Valley. People have been harvesting a lot of Chum salmon, but not many Kings.

Council Member Gervais welcomed Ms. Clark to the Council and noted that the Council needed more women and that it was important to have representation from the GASH area. He noted successful harvest of King salmon and how important a resource it is, and thanked land

managers and staff for their efforts. Mr. Gervais also noted the importance of subsistence resources to food security, self-reliance, well-being, and connectedness. Engaging in subsistence provides youth strong role models and helps to develop future leaders and positive relationships. These resources are especially important in light of high fuel and shipping costs. Noting the upcoming ADF&G presentation on artificial propagation of King salmon, he expressed concerns about impacts of farmed salmon on wild stocks. He also stressed the need to stay current on fisheries bycatch issues.

Council Member Thomas reported that his area received a decent run of King salmon compared to the previous year, but that Chum levels remained the same and Coho levels were good. He noted the moose population is improving, with a good increase in harvest. However, no caribou are being harvested upriver, although the caribou used to migrate through the communities. He also noted a need for improved moose populations, and that a loss of breeding component in the herd can result in reproductive failure. He requested current bull/cow ratio data.

Council Member Collins commented that moose management near McGrath had success with hunt closures and predator management. He learned that bears were taking about 60% of calves. He observed that wolves are hunting year round and being aided by deep snow conditions, and noted that locals are interested in getting permits from ADF&G to hunt wolves. He spoke at length about efforts to rebuild King salmon populations on the upper river and get buy-in from lower river communities on management efforts, which he hopes will continue. Numbers have increased in recent years.

Council Member Alexie reported that over the last two years, people in Kaltag have caught their quota of King salmon. He noted similar success for Koyukuk, Galena, Nulato and Grayling. He also expressed concerns about smolts, from the trawler fishery to poor health and lack of food. Alexie also spoke at length about predation by wolves and bears, noting several moose kills. He was thankful for wolf and bear hunters, and noted that elders have been lost who were avid bear hunters. More needs to be done to control predators to provide for more food abundance.

Council Member Pelkola noted that she spent most of her summer at Bishop Mountain/Rock. She noted her history of sharing fish and cooked fish eggs. When talking about her hopes to get a moose next year, she expressed concern about wanton waste of moose meat in the area (such as dumping in the river) and noted the need for another upriver check point to help curb wanton waste.

Council Member Vent described his fall hunt and noted he did not have much success due to competition with hunters. He noted the decline in moose population and increased difficulty in harvesting black bears, attributing both concerns to presence of wolves and brown bears. Vent also spoke at length about decline in caribou populations in general and the absence in recent years in specific areas of the region. He discussed various State management efforts and proposals before the Board of Game. He also voiced concerns in particular regarding the Teshekpuk Caribou Herd.

Chair Reakoff reported on his participation in the Federal Subsistence Board deliberations on fisheries proposals and the special action request to repeal the closure to non-subsistence use in Unit 23 for caribou. He discussed recent activities of the Koyukuk River Fish and Game Advisory Committee. He observed on the population status of various types of wildlife in his part of the region, noting population crashes in recent years in the moose, sheep, caribou and wolf populations. He attributed low wolf numbers to rabies and decline in the Central Arctic Caribou Herd. He added that that recent conditions have been good for moose calves and cows. He also observed an increase in the number of snowshoe hare. He also noted large increases in numbers of owls, lynx, and hawks.

Public and Tribal Comments on Nonagenda Items

Pollack (P.J.) Simon, Jr., First Chief of Allakaket Village, a Federally-recognized tribe of 330 members located in the southern Foothills of the Brooks Range, spoke at length about his concerns regarding the BLM Central Yukon Resource Management Plan and modifications to PLO 5150. He stressed the "world class" significance of the lands and how they provide abundant wildlife, such as Dall sheep and caribou. He stressed concerns about adverse cumulative effects if the lands were transferred to the State. The Council and the Chair discussed many of the details of those concerns, stated their opposition to the modification to PLO 5150 lands, and additionally discussed a letter prepared by Jack Reakoff as a comment on the changes to PLO 5150. The detailed Reakoff letter can be found in the administrative record for the meeting. The Council adopted those comments in its annual report and also approved a motion seeking that BLM document subsistence uses that would be necessary in designating Areas of Critical Environmental Concern or other actions.

The Chair addressed a letter from Cora Madros (Kaltag, Alaska) to the Council, requesting assistance addressing a user conflict occurring not on Federal public lands and brought to the Council's attention by Mr. Ben Stevens (TCC). The Council voted to transmit a letter to Ms. Madros to inform her that the recourse would be with landowner Doyon to get Doyon to close those lands specifically to the guiding entities that she would like controlled. The Council also expressed that a copy of the letter be transmitted to Ben Stevens at TCC.

Old Business

Co-Sign on Letter Opposing Final Rule

The Council was asked by the Kodiak/Aleutians Subsistence Regional Advisory Council to sign-on to is letter opposing a final rule regarding regulations for Alaska National Wildlife Refuges: The Non-Subsistence Take of Wildlife and Public Participation and Closure Procedures on National Wildlife Refuges in Alaska, 81 FR 887. The Council voted unanimously to become a signatory to the letter.

Draft Council Correspondence

The Council voted unanimously to develop a letter, to be prepared by Council Member Gervais and the Council Coordinator, emphasizing that the State Chinook Salmon Initiative not be forgotten; noting that the management actions the Board of Fisheries has taken may

negatively affect the recovery of Chinook salmon; and stating the wish of the Council to know what the Department's plan is for this Salmon Initiative

New Business

State Board of Game Proposal Review

Addressing State Proposal 105, regarding the Central Arctic Caribou Herd, which inhabits the upper portion of the region in Unit 24, the Council voted unanimously to adopt the ADF&G recommendations and emergency closure of the caribou cow harvest this spring (March 1 to November 1, 2017). Justifying this proposal, the Council noted the Central Arctic Caribou Herd has declined from 68,000 in 2010 down to 22,600. The Council noted the proposal is needed to preserve the Central Arctic Caribou Herd and minimize the rapid decline of the herd and reduce human activities contributing to the decline of the herd. This comment was to be delivered orally before the Board of Game at their February 2017 meeting in Fairbanks.

Call for Federal Wildlife Proposals

The Chair moved to submit a Federal wildlife regulatory proposal for aligning caribou season dates in Units 21D, 22, 23, 24, 25A (West), and 26B. The intent of this proposal would be to protect cows during fall and spring migration. Reducing the exposure of cows to hunting during migration will avoid migration deflections because cows lead migration. The proposed seasons also prohibit bull harvest when the caribou are not palatable during the rut. In order to align seasons and reduce regulatory complexity, the proposal should also be submitted to the Board of Game. Periodic updates on the status of population are requested. The motion was seconded by Council Member Clark. The Council voted unanimously to support the motion.

The Chair entertained a motion to submit a Federal wildlife regulatory proposal to align with Board of Game action regarding the fall moose hunt in Unit 21E. The season should be changed to September 1 to September 25 to align State and Federal seasons, reducing regulatory complexity. The motion was introduced by Chair Reakoff. Motion by Pelkola, seconded by Clark. The motion passed on unanimous vote.

Review and Approve FY2016 Annual Report

The Council reviewed the draft annual report and discussed adding language to include those communities that would be adversely affected by the exclusion of the subsistence uses by the State of Alaska through the modification of PLO 5150. Alexie moved to add the language, with a second by Vent. The motion carried on a unanimous vote.

Agency & Other Reports

The following reports were delivered as further detailed in the transcripts.

United States Fish and Wildlife Service

Stewart Cogswell, Acting Deputy Assistant Regional Director, Office of Subsistence Management, provided an update on the Kuskokwim Partnership Project.

Tom Kron, Office of Subsistence Management, provided a staffing update and addressed the Draft MOU between the Board and the State.

Joanne Bryant, Tribal Communication and Outreach Specialist, Arctic NWR provided an overview of the Draft Alaska Native Relations Policy.

2016 Yukon Salmon Season Overview

Gerald Maschmann, Assistant Federal In-Season Manager, Fairbanks Subsistence Office, provided an overview of the 2016 season and subsistence harvest levels; and genetic information addressing the composition of salmon runs. Holly Carroll, Summer Season Manager for the Yukon Area with ADF&G addressed questions regarding the age and sex composition of the runs. Fred Bue, Yukon River Inseason Manager and Subsistence Fisheries Branch Chief, U.S. Fish and Wildlife Service, addressed the status of updating the Comprehensive Salmon Plan; management implications; treaty obligations; and shared information on hatcheries.

Yukon River Drainage Fisheries Association

Wayne Jenkins, Director, Yukon River Drainage Fisheries Association provided an update on the organization's current programs and upcoming initiatives in 2017 including an upcoming annual Board meeting (April 17); review of the Comprehensive Salmon Plan Update; coordinating the Yukon River fishery preseason planning meeting; and in-season Yukon River teleconference.

Danielle Stickman, newly hired YRDFA staff member, addressed an upcoming workshop for young fishermen addressing the biology and regulatory framework affecting fisheries and other topics of interest to stakeholders. Ms. Stickman also addressed the development of a related outreach pamphlet and development of a strategic plan for an Alaska Boreal Conservation Campaign.

Catherine Moncrieff, YRDFA staff member, provided an overview of an in-season salmon harvest survey; planning for the 2017 season; an update on customary trade in the Upper Yukon; an upcoming study, funded by the North Pacific Research Board, using case studies to examine the social values of salmon and the implications for fisheries management; a study examining traditional knowledge of fisheries management and implications for management by the North Pacific Management Council, funded by the Pew Charitable Trusts; and a study examining indigenous perspectives on the Yukon River salmon decline, funded by the National Science Foundation.

Bureau of Land Management

Erin Julianus, Field Biologist, Central Yukon Field Office provided an update on the Central Yukon Management Plan; recreation update; permit update; visitor update; right-of-way

project update within the Utility Corridor and Bettles Winter Road; mining and gravel extraction update; and wildlife status update (i.e. Dall sheep, caribou, and herbicide applications); fisheries, water quality, and hydrology update; wildfire update; and a forestry update.

Bruce Seppi, Wildlife Biologist and Subsistence Coordinator with the Anchorage Field office, provided an update on land use planning; the Donlin planning process; and preparations for the Iditarod race.

Erin Julianus addressed questions pertaining to community outreach conducted regarding the Central Yukon Resource Management Plan.

Laonna Dewilde, originally from Huslia, and now studying the decline of salmon on the Yukon and Kuskokwim Rivers for her PhD, requested an MOU be established between the BLM and affected tribes to address the process for ACEC designation and the merits of this process for Federally qualified subsistence users. This recommendation was affirmed by the Chair.

Council Member Vent requested an update on the lands-into-trust initiative and potential impacts to Federally qualified subsistence users.

Kanuti National Wildlife Refuge

Mike Spindler, Refuge Manager, addressed aircraft patrols of the Dalton Highway and Gates of the Arctic National Park.

Council members voiced concern regarding the amount of predators in the refuge and asked about the meaning of the indigenous name for the refuge. Wildlife management, effects on vegetation, and implications to subsistence resources was addressed.

Koyukuk, Nowitna, and Innoko National Wildlife Refuges

Kenton Moos, Refuge Manager, introduced Jeremy Havener, Refuge Subsistence Coordinator, Koyukuk/Nowitna/Innoko NWR. Mr. Havener provided a staff update; a status update on education initiatives in the refuge; and an update on the winter moose hunt. He also addressed questions from the Council regarding the decline of moose. He provided a trends update on the Huslia Flats and Treat Island and a Novi and Innoko moose population update.

National Park Service

Marcy Okada, Subsistence Coordinator, Yukon-Charley and Gates of the Arctic NPP described a new Federal regulation for Dall sheep hunting in Units 24A and 24B for Gates of the Arctic National Park and Preserve and provided an update on hunting permits issued. She also provided an overview of a Hughes subsistence harvest report. Ms. Okada provided an update on the Gates of the Arctic Subsistence Resource Commission, which met on 15 November 2016 in Fairbanks, and an update on the Ambler Mining District industrial access project. She noted efforts to develop an environmental and economic analysis to inform which route the Park Service will recommend for the right-of-way.

Dr. Anette Watson, College of Charleston, South Carolina, described a new research project, funded by the Park Service, examining the subsistence use in the vicinity of Gates of the Arctic National Park and Preserve designed to complement the environmental and economic analysis. The Council indicated interest in receiving updates on the project.

Alaska Department of Fish and Game

Chris Stark, Bering Sea Fishermen's Association, participating telephonically on behalf of Jill Klein, contributed to the discussion addressing the Salmon Plan Update.

Landscape Conservation Cooperatives

Aaron Poe, Science Coordinator, Aleutian and Bering Sea Islands Landscape Conservation Cooperative, Region 7 described the mission and role of the Landscape Conservation Cooperatives and provided an overview of a research project documenting local perceptions of climate change to promote community resilience and adaptation strategies in vicinity of the Bering Sea and Aleutian Islands. Zach Stevenson, Council Coordinator, OSM, noted how this type of research could be applied to address the Council's interest in better understanding the effects of climate change on subsistence fisheries. The Council requested a proposal be shared at their next meeting to outline what such a study might entail.

Future Meeting Dates

The Chair requests El Sol guarantee flights on these dates so as to prevent arbitrary cancellations experienced with travelers using Ravn. The Council decided its future meeting dates as follows:

- Fall 2017 meeting date of 10-11 October in Galena.
- Winter 2018 meeting date of 20-21 February in Anchorage.

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

_____

Zach Stevenson, Designated Federal Official, OSM *Date*

_____

Jack Reakoff, Chair *Date*

These minutes will be formally considered by the Western Interior Alaska Subsistence Regional Advisory Council at its fall 2017 public meeting, and any corrections or notations will be incorporated in the minutes of that meeting.

Presentation Procedure for Proposals

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

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 (DOI) and Agriculture (USDA), 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, OSM announces a funding opportunity for investigation plans addressing subsistence fisheries on Federal public lands. The 2018 Notice of Funding Opportunity focused on priority information needs developed by the Subsistence Regional Advisory Councils with input from strategic plans and subject matter specialists. The Monitoring Program is administered through regions to align with stock, harvest, and community issues common to a geographic area. The six Monitoring Program regions are shown in **Figure 1**.

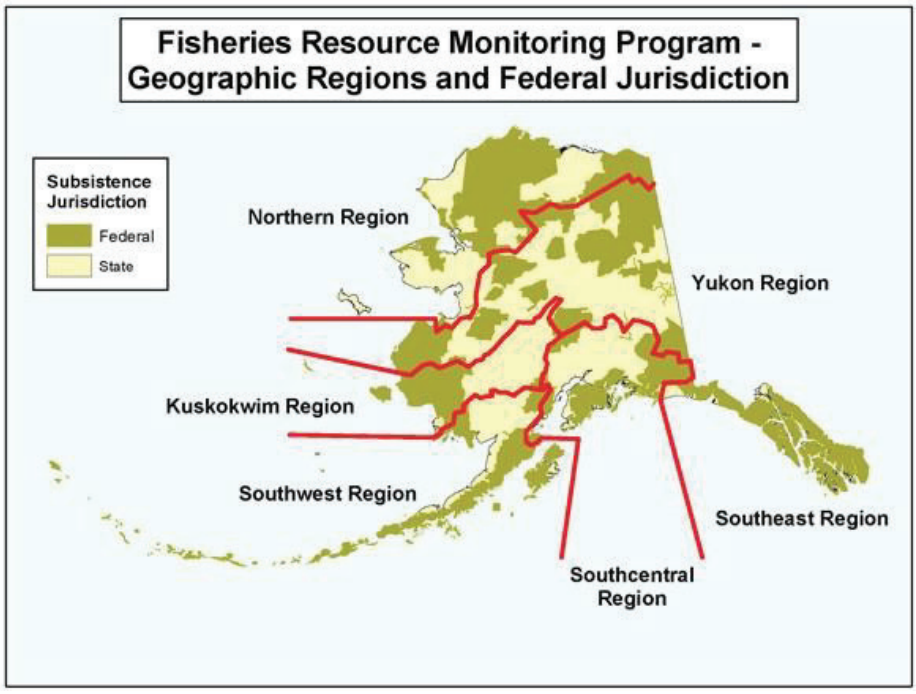

Figure 1. Geographic Regions for the Fisheries Resource Monitoring Program.

Strategic plans sponsored by the Monitoring Program have been developed by workgroups of fisheries managers, researchers, Subsistence Regional Advisory Councils, and by other stakeholders for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska. These plans identify prioritized information needs for each major subsistence fishery and are available for viewing on the Federal Subsistence Management Program website (https://www.doi.gov/subsistence/frmp/funding). Individual copies of plans are available by placing a request to OSM. 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 regional working groups and experts on the Subsistence Regional Advisory Councils, the Technical Review Committee (a committee comprised of representatives from each of the five Federal agencies involved with subsistence management, and relevant experts from the Alaska Department of Fish and Game), and Federal and State managers, with technical assistance from OSM staff. 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).

Investigation plans are reviewed and evaluated by OSM and Forest Service staff, and then by the Technical Review Committee. The Technical Review Committee's function is to provide evaluation, technical oversight, and strategic direction to the Monitoring Program. Each investigation plan is scored on these five criteria: strategic priority; technical and scientific merit; investigator ability and resources; partnership and capacity building; and cost benefit.

Project abstracts and associated Technical Review Committee proposal scores are assembled into a draft 2018 Fisheries Resources Monitoring Plan. The draft plan is distributed for public review and comment through Subsistence Regional Advisory Council meetings, beginning in August 2017. The Federal Subsistence Board will review the draft plan and will accept written and oral comments at its January 2018 meeting. The Federal Subsistence Board takes into consideration recommendations and comments from the process, and forwards their comments to the Assistant Regional Director of OSM. Final funding approval lies with the Assistant Regional Director of OSM. Investigators will subsequently be notified in writing of the status of their proposals.

HISTORICAL OVERVIEW

The Monitoring Program was first implemented in 2000, with an initial allocation of $5 million. Since 2001, a total of $117.2 million has been allocated for the Monitoring Program to fund a total of 452 projects (**Figure 2; Figure 3**).

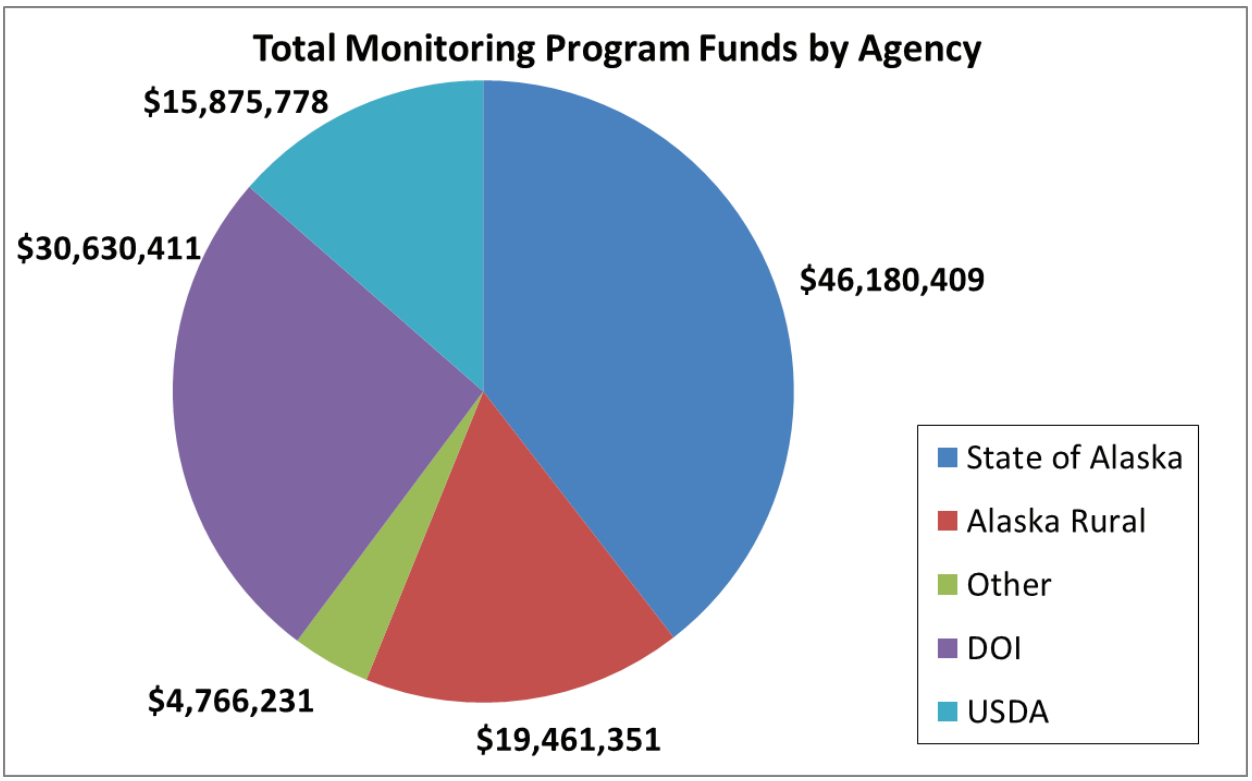

Figure 2. Total Project funds through the Monitoring Program from 2000 through 2016 listed by the organization of the Principal Investigator for projects funded. The funds listed are the total approved funds from 2000 to 2016. DOI = Department of Interior and USDA = U.S. Department of Agriculture.

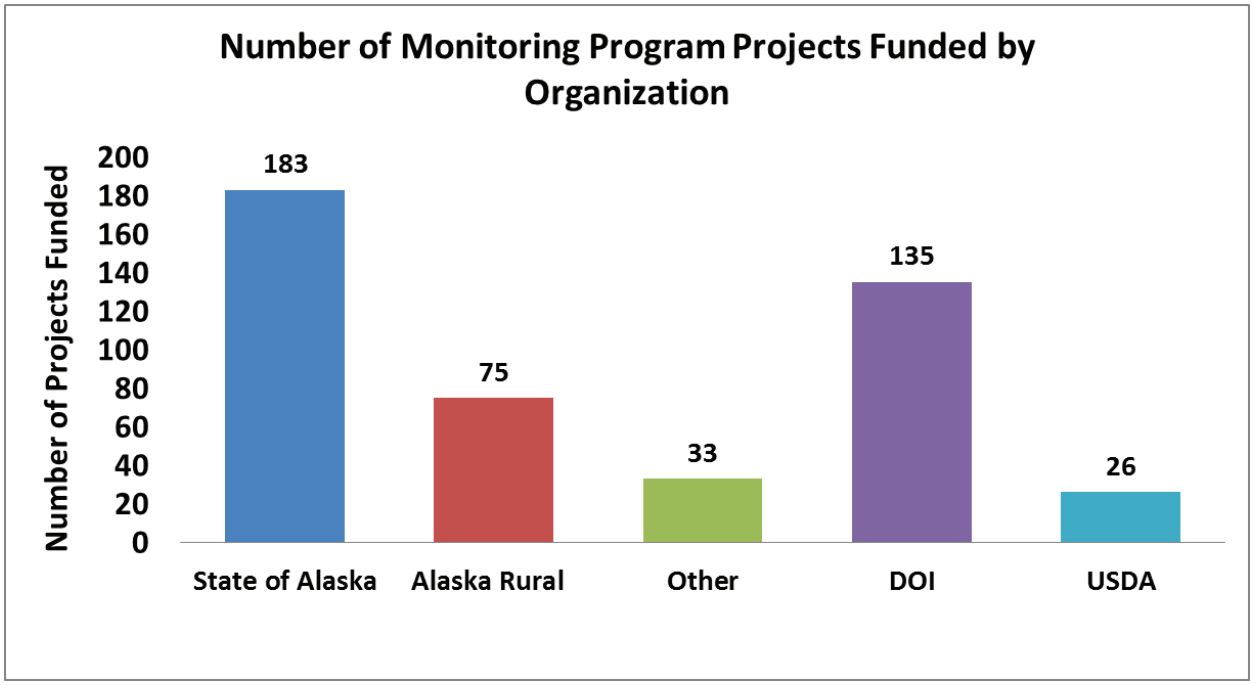

Figure 3. The total number of projects funded through the Monitoring Program from 2000 through 2016 listed by the organization of Principal Investigator. DOI = Department of Interior and USDA = U.S. Department of Agriculture.

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 4; Figure 5**).

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

Region	Department of Interior Funds	U.S. Department of Agriculture Funds
Northern	17%	0%
Yukon	29%	0%
Kuskokwim	29%	0%
Southwest	15%	0%
Southcentral	5%	33%
Southeast	0%	67%
Multi-Regional	5%	0%

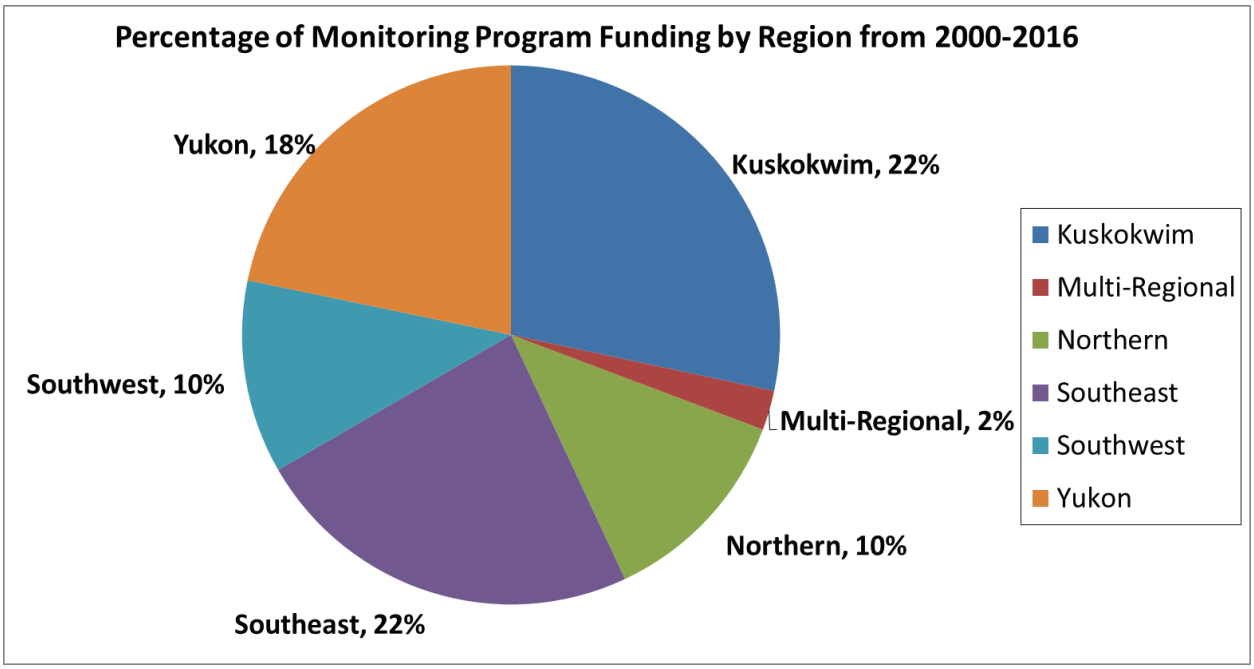

Figure 4. Total Project Funding by Geographic Region from 2000 through 2016.

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:

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.

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.

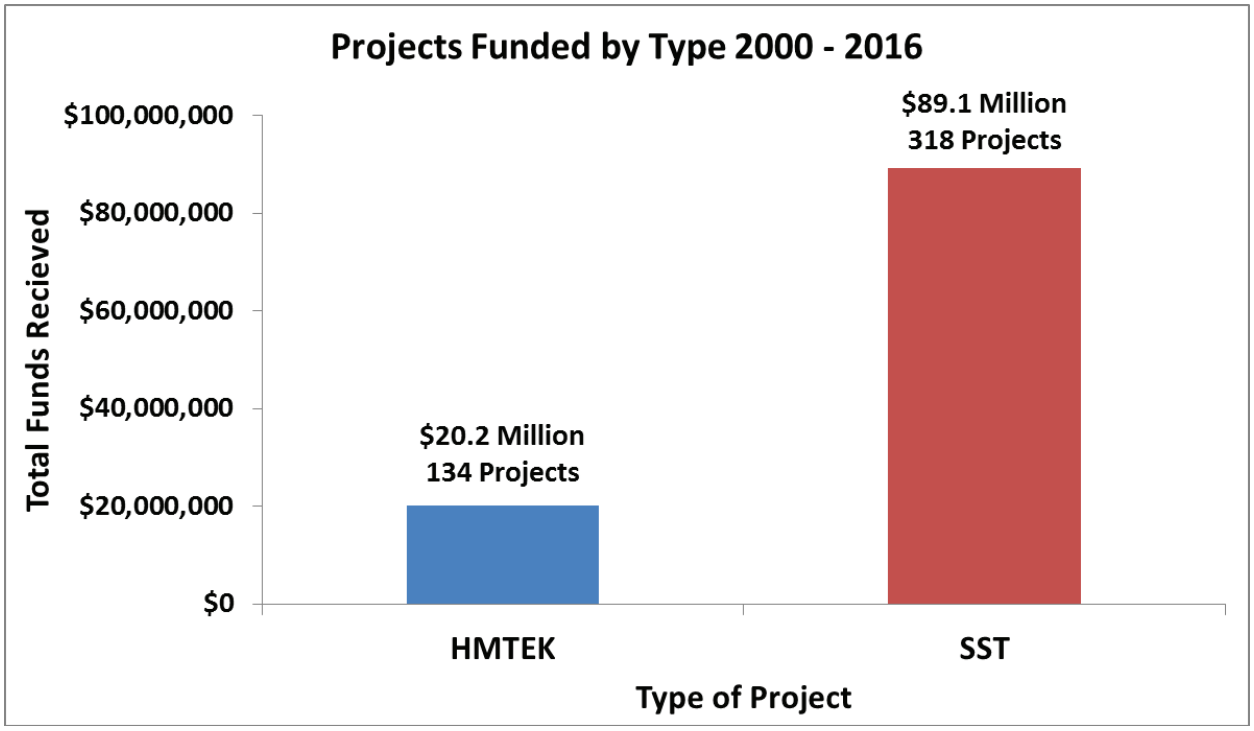

Figure 5. Total Project funding by type from 2000 through 2016. HMTEK = Harvest Monitoring/ Traditional Ecological Knowledge and SST = Stock, Status and Trends.

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. 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 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 Subsistence Regional Advisory 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.

To be considered for funding under the Monitoring Program, a proposed project must have a nexus to Federal subsistence fishery management. Proposed projects must have a direct association to a Federal subsistence fishery, and the subsistence fishery or fish stocks in question must occur in or pass through waters within or adjacent to Federal public lands. Complete project packages need to be submitted on time and must address five specific criteria (see below) to be considered a high quality project. Five criteria are used to evaluate project proposals:

1. ***Strategic Priorities*** – Studies should be responsive to information needs identified in the *2018 Priority Information Needs* https://www.doi.gov/subsistence/frmp/funding. All projects must have a direct linkage to Federal public lands and/or waters to be eligible for funding under the Monitoring Program. To assist in evaluation of submittals for projects previously funded under the Monitoring Program, investigators must summarize project findings in their investigation plans. This summary should clearly and concisely document project performance, key findings, and uses of collected information for Federal subsistence management. Projects should address the following topics to demonstrate links to strategic priorities:
    - **Federal jurisdiction,**
    - **Conservation mandate**,
    - **Potential impacts on the subsistence priority,**
    - **Role of the resource, and**
    - **Local concern.**

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 show 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 that have received funding in the past will be evaluated and ranked on their past performance, including fulfillment of 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 and Capacity Building*** – Collaborative partnerships and capacity building are priorities of the Monitoring Program. ANILCA Title VIII mandates that rural residents be afforded a meaningful role in the management of subsistence fisheries, and the Monitoring

Program offers opportunities for partnerships and participation of local residents in monitoring and research. 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 communities or organizations that will collaborate on the proposed project add to the strength of a proposal. Investigators and their organizations must 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 community and regional collaboration that is practical. Investigators must demonstrate that capacity building has already reached the communication or partnership development stage during proposal development, and ideally, include a strategy to develop capacity building to higher levels, recognizing, however, that in some situations higher level involvement may not be desired or feasible by local organizations. Successful capacity building requires developing trust and dialogue among investigators, local communities, and regional organizations. Investigators need to be flexible in modifying their work plan in response to local knowledge, issues, and concerns, and must also understand that capacity building is a reciprocal process in which all participants share and gain valuable knowledge. The reciprocal nature of the capacity building component(s) must be clearly demonstrated in proposals.

5. Cost Benefit

Cost/Price Factors – An 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.

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. Capacity building is considered a critical component of all projects, and all investigators are expected to incorporate capacity building and partnerships within their projects.
6. 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.

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.

2018 FISHERIES RESOURCE MONITORING PLAN

For 2018, a total of 53 investigation plans were received and 53 are considered eligible for funding. Of the projects that are considered for funding, 40 are SST projects and 13 are HMTEK projects.

For 2018, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.0 to $1.5 million in funding for new projects and up to $1.6 million for ongoing projects that were initially funded in 2016. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided $1.8 million annually. The amount of U.S. Department of Agriculture funding available for 2018 projects is uncertain.

FISHERIES RESOURCE MONITORING PROGRAM
KUSKOKWIM REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, 100 projects have been undertaken in the Kuskokwim Region for a total of $27.2 million (**Figure 1**). Of these, the State of Alaska conducted 59 projects, Alaska Rural organizations conducted 16 projects, the Department of the Interior conducted 21 projects, the U.S. Department of Agriculture conducted one project, and other organizations conducted three projects (**Figure 2**). Sixty-nine projects were Stock, Status, and Trends (SST), and 31 projects were Harvest Monitoring and Traditional Ecological Knowledge (HMTEK). A list of all Kuskokwim Region Monitoring Program projects from 2000 to 2016 is provided in **Appendix A**.

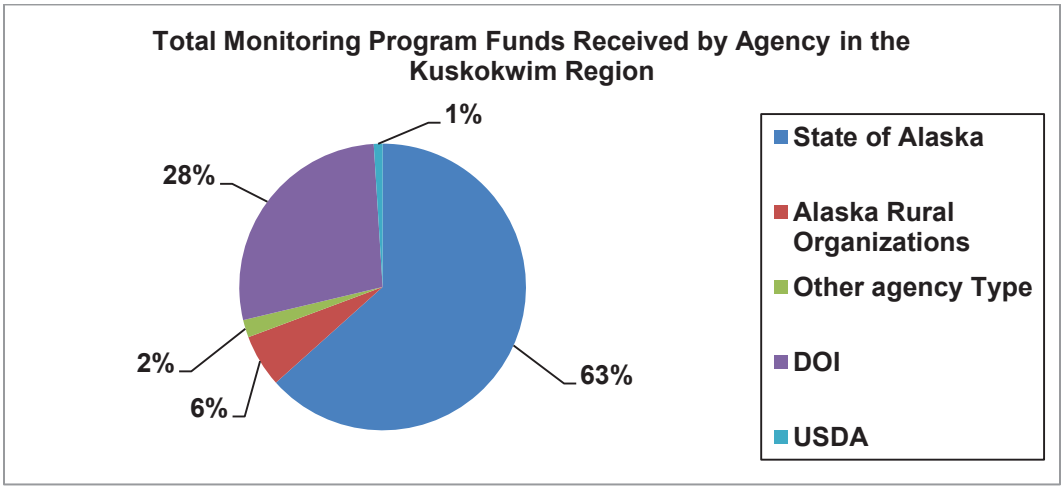

Figure 1. Monitoring Program funds received by agencies for projects in the Kuskokwim Region. The funds listed are the total approved funds from 2000 to 2016. DOI = Department of the Interior and USDA = U.S. Department of Agriculture.

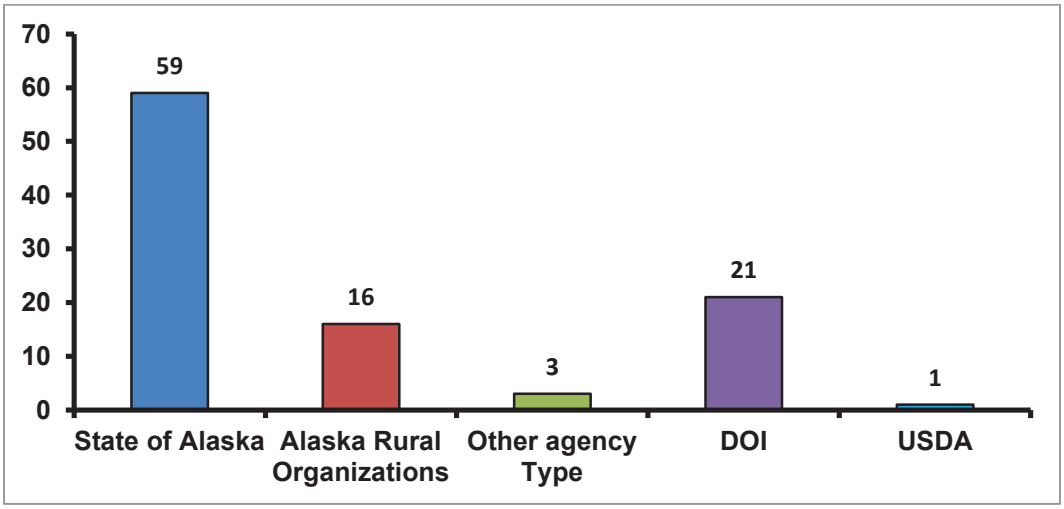

Figure 2. Total number of Monitoring Program projects funded, by agency, in the Kuskokwim Region from 2000 to 2016. DOI = Department of the Interior and USDA = U.S. Department of Agriculture.

2018 DRAFT FISHERIES RESOURCE MONITORING PLAN

OVERVIEW

Priority Information Needs

The 2018 Notice of Funding Opportunity for the Kuskokwim Region identified seven priority information needs:

- Reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests.
- 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 future growth of the sport fishery, and 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.
- Traditional ecological knowledge or other knowledge of whitefish in the Kuskokwim River drainage, especially in lower and middle Kuskokwim communities. Groups of communities might include Kwethluk, Akiachak, and Tuluksak, or Kalskag, Lower Kalskag, Aniak, and Chuathbaluk, or Red Devil, Sleetmute, and Stony River.
- A spatially robust indexing method for estimating species-specific whitefish harvests on an annual basis for the Kuskokwim drainage.
- Origin of Chinook Salmon harvested for subsistence in marine waters of Etolin Strait.

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. Regional budget guidelines provide an initial target for planning. For 2018, the U.S. Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.0 to $1.5 million in funding for new projects and up to $1.6 million for ongoing projects that were initially funded in 2016. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided up to $1.8 million annually. The amount of U.S. Department of Agriculture funding available for 2018 projects is uncertain.

Technical Review Committee Proposal Score

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 (TRC) to develop the

strongest possible Monitoring Plan for each region and across the entire state.

For the 2018 Monitoring Program, nine proposals were submitted for the Kuskokwim Region. The TRC evaluated and scored each proposal for Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1,** 1= first place, 2 = second place, etc.). Projects that place 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 2018 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 2018 Monitoring Program please see the abstracts in **Appendix B**.

Table 1. Technical Review Committee (TRC) score for projects in the Kuskokwim Region. Projects are listed by TRC score and include the total funds requested and the average annual request for each project submitted to the 2018 Monitoring Program within the Kuskokwim Region (1 = first place, 2 = second place, etc.). The projects listed are currently being considered for funding in the 2018 Monitoring Program. Projects which were not eligible due to the nature of the activity are not included.

TRC Score	Project Number	Title	Total Project Request	Average Annual Request
1	18-350	Bethel In-season Subsistence Harvest Surveys	$271,702	$67,926
2	18-351	Kuskokwim Area Salmon Post season Subsistence Harvest Surveys	$840,225	$210,056
3	18-304	George River Salmon Weir	$726,492	$181,623
4	18-302	Kwethluk River Salmon Run Timing and Abundance	$754,808	$188,702
5 (tied)*	18-303	Tuluksak River Salmon Run Timing and Abundance	$385,180	$96,295
5 (tied)*	18-305	Kuskokwim River Sonar	$388,809	$97,202
6 (tied)*	18-352	Support for Cooperative Management of the Kuskokwim River Subsistence Salmon Fishery	$416,169	$104,042
6(tied)*	18-300	Kuskokwim River Broad Whitefish	$613,877	$153,469
7	18-301	Inferring production patterns of Kuskokwim River Chinook Salmon Using Otolith Microchemistry and River Isoscapes	$823,207	$205,802
		Total	$5,220,469	$1,305,117

* Proposals with identical scores during the rating process may be further assessed by comparing the average annual cost. Proposals with a lower average annual cost may be ranked above a similar rated proposal that has a higher annual average cost.

TECHNICAL REVIEW COMMITTEE JUSTIFICATION FOR PROJECT SCORE

TRC Score: 1
Project Number: 18-350
Project Title: Bethel In-season Subsistence Harvest Surveys

TRC Justification: Sizes of recent Chinook Salmon runs have been some of the lowest on record resulting in fishery managers implementing harvest restrictions. Drainage residents are highly dependent on local salmon runs, and the harvest of Chinook Salmon by Bethel residents (approximately 6,000 people) is 34% of the recent 10-year average total harvest by residents of the drainage. The study area is encompassed by the Yukon Delta National Wildlife Refuge. This project addresses a priority information need in the Kuskokwim Region identified in the 2018 Notice of Funding Opportunity, "*Reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests*." The project's strategic need and Federal linkage are clear.

The overall goal of the project is to describe relevant subsistence fishing effort and catch information collected from a representative sub-set of families who harvest salmon for subsistence purposes in the Bethel Area. The project has three objectives: (1) describe Bethel area subsistence users' annual harvest goals for Chinook, Chum and Sockeye Salmon; (2) document subsistence fishing activity in the Bethel area, including catch per unit effort by gear type, and catch composition; and (3) estimate the annual age-sex-length composition of Chinook Salmon harvested in the Bethel area subsistence fishery. Two previously-funded projects and research goals (inseason harvest monitoring and age-sex-length data collection) have been integrated in this proposal resulting in the need for less funding. The average annual cost of the proposal is $67,000 and has decreased from the $82,926 average annual cost of the project 2016–2018. Budget tables and justifications were provided. Partner organizations are contributing $78,477 ($19,619 per year).

This project has received Monitoring Program funding since 2001 and has been successfully re-conceived to address comments from the Technical Review Committee and better address information needs in the Kuskokwim Region. The project now includes the objective of calculating catch per unit effort by gear type. Near real-time harvest estimates are available to fishery managers contributing to better in-season management of the Chinook Salmon run. The project provides a strong and meaningful partnership between the Alaska Department of Fish and Game (ADF&G) and the Orutsararmiut Native Council, which administers much of the project. Investigators are qualified to conduct the research, and provided resumes and multiple letters they received supporting the project. The investigation plan is well-written and complete.

TRC Score: 2
Project Number: 18-351
Project Title: Kuskokwim Area Salmon Post season Subsistence Harvest Surveys

TRC Justification: Investigators propose to continue this 26 year data set and conduct voluntary household surveys that will be used to estimate subsistence salmon harvests by residents of the Kuskokwim Management Area. The Monitoring Program has provided funds since 2000. This project

addresses a priority information need for the Kuskokwim Region identified in the 2018 Notice of Funding Opportunity that is the following: (1) *Reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests.* Data collected during this survey contributes a vital input to State, Federal, and Tribal fisheries managers for Kuskokwim Area salmon stocks. Quantifying subsistence harvest has been an essential data element of recent salmon reconstructions, run reconstructions, and stock assessment; this project allows for the development of productivity models of salmon species that are then used in every aspect of salmon resource management, including preseason forecasting, inseason management, postseason assessment, and the definition of escapement goals.

The lower Kuskokwim River drainage, where most people living in the Kuskokwim Area reside, is encompassed by the Yukon Delta National Wildlife Refuge. The drainage stretches to parts of Denali National Park and Preserve and Lake Clark National Park and Preserve. The harvest survey is conducted with south Kuskokwim Bay residents relying on salmon that spawn in the Togiak National Wildlife Refuge. The Federal linkage and strategic priority are clear

The project was reconceived in 2008 when ADF&G, Commercial Fisheries Division, evaluated and changed methods. The sampling design is clearly stated and the investigation plan is well-written and complete. Harvest information will be collected through postseason household interviews and harvest calendars. Simple random sampling and stratified random sampling techniques will be used, based on community size and user group designations, to select households to be interviewed. In instances when minimum sample requirements are not met, statistical expansion will not be performed. Instead, community-based harvest will be estimated using Bayesian methods. In addition to salmon, respondents are asked to report their harvests of humpback whitefish, broad whitefish, sheefish, and a combined count for smaller whitefish (round whitefish, and Bering and least cisco). Broad and humpback harvest data have been expanded to generate total harvest estimates for these species since the late 2000s, and sheefish and cisco harvests have been expanded since 2014. Concerning salmon harvest timing, this investigation plan includes more robust methods than previously used to increase the use of harvest calendars. Data will be archived in the ADF&G's Arctic-Yukon-Kuskokwim Database and community-level harvest estimates made available to the public. The final report of findings will be peer reviewed and published in the ADF&G's Fisheries Data Series.

The project provides a strong and meaningful partnership between Orutsararmiut Native Council and ADF&G that began in 1999. Investigators are qualified to conduct the research and provided resumes.

This is an expensive project, and the funding request has increased 20% since the last funding cycle in 2014. The average annual cost of the request is $210,056. Investigators are requesting funding for 57% of overall costs of this long-term project. Investigators provided budget tables and justifications.

TRC Score: 3
Project Number: 18-304
Project Title: George River Weir

TRC Justification: The funding requested is to support the continued operation of the George River weir

for four years (14-303 was project from 2014 FRMP cycle). The George River weir monitors distribution, abundance and quality of Chinook, Chum and Coho Salmon escapement into the middle Kuskokwim River Drainage. The Kuskokwim River supports one of the state's largest subsistence salmon fisheries. The majority of this harvest occurs in the lower Kuskokwim River, within the Yukon Delta National Wildlife Refuge. A nexus to Federal subsistence fisheries management occurs because George River salmon stocks are harvested by Federally qualified subsistence users on the Yukon Delta National Wildlife Refuge. Beginning in 2018 the George River weir would be the only project monitoring salmon in the middle Kuskokwim River, and has an escapement goal for Chinook Salmon. As such, the George River weir has high value.

Technical merit is high; the objectives are clearly written, quantifiable, and achievable. Returns of Chinook, Chum, and Coho Salmon will be estimated using proven weir methods for this system. The project does not have any operational or technical deficiencies. Age, sex, and length data are routinely collected and reported, as well as environmental data. Daily escapement estimates are provided to managers for in-season management needs, and annual escapement summaries will be used to develop formal escapement goals for the George River and to contribute to modeling to the estimate total annual escapement in the Kuskokwim River. This proposal will continue a 21 year dataset used to help monitor Chinook, Chum, and Coho Salmon in the middle portion of the Kuskokwim River drainage. This project addresses the 2018 Priority Information Need for *reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests*.

The principal investigator has supplied a resume and has been a principal investigator for weir projects with the ADF&G. The co-investigators also have extensive experience with Kuskokwim River Area salmon research and management. The primary investigator and first co-investigator are not rural Alaska Natives or a part of a Tribal organization; however, the second co-investigator is a biologist for the Native Village of Napaimute as well as the Environmental Director for the Native Village of Napaimute and a former Director of Fisheries for the Kuskokwim Native Association. The tribal organization has a meaningful role in the project. The Native Village of Napaimute will conduct a high school internship program that will serve as an advance opportunity for a small group of students with expressed interest in pursuing degrees in fisheries or related fields, and who have participated at least once in the Aniak River Math and Science Expedition organized by the Kuskpuk School District. The proposed internship will provide ten students with three complementary experiences aimed at teaching watershed concepts, physical habitat assessment, biological sampling, and data analysis. The native organization also will help ADF&G disseminate project results and related fisheries management issues to middle river communities during quarterly shareholder newsletters and community meetings. The project has multiple letters of support from varying local, Federal, Tribal, State, and independent entities: Yukon Delta National Wildlife Refuge, Kuskokwim River Inter-Tribal Fish Commission, Kuskokwim River Salmon Management Working Group, and the ADF&G Bethel Advisory Committee. Detailed budget tables and budget justifications were provided by the investigators. The average annual cost of the project is $181,623, with the total cost of the project over four years being $726,492. This project was previously funded in 2014 (14-303) at an average yearly cost of $216,206, with a four year total cost of $864,822. The 2018 total costs are approximately 19% smaller than the 2014 total costs.

TRC Score: 4
Project Number: 18-302
Project Title: Kwethluk River Salmon Run Timing and Abundance

TRC Justification: The Kwethluk River weir is a well-established and successful salmon monitoring project that provides information on a majority of the escapement that occurs in the lower section of the Kuskokwim River. Escapement data gathered from the Kwethluk weir is utilized as an input to help assess the Kuskokwim River drainage-wide run-size and escapement assessment for Chinook Salmon. The age composition data collected from Chinook Salmon at the weir is also utilized as input into the spawn-recruit analysis for Chinook Salmon, which helps set drainage-wide escapement goals for the Kuskokwim River.

The weir has operated for 17 years, providing information on escapement magnitude and run timing for all salmon species with additional age and sex collection for Chinook, Chum, and Coho Salmon. The previously funded projects had objectives that enumerated all salmon species in the Kwethluk, while the current proposed project only enumerates Chinook and Chum Salmon. As a result, the collection of age, sex, and length information will be limited to Chinook and Chum Salmon. In order to decrease costs of the project, the investigators propose ceasing weir operations on August 15 rather than the normal date of September 10.

The project occurs within the Kwethluk River, which is fully within the Yukon Delta National Wildlife Refuge. Residents of the village of Kwethluk harvest salmon within Refuge waters in both the Kwethluk and Kuskokwim rivers. This project addresses the 2018 Priority Information Need for the Kuskokwim Region for *reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests*. The project also marginally addresses the 2018 Priority Information Need for the Kuskokwim Region for methods including *"quality of escapement" measures in establishing Chinook Salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements*.

Consultations and capacity building have been ongoing between the U.S. Fish and Wildlife Service Kenai Fish and Wildlife Field Office and the Organized Village of Kwethluk since the early 1990s. All three biologists have multiple years' experience working closely with resource partners and with Tribal organizations in the Kuskokwim River drainage, although there have been issues with support for the weir from some elders in the village who believe the weir kills fish. In an effort to raise support for the weir operations, the investigators propose an annual "elder's tour", which would help educate the elders on any misconceptions they may have about the operation of the weir. Project also has multiple letters of support from varying local, Federal, and independent entities (Organized Village of Kwethluk (OVK), Tuluksak Native Community (TNC), Native Village of Napaimute (NVN), Association of Village Council Presidents (AVCP), Orutsararmiut Native Council (ONC), Kuskokwim Watershed Council (KRWC), and the Yukon Delta National Wildlife Refuge). The project also plans on hiring one rural Alaskan technician each season as a local hire, as well as an Alaska Native Science and Engineering Program (ANSEP) student. However, no budget or letter of support for an ANSEP student is provided in the project documentation.

The average annual cost of the project is $187,702, with the total cost of the project over four years being $754,808. This project was previously funded in 2014 (14-308) at an average yearly cost of $200,199, with a four year total cost of $853,077. Cost of the project has been reduced by 13% as compared to previous years, which is primarily associated with the reduction in the amount of time the weir will be in operation. Despite the budget reduction, the project still provides data on Chinook Salmon and Chum Salmon, which are two stocks that have faced serious population issues in recent years in the Kuskokwim River.

TRC Score: 5 (tied)
Project Number: 18-303
Project Title: Tuluksak River Salmon Run Timing and Abundance

TRC Justification: The funding requested is to support the continued operation of the Tuluksak River weir for four years (14-306 was project from 2014 FRMP cycle). The Tuluksak River is a lower-river tributary of the Kuskokwim River that flows through the Yukon Delta National Wildlife Refuge and supports all Pacific salmon species, but has experienced disrupted hydrological flow from mining in and near the river, which has possibly decreased available habitat for the salmon returning to the river. The data collected from the Tuluksak River weir is a data component in the drainage-wide assessment for management of Chinook Salmon in the Kuskokwim River. It is one of the two weirs located in the lower section of the Kuskokwim River that are used to monitor escapement (with the other being the Kwethluk). Although it is small in magnitude as compared to overall escapement and does not greatly influence management of the aggregate Chinook Salmon stock in the Kuskokwim River, one of the Yukon Delta Wildlife Refuge's purposes as mandated by Congress is to preserve the natural diversity of species located within Refuge boundaries. Since the Tuluksak River Chinook Salmon sub-stock is a component of the much larger Kuskokwim Chinook Salmon stock, the weir allows for the monitoring of the smaller sub-stock and provides information to the Refuge if a management action is needed to protect the sub-stock in the future. The protection of the sub-stock could be needed in the future as the number of Chinook Salmon returning to the Tuluksak River has dropped substantially since 2007 (pre-2007 ~ 1,549 fish, post-2007 ~ 461 fish).

Technical merit is high with clear, measurable, and achievable objectives. The project uses proven weir methodology that utilizes a resistance board weir affixed with an underwater video camera that spans a 60 meter section of the Tuluksak River approximately 49 river kilometers upstream from the confluence of the Kuskokwim River. The weir was in operation from 1991 through 1994 and then from 2002 to present. The previously funded projects had objectives that enumerated all salmon species in the Tuluksak River, while the current proposed project only enumerates Chinook and Chum Salmon. Age, sex, and length information will be collected on Chinook and Chum Salmon. Sampling would follow established and technically sound methods developed by ADF&G and USFWS for estimating salmon ASL composition. Data gathered from the project for Chinook Salmon is utilized to measure lower river escapement in the Kuskokwim River drainage-wide Chinook Salmon assessment. Biological data obtained from the escapement data is then used in the spawn-recruit analysis for Kuskokwim River Chinook Salmon, which is used to help set drainage-wide escapement goals. This project addresses the

2018 Priority Information Need for the Kuskokwim Region for *reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests*. The project also marginally addresses the 2018 Priority Information Need for the Kuskokwim Region for methods including *"quality of escapement" measures in establishing Chinook Salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements*.

The principal investigator has supplied a resume and has participated in numerous Fisheries Resource Monitoring Program funded project in the past, including being the Principal Investigator for the Tuluksak. The project has multiple letters of support from varying local, Federal, and independent entities, Tuluksak Native Community (TNC), Organized Village of Kwethluk (OVK), Native Village of Napaimute (NVN), Association of Village Council Presidents (AVCP), Orutsararmiut Native Council (ONC), and the Kuskokwim Watershed Council (KRWC). The project also plans on hiring one rural Alaskan technician each season as a local hire, as well as an Alaska Native Science and Engineering Program (ANSEP) student. However, no budget or letter of support for an ANSEP student is provided in the project documentation.

Detailed budget tables and budget justifications were provided by the investigators. The average annual cost of the project is $96,295, with the total cost of the project over four years being $385,180. This project was previously funded in 2014 (14-306) at an average yearly cost of $184,239, with a four year total cost of $784,448.The 2018 total costs are approximately 51% smaller than the 2014 total costs. The reduction in costs is primarily associated with the reduction in the amount of time the weir will be in operation and reduction from four weir operations staff to two weir operations staff.

TRC Score: 5 (tied)
Project Number: 18-305
Project Title: Kuskokwim River Sonar

TRC Justification: The funding requested is to enable ADF&G to continue annual sonar operations during the month of August to enumerate the annual Coho Salmon run in the Kuskokwim River. From 2014-2016, ADF&G conducted a feasibility study using sonar in combination with drift-gillnetting to estimate salmon abundance in the Kuskokwim River. As a result of the successful completion of the feasibility study, ADF&G has secured long-term funding for continued sonar operations; however, the existing budget is only adequate to operate the project through the overlapping Chinook, Chum, and Sockeye Salmon runs. The proposed project can also indirectly improve our knowledge on whitefish species abundance (although not specifically stated as an objective of the project). The proposal also seeks transportation and lodging funds to allow four trips per year (8 total) in order for local representatives to visit the project where they will be exposed to the daily sonar operations at the field camp. By funding this proposed project, all Pacific salmon species utilized in the subsistence fishery in the Kuskokwim River will be monitored via sonar at the confluence of the Kuskokwim River and Church Slough.

This project addresses the 2018 Priority Information Need for the Kuskokwim Region for *reliable quantitative and/or qualitative estimates of salmon escapements and/or harvests*. Data collected from

this project will result in more reliable and timelier estimates of Coho Salmon abundance for the Kuskokwim River drainage. The project could eliminate the need to calculate Coho Salmon abundance through the run-reconstruction model. Daily results would provide real-time abundance data and timing information to fishery managers, which would allow for better informed decisions with regards to harvest opportunities for local subsistence users. All of the information from this project will help assess the effects of increased Coho Salmon harvest on the Coho Salmon run in the Kuskokwim River, given the restrictions in Chinook Salmon harvest since 2012. This project is even more important given that two weirs in the lower Kuskokwim River (Kwethluk and Tuluksak) will not be monitoring Coho Salmon escapement if funding is approved for those two projects through the Monitoring Program process this year. The project also will help the managers for salmon in the Kuskokwim River transition slowly away from the Bethel Test Fishery as the standardized methodology the sonar provides makes year to year comparisons of run size more reliable.

Technical merit is high with clear, measurable, and achievable objectives. Investigators are all highly skilled and the plans for this project have been discussed with all State, local, rural, and tribal management groups in the area. In turn, each of these groups have provided a letter of support (Kuskokwim River Salmon Management Working Group, Kuskokwim River Inter-Tribal Fish Commission, Bethel Fish and Game Advisory Committee, the Native Village of Napaimute, and the Yukon Delta National Wildlife Refuge). The sonar methodology outlined in the proposal has proven to be a valuable tool for estimating run-timing and daily abundance of annual salmon runs to large Alaskan rivers similar to the Kuskokwim River. Similar methods are used on the Yukon, Kenai, and Cooper rivers.

The sonar site is located on land owned by the Native Village of Kwethluk. To show their support for the sonar project, the Kwethluk Tribal Council issued permits for the feasibility work conducted in 2015 and 2016 and has agreed to issue a five-year land use permit for constructing a sonar camp. Fish harvested in the sonar test fishery will be donated to local communities through the Kwethluk Tribal Council and the Orutsararmiut Native Council, which will be similar to what is currently done in the Bethel Test Fishery.

No local hires or student interns will be hired to assist with project management or fieldwork for the length of the project. In order to promote capacity building with management advisory groups, all members of the Working Group, Fish Commission, in-season managers, and Refuge staff will be invited to visit the sonar project while in operation.

Detailed budget tables and budget justifications were provided by the investigators. The average annual cost of the project is $97,202, with the total cost of the project over four years being $388,809. ADF&G proposes $55,492 in matching funds, which is approximately 14% of the total cost of the project.

TRC Score: 6 (tied)
Project Number: 18-352
Project Title: Support for Cooperative Management of the Kuskokwim River Subsistence Salmon Fishery

TRC Justification: This project supports the activities of the Kuskokwim River Salmon Management Working Group. The Working Group is considered to be a successful model of collaboration, and it provides a much needed public forum in which rural subsistence fishers and other stakeholders meet and have discussions with State and Federal fishery managers regarding salmon subsistence, commercial, and sport fisheries. The Working Group reaches a consensus on how to proceed with management. The size of recent Chinook Salmon runs into the Kuskokwim River drainage have been some of the lowest on record resulting in fishery managers implementing harvest restrictions. Drainage residents are highly dependent on local salmon runs. The lower Kuskokwim River drainage, where most people living in the Kuskokwim Area reside, is encompassed by the Yukon Delta National Wildlife Refuge. The drainage stretches to parts of Denali National Park and Preserve and Lake Clark National Park and Preserve.

This project does not address a priority information need for the Kuskokwim Region as identified in the 2018 Notice of Funding Opportunity. However, activities of the Working Group have been a major feature of collaborative management for almost three decades.

The investigator is qualified to conduct the project and provided a resume. The investigation plan is well-written and complete. The budget request has increased significantly by 59% since 2014. The average annual cost of the request is $104,042. Investigators are requesting funding for 70% of overall costs for this long-term project, and cost sharing has gone down significantly from previous funding cycles when ADF&G contributed more to the support of its staff.

TRC Score: 6 (tied)
Project Number: 18-300
Project Title: Kuskokwim River Broad Whitefish

TRC Justification: Broad whitefish are an important subsistence species in the Kuskokwim River region and are presumed to be heavily utilized by Federally-qualified subsistence users within the Yukon Delta National Wildlife Refuge, as well as, other locations in the Kuskokwim River drainage. Local users have expressed concerns that numbers have decreased and some populations may be over-exploited; however, population demographics and harvest data are very limited in the upper Kuskokwim River.

This project addresses two Priority Information Needs identified by the Monitoring Program, which are as follows: (1) Traditional ecological knowledge or other knowledge of whitefish in the Kuskokwim River drainage, especially in lower and middle Kuskokwim River communities and (2) a spatially robust indexing method for estimating species-specific whitefish harvest on an annual basis for the Kuskokwim River drainage. The proposed project also addresses a priority research need identified in the Office of Subsistence Management-funded *Strategic Plan for Research of Whitefish Species in the Yukon and Kuskokwim River Drainages in Alaska*.

Methodology is sound and objectives are clear, measurable, and achievable. If properly done, this project could provide more information about Broad Whitefish in the Kuskokwim River than any other project done to date. This is because the methodologies used in the project can simultaneously estimate abundance, exploitation rates, and population demographics through the combination of mark-recapture

and mark-recovery techniques. This project would also lend insight the frequency of "skip-spawning" that has been identified to occur in the Broad Whitefish population in the Kuskokwim River.

Both of the co-investigators, the Native Village of Napaimute and the Orutsararmiut Native Council play meaningful roles in the project as they are integral components in achieving the first objective of the project, which is to "estimate subsistence exploitation rates in the lower, middle, and upper Kuskokwim River for Broad Whitefish". The co-investigators for this project are from the lower and middle Kuskokwim River, where a majority of the Broad Whitefish subsistence harvest comes from; thus, their works in providing outreach and communication about the project is important.

Detailed budget tables were provided by the investigators. The budget justification is extremely detailed. The average annual cost of the project is $153,469, with the total cost of the project over four years being $613,877. The level of requested funding is justifiable when considering the large geographic scale of the study and given the potential diversity of results that will add substantially to the knowledge of Broad Whitefish exploitation, abundance, and population demographics in the Kuskokwim River.

TRC Score: 7
Project Number: 18-301
Project Title: Inferring Production Patterns of Kuskokwim River Chinook Salmon Using Otolith Microchemistry and River Isoscapes

TRC Justification: The proposed project is seeking to quantify the production patterns and life-history strategies of Kuskokwim River Chinook Salmon at spatial and temporal scales relevant to fisheries management. The project would do this by generating a geo-spatial model of strontium isotope signatures collected from water samples collected throughout the Kuskokwim River drainage. This new model then would be able to reapportion Chinook Salmon harvested in the lower portion of the Kuskokwim River based on strontium isotope signatures found in otoliths collected from the harvested Chinook Salmon in the subsistence fishery or at the Bethel Test Fishery. This analytical framework can then be used to assess inter-annual variability in production and how this production varies with environmental variation or fishery harvests. The same type of work has been done in the Nushagak River in the Bristol Bay system and the same working is currently being done in the Yukon River. These new assessments then could help guide in-season management decisions once completed.

This project involves the collaborations of many Federal, State, and University entities (ADF&G, USGS, USFWS, the University of Washington, and the University of Utah). The project does not have any letters of support from any State, Federal, Tribal, or independent entities, nor are any of the investigators part of any rural organization. There is no plan to hire any local hires for the project. The investigators indicate that they will take advantage of the capacity building plan that is in place through AYKSSI funded projects in order to communicate the importance and implications of the work produced in the proposal. The investigators offer to inform communities of the project and its findings and members of the research team will offer to make annual presentations at the annual meetings of the Association of Village Council Presidents (AVCP) in Anchorage and Bethel, as well as at the Kuskokwim Area Interagency meeting.

This project is highly technical and the investigators are well regarded in their research fields. Similar high quality work has been successfully completed for Chinook Salmon stocks within the Nushagak River. The investigators are also doing similar work for Chinook Salmon stocks within the Yukon River. The overall results produced by the project could provide important insights that can be used to develop and implement effective management and conservations strategies given uncertainty in Chinook Salmon populations within the Kuskokwim River.

Detailed budget tables and budget justifications were provided by the investigators. The average annual cost of the project is $205,802, with the total cost of the project over four years being $823,207. The price of the project is high, with each year's cost being within 10% of the $215,000 cap.

APPENDIX A

Table A.1. Fisheries Resource Monitoring Program projects funded in the Kuskokwim Region from 2000 to 2016.

Project Number	Project Title	Investigators
	Kuskokwim River Salmon	
00-007	Tatlawiksuk River Salmon Weir	ADF&G, KNA
00-008	Bethel Inseason Subsistence Harvest Data	ONC
00-009	Bethel Postseason Harvest Monitoring	ADF&G, ONC
00-019	Kwethluk River Salmon Weir	USFWS, OVK
00-027	Goodnews River Salmon Weir	ADF&G
00-028	Kanektok River Salmon Weir	ADF&G, USFWS
00-029	Documentation/Communication on Floating Weirs	AVCP
00-030	Kuskokwim Salmon Project Site Surveys	ADF&G, USFWS
01-019	Planning Meetings in AVCP Region	AVCP, KNA
01-023	Upper Kuskokwim River Inseason Data	ADF&G, MNVC
01-024	Bethel Postseason Fishery Household Surveys	ADF&G, ONC
01-053	Tuluksak River Salmon Weir	USFWS, TNC
01-070	Kuskokwim River Chinook Salmon Genetic Diversity	ADF&G, USFWS
01-086	Kuskokwim River Escapement Project Technician	ONC
01-088	Natural Resource Internship Program	KNA
01-116	Kuskokwim River Salmon Work Group support	ADF&G
01-117	Kuskokwim Salmon Age-Sex-Length Assessment	ADF&G
01-118	Kanektok River Salmon Weir	ADF&G, BSFA
01-132	Bethel Inseason Subsistence Salmon Harvest Data	ONC, ADF&G
01-141	Holitna River Chinook, Chum and Coho Telemetry	ADF&G
01-147	Aniak River Sport Fisheries Survey	ADF&G, KNA
01-225	Middle Kuskokwim River Inseason Salmon Harvest	KNA, ADF&G, USFWS
01-226	Subsistence Fisheries Research Capacity Building	ADF&G
02-036	Aniak Postseason Subsistence Fishery Surveys	ADF&G, KNA
02-046	Kuskokwim River Chinook Salmon Inriver Abundance	ADF&G
03-030	Kuskokwim River Salmon Mark-Recapture	ADF&G, KNA
03-041	Kuskokwim Coho Salmon Genetics	ADF&G, USFWS
03-931	Kuskokwim Science Plan	BSFA
04-301	Kwethluk River Salmon Weir	USFWS, OVK
04-302	Tuluksak River Salmon Weir	USFWS, TNC
04-305	Kanektok River Salmon Weir	ADF&G, BSFA
04-306	Holitna River Chinook and Chum Salmon Telemetry	ADF&G
04-307	Kuskokwim Age-Sex-Length Sampling	ADF&&G
04-308	Kalskag Salmon Mark-Recapture	ADFG
04-309	Kuskokwim Native Association Internship Program	KNA

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Table A.1 continued

Project Number	Project Title	Investigators
	Kuskokwim River Salmon (continued)	
04-310	Tatlawiksuk River Salmon Weir	ADF&G, KNA
04-311	Kuskokwim Coho Salmon Genetic Mixed Stock Assessment	USFWS
04-312	Goodnews River Coho Salmon Weir	ADF&G
04-351	Kuskokwim Bay Traditional Ecological Knowledge and Oral History	USFWS
04-353	Bethel Inseason Subsistence Salmon Data Collection	ADF&G, ONC
04-359	Kuskokwim Postseason Salmon Subsistence Harvest Surveys	ADF&G, KNA, ONC
05-302	Kuskokwim River Chinook Salmon Inriver Abundance	ADF&G
05-304	George and Takotna River Salmon Weirs	ADF&G
05-305	Kuskokwim Chinook Salmon Genetic Stock Identification	ADF&G
05-306	Kuskokwim River Inseason Subsistence Harvest Data Collection	ADF&G, ONC
05-307	Lower Kuskokwim Subsistence Fisheries Catch Monitoring	ONC
05-353	Nunivak Island Subsistence Cod Fisheries	NPT
05-356	Kuskokwim Area Postseason Subsistence Salmon Harvest Survey	ADF&G
06-306	Lower Kuskokwim Salmon Inseason Subsistence Catch Monitoring	ADF&G
06-307	Kuskokwim River Salmon Management Working Group	ADF&G
07-302	Kuskokwim River Chum Salmon Run Reconstruction	ADF&G, BC
07-303	Kuskokwim River Salmon Age-Sex-Length Assessment	ADF&G
07-304	Tatlawiksuk River Salmon Weir	ADF&G, KNA
07-305	Kanektok-Goodnews River Salmon and Dolly Varden Weirs	ADF&G
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	ADF&G
08-303	George River Salmon Weir	ADF&G
08-304	Takotna River Salmon Weir	ADF&G
08-351	Tuluksak River Subsistence Chinook Salmon Age-Sex-Length	USFWS
08-352	Bethel and Aniak Postseason Subsistence Salmon Harvest Surveys	ADF&G
10-300	Kanektok and Goodnews River Salmon Assessment	ADF&G
10-303	Kuskokwim River Salmon Age Sex Length Assessment	ADF&G
10-304	Tatlawiksuk River Salmon Assessment	ADF&G
10-306	Kwethluk River Salmon Assessment	USFWS
10-307	Tuluksak River Salmon Assessment	USFWS
10-352	Kuskokwim Salmon Postseason Harvest Monitoring	ADF&G
10-353	Kuskokwim Salmon Working Group Support	ADF&G
10-354	Kuskokwim Salmon Inseason Harvest Monitoring	ADF&G
12-302	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADF&G, ONC
12-303	George River Salmon Weir	ADF&G, KNA
12-304	Takotna River Salmon Weir	ADF&G, TCA
12-309	Kwethluk River Salmon Weir	USFWS

Continued on next page

Table A.1 continued

Project Number	Project Title	Investigators
	Kuskokwim River Salmon (continued)	
14-302	Tatlawiksuk River Salmon Weir	ADF&G
14-303	George River Salmon Weir	ADF&G
14-306	Tuluksak River Salmon Weir	USFWS
14-308	Kwethluk River Salmon Weir	USFWS
14-351	Kuskokwim Delta Chinook Salmon Non-local Harvesters	USFS
14-352	Kuskokwim Area Salmon Post-season Subsistence Harvest Surveys	ADF&G
14-353	Kuskokwim River Salmon Inseason Subsistence Survey	ADF&G
14-354	Kuskokwim River Support for Cooperative Management	ADF&G
16-301[a]	Lower Kuskokwim River Subsistence Chinook Salmon Harvest ASL	ADF&G, ONC
16-302[a]	Salmon River of the Pitka Fork Weir	ADF&G, MTNT
16-351[a]	Middle Kuskokwim River In season Subsistence Salmon Harvest Monitoring and Estimation	ADF&G, NVN
	Resident Species	
01-052	Whitefish Lake Humpback & Broad Whitefish	USFWS, KNA
01-112	Aniak River Subsistence Fisheries Study	ADF&G, KNA
01-235	Upper Kuskokwim Community Use Profiles	ADF&G
04-304	Whitefish Lake Whitefish Telemetry	USFWS
05-301	Whitefish PIT Tags	USFWS
06-303	Kuskokwim River Whitefish Migratory Behavior	USFWS, KNA
06-305	Kuskokwim River Inconnu Spawning Distribution	ADF&G
06-351	Lower Kuskokwim Non-salmon Harvest and TEK	ADF&G, AVCP
08-300	Aniak River Rainbow Trout Seasonal Distribution	ADF&G
10-305	Kuskokwim River Sheefish Spawning, Distribution and Timing	ADF&G
12-312	Status of sheefish in Highpower Creek and Upper Kuskokwim River	ADF&G
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	ADF&G
14-301	Kuskokwim River Broad Whitefish Spawning above McGrath	USFWS
14-307	Upper Kuskokwim River Sheefish Enumeration	USFWS
14-356	Lower Kuskokwim Villages Whitefish	UAA
16-303[a]	Enumeration and spawning area characterization of Sheefish in the Upper Kuskokwim River	ADF&G

a = On-going projects during 2017.
Abbreviations: **ADF&G** = 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, **MTNT** = McGrath, Takotna, Nikolai, Telida Ltd. **NPT** = Nuniwarmiut Piciryarata Tamaryalkuti, Inc., **NVN** = Native Village of Napaimute , **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.

APPENDIX B

The following abstracts were written by the Principal Investigators and submitted to the Office of Subsistence Management as part of the proposal package. The statements and information contained in the abstracts were not altered and they may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee.

Project Number: 18-301
Title: Inferring production patterns of Kuskokwim River Chinook Salmon using otolith microchemistry and river isoscapes
Geographic Region(s): Kuskokwim Region
Data Type: Stock Status and Trends (SST)
Principal Investigator: Daniel Schindler (University of Washington)
Co-Investigator(s): Zachary Liller (Alaska Dept. of Fish & Game), Lewis Coggins (US Fish and Wildlife Service), Christian Zimmerman (US Geological Survey), Diego Fernandez (University of Utah), Sean Brennan (University of Washington).

Cost:	**2018:** $211,019	**2019:** $196,014	**2020:** $205,239	**2021:** $209,935
Total: $823,207				

Issue: Kuskokwim River Chinook Salmon have experienced critically low returns during the last decade, critically challenging the health, culture, and economies of subsistence-based human communities within this vast watershed. The Kuskokwim Region represents the largest subsistence fishery in Alaska, and is one of the largest in North America. However, fundamental knowledge gaps concerning the ecology of its Chinook Salmon populations remain but are critical to their effective management. In particular, it is unknown how Chinook Salmon production is distributed across the Kuskokwim's diverse tributaries and habitats, and how these production patterns change over time in response to climate forcing, industrial development (e.g., mining activity), and fishery interceptions during subsistence harvests in the lower river. Also unclear is the extent to which juvenile salmon exhibit different life history strategies during their early life phase within the freshwater environment, and how these translate to adult recruitment. Heterogeneity in both of these aspects of Chinook Salmon biology impart resilience to populations to environmental change by distributing the risk of poor performance, or production, across a variety of distinct sub-populations, habitats, and life-history strategies. We currently lack the tools to easily delineate how production patterns change over time across this vast and diverse watershed.

Objectives: Here, we propose to apportion the production of Chinook Salmon returning to the Kuskokwim River annually for the years 2018-2021 using strontium isotope records within the otoliths of these fish. Otoliths represent a life-long record of the movements of migratory fish through different habitats; strontium isotopes have proven to be a particularly powerful tracer to discern the natal sources and life history strategies of Chinook Salmon.

Methods: Using a Bayesian assignment framework, we will employ a strontium isotope baseline to determine the natal origins and freshwater movements of fish caught in the Bethel Test Fishery (BTF)

annually, run by the Alaska Department of Fish and Game, based on a match between the strontium isotopes recorded in their otoliths and the spatial variation that exists across the watershed.

Outcomes: This information can then be used to inform stock assessments that are currently hampered by a distinct lack of data describing the distribution of returning fish among tributary populations. Overall, the result will be an annual reconstruction of the relative production patterns of Chinook Salmon at fine spatial scales and their life-history strategies. Such insights will provide a framework to quantify the inter-annual variation that characterizes these two fundamental aspects of Chinook Salmon biology at multiple spatial and temporal scales and how they contribute to the overall stock portfolio of Kuskokwim River Chinook Salmon. Doing so is a first and necessary step to evaluate i) how environmental changes may affect the productivity of Kuskokwim River Chinook Salmon into the future, and ii) the trade-offs between harvests and the conservation of Chinook Salmon biodiversity.

Partnerships/Capacity Building: This project is a unique collaboration between academia and the state and federal agencies in charge of monitoring and managing Kuskokwim River Chinook Salmon. Our work will improve stock assessments needed for sustainable management of this subsistence resource.

Project Number: 18-302
Title: Kwethluk River Salmon Run Timing and Abundance
Geographic Region: Kuskokwim Region
Data Type: Stock Status and Trends
Principal Investigator: Ken Harper and Aaron Webber, USFWS Kenai FWCO, Aaron Moses, USFWS Yukon Delta NWR

Cost:	**2018:** $189,752	**2019:** $189,058	**2020:** $188,521	**2021:** $187,477
Total: $754,808				

Issue: This project focuses on two of the identified priority information needs for the Kuskokwim Region of the 2018 Fisheries Resource Monitoring Plan Priority Information Needs: Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests, and methods for measuring quality of escapement. This project will collect salmon escapement numbers, run timing, age, sex, and length data, all of which are vital for managers for run reconstructions and inseason management. Monitoring of salmon returns to the Kwethluk River is essential to ensuring that Federal conservation mandates are fulfilled within the Yukon Delta National Wildlife Refuge (Alaska National Interest Lands Conservation Act (Section 303 (7) (8) a, b, c). Escapement monitoring also helps ensure that subsistence harvest needs will be met.

Objectives:

1. Enumerate the daily passage and characterize the run timing of Chinook and Chum Salmon.
2. Estimate the weekly sex and age composition of Chinook and Chum Salmon such that the simultaneous 95% confidence intervals have a maximum width of 0.2.

3. Estimate the mean length of Chinook and Chum Salmon by sex and age such that the simultaneous 95% confidence intervals have a maximum width of 0.2.
4. Identify and count other fish species passing through the weir and enumerate salmon carcasses passing back over the weir.

Methods: The USFWS will operate a resistance board weir affixed with an underwater video system in the Kwethluk River approximately 88 river kilometers upstream from the confluence with the Kuskokwim River. Enumeration of salmon will occur between mid-June and August 15. Daily escapement counts will be relayed to staff daily, thus contributing to daily in-season management decisions. Data on fish age, sex, and length will be collected weekly. Sampling consists of measuring length, determining sex, collecting scales, examining fish for gill net marks, and then releasing the fish upstream of the weir. Days with partial or zero counts will be considered incomplete and estimates will be calculated for those dates.

Partnerships/Capacity Building: We will provide an opportunity for up to 5 elders from Kwethluk each year to have an "Elders Tour". We will transport them to the weir, tour the site, provide an opportunity for them to help with hands-on sampling of salmon, share a nice meal, and return them back to their homes. We hope this experience will eliminate misconceptions some elders have about negative consequences of weirs to salmon, and by so doing, positively influence other village residents who form opinions based on the experience of the elders. We will also visit other villages and give presentations at rural schools about subsistence issues as an outreach tool. In addition, we will hire, train, and mentor one technician and one ANSEP student from local rural villages to work at the weir each year. We hope these technicians use that experience to become more involved in their communities, such as being active on their local RAC.

Project Number: 18-303
Title: Tuluksak River Salmon Run Timing and Abundance
Geographic Region: Kuskokwim Region
Data Type: Stock Status and Trends
Principal Investigator: Ken Harper and Aaron Webber, USFWS Kenai FWCO, Aaron Moses, USFWS Yukon Delta NWR

Cost:	**2018:** $93,953	**2019:** $99,153	**2020:** $96,320	**2021:** $95,754
Total: $385,180				

Issue: This project focuses on two of the identified priority information needs for the Kuskokwim Region of the 2018 Fisheries Resource Monitoring Plan Priority Information Needs: Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests, and methods for measuring quality of escapement. This project will collect salmon escapement numbers, run timing, age, sex, and length data, all of which are vital for managers for run reconstructions and inseason and post-season management. Monitoring of salmon returns to the Tuluksak River is essential to ensuring that Federal conservation mandates are fulfilled within the Yukon Delta National Wildlife Refuge (Alaska National Interest Lands Conservation Act (Section 303 (7) (8) a, b, c). Escapement monitoring also helps ensure that subsistence

harvest needs will be met.

Objectives:

1. Enumerate the daily passage and characterize the run timing of Chinook and Chum Salmon.
2. Estimate the weekly sex and age composition of Chinook and Chum Salmon such that the simultaneous 95% confidence intervals have a maximum width of 0.2.
3. Estimate the mean length of Chinook and Chum Salmon by sex and age such that the simultaneous 95% confidence intervals have a maximum width of 0.2.
4. Identify and count other fish species passing through the weir and enumerate salmon carcasses passing back over the weir.

Methods: The USFWS will operate a resistance board weir affixed with an underwater video system in the Tuluksak River approximately 49 river kilometers upstream from the confluence with the Kuskokwim River. Enumeration of salmon will occur between mid-June and August 1. Daily escapement counts will be relayed to staff daily, thus contributing to daily in-season management decisions. Data on fish age, sex, and length will be collected weekly. Sampling consists of measuring length, determining sex, collecting scales, examining fish for gill net marks, and then releasing the fish upstream of the weir. Days with partial or zero counts will be considered incomplete and estimates will be calculated for those dates.

Partnerships/Capacity Building: We will provide an opportunity for up to 5 elders from Tuluksak each year to have an "Elders Tour". We will transport them to the weir, tour the site, provide an opportunity for them to help with hands-on sampling of salmon, share a nice meal, and return them back to their homes. We hope this experience will eliminate misconceptions some elders have about negative consequences of weirs to salmon, and by so doing, positively influence other village residents who form opinions based on the experience of the elders. We will also visit other villages and give presentations at rural schools about subsistence issues as an outreach tool. In addition, we will hire, train, and mentor one technician from a rural village to work at the weir as a local hire each year. We hope these technicians use that experience to become more involved in their communities, such as being active on their local RAC.

Project Number: 18-304
Title: George River Salmon Weir
Geographic Location: Kuskokwim Region
Data Type: Stock Status and Trends
Principle Investigator: Jordan M Head, Alaska Department of Fish and Game (ADF&G)
Co-Investigators: Zachary Liller ADF&G and Dan Gillikin Native Village of Napaimute

Cost:	**2018**: $214,853	**2019**: $179,473	**2020**: $186,752	**2021**: $145,414
Total: $726,492				

Overview of need: We propose to continue operations of a weir on the George River to index Chinook (*Oncorhynchus tshawytscha*), Chum (*O. keta*), and Coho Salmon (*O. kisutch*) escapement to the middle

portion of the Kuskokwim River drainage, as well as conduct a high school internship program as part of our long-term efforts to build local capacity. Our proposal is in response to the priority information needs identified in the 2018 FRMP request for proposals to obtain reliable quantitative estimates of salmon escapements and estimate the age-sex-length composition of the escapement. This proposal would continue a 21 year dataset used to evaluate the size and composition of Chinook, Chum, and Coho Salmon escapements to the middle Kuskokwim River. Annual monitoring is needed to evaluate if escapements are within the bounds of the established George River Chinook Salmon escapement goal. The success of the George River weir has made it an integral component of the broader salmon escapement monitoring program on the Kuskokwim River. Apart from its utility to the management of the Kuskokwim River subsistence fishery, the George River weir has been important in fostering community awareness, understanding, and direct involvement in fisheries assessment. Since 2005, the George River weir has been the site of high school mentorship and college internship programs sponsoring hundreds of high school age students and multiple college interns from throughout the Kuskokwim Region. The internship program has proven to be highly successful. In recent years, a majority of fisheries technicians and crew leaders working on Kuskokwim River weir projects are past graduates of the high school and college internship programs. Several are currently pursuing degrees in fisheries science.

Project Goals and Objectives: Our overall project goals are to index escapement of Chinook, Chum, and Coho Salmon to the middle portion of the Kuskokwim River drainage and provide capacity building and education opportunities for local stakeholders. Specific objectives of this project are to:

1. Estimate the daily and total annual Chinook, Chum, and Coho Salmon escapements from 15 June to 20 September;
2. Estimate age-sex-length composition of the annual Chinook, Chum, and Coho Salmon escapements to the George River such that 95% confidence intervals of age composition will be no wider than ±10% (a=0.05, d=0.10);
3. Foster local interest in natural resource management and field biology, and expose high school students to employment and post-secondary education possibilities.

Specific project activities: We will conduct daily visual counts of salmon escapement to the George River from 15 June to 20 September and collect age-sex-length samples from 230 Chinook Salmon, 400 Chum Salmon, and 400 Coho Salmon throughout the run in proportion to run abundance. All data will be uploaded to a publicly accessible database and made available weekly at inseason meetings to inform fisheries management decisions. Final results will be published in the ADF&G Fishery Data Series. An 8 day internship will be provided for up to 10 students.

Anticipated outputs and outcomes: Escapement estimates from the George River Weir will be used as data input for run reconstruction models used to estimate total annual abundance and escapement of Chinook and Coho Salmon returning to the Kuskokwim River. Annual Chinook Salmon escapement to the George River will be evaluated relative to an established sustainable escapement goal. Annual Chum and Coho escapements to the George River will be compared to historical observations to monitor the

adequacy of escapement of those species. Age-sex-length data will be used to reconstruct brood year production and monitor escapement composition relative to the total run and harvest.

Project Number: 18-305
Title: Kuskokwim River Sonar
Geographic Location: Kuskokwim Region
Data Type: SST
Principle Investigator: Nicholas J. Smith, Alaska Department of Fish and Game
Co-Investigators: Zachary Liller and Carl T. Pfisterer, Alaska Department of Fish and Game

Cost:	**2018**: $95,590.59	**2019**: $98,870.30	**2020**: $95,739.04	**2021**: $98,609.55
Total: $338,809.48				

Overview of need: We propose to use sonar and drift gillnet apportionment methods to estimate daily and total abundance of adult salmon species (*Oncorhynchus sp.*) returning to the Kuskokwim River. Our proposal is in direct response to the need for inseason abundance estimates for all salmon species and is consistent with Alaska Department of Fish and Game's (ADF&G) strategic plan towards integrating a sonar-based salmon assessment program within the current suite of Kuskokwim River assessment projects. Towards that goal, ADF&G has secured long-term funding for sonar operations, but the existing budget is only adequate to operate the project through the overlapping Chinook (*O. tshawytscha*), Chum (*O. keta*), and Sockeye (*O. nerka*) Salmon runs. Coho Salmon (*O. kisutch*) enter the Kuskokwim River beginning in late July, after the migration of other species has all but ended. By the end of July, only about 20% of the Coho Salmon run has passed through the lower river, where most harvest occurs. Our request would continue annual sonar operation during the month of August to enumerate the annual Coho Salmon run. Our proposal addresses the priority information needs identified for the Kuskokwim Area by providing *reliable quantitative estimates of salmon escapements* for the entire Kuskokwim River, which are easily obtained from total run and harvest estimates.

Project Goals and Objectives: The overarching goal of the Kuskokwim River sonar project is to estimate daily and total abundance of Chinook, Chum, Sockeye, and Coho Salmon near Bethel and provide those estimates to State and Federal fisheries managers inseason to inform sustainable fisheries management. Towards that goal, SOA has secured long-term funding to operate the sonar program during June and July annually to assess the overlapping Chinook, Chum, and Sockeye Salmon runs. This proposal seeks to continue project operations through August, to meet the following specific objective: Estimate the daily and total passage of Kuskokwim River Coho Salmon at rkm 130 through August 24, 2018, 2019, 2020, and 2021.

Specific project activities: We propose to use sonar and drift gillnet apportionment methods on the mainstem Kuskokwim River just upriver from Bethel to estimate daily and total number of adult Coho Salmon through August 24, 2018, 2019, 2020, and 2021. Sonar data files will be processed using software developed by ADF&G. A drift gillnet test fishery that overlaps the ensonified areas will be used to apportion abundance estimates to species. ADF&G/CF staff will maintain all physical and electronic data

produce tabular and graphical summaries for the use by State and Federal managers and advisory groups engaged in inseason salmon management. Abundance estimates will be updated daily in the publicly accessible Arctic Yukon Kuskokwim Database Management System and ADF&G Fish Counts Page.

Anticipated outputs and outcomes: Project results are expected to influence inseason management decisions by providing the first ever reliable daily estimates of abundance near the dominant fishery. This information will be used by managers within formal and informal decision making frameworks to evaluate management options and execute the fishery. Final project results will be published in the ADF&G Fishery Data Series.

Project Number: 18-350
Title: Bethel Subsistence Harvest Surveys
Geographic Region: Kuskokwim Region
Data Type: Harvest Monitoring, Stock Status and Trends
Principal Investigator: Janessa Esquible
Co-Investigators: Greg Roczicka ONC, Zachary Liller ADF&G

Cost:	**2018**: $67,662	**2019**: $66,487	**2020**: $67,994	**2021**: $67,559
Total: $271,702				

The proposed project will collect detailed quantitative subsistence harvest and age-sex-length (ASL) information in the Bethel area to quantify subsistence harvest effort and catch composition during the Chinook Salmon (*Oncorhynchus tshawytscha*), Chum Salmon (*Oncorhynchus keta)* and Sockeye (*Oncorhynchus nerka)* Salmon runs. Data collected in this project addresses several 2018 priority information needs by providing reliable quantitative estimates of salmon harvests and documenting the extent that subsistence fish are shared among the people of the lower Kuskokwim River. This project will also provide information that could be used for measuring quality of escapement with the collection of Chinook Salmon ASL data as it may apply to state and federal management considerations for the subsistence fishery. Subsistence harvest information will be collected through weekly visits to surrounding

Bethel fish camps and opportunistic encounters at the Bethel boat harbor in the months of June and July. ASL information will be obtained through concerted recruitment efforts of 50 fishermen in the Bethel area that will voluntarily sample their Chinook Salmon harvest. Project objectives are as follows:

1. Describe Bethel area subsistence users' annual harvest goals for Chinook, Chum and Sockeye Salmon, determine the relative change in harvest goals compared to the prior year, and monitor weekly progress towards achieving annual harvest goals.
2. Document subsistence fishing activity in the Bethel area, including: when families begin subsistence fishing, weekly participation, catch per unit effort by gear type, and catch composition.

3. Estimate the annual ASL composition of Chinook Salmon harvested in the Bethel area subsistence fishery.

The overarching goal of this proposed project is to provide state and federal managers with relevant subsistence fishing effort and catch information. This information is collected from a representative sub-set of families, which are identified as "work groups" who harvest salmon for subsistence purposes in the Bethel Area. Continuous contact with subsistence fishing work groups in June and July provides a meaningful opportunity for subsistence users to share their perspectives on the annual salmon runs, harvest needs, and personal impacts of management decisions. Inseason subsistence harvest data can also be utilized to inform inseason harvest models and decisions while also serving as a time-series that provide insight into trends in gear usage, fishing effort and subsistence fleet timing. These long-term datasets can ultimately improve our understanding of Chinook Salmon subsistence harvest patterns and the resulting impact on escapement and run dynamics. All goals and outcomes will be achieved through a collaborative effort between Orutsararmiut Native Council and Alaska Department of Fish & Game to collect, process, and analyze all data.

Project Number: 18-351
Title: Kuskokwim Area Salmon Post Season Subsistence Harvest Surveys (continuation of FRMP #14-352)
Geographic Location: Kuskokwim Region
Data Type: Harvest Monitoring, Stock Status/Trends
Principal Investigator: Aaron Tiernan, Alaska Department of Fish and Game (ADF&G)
Co-Investigators: Toshihide Hamazaki**,** ADF&G and Janessa Esquible, Orutsararmiut Native Council

Cost:	**2018**: $206,568	**2019**: $205,751	**2020**: $214,659	**2021**: $213,247
Total: $840,225				

The Alaska Department of Fish and Game (ADF&G) in partnership with Orutsararmiut Native Council (ONC) in Bethel propose to conduct a voluntary survey program to estimate subsistence salmon harvest for the Kuskokwim Management Area. Harvest information will be collected through postseason household interviews and harvest calendars. Simple random sampling and stratified random sampling techniques will be used, based on community size and user group designations, to select households to be interviewed. For the community of Bethel, subsistence salmon harvest information will be collected by ONC, and ADF&G will survey the remaining communities in the Kuskokwim Management Area.

This proposal would continue a 26 year dataset of the subsistence salmon harvests and would also continue to build upon the dataset of white fish harvests in the Kuskokwim Area. Currently there are no annually required subsistence harvest permits or reporting requirements for salmon harvest in the Kuskokwim Area. This project provides the only estimate of salmon harvest in these areas. Since 2008 the Kuskokwim Subsistence Salmon Monitoring Program has been estimating subsistence harvest, primarily through household surveys and to a lesser extent harvest calendars and post card surveys.

This information has been critical for Alaska Department of Fish and Game (ADF&G), U. S. Fish and Wildlife Service (FWS), the Alaska Board of Fisheries, and the Federal Subsistence Board to manage the fishery and provide a reasonable opportunity for continued customary and traditional uses of salmon throughout the region. This harvest Monitoring Program has partnered with Orutsararmiut Native Council (ONC) in Bethel since 1999.

This project provides managers with critical information for effective stewardship of subsistence salmon resources in the Kuskokwim Area and associated federal conservation units. Data provided by this project are the basis for the development of Amounts reasonably Necessary for Subsistence (ANS) for salmon, and for assessing whether these needs have been met.

Beyond serving as a measure for ANS, data collected during this survey contributes a vital input to state, federal, and tribal fisheries managers for Kuskokwim Area salmon stocks. Quantifying subsistence harvest has been an essential data element of recent salmon reconstructions, run reconstructions, and stock assessment; this project allows for the development of productivity models of salmon species that are then used in every aspect of salmon resource management, including preseason forecasting, inseason management, post season assessment, and the definition of escapement goals.

Project Number: 18-352
Title: Support for Cooperative Management of the Kuskokwim River Subsistence Salmon Fishery (continuation of FRMP #14-354)
Geographic Location: Kuskokwim Region
Data Type: Stock Status Trends (SST), Harvest Monitoring (HM), Traditional Ecological Knowledge (TEK)
Principal Investigator: Aaron Tiernan, Alaska Department of Fish and Game (ADF&G)

Cost:	**2018**: $118,596	**2019**: $102,856	**2020**: $106,566	**2021**: $88,151
Total: $416,169				

The Alaska Department of Fish and Game is proposing for the continued support of The Kuskokwim River Salmon Management Working Group (Working Group). The Working Group is made up of 13 member seats (held by one member with one or more alternates), each representing a group of salmon resource users with interest in Kuskokwim River salmon: two elder seats (Upriver, Downriver), four subsistence fisher seats (Lower River, Middle River, Upper River, and Headwaters), one commercial processor representative, one commercial fisherman's representative, one sport fisherman's representative, one Member at Large, two Federal Subsistence RAC members (Yukon-Kuskokwim Delta, Western Interior), and ADF&G. This group provides a forum by which ADF&G, USFWS, and area salmon resource users representing subsistence, commercial, sport fishing interests, and federal advisory councils meet to discuss, collaborate and co-manage salmon resources in the Kuskokwim River drainage. In addition, everyone is able to gain detailed information and context on the current status of Kuskokwim River salmon runs, salmon utilization, and management decisions as they happen.

The State of Alaska, Department of Fish and Game (ADF&G) and the U.S. Fish and Wildlife Service (USFWS) participate in cooperative management of subsistence salmon resources in the Kuskokwim area. The Kuskokwim River Salmon Management Working Group (Working Group) participates in this process as an advisory body under direction from the Alaska State Board of Fish (BOF). This project supports the proceedings of the Working Group and directly affects subsistence salmon fisheries that occur within the waters of the Yukon Delta National Wildlife Refuge conservation unit.

FISHERIES RESOURCE MONITORING PROGRAM
YUKON REGION OVERVIEW

Since the inception of the Monitoring Program in 2000, 114 projects have been undertaken in the Yukon Region for a total of $20.6 million (**Figure 1**). Of these, the State of Alaska conducted 26 projects, the Department of the Interior conducted 49 projects, Alaska Rural organizations conducted 19 projects, and other organizations conducted 20 projects (**Figure 2**). Eighty-six projects were Stock, Status, and Trends (SST), and 28 projects were Harvest Monitoring and Traditional Ecological Knowledge (HMTEK). A list of all Yukon Region Monitoring Program projects from 2000 to 2016 is provided in **Appendix A**.

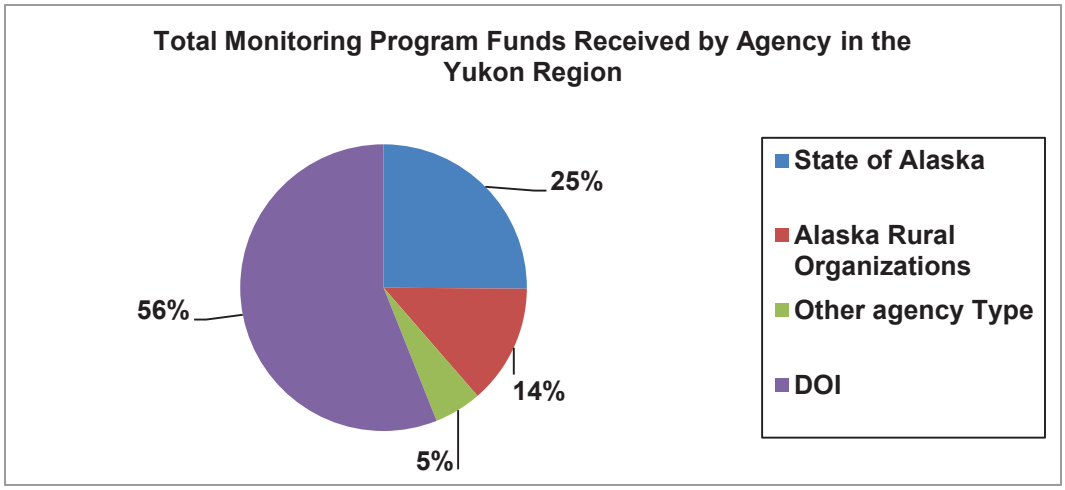

Figure 1. Monitoring Program funds received by agencies for projects in the Yukon Region. The funds listed are the total approved funds from 2000 to 2016. DOI = Department of the Interior.

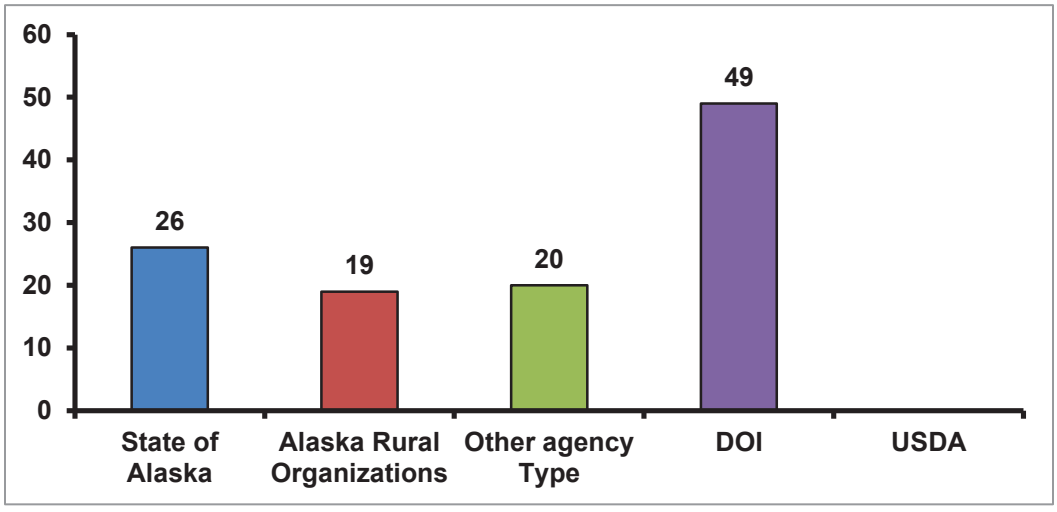

Figure 2. Total number of Monitoring Program projects funded, by agency, in the Yukon Region from 2000 to 2016. DOI = Department of Interior and USDA = U.S. Department of Agriculture.

2018 DRAFT YUKON REGION FISHERIES RESOURCE MONITORING PLAN

OVERVIEW

Priority Information Needs

The 2018 Notice of Funding Opportunity for the Yukon Region identified ten priority information needs:

- Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests.
- Salmon run timing and run strength from Yukon River District 5.
- Geographic distribution of salmon and whitefish species based on traditional ecological knowledge or other knowledge, and incorporation of anadromous information into the Anadromous Waters Catalog.
- A spatially robust indexing method for estimating species-specific whitefish harvest on an annual basis for the Yukon drainage.
- Methods for including "quality of escapement" measures (for example, potential egg deposition, sex and size composition of spawners, or 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 (for example, 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 (for example, loss of Chinook Salmon from 6-inch mesh net Chum Salmon 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.
- Incorporation of traditional ecological knowledge into fishery management processes.
- The effects of beaver dams on salmon spawning.

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. Regional budget guidelines provide an initial target for planning. For 2018, the Department of the Interior through the U.S. Fish and Wildlife Service, will provide an anticipated $1.0 to $1.5 million in funding for new projects and up to $1.6 million for ongoing projects that were initially funded in 2016. The U.S. Department of Agriculture, through the U.S. Forest Service, has historically provided up to $1.8 million annually. The amount of U.S. Department of Agriculture funding available for 2018 projects is uncertain.

Technical Review Committee Proposal Score

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 (TRC) to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2018 Monitoring Program, nine proposals were submitted for the Yukon Region. The TRC evaluated and scored each proposal on Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (**Table 1,** 1= first place, 2=second place, etc.). Projects that rank 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 2018 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 2018 Fisheries Resource Monitoring Program please see the abstracts in **Appendix B**.

Table 1. Technical Review Committee (TRC) score for projects in the Yukon Region. Projects are listed by TRC score and include the total funds requested and the average annual request for each project submitted to the 2018 Monitoring Program within the Yukon Region (1 = first place, 2 = second place, etc.). The projects listed are currently being considered for Funding in the 2018 Fisheries Resource Monitoring Program. Projects which were not eligible due to the nature of the activity are not included.

TRC Score	Project Number	Title	Total Project Request	Average Annual Request
1	18-251	Traditional knowledge of anadromous fish in the Yukon Flats with a focus on the Draanjik Basin	$190,086	$63,362
2	18-250	Documentation of salmon spawning and rearing in the upper Tanana River drainage	$160,584	$53,528
3	18-252	Subsistence salmon networks in Yukon River communities	$331,742	$110,581
4	18-202	Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment, Koyukuk National Wildlife Refuge, Alaska.	$583,676	$145,919
5(tied)*	18-203	Application of mixed-stock analysis for Yukon River Chum Salmon	$501,212	$125,303
5 (tied)*	18-205	Yukon River Coho Salmon radio telemetry	$429,910	$214,955
5 (tied)*	18-201	East Fork Andreafsky River Chinook and summer Chum Salmon abundance and run timing, Yukon Delta National Wildlife Refuge, Alaska	$678,485	$169,621
6	18-204	Yukon River Coho Salmon mixed-stock analysis	$96,000	$24,000
7	18-200	Identification and protection of habitat for Chena River Chinook Salmon	$46,661	$15,554
		Total	$3,018,356	$922,823

* Proposals with identical scores during the rating process may be further assessed by comparing the average annual cost. Proposals with a lower average annual cost may be ranked above a similar rated proposal that has a higher annual average cost

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TECHNICAL REVIEW COMMITTEE JUSTIFICATION FOR PROJECT SCORE

TRC Score: 1
Project Number: 18-251
Project Title: Traditional knowledge of anadromous fish in the Yukon Flats with a focus on the Draanjik Basin

TRC Justification: This project seeks to identify and verify the salmon and whitefish species present in the Draanjik (Black River) drainage for the purpose of making nominations to Alaska's Anadromous Waters Catalog. Proposed methods include the use of traditional ecological knowledge, environmental DNA (eDNA), minnow traps and aerial surveys to document anadromous waters used for spawning and rearing of salmon and whitefish. The principal investigators will use their findings to submit nominations to the Anadromous Waters Catalog for all waterbodies in which salmon and whitefish were documented in this drainage.

This project contains a linkage to Federal public lands/waters for subsistence use as the Draanjik (Black River) flows within and adjacent to the Yukon Flats National Wildlife Refuge. Salmon and whitefish in this drainage are harvested by residents of the proximal communities of Fort Yukon and Chalkytsik, both of which have customary and traditional use determinations for salmon. This proposal directly addresses the priority information need submitted by the Eastern Interior Subsistence Regional Advisory Council: *documentation of the geographic distribution of salmon and whitefish species based on traditional ecological knowledge or other knowledge, and incorporation of anadromous information into the Anadromous Waters Catalog*.

The results of the project will assist managers in understanding fish distribution within the watershed. Inclusion in the Anadromous Waters Catalog enables fisheries managers and biologists to better understand and evaluate sustainable harvest levels, protect habitats necessary for spawning, rearing, and migrating of anadromous fishes. The results would have wide geographic implications considering that management implications of inclusion in the Anadromous Waters Catalog would protect several anadromous species that utilize waters outside of the drainage in various stages of their life history.

The project will use ethnographic and biological methods to document fish presence and life history characteristics. The researchers propose following a rigorous sampling and research design, both in the traditional ecological knowledge components of the work and in the biological sampling of fish and eDNA. The proposal also suggests that important partnerships and capacity building with local residents and tribal organizations will be possible. Tribal governments will select the local research assistants to assist with the project. Local research assistants will be trained to carry out several aspects of the fieldwork and associated logistics and will also be trained to utilize biological sampling equipment. The Tribal Councils will be consulted in the development of project design and timing of field work. Letters of support were provided by the Chalkitsik Village Council, the Gwichyaa Zhee Gwich'in Tribal Government, the Venetie Village Council, the Yukon Flats National Wildlife Refuge and the Alaska Department of Fish and Game. The average annual cost of the project is $60,209.

TRC Score: 2
Project Number: 18-250
Project Title: Documentation of salmon spawning and rearing in the upper Tanana River drainage

TRC Justification: This study addresses the Yukon Region priority information need identified in the 2018 Notice of Funding Opportunity, "*Geographic distribution of salmon and whitefish species based on traditional ecological knowledge or other knowledge, and incorporation of anadromous information into the Anadromous Waters Catalog*." Evidence strongly suggests a much wider distribution of salmon in the Chisana and Nabesna drainages than is documented in the Anadromous Waters Catalog. The two largest tributaries of the upper Tanana River are the Chisana and Nabesna Rivers. Both drainages are almost entirely encompassed within Tetlin National Wildlife Refuge and Wrangell St. Elias National Preserve. While residents in the upper reaches of the Tanana River harvest the majority of their salmon from the Copper River or in the Yukon River near Eagle, they do harvest some salmon in the Tanana River. The proposal did not adequately address why the information is needed in this area at this time.
This project will utilize a combination of social and biological science methods. Documentation and verification of salmon spawning and rearing areas will be conducted over two open water seasons (2018 and 2019). Sampling during the first season will include minnow trapping and water sampling to test for environmental DNA (eDNA) in areas of the Chisana and Nabesna drainages previously identified as potential salmon spawning or rearing areas. Sampling during the second season will include minnow trapping in any areas identified during interviews with local knowledgeable residents and additional tributaries with positive eDNA results. All verified waters used by salmon will be submitted for listing in the Anadromous Waters Catalog. The investigation plan lacks a complete explanation of ethnographic methods and how the information will be used. The sampling protocol describes one eDNA sample event per site, which is not considered adequate for accurately determining the presence of fish species within a waterbody. Finding juveniles through trapping methods can be difficult, and widespread use of electrofishing should be considered to verify eDNA findings.

This project is designed in partnership with Yukon River Drainage Fisheries Association and Tanana Chiefs Conference. In separate proposals, they are focusing on Yukon Flats (18-251) while this proposal focuses on the upper Tanana River drainage. The proposals each stand-alone but, if funded, will collaborate through mirrored methodology and consultation during the analysis phase. By forming this partnership investigators are incorporating an inter-regional initiative to expand the information in the Anadromous Waters Catalog and to assist with capacity building efforts with a new sampling technique.

Investigators are qualified to conduct the research and provided resumes. Investigators provided multiple letters they received supporting the project. The average annual cost of the project is $53,528. The cost is reasonable for the work being proposed. The Alaska Department of Fish and Game is contributing $27,712 ($6,928 per year) in matching funds.

TRC Score: 3
Project Number: 18-252
Project Title: Subsistence salmon networks in Yukon River communities

TRC Justification: This project proposes to describe how salmon are shared within, between, and beyond the communities of Pilot Station, Nualto, and Beaver using social network analysis. The specific goal of this project is to provide information on how social networks "function in the allocation and management of subsistence resources… and how such a model might be applied and utilized in Federal subsistence management." The project generally addresses a Yukon Region priority information need requesting "incorporation of traditional ecological knowledge into fisheries management processes." The technical and scientific merits are strong, as is investigator capacity, and the cost of the project is reasonable for the research proposed.

This project addresses an immediate subsistence concern; it would highlight and advance understanding of harvesting, processing, and sharing Chinook Salmon on the Yukon River, cultural practices that are currently at risk.

There is no rural, Alaska Native, or Tribal organization involved as a meaningful partner and no letters of support were included with the proposal. Investigators claim building local capacity as a project objective, however, capacity building as described by this objective and indicated throughout the investigation plan is simply standard practice for the Division of Subsistence. One local research assistant from each project community will be hired to assist with the administration of the survey and local logistics. Resolutions of support are being sought from participating communities. The principal investigator has a track record of maintaining relationships and working closely with rural organizations. A similar project with Dr. Gerkey is currently under way in Southwest Alaska for Monitoring Program project 16-451. The average annual cost of the project is $110,000.

TRC Score: 4
Project Number: 18-202
Project Title: Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment, Koyukuk National Wildlife Refuge, Alaska

TRC Justification: The Gisasa River weir is an established Monitoring Program project, operating since 1994. This project provides important in-season information on tributary run strength, run timing, and quality of escapement for management decisions. This project is located within the Koyukuk National Wildlife Refuge boundaries, and addresses Chinook and Chum Salmon populations that are harvested by Federally qualified subsistence users from the mouth of the Yukon River and into the Koyukuk River. Gisasa River stocks contribute an unknown amount to subsistence harvests in villages of the lower Yukon River, which have harvested approximately 19,000 Chinook Salmon, and 51,500 summer Chum Salmon annually (2002 – 2011 average). Currently the project uses video technology to count fish as they pass the weir. Also, the investigator is proposing to use video data to collect length frequencies on all adult Chinook and Chum Salmon, particularly during periods of high water levels or high water temperatures, which can reduce stress on fish and allow crews to collect data when they typically couldn't in the past.

The majority of the methods used have a proven track record to achieve the results, and have gone through rigorous sampling design review. The systematic sampling used at the weir was designed

according to the recommendations of Cochran (1977); these data have been evaluated for performance, and are among the most reliable types of data collected for migratory salmon. The project answers immediate conservation concerns by providing vital data to in-season fisheries managers about fish stocks in the lower Koyukuk River. Primary investigator lays out a complete plan to show when progress, annual, and final reports will be submitted. This project addresses the following Priority Information Needs presented in the 2018 FMRP Notice of Funding Opportunity: *reliable qualitative and/or quantitative estimates of Chinook Salmon and Chum Salmon escapements, methods for including "quality of escapement" measures (e.g., egg deposition, sex and size composition of spawners, or spawning habitat utilization) in establishing Chinook Salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements, and harvest and spawning escapement changes through time in relation to changes in gillnet construction and use (e.g., set versus drift fishing, mesh size changes) for Chinook Salmon subsistence harvests in the mainstem Yukon River*.

The investigators have supplied a resume and have participated in several Fisheries Resource Management Program funded projects on the Gisasa River weir. They have experience building, installing, and repairing resistance board weirs, and had a major role in incorporating video monitoring into the Gisasa and Andreafsky weirs. The investigators have received two letters of support, from the Alaska Department of Fish and Game and from Tanana Chiefs Conference. The proposal does include hiring either locally or a student from the Alaska Native Science and Engineering Program (ANSEP). The total cost of the project is $859,825 for the four years of the project, of which $276,149 is match from the Fairbanks Fish and Wildlife Field Office. The average annual cost to the monitoring program is $145,919, which is reasonable throughout the agreement periods and is reasonable for the work being proposed.

TRC Score: 5 (tied)
Project Number: 18-203
Project Title: Application of mixed-stock analysis for Yukon River Chum Salmon

TRC Justification: The investigators seek funding to continue in-season mixed stock genetic analysis of Yukon River summer and fall Chum Salmon. The samples, collected at the Pilot Station sonar run by the Alaska Department of Fish and Game, are shipped to the United States Fish and Wildlife Genetics Conservation Lab in Anchorage for analysis. Stock composition estimates will be available to fisheries managers within 24-48 hours, supporting the in-season management of Chum Salmon as these stocks progress up the Yukon River. This proposal will estimate stock composition of both summer run and fall run Chum Salmon as they pass through the lower Yukon River, are harvested in, or spawn in the Yukon Delta, Innoko, Koyukuk, Nowitna, Yukon Flats, Arctic, Kanuti, and Tetlin NWR's, along with the White Mountain National Recreation Area, Steese National Conservation Area, Yukon Charley Rivers National Preserve, and Denali National Park. Federally qualified subsistence users harvested an average of 73,959 summer and 81,639 fall Chum Salmon annually from 2006-2010, making these stocks very important to subsistence users of the region.

The application of mixed-stock analysis for Yukon River Chum Salmon has wide geographic implications, affecting the in-season management of summer and fall run Chum Salmon throughout the

drainage. The data from this project, along with the sonar estimates, are used by Alaska Department of Fish and Game and United States Fish and Wildlife to estimate stock abundance in the lower Yukon River which facilitates the management of the fishery. Stock identification as fish enter the lower river allows fisheries managers to time fishing opportunities, potentially minimizing harvest on weak stocks as they travel up the river. The study design is sound and relatively uncomplicated and is greatly benefitted by data inputs that are based on several decades of genetic stock biology and sonar enumeration research and application. The project addresses the priority information need: *Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests*.

The investigators have extensive experience with this type of project and the principal investigator has been the lead investigator on this project since its inception in 2004. The project plans to partner with the Association of Village Council Presidents to employ a local hire for collecting genetics samples at Pilot Station. The investigator's plan to cooperate with Alaska Department of Fish and Game with sample collections and will share data with them for in-season management. The average requested amount is $125,303, which represents a decrease from the 2014 funding amount from the Fisheries Resource Monitoring Plan.

TRC Score: 5 (tied)
Project Number: 18-205
Project Title: Yukon River Coho Salmon Radio Telemetry

TRC Justification: The investigators seek funding to conduct radio telemetry on Coho Salmon in the Yukon River Drainage. A total of 300 Coho Salmon will receive esophageal radio tags with uniquely numbered external spaghetti tags. Capture will occur near Russian Mission on the Lower Yukon and tracking would occur in the mainstem Yukon River up to the oil pipeline crossing, including tributaries such as the Koyukuk and Tanana Rivers. This is a two year project that is broken into two parts: the first year is spent setting up telemetry sites and purchasing equipment, and the second year will involve tagging and tracking Coho Salmon. The results of this project will give managers a better understanding of migratory distribution patterns, run timing and spawning areas of Coho Salmon in the Yukon River Drainage. This proposal aims to gain baseline information on the Coho Salmon stocks within the Yukon River and that migrate through, are harvested in, or spawn in the many Federal public waters located on the Yukon Delta, Innoko, Koyukuk, Nowitna, Yukon Flats, Arctic, Kanuti, and Tetlin National Wildlife Refuges, along with the White Mountain National Recreation Area, Steese National Conservation Area, Yukon Charley Rivers National Preserve, and Denali National Park.

This project addresses a subsistence resource used throughout the drainage that has seen increased exploitation in the last 5 years. However, the majority of this increase in harvest is taken coincidentally in the commercial fishery while targeting fall Chun Salmon below the Alaska Department of Fish and Game Sonar located in Pilot Station. The project addresses the priority information need: *geographic distribution of salmon and whitefish species based on traditional knowledge or other knowledge, and incorporation of anadromous information into the Anadromous Waters Catalog*.

The investigators have the abilities and resources to fully accomplish a project of this magnitude. They have support from Tanana Chiefs Conference, The Iqurmiut Traditional Council, United States Fish and Wildlife Service Fairbanks Field Office, and Bureau of Land Management. The proposal included both the budget justification and budget tables and the average annual cost to the monitoring program would be $214,955. Telemetry projects are expensive to operate and require a large amount of equipment costs up front. The long distances and difficulty involved with accessing a project of this magnitude increase the helicopter and airplane costs over what may be seen in smaller systems. For example, radio tags in year one exhausts about 26% of the requested budget, and helicopter time to maintain radio telemetry sites uses another 30%. The investment into a project with high costs that only collects data for one year is hazardous, as many situations can arise during the one year that may affect the outcome of the project. The costs, while high, are in line with a project of this magnitude. The Technical Review Committee suggests collecting Coho Salmon genetic samples while capturing fish to add value to the project.

TRC Score: 5 (tied)
Project Number: 18-201
Project Title: East Fork Andreafsky River Chinook and summer Chum Salmon abundance and run timing, Yukon Delta National Wildlife Refuge, Alaska

TRC Justification: The East Fork Andreafsky River weir is an established monitoring project, operating since 1994. This project provides important information on tributary run strength and quality of escapement for in-season management decisions, especially during years with low returns as it is one of the few escapement projects that monitor populations down river of the majority of the subsistence harvest on the Yukon River. Additionally, the East Fork of the Andreafsky River is one of only two on the U.S. portion of the Yukon River to have escapement goals for both Chinook and Chum Salmon. This project is located within the Yukon Delta National Wildlife Refuge boundaries, and addresses Chinook and Chum Salmon populations that are harvested by Federally qualified subsistence users from the mouth of the Yukon River upstream to the village of St. Mary's. Stocks headed for the Andreafsky River contribute to the approximately 11,000 Chinook Salmon, 60,000 summer Chum Salmon, 4,500 Pink Salmon, and 2,500 Coho Salmon annually harvested below the Andreafsky River by Federally qualified subsistence users. Currently the project uses video technology to count fish as they pass the weir. Additionally, the investigator is proposing to use video data to collect length frequencies on adult Chinook and Chum Salmon during periods of high water levels or high water temperatures, which can reduce stress on fish and allow crews to collect data when they typically couldn't in the past.

The majority of the methods used have a proven track record to achieve the results, and have gone through rigorous sampling design review. These methods are standardized throughout the region, as is the analysis and reporting procedures. The project answers immediate conservation concerns by providing vital data to in-season fisheries managers about fish stocks downstream of the Pilot Station sonar. The principal investigator lays out a complete plan to show when progress, annual, and final reports will be submitted. This project addresses the following Priority Information Needs presented in the 2018 Fisheries Management Resource Program Notice of Funding Opportunity: *reliable qualitative and/or quantitative estimates of Chinook Salmon and Chum Salmon escapements, methods for including "quality of escapement" measures (e.g., egg deposition, sex and size composition of spawners, or*

spawning habitat utilization) in establishing Chinook Salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements, and harvest and spawning escapement changes through time in relation to changes in gillnet construction and use (e.g., set versus drift fishing, mesh size changes) for Chinook Salmon subsistence harvests in the mainstem Yukon River.

The principal investigator has supplied a resume and has participated in several Fisheries Resource Management Program funded projects on the Gisasa River weir. He has experience building, installing, and repairing resistance board weirs, and had a major role in incorporating video monitoring into the Gisasa and Andreafsky weirs. The investigator has received two letters of support, from the Alaska Department of Fish and Game and from Association of Village Council Presidents. The investigator intends on hiring locally or hiring a student from the Alaska Native Science and Engineering Program (ANSEP) In the future, it is suggested that the investigator obtains a letter of support from ANSEP to show how serious they are in pursuing a student from this program. The total cost of the project is $968,856 for the four years of the project, of which $290,371 is match from the Fairbanks Fish and Wildlife Field Office. The average annual cost to the monitoring program is $169,621, which is reasonable throughout the agreement periods and is reasonable for the work being proposed.

TRC Score: 6
Project Number: 18-204
Project Title: Yukon River Coho Salmon mixed-stock analysis

TRC Justification: The investigators seek funding to conduct mixed stock genetic analysis of Yukon River Coho Salmon, building upon the genetic baseline created in the Fisheries Resource and Monitoring Program funded project 14-206. The samples, collected at the Pilot Station sonar run by the Alaska Department of Fish and Game, are shipped to the United Stated Fish and Wildlife Service Genetics Conservation Lab in Anchorage for analysis. Stock composition estimates will be derived by combining the sonar passage estimates with the stock composition estimates. Also, the investigators will be testing the samples against the baseline to estimate the probability of a missing baseline stock group. The project addresses the priority information need: *Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests*.

Application of mixed-stock analysis for Yukon River Coho Salmon has wide geographic implications as these stocks migrate through, are harvested in, or spawn in the many Federal public waters located on the Yukon Delta, Innoko, Koyukuk, Nowitna, Yukon Flats, Arctic, Kanuti, and Tetlin National Wildlife Refuges, along with the White Mountain National Recreation Area, Steese National Conservation Area, Yukon Charley Rivers National Preserve, and Denali National Park. The study design is sound and relatively uncomplicated and is greatly benefitted by data inputs that are based upon results of previously funded project 14-206.

The investigators have extensive experience with this type of project and the principal investigator has been the lead investigator on similar projects since its inception in 2004. The investigator's plan to cooperate with Alaska Department of Fish and Game with sample collections and will share data once it has been analyzed. The project does not mention any capacity building, but plans to consult with the

appropriate Regional Advisory Councils. However, in the future, it is recommended that the investigator consults with Regional Advisory Councils prior to the proposal to elicit support for the project, and documenting when and if this has happened. The average requested amount is $24,000, which is a decrease in the amount requested from the Fisheries Resource Monitoring Plan to develop the genetic baseline for Yukon River Coho Salmon during the 2014 funding cycle.

TRC Score: 7
Project Number: 18-200
Project Title: Identification and Protection of Habitat for Chena River Chinook Salmon

TRC Justification: The Chena River hosts one of the largest Chinook Salmon returns in the U.S. portions of the Yukon River. Although the Chena Rivers hosts large returns, the watershed has seen increased development within the last decade with new housing and roads being built. The surge in human population increases the potential for degradation of the watershed, much of which hasn't been fully sampled for anadromous fish populations. Chinook Salmon from the Chena River are harvested by many Federally qualified subsistence users throughout the drainage as they pass by 21 communities of which 16 are within and adjacent to the Yukon Delta, Innoko, Koyukuk, or Nowitna National Wildlife Refuges. This project fully addresses the following Priority Information Needs: Geographic distribution of salmon and whitefish species based on traditional ecological knowledge or other knowledge, and incorporation of anadromous information into the Anadromous Waters Catalog.

The investigators request three years of funding to assess the waters in the Chena River drainage for the presence of anadromous fish species, of particular interest is Chinook Salmon. Sampling methods include minnow traps, electrofishing, and seines to capture fish, and collect species ID, sex (where applicable) and length data throughout the drainage. This project uses proven science and logistics to produce objectives that are clear, measurable and achievable. The methods are standard for a project of this nature, and the investigators are able build upon recent work performed by the University of Alaska. All newly identified anadromous waterways will be added to the Anadromous Waters Catalog and researchers will identify the life stage encountered at the sampling site.

The investigators work for the United States Fish and Wildlife Service at the Fairbanks Fish and Wildlife Field Office, with extensive experience in field projects throughout the Yukon River and Northern Alaska. The project does not build capacity at this time due to previous commitments of Tanana Chiefs Conference Fisheries Department. All efforts will be made to include them when conditions warrant. Tanana Valley Watershed Association, a local non-profit, has agreed to facilitate public outreach. The average annual amount requested is $15,554, with this amount used to cover seasonal employee salary. Budget tables and justification were provided, and the cost of the proposal is reasonable across all agreement periods. The cost is reasonable for the work being proposed.

APPENDIX A

Table A.1. Fisheries Resource Monitoring Program projects funded in the Yukon Region from 2000 to 2016.

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

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Table A.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 A.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	Gisasa R Salmon Video	USFWS
14-202[a]	E Fork Andreafsky Salmon	USFWS
14-203[a]	Gisasa R Salmon	USFWS
14-206[a]	Yukon R Coho Salmon	USFWS
14-207[a]	Yukon R Chum Salmon	USFWS
14-208[a]	Koyukuk R Chum Salmon	USFWS
14-209[a]	Henshaw Crk Salmon	TCC
16-204[b]	Henshaw Creek Abundance and run timing of adult salmon.	TCC
16-251[b]	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	ADF&G
16-255[b]	Yukon River In-Season Community Surveyor Program	YRDFA, USFWS
16-256[b]	In Season Salmon Management Teleconferences	YRDFA
	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

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Table A.1 continued

Project Number	Project Title	Investigators
	Yukon River Non-Salmon Projects (continued)	
04-253	Upper Tanana Subsistence Fisheries Traditional Ecological Knowledge	USFWS,UAF, ADF&G
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	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[a]	Lower Yukon Whitefish	ADF&G
14-253	Upper Yukon Customary Trade	YRDFA
16-203[b]	Bering Cisco Spawning Abundance in the Upper Yukon Flats, 2016-2017	ADF&G, USFWS
16-205[b]	Burbot Population Assessments in lakes of the Upper Tanana and Upper Yukon River Drainages	NPS

[a] = Final Report in Preparation.

[b] = On-going projects during 2018.

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.

APPENDIX B

The following abstracts were written by the Principal 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.

Project Number: 18-200
Title: Identification and Protection of Habitat for Chena River Chinook Salmon
Principal Investigator: Ray Hander, U.S. Fish and Wildlife Service
Co-investigator: Jimmy Fox, U.S. Fish and Wildlife Service

Project Cost by Year:

Project Cost:	**2018:** $15,322	**2019:** $15,553	**2020:** $15,786	**2021:** $0
Total Cost: $46,661				

Issue:
The Chena River supports the second-largest run of Chinook Salmon *Oncorhynchus tshawytscha* within the Alaska portion of the Yukon River drainage. Federally qualified rural residents from 21 villages may harvest Chinook Salmon returning to spawn in the Chena River. However, the lower Chena River and two major sloughs are considered impaired by Clean Water Act standards. In addition, historical and current anthropogenic instream and riparian habitat degradation and destruction results from housing, roads and commercial development such as mining, forestry, dredging, and wetland filling. Major tributaries and associated streams in the Chena River drainage lack adequate habitat protection from an absence of evidence of anadromous fish use (spawning, rearing or migration). These tributaries and streams are not listed in the State of Alaska Anadromous Waters Catalog (AWC), thus not protected by the State of Alaska Anadromous Fish Act. This project will sample for juvenile Chinook Salmon and other anadromous fish in Chena River tributaries not listed in the AWC, and nominate waters that meet AWC requirements.

Objectives:

1. Determine the presence of juvenile Chinook Salmon and other anadromous fish species in Chena River tributaries not listed in the AWC;
2. Describe life history stages of Chinook Salmon in tributaries of the Chena River;
3. Publish fish species information in the AWC for all waters that satisfy AWC requirements.

Methods: We will conduct juvenile fish capture operations on selected tributaries to the Chena River. The tributaries have been chosen where habitat disturbance is most likely to occur and where positive results from environmental DNA sampling are located. Sampling will occur in three periods in 2018, 2019 and 2020: 1) late May to early June; 2) late July to early August; and 3) late August to early September to detect the presence of juvenile or adult salmon. This temporal sampling approach increases the opportunity of encountering juvenile or adult salmon based on the differential migration timing.

Sampling methods will include: baited minnow traps, electrofishing, small mesh beach seines, dip nets, and visual observation (adult salmonids). All anadromous fish captured will be identified and nominations to the AWC will be submitted where applicable and a comprehensive report will be made at the project's completion.

Partnerships/Capacity Building:
Due to the proximity of the TCC headquarters within the project area, this project presents an excellent opportunity for TCC to develop capacity to document anadromous waters within or adjacent to tribal lands. TCC recruits local hires and has personnel trained to conduct fisheries work. Our office cooperates with TCC annually on operation of the Henshaw River weir. A fisheries biologist with the TCC was invited to be a cooperator for this project but declined on December 21, 2017 due to direct competition with a similar proposal. However, this representative agreed to be a partner on a similar 2017 pilot project. If TCC is unsuccessful, and this project is funded every effort will be made to involve TCC employees to build tribal capacity. In addition, partner Tanana Valley Watershed Association, a local non-profit, has agreed to facilitate public outreach.

Project Number: 18-201
Title: East Fork Andreafsky River Chinook and summer Chum Salmon abundance and run timing, Yukon Delta National Wildlife Refuge, Alaska.
Geographic Region(s): Yukon Region
Data Type: Stock Status and Trends
Principal Investigator: Jeff Melegari, U.S. Fish and Wildlife Service (USFWS), Fairbanks Fish and Wildlife Field Office (FFWFO)

Project Cost:	**2018:** $158,551	**2019:** $175,755	**2020:** $169,265	**2021:** $174,914
Total Cost: $678,485				

Issue: Through Section 302 of the Alaska National Interest Lands Conservation Act, the USFWS has a responsibility to ensure that salmon populations within federal conservation units are conserved in their natural diversity, that international treaty agreements are met, and subsistence opportunities are maintained. The East Fork Andreafsky River provides important spawning and rearing habitat for Chinook and summer Chum Salmon that contribute to complex Yukon River mixed stock commercial and subsistence fisheries. The East Fork Andreafsky River's location below the Pilot Station Sonar project and the fact that it has established escapement goals for both Chinook and Chum Salmon make it an important project for management. This project will provide data that managers need to inform and evaluate in-season management decisions, build run reconstructions, and make future run predictions. These data will also help evaluate long term trends in species abundance and age, sex, and length composition.

Objectives:

1. Use video weir technology to enumerate daily passage of all fish species.

2. Estimate seasonal escapement of Chinook Salmon and summer Chum Salmon using Sethi and Bradley (2016) model, and characterize their run timing.
3. Estimate the weekly age, sex, and length composition of adult Chinook and summer Chum Salmon such that the simultaneous 90% confidence intervals have a maximum width of 0.20.
4. Evaluate the use of VidSync software with a stereo camera system to measure lengths of Chinook Salmon and Chum Salmon via video (this will begin in 2017).
5. Continue to build a more robust Sockeye Salmon ASL data set on the recently observed spawning aggregation upriver of the East Fork Andreafsky River weir.

Methods: A resistance board weir will be installed and operated on the East Fork Andreafsky River from mid-June through early to mid-August during each year. A trap equipped with a video counting chute will allow all fish passing through the weir to be identified to species and counted. Count data will be provided to managers and other interested parties daily. Age (scales), sex, and length data will be collected from Chinook, and Chum Salmon following a stratified random sampling design, and collected opportunistically for Sockeye Salmon. Scales will be sent to Alaska Department of Fish and Game for aging.

Partnerships/Capacity Building: The FFWFO has strived for local involvement and capacity building with the project and is committed to continually promoting capacity building by describing project opportunities at RAC, YRDFA, and Refuge coordination meetings. In the past the project has served as a platform to host a science camp for youth from Yukon River communities. The project actively recruits for and fills a local hire position.

Project Number: 18-202
Title: Gisasa River Chinook and summer Chum Salmon abundance and run timing assessment, Koyukuk National Wildlife Refuge, Alaska
Geographic Region(s): Yukon Region
Data Type: Stock Status and Trends
Principal Investigator: Jeremy Carlson, U.S. Fish and Wildlife Service (USFWS), Fairbanks Fish and Wildlife Field Office (FFWFO)
Co-Investigator: Jeff Melegari, USFWS, FFWFO

Project Cost:	**2018:** $149,355	**2019:** $140,209	**2020:** $144,997	**2021:** $149,115
Total Cost: $583,676				

Issue: Through Section 302 of the Alaska National Interest Lands Conservation Act, the USFWS has a responsibility to ensure that salmon populations within federal conservation units are conserved in their natural diversity, that international treaty agreements are met, and subsistence opportunities are maintained. The Gisasa River provides important spawning and rearing habitat for Chinook and summer Chum Salmon that contribute to complex Yukon River mixed stock commercial and subsistence fisheries. The Gisasa River weir is currently one of only two projects within the Koyukuk River drainage that

provide in-season run information. This project will provide data that managers need to inform and evaluate in-season management decisions, build run reconstructions, and make future run predictions. These data will also help evaluate long-term trends in species abundance and age, sex, and length composition.

Objectives:

1. Use video weir technology to enumerate daily passage of all fish species.
2. Estimate seasonal escapement of adult Chinook Salmon and summer Chum Salmon using Sethi and Bradley (2016) model, and characterize their run timing.
3. Estimate the weekly age, sex, and length composition of adult Chinook and summer Chum Salmon such that the simultaneous 90% confidence intervals have a maximum width of 0.20.
4. Evaluate the use of VidSync software with a stereo camera system to measure lengths of Chinook Salmon and Chum Salmon via video (this will begin in 2017).

Methods: A resistance board weir will be installed and operated on the Gisasa River from mid-June through early to mid-August during each year. A trap equipped with a video counting chute will allow all fish passing through the weir to be identified to species and counted. Count data will be provided to managers and other interested parties daily. Age (scales), sex, and length data will be collected from Chinook, and Chum Salmon following a stratified random sampling design. Scales will be sent to Alaska Department of Fish and Game for aging.

Partnerships/Capacity Building: The FFWFO has strived for local involvement and capacity building with the project and is committed to continually promoting capacity building by describing project opportunities at RAC, YRDFA, and Refuge coordination meetings. Project staff has worked with staff from Tanana Chiefs Conference's Henshaw River Weir, the other Koyukuk River monitoring project, to share knowledge, methods, and labor for weir setup. The FFWFO has also worked with Koyukuk National Wildlife Refuge to provide field work experience for Alaska Native Science & Engineering Program students and local hires from the Refuge.

Project Number: 18-203
Title: Application of mixed-stock analysis for Yukon River Chum Salmon
Geographic Region(s): Yukon River
Data Type: Stock Status and Trends
Principal Investigator: Blair Flannery, Conservation Genetics Laboratory (CGL), USFWS
Co-Investigator: John Wenburg, CGL, USFWS

Project Cost:	**2018:** $125,303	**2019:** $125,303	**2020:** $125,303	**2021:** $125,303
Total Cost: $501,212 (a 16.5% reduction from the total cost of the project under 14-207)				

Issue: This project relates to the following priority information need identified in the 2014 Office of Subsistence Management (OSM) Request for Proposals:
• *Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests*.

This proposal is a continuation of Fisheries Resource Monitoring Program (FRMP) projects 04-228, 06-205, 10-205, and 14-207, which have provided in-season stock composition estimates of Chum Salmon to fishery managers within 24 to 48 hours of receiving samples from the Pilot Station sonar test fishery.

The disparate strength of individual stocks within and among years makes it clear that in-season stock return data assists management to meet escapement. It provides a real-time tool that allows for informed decisions on regulating fisheries to meet escapement and harvest goals.

Objectives: 1) Estimate the stock compositions of summer and fall Chum Salmon sampled from the Pilot Station test fishery each year (June 1 – August 31). 2) Assess the accuracy of the results by comparison with other sources of escapement and harvest data.

Methods: Genetic samples will be collected from every Chum Salmon caught in the Pilot Station sonar test fishery from June 1 – August 31, and sent to the CGL every week and at the conclusion of each run pulse. Samples will be stratified by time period or run pulse and a subsample of size 288, selected so that daily sample size is proportional to the daily sonar passage estimate within a stratum, will be genotyped for each stratum of the run. Stock composition will be estimated using Bayesian mixture modeling and reported to fishery managers as soon as practicable. Stock abundance estimates will be derived by combining the sonar passage estimates with the stock composition estimates. A post season analysis will be conducted to compare these stock specific abundance estimates against escapement and harvest estimates.

Partnerships/Collaboration: We will work with ADF&G biologists to coordinate sample collection. We will contract with the Association of Village Council Presidents (AVCP) to hire a local to collect the genetic samples. We completed the baseline in partnership with the DFOC. We will consult, collaborate and coordinate with ADF&G, USFWS, and DFOC managers.

Project Number: 18-204
Title: Yukon River Coho Salmon mixed-stock analysis
Geographic Region(s): Yukon River
Data Type: Stock Status and Trends (SST).
Principal Investigator: Blair Flannery and John Wenburg, Conservation Genetics Laboratory (CGL), U.S. Fish and Wildlife Service (USFWS)

Project Cost:	**2018:** $24,000	**2019:** $24,000	**2020:** $24,000	**2021:** $24,000
Total Cost: $96,000				

Issue: This project relates to the following priority information need identified in the 2018 Office of Subsistence Management (OSM) Request for Proposals:
• *Reliable qualitative and/or quantitative estimates of salmon escapements and/or harvests*.

This project to conduct mix-stock analysis for Yukon River Coho Salmon extends the work done to create the genetic baseline under FRMP project 14-206.

With the recent decline in abundance of Yukon River Chinook Salmon, the exploitation rate for Coho Salmon has increased dramatically. From 1997−2010, an average of 29% of the Yukon River Coho Salmon run (as estimated by mainstem sonar) has been harvested, whereas since 2011, the average harvest has increased to 86% of the run (JTC 2014). The lack of stock composition data for Coho Salmon in light of this increased pressure is problematic. Stock identification and determining relative contributions of harvested stocks are essential for management of mixed stock fisheries (Larkin 1981). Differential harvest can result in excessive exploitation of individual stocks, which can decrease overall production in the long run for the entire system (Allendorf et al. 1987).

Objectives: 1) Estimate regional stock contributions and run timing of Yukon River Coho Salmon from mainstem sonar test fishery harvests; 2) determine if baseline is missing significant stock groups.

Methods: Genetic samples will be collected from Coho Salmon caught in the mainstem sonar test fishery. Samples will be stratified by run quartile. A sample size of 150 will be analyzed for each stratum, with the daily sample size proportional to the daily sonar passage estimate within a stratum. The mixture data will be compared to the genetic baseline (Figure 1) to estimate the relative stock compositions using the Bayesian mixture modeling method as implemented in the program Bayes (Pella and Masuda 2001). Stock composition estimates will be reported for the following stock groups: lower river, Nenana River, Tanana River, and Porcupine River. Abundance data will be obtained from Pilot Station sonar. Stock specific abundance estimates will be derived by combining the sonar passage estimates with the stock composition estimates.

Partnerships/Collaboration: We will work with ADF&G biologists to coordinate sample collection from the Pilot Station sonar test fishery.

Project Number:	18-205
Title:	Yukon River Coho Salmon Radio Telemetry
Geographic Region(s):	Yukon River
Data Type:	Stock Status and Trends (SST).
Principal Investigator:	Bonnie Borba, Fisheries Biologist III, Alaska Department of Fish and Game
Co-Investigator:	Sean Larson, Fisheries Biologist II, Alaska Department of Fish and Game
	Raymond Hander, United States Fish and Wildlife Service
	Randy Brown, United States Fish and Wildlife Service

Project Cost:	**2018:** $0	**2019:** $214,969	**2020:** $214,941	**2021:** $0
Total Cost: $888,224				

Overview of need: We propose to conduct a radio telemetry project to track adult Coho Salmon (*Oncorhynchus kisutch)* to their spawning areas. This proposal is in direct response to the need for information on this highly exploited species, which has recognized large spawning distribution data gaps. Coho Salmon are targeted as the last salmon species migrating into the Yukon River each season. Especially during times when other species such as Chinook and fall Chum Salmon runs are weak, Coho Salmon are needed to supplement subsistence harvests. This project will improve Coho Salmon management to better provide for sustainable fisheries. Coho Salmon are a recognized as a priority for subsistence with an established *Amounts Reasonably Necessary for Subsistence*. This proposal addresses one of the priority information needs identified for the Yukon Region by providing *reliable qualitative and/or quantitative estimates of salmon escapement and/or harvests*. It will also provide data on *geographic distribution of Coho Salmon for incorporation into the Anadromous Waters Catalog*.

Project Goals and Objectives: The goal of this Yukon River telemetry project is to learn as much as possible about Coho Salmon migration and spawning distribution, to better inform fisheries managers responsible for ensuring sustainable use of the resource to benefit the people of Alaska. Identifying migration routes, stock specific run timing, migration rates, movement patterns, and distribution of Coho Salmon spawning areas in combination with an estimated total run size will help fishery managers spread the harvest throughout the run and indicate where escapement monitoring projects might be practical.

Specific project activities: This proposal seeks funding to apply esophageal radio tags in Coho Salmon in the lower Yukon River, just upstream of Russian Mission, and track them via an array of radio tracking stations located strategically along the mainstem and main tributaries of the Yukon River. These radio tracking stations will provide information used to plan the aerial survey tracking to locate fish at their spawning grounds. Analysis of the tower and aerial data together will address the information needs outlined in the objectives (i.e. migration routes, stock specific run timing, migration rates, movement patterns, and distribution).

Anticipated outputs and outcomes: Project results are expected to provide information for fishery management of Coho Salmon, and for development of management plans, development of escapement projects, and habitat projection. These benefits will be realized soon after the spawning areas are documented. All data collected through this proposal will be archived in perpetuity in ADF&G databases. Final project results will be published in the ADF&G Fishery Data Series.

Project Number: 18-250
Title: Documentation of salmon spawning and rearing in the Upper Tanana River Drainage.
Geographic Region(s): Yukon Region (Tanana River Drainage).
Data Type: Stock Status and Trends (SST), Traditional Ecological Knowledge (TEK).

Principal Investigator: Brandy Baker**,** Alaska Department of Fish and Game, Division of Sport Fish
Co-Investigator(s): Caroline Brown, Alaska Department of Fish and Game, Division of Subsistence

Project Cost:	**2018:** $78,087	**2019:** $67,106	**2020:** $15,391	**2021:** $0
Total Cost: $160,584				

Issue: This study addresses the Yukon Region Priority Information Need: geographic distribution of salmon and whitefish species based on traditional ecological knowledge or other knowledge and incorporation of anadromous information into the Anadromous Waters Catalog. Documentation and inventory of anadromous fish species has been limited in the upper Tanana River drainage due to perceived low salmon abundance and the greater importance of Non-salmon species to local users. Presence of Chinook *O. tshawytscha*, which are currently not listed in this area, as well as Chum Salmon *O. keta,* and Coho Salmon *O. kisutch* which have limited documentation in this area, are mentioned in a recent TEK study from Northway and in the Tetlin NWR Fishery Management Plan as being present. This study proposes to document and list Pacific salmon *Oncorhynchus sp* spawning and rearing habitat in the upper Tanana River drainage (the largest tributary of the Yukon River).

Objectives:

1. Document traditional ecological knowledge (TEK) related to locally reported spawning and rearing areas of Chinook, Chum, and Coho Salmon not listed in the AWC within the Chisana and Nabesna drainages.
2. Verify presence of juvenile and adult salmon and document spawning and rearing areas in select waters identified through TEK, anecdotal accounts, and field observations.
3. Submit all verified waters used by salmon for listing in the Anadromous Stream Catalog.
4. Contribute to local capacity building by working with local research assistants on both ethnographic and biological sampling data collection.

Methods: Researchers will use a combination of social and biological science methods. First, researchers will use ethnographic methods to identify potential search areas based on local knowledge. Next, PIs will use aerial surveys, water sample collection for eDNA analysis, and minnow trapping to document and identify salmon presence and rearing habitat in those areas identified from the local knowledge as well as other areas that appear to have suitable habitat.

Partnerships/Capacity Building: This project is designed to incorporate an inter-regional initiative to assist with capacity building efforts with a new sampling technique for a similar proposal being submitted by YRDFA-TCC. Capacity building for this project will occur in the following ways: we will work with local residents and tribal councils to identify key respondents for the TEK interviews; we will work with TCC Partners Biologist to advertise and hire a local technician(s) to assist with ethnographic and field data collection; we will work YRDFA-TCC to collaborate on mirrored methodology and consultation during the analysis phase; we will work with agency staff from Tetlin and NPS to communicate areas of priority and collaborate on any additional habitat information from other surveys.

Project Number: 18-251
Title: Traditional Knowledge of anadromous fish in the Yukon Flats with a focus on the Draanjik Basin.
Geographic Region(s): Yukon Region
Data Type: Stock Status and Trends
Principal Investigator: Catherine Moncrieff, Yukon River Drainage Fisheries Association (YRDFA)
Co-Investigator: Brian McKenna, Tanana Chiefs Conference (TCC)

Project Cost:	**2018:** $97,458	**2019:** $62,379	**2020:** $20,791	**2021:** $0
Total Cost: $180,628				

Issue: This proposal addresses the Yukon Region Priority Information Need of geographic distribution of salmon and whitefish species based on traditional ecological knowledge (TEK) and incorporation of anadromous information into the Anadromous Waters Catalog. This proposal will provide information critical to the management of anadromous Pacific salmon *Oncorhynchus sp* and whitefish species *Coregoninae subfamily* and the habitat utilized by them throughout their life cycles. Multiple salmon and whitefish species are known to utilize habitats within the Yukon Flats, and the Draanjik (Black River) subbasin at multiple stages in their life cycles for migration, spawning, and rearing. However, while their presence is known, the extent of their anadromous geographic distribution is not fully identified and documented within the AWC. This project will collect and document TEK of anadromous species within the Yukon Flats region, and will verify documentation of spawning and rearing activity within the Draanjik subbasin.

Objectives: The goal of this proposal is to provide information critical to the management of anadromous fishes and the habitats that support them and will achieve this through the following objectives:

1. Document and record TEK of anadromous waters utilized by salmon and whitefish species occurring in the Yukon Flats with a focus on the Draanjik subbasin
2. Verify the presence of salmon and whitefish species and document and record anadromous waters used for spawning and rearing as described by TEK ecological knowledge, primary literature, and field observations for the Draanjik subbasin
3. Submit nominations to the Anadromous Waters Catalog for all verified waterbodies used by salmon and whitefish species to maximize the spatial extent of mapped anadromous waters.
4. Engage the local communities and build capacity by collaborating with the Tribal Councils and by hiring local research technicians to assist with the ethnographic and biological research.

Methods: This research project has been designed to be a collaborative project, seeking and confirming locally observed contributions to the AWC, using a combination of social and biological methods and

collaborating amongst agencies and communities. Broadly, researchers will engage standard anthropological methods of ethnographic fieldwork (participant observation, semi-structure interviews, and mapping) to identify potential search areas based on local knowledge. Next, PIs will use aerial surveys, water sample collection for eDNA analysis, and minnow trapping to document and identify salmon presence and rearing habitat gained from the local knowledge. Subsequent year sampling locations will be refined dependent on minnow trap and eDNA results and visual observations from aerial surveys.

Partnerships/Capacity Building: This project is designed in partnership with the ADF&G (Upper Tanana proposal) as parallel proposals as well as a partnership with the Tribal Councils of the Chalkyitsik, Venetie, and Gwichyaa Zhee. The TCs will select local research assistants for the ethnographic fieldwork. Local hires will be trained in interviews, mapping techniques and will participate in outreach activities.

Project Number: 18-252
Title: Subsistence salmon networks in Yukon River communities
Geographic Region(s): Yukon Region
Data Type: Harvest Monitoring and Traditional Ecological Knowledge
Principal Investigator: Caroline Brown, Division of Subsistence, Alaska Department of Fish
Co-Investigator: Dr. Drew Gerkey, Department of Anthropology, Oregon State University

Project Cost:	**2018:** $133,742	**2019:** $96,013	**2020:** $101,733	**2021:** $0
Total Cost:				

Issue: Priority information needs identified in the 2015 Fisheries Resource Monitoring Program for the Yukon River included: "Incorporation of traditional ecological knowledge into fishery management processes." This project will focus on 3 communities: Pilot Station, Nulato, and Beaver, each of which has a unique regional sharing pattern as identified during previous studies carried out by project researchers. The goal of this project is to provide information on how social networks "function in the allocation and management of subsistence resources… and how such a model might be applied and utilized in Federal subsistence management." Understanding how the social obligations of sharing that underpin subsistence economies drive harvest will help State and Federal managers anticipate fluctuations in subsistence harvests in order to develop locally meaningful and effective regulations, especially in times of low abundance.

Objectives:

1. Using a social network survey and building on documented harvest data from the fall 2018, systematically document the scope of and local characteristics of exchange in 3 Yukon river communities, paying attention to exchanges both within and between communities;

2. Using the assembled 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; f) perceptions of change in the environment, particularly with regard to salmon and other subsistence resources, and how these affect exchange practices; and g) perceptions of change in exchange practices in order to describe how exchange practices fit within the overall social, cultural, and economic life in the Yukon River; and
3. Contribute to local capacity building by utilizing a framework of community involvement in research.

Methods: The research will employ two integrated social science data gathering methods—systematic household harvest and network surveys and key respondent interviews—to analyze subsistence salmon sharing networks in 3 communities along the Yukon River: Pilot Station, Nulato, and Beaver. Harvest data will be collected using a census sample. Building off of that harvest data, researchers will administer the network survey with community households. The ethnographic research for this project will include anthropological methods of semi-structured key respondent interviews and participant observation. Researchers will attempt to interview 5-10 individuals per community. Network data will be analyzed using "R," an open-source statistics software program. Researchers will take a final trip to each community to present preliminary findings and follow-up with any informational gaps.

Partnerships/Capacity Building: Tribal councils in study communities will be consulted about the project, and project approvals will be obtained prior to conducting fieldwork. Temporary field assistants will be hired by ADF&G in coordination with tribal councils in each study community to assist with administration of the survey instrument and to help coordinate local logistical support and participation.

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 $2.5 million (**Figure 1**). Of these, the State of Alaska was principal investigator on 11 projects, the Department of Interior conducted 3 projects, and other organizations conducted 2 projects (**Figure 2**). 12 projects were Stock, Status, and Trends (SST), and 4 projects were Harvest Monitoring and Traditional Ecological Knowledge (HMTEK). For more information on Multi-Regional projects completed from 2000 to 2016, please see **Appendix A.**

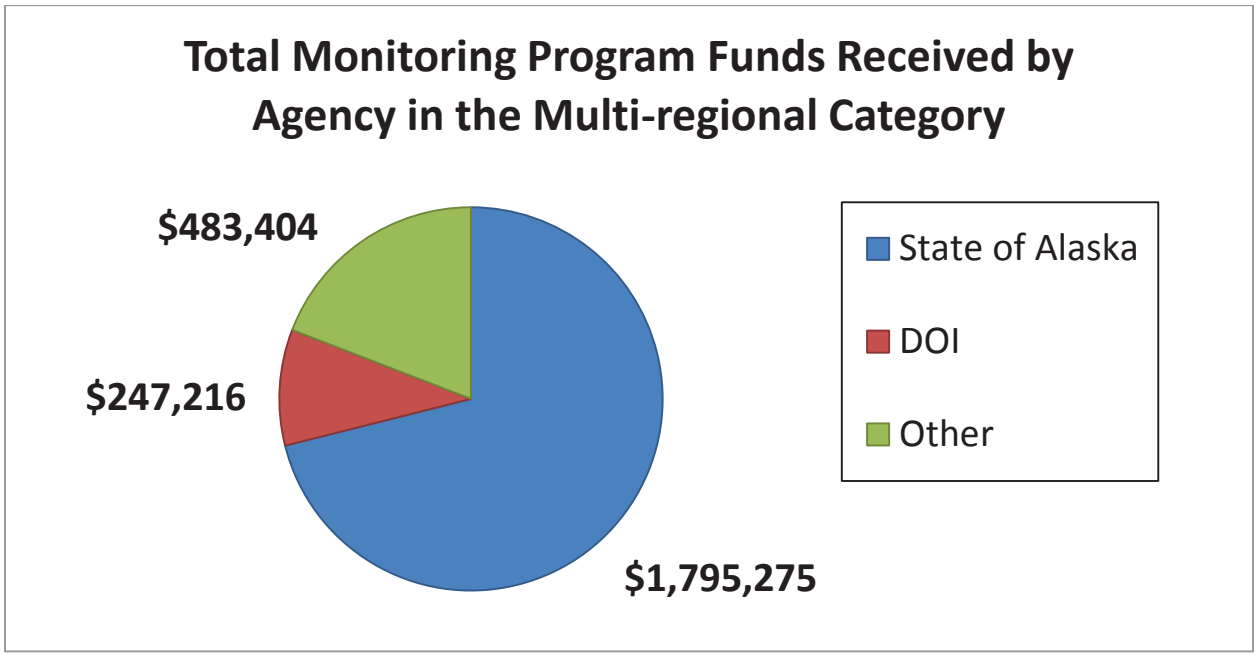

Figure 1. Monitoring Program funds received by agencies for projects in the Multi-regional category. The funds listed are the total approved funds from 2000 to 2016. DOI = Department of Interior.

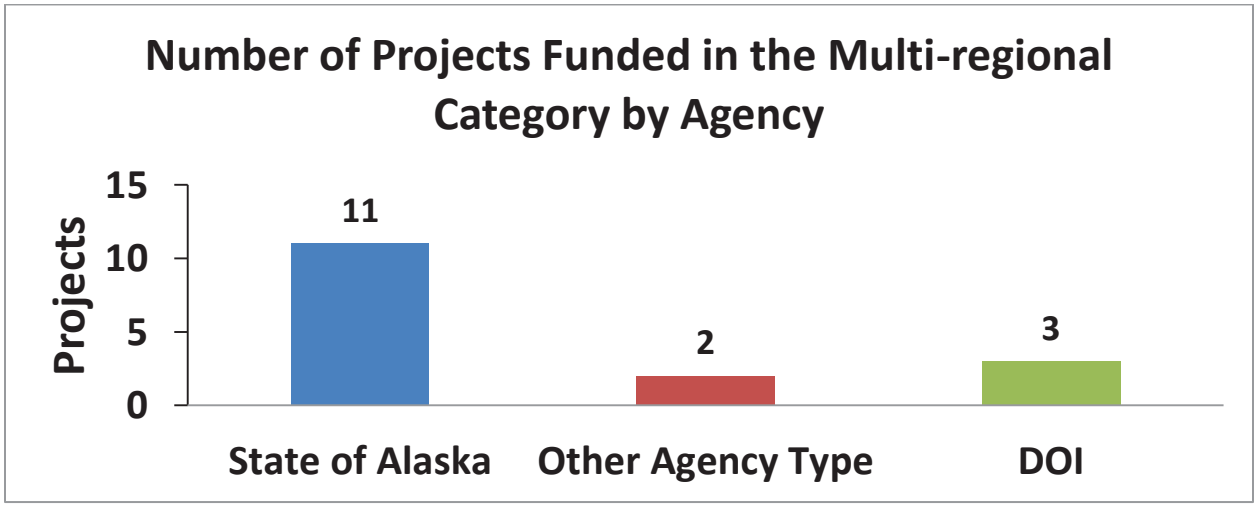

Figure 2. Total number of Monitoring Program projects funded, by agency, in the Multi-regional category from 2000 to 2016. DOI = Department of Interior and USDA = Department of Agriculture.

2018 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. No priority information needs for the Multi-regional category were identified for the 2018 Notice of Funding Opportunity. However, proponents submit proposals which have research components in more than one Monitoring Program region.

Available Funds

Federal Subsistence Board guidelines direct initial distribution of funds among regions and data types. Regional budget guidelines provide an initial target for planning. For 2018, the Department of the Interior, through the U.S. Fish and Wildlife Service, will provide an anticipated $1.0 to $1.5 million in funding for new projects and up to $1.6 million for ongoing projects that were initially funded in 2016. The U.S. Department of Agriculture (USDA), through the U.S. Forest Service, has historically provided up to $1.8 million annually. The amount of USDA funding available for 2018 projects is uncertain.

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 TRC to develop the strongest possible Monitoring Plan for each region and across the entire state.

For the 2018 Monitoring Program, two proposals were submitted in the Multi-regional category. The TRC evaluated and scored each proposal for Strategic Priority, Technical and Scientific Merit, Investigator Ability and Resources, Partnership and Capacity Building, and Cost/Benefit (Table 1. 1 = first place, 2 = second place, etc.) The projects listed are currently being considered for funding in the 2018 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 2018 Monitoring Program please see the abstracts in **Appendix B**.

Table 1. TRC scores for projects in Multi-regional. Projects are listed by TRC score (1 = first place, 2 = second place, etc.) and include the total funds requested and the average annual requested. The projects listed are currently being considered for funding in the 2018 Monitoring Program.

TRC Score	Project Number	Title	Total Project Request	Average Annual Request
1	18-751	Togiak River Harvest Assessment of Dolly Varden	$120,236	$40,079
2	18-750	Kuskokwim, Southcentral and Southeast Wild Food Sharing Events	$34,686	$11,562
		Total	**$154,922**	**$51,641**

TECHNICAL REVIEW COMMITTEE JUSTIFICATION FOR PROJECT SCORE

TRC Score: 1
Project Number: 18-751
Project Title: Subsistence Harvest Assessment and Stock Composition of Dolly Varden and Nonsalmon fish stocks in the Togiak National Wildlife Refuge

TRC Justification: This 3-year interdisciplinary project will collect subsistence harvest data of nonsalmon fish in the communities of Togiak and Twin Hills, and collect Traditional Knowledge and estimate the stock composition of subsistence caught Dolly Varden from the Togiak and Kanektok Rivers in the Togiak National Wildlife Refuge. This project directly addresses priority information needs from the 2018 Notice of Funding Opportunity and builds upon current 2016 Monitoring Program projects. Advantages include infrastructure, logistics, data and cost sharing with the foundational projects, good interagency partnership and capacity building opportunities, and a reasonable budget. Investigator ability is strong and there is general community support for the work with local hire and participation opportunities.

This is an interdisciplinary project and the implications for knowledge sharing and integration of datasets and results are intriguing. Greater intentionality in developing the interview protocol, the Yup'ik taxonomy used in species identification for each sampling event, and more staff time allotted for collaborative report writing and review are recommended.

TRC Score: 2
Project Number: 18-750
Project Title: A descriptive investigation of rural community-wide wild food sharing events at upper Copper River, lower Kuskokwim River, and Southeast areas of Alaska

TRC Justification: This three-year, multi-region ethnographic study proposes to use semi-directed interviews and participant observation to document community-wide wild food sharing events in three regions of rural Alaska – the upper Copper River, the lower Kuskokwim River, and Southeast Alaska (community of Wrangell). The project has a clear connection with the Federal Subsistence Management Program in that fish harvested from federal waters play an important role in the subsistence economy and way of life in each of these regions. Each member of the research team would be responsible for the work a specific region, and each has previous fieldwork experience in that region. The team members also each have prior experience with projects documenting the harvest and use of subsistence resources in rural Alaskan communities. The project employs well recognized ethnographic methods – key informant interviews and participant observation; however, time in the field is limited – no more than 16 days per person over the length of the project. Partnerships and capacity building appear to be limited to consulting with local organizations on the selection of study communities or a local research assistant along with hiring local assistants to help with organizing the interviews. The end result of the project will be a technical report along with educational materials describing the food sharing events, with an intended

audience of both the villages and Federal fishery management staff. From the standpoint of Federal management, the goal of the educational materials is to help managers incorporate the local cultural values represented by the food sharing events in their decision making. Because the research team is comprised of federal employees, funding is requested only for travel expenses, honoraria, local research assistants, interview transcription/translation, and supplies. Project costs seem generally reasonable in relation to the work being proposed, although a few discrepancies between planned work and anticipated expenses in a given year should be clarified.

APPENDIX A

Table A.1. Monitoring Program projects funded in the Multi-regional category from 2000 to 2016.

Project Number	Project Title	Investigators
00-016	Information Access of AYK Fish Data	ADF&G
00-017	Statewide Subsistence Harvest Strategy	ADF&G, AIT
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
04-751	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	Stream Temperature Monitoring	ARRI
16-752	Subsistence Harvest and Use Patterns of Nonsalmon by Yukon-Kuskokwim Delta Coastal Communities	ADF&G

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.

APPENDIX B

The following abstracts 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 abstracts were not altered and they may not reflect the opinions of the Office of Subsistence Management or the Technical Review Committee.

Project Number: 18-751
Title: Subsistence Harvest Assessment and Stock Composition of Dolly Varden and Nonsalmon fish stocks in the Togiak National Wildlife Refuge
Geographic Region: Multi-Regional: Kuskokwim River and Yukon River Drainages
Data Type: Harvest Monitoring and Traditional Ecological Knowledge
Principal Investigator: Bronwyn Jones, Division of Subsistence, Alaska Department of Fish and Game
Co-Investigators: Cody Larson, Department of Natural Resources, Bristol Bay Native Association; Penelope Crane, Conservation Genetics Laboratory, U. S. Fish and Wildlife Service; Amanda Cochran, Togiak National Wildlife Refuge, U. S. Fish and Wildlife Service

Project Cost:	**2018**: $23,176	**2019**: $49,054	**2020**: $48,006
Total Cost: $120,236			

Addressed: This project addresses two priority information needs of the 2018 FRMP, 1) obtaining harvest estimates and use of salmon and nonsalmon fish in Togiak and 2) Dolly Varden char harvest and use by residents of Togiak and Twin Hills. Though residents of communities within the TNWR use a wide variety of resources, salmon and nonsalmon fish, including Dolly Varden char, provide the most reliable annual source of subsistence foods. Dolly Varden in TNWR rivers home to natal streams to spawn, but can migrate to nonnatal rivers for overwintering, therefore subsistence harvests are likely mixed. This project will estimate subsistence harvests for salmon, Dolly Varden, and other nonsalmon fish in Togiak and Twin Hills, conduct participant observation in-season and gather Traditional Ecological Knowledge in Togiak, Twin Hills, and Quinhagak to better understand how subsistence stakeholders use, share, and report nonsalmon fish harvests. Dolly Varden will be sampled from subsistence fisheries in the Togiak and Kanektok rivers. Genetic data will be used to estimate the proportions of major stocks of Dolly Varden contributing to subsistence catches and using these rivers for overwintering habitat and how Yup'ik terms for char harvested correspond to different life history strategies and species of char to improve harvest estimates for char.

Objectives:

1. Collect fin clips for genetic analysis from Dolly Varden harvested in the subsistence fishery in the Togiak and Kanektok rivers and estimate the stock composition of fishery samples (CGL, TNWR).
2. Conduct participant observation in fall in winter in Togiak, Twin Hills, and Quinhagak to document how residents harvest, use and report Dolly Varden and nonsalmon fish harvests (BBNA, ADF&G).

3. Conduct interviews with local subsistence users to document their historical and contemporary knowledge of nonsalmon fish abundance and use in the Togiak River watershed (BBNA, ADF&G).
4. Conduct post-season harvest surveys to obtain amount and locations of household harvests to estimate the subsistence harvests of salmon and nonsalmon fish in Togiak and Twin Hills (ADF&G).

Methods: (Objective 1) Fin clips (N=800 total) will be collected from fish harvested in fall and winter fisheries in the Togiak and Kanektok rivers. Length and Yup'ik name ("annerluaq", "yugyaq") will be recorded for sampled fish. Stock composition estimates will be made using genetic methods to determine proportions of major stocks contributing to subsistence catches and overwintering aggregates within these rivers and if Yup'ik describing fish correspond to different species or gene pools. (Objectives 2,3) Participant observation and Key Respondent Interviews will be conducted in Togiak, Twin Hills, and Quinhagak. Data will be summarized to evaluate the harvest and use of Dolly Varden (uses, sharing, competition, trends) and patterns between communities. (Objective 4) Household surveys of fish harvests will be conducted in Togiak and Twin Hills.

Partnerships/Capacity Building: Refuge information technicians (RITs) and local research assistants (LRAs) from Togiak and Quinhagak will participate in data collection, analysis, and reporting. Principal investigators will visit with communities at the beginning of the project and at the end to disseminate final results. Principal investigators will provide technical training for the RITs and LRAs; RITS will participate in genetic analysis of Dolly Varden at the CGL. TNWR will provide logistic support.

Project Number: 18-750
Title: A Descriptive Investigation of Rural Community-wide Wild Food Sharing Events at Upper Copper River, Lower Kuskokwim River, and Southeast areas of Alaska.
Geographic Region: Multi-Regional: Kuskokwim, Southcentral and Southeast
Data Type: Traditional Ecological Knowledge
Principal Investigator: Pippa Kenner; Office of Subsistence Management, U.S. Fish and Wildlife Service
Co-Investigators: Robbin La Vine; Office of Subsistence Management, U.S. Fish and Wildlife Service; Dr. Joshua Ream; Office of Subsistence Management, U.S. Fish and Wildlife Service

Project Cost:	**2018**: $9,618	**2019**: $17,090	**2020**: $7,918
Total Cost: $34,686			

Issue: This study will demonstrate a primary aspect of subsistence needs and harvest goals regarding fish taken in Federal subsistence fisheries. Subsistence needs and harvest goals are regularly discussed by Federal fisheries management staff. Details of people's motivations for harvesting are little understood. Meeting nutritional needs is one aspect informing subsistence needs and harvest goals. Another aspect is

common occurrences of community-wide wild foods sharing events in rural Alaska that are the focus of this study. Detailed contemporary descriptions of what this looks like are rare. This descriptive ethnographic study is structured to give Federal fishery management staff tools that will provide a bridge between cultures of Federal fishery management staff and local residents of three study areas. Findings will be organized in educational materials describing these events. Residents of regions in the study will respond positively when managers incorporate local cultural values represented by these sharing events in their management decision-making processes.

Objectives:

1. Detailed decriptions of one or more contemporary community-wide wild food sharing events at upper Copper River, lower Kuskokwim River, and Southeast Alaska areas of Alaska. The study will answer questions of who participates, what happens, where and when they occur, and what role wild-caught fish plays in supporting these events.
2. Education packages for each of three regions in the study describing the findings of the study, including tools to incorporate Alaska Native cultural values demonstrated by these events into Federal fisheries management decision-making.
3. Bridges between cultures of Federal fishery management staff, villages, and the public.

Methods: Semi-directed interviews with communities in each region of the study and participant observation of community-wide sharing events.

Partnerships/Capacity Building: The study follows a collaborative research methodology. Participants in the study will be asked to help determine the best appropriate approaches to the research within the study design. Researchers will assist study participants to document their activities so that findings will be meaningful to them and appropriate for representing community events to outsiders. Each researcher will hire a local research assistant to help with the study. Every interview respondent will receive an honorarium payment. Findings will be organized in educational materials for villages and Federal fishery management staff describing community sharing events. The study is designed to give Federal fishery management staff important information and tools that will provide a bridge between cultures of Federal fishery management staff and local residents. Residents of regions in the study will respond positively when managers incorporate local cultural values represented by these sharing events in their management decision-making processes.

ANNUAL REPORTS

Background

ANILCA established the Annual Reports as the way to bring regional subsistence uses and needs to the Secretaries' attention. The Secretaries delegated this responsibility to the Board. Section 805(c) deference includes matters brought forward in the Annual Report.

The Annual Report provides the Councils an opportunity to address the directors of each of the four Department of Interior agencies and the Department of Agriculture Forest Service in their capacity as members of the Federal Subsistence Board. The Board is required to discuss and reply to each issue in every Annual Report and to take action when within the Board's authority. In many cases, if the issue is outside of the Board's authority, the Board will provide information to the Council on how to contact personnel at the correct agency. As agency directors, the Board members have authority to implement most of the actions which would effect the changes recommended by the Councils, even those not covered in Section 805(c). The Councils are strongly encouraged to take advantage of this opportunity.

Report Content

Both Title VIII Section 805 and 50 CFR §100.11 (Subpart B of the regulations) describe what may be contained in an Annual Report from the councils to the Board. This description includes issues that are not generally addressed by the normal regulatory process:

- an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
- an evaluation of current and anticipated subsistence needs for fish and wildlife populations from the public lands within the region;
- a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs related to the public lands; and
- recommendations concerning policies, standards, guidelines, and regulations to implement the strategy.

Please avoid filler or fluff language that does not specifically raise an issue of concern or information to the Board.

Report Clarity

In order for the Board to adequately respond to each Council's annual report, it is important for the annual report itself to state issues clearly.

- If addressing an existing Board policy, Councils should please state whether there is something unclear about the policy, if there is uncertainty about the reason for the policy, or if the Council needs information on how the policy is applied.
- Council members should discuss in detail at Council meetings the issues for the annual report and assist the Council Coordinator in understanding and stating the issues clearly.

- Council Coordinators and OSM staff should assist the Council members during the meeting in ensuring that the issue is stated clearly.

Thus, if the Councils can be clear about their issues of concern and ensure that the Council Coordinator is relaying them sufficiently, then the Board and OSM staff will endeavor to provide as concise and responsive of a reply as is possible.

Report Format

While no particular format is necessary for the Annual Reports, the report must clearly state the following for each item the Council wants the Board to address:

1. Numbering of the issues,
2. A description of each issue,
3. Whether the Council seeks Board action on the matter and, if so, what action the Council recommends, and
4. As much evidence or explanation as necessary to support the Council's request or statements relating to the item of interest.

Federal Subsistence Board

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

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

FOREST SERVICE

AUG 15 2017

OSM 17050.ZS

Jack Reakoff, Chair
Western Interior Alaska Subsistence
Regional Advisory Council
c/o Office of Subsistence Management
1101 East Tudor Road, MS 121
Anchorage, Alaska 99503

Dear Chairman Reakoff:

This letter responds to the Western Interior Alaska Subsistence Regional Advisory Council's (Council) fiscal year 2016 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. Opposition to modification of PLO 5150 to allow State selection of Federal public lands in the existing Utility Corridor under the BLM Central Yukon Resource Management Plan

Federally qualified subsistence users have raised concerns at public meetings held in the Western Interior Region by the Bureau of Land Management (BLM) regarding the potential effects of Public Order 5150 pertaining to the Dalton Utility Corridor in the BLM Central Yukon Resource Management Plan. The Council notes the Dalton Utility Corridor (PLO 5150) is the jewel of the Central Yukon BLM management area and a national treasure. The BLM lands in this corridor provide some of the best road-accessed scenery in Alaska, sport and subsistence use opportunity, mining and other commercial uses. There are statutory as well as other compulsory reasons to recommend in the Preferred Alternative not to lift any portion of the PLO 5150, and to not convey any Top Filed lands to the State of Alaska. Providing relevant context to these concerns, as noted in the BLM Central Yukon Resource Management Plan and Environmental Impact Statement FAQs:

> *In 1971, Public Order 5150 (a.k.a. PLO 5150) established a utility and transportation corridor along the general route of the Trans-Alaskan Pipeline and made the lands in that corridor unavailable for selection by the State of Alaska. In 1980, the Alaska National Interest Lands Claim Act (ANILCA) granted the State an additional 10 years (until 1993) to complete its land selections. It also gave the State the right to file "future selection applications" on lands that were not available for selection at that time in case they became available in the future. These future selection applications are called "top filings." The State of Alaska has top-filed a large portion of the lands in the utility corridor that was reserved by PLO 5150. It is possible that PLO 5150 would be modified through the Central Yukon Resource Management Plan. If PLO 5150 is modified or eliminated, then the top-filed lands would become valid State selections, and eventually become State-owned lands. Source: United States Department of the Interior Bureau of Land Management. 2017. Central Yukon Resource Management Plan and Environmental Impact Statement FAQs. https://goo.gl/8sWIJY. Retrieved: March 22, 2017.*

Addressing this potential scenario as stated by the BLM, the Council received oral testimony delivered by Pollack (P.J.) Simon, Jr., First Chief of Allakaket Village, a Federally-recognized tribe of 330 members located in the southern Foothills of the Brooks Range. Mr. Simon addressed the importance of preserving caribou and Dall sheep populations utilized by Federally qualified subsistence users in the region. Mr. Simon noted that Tribal members oppose the conveyance of the 5150 Utility Corridor lands along the Haul Road, from the Yukon River ridge to Coldfoot.

Mr. Simon noted the Utility Corridor is rich in wildlife utilized by Federally qualified and non-Federally qualified users alike. Mr. Simon explained these wildlife resources cover a matrix of Federal, State, and ANCSA ownership including Doyon lands. Mr. Simon described the significance of these lands as "world class" noting the abundance of Dall sheep in the vicinity of Coldfoot; and three caribou herds (Teshekpuk, the Central Arctic, and the Western Arctic) which provide an important food source. Mr. Simon noted the Tribe has gotten along very well with the existing guides and air transporters operating out of Evansville and Wiseman. Mr. Simon explained this good working relationship would be jeopardized by PLO 5150. Mr. Simon explained that conveying these Federal public lands to the State could result in cumulative effects adversely impacting the flora and fauna along the Dalton Highway due to increased motorized vehicle traffic, intensified hunting pressure, habitat fragmentation, and changes in water quality due to mining activity.

Responding to these concerns, the Council noted the State is over-selected by 18 million acres on vacant, unappropriated, or unreserved lands at this time. The PLO 5150 lands were withdrawn, and continue to have "reserved interest" to the United States. The current PLO 5150 lands do not legally qualify to be "Top Filed" as they do not qualify under the Statehood Act Selections found in Alaska Statehood Act sec. 6 (a) and (b), "vacant, un-appropriated, or unreserved lands." The Council understands ANILCA, and the Federal Lands Policy Act of 1976 to preclude transfer of the 5150 lands to the State, as found explicitly in ANILCA Title VIIII §906 (j). The Council emphasizes the Board should recognize that exclusion of subsistence uses by the State of

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Alaska would have a significant and adverse impact on Federally qualified subsistence users in the communities of the upper portion of the Western Interior region. The Council emphasizes the BLM Central Yukon Resource Management Plan alternatives that would open Federal public lands to selection by the State of Alaska and conveyance to the State of Alaska would have extreme detriment to Federally qualified subsistence users. Reiterating these concerns, the Council opposes any further modification of the current PLO 5010 lands to allow State selection of Federal public lands in the existing Utility Corridor citing the legality, detriment to communities, and best interest of the American people.

Responding to these concerns, the Council unanimously moved to endorse a letter (see attached) prepared by Jack Reakoff of Wisemen to the Bureau of Land Management. The Council asks the Board to recognize the following specific points from the letter as specified below.

- *On December 27, 1971 the Secretary of Interior withdrew the transportation and utility corridor "from all forms of appropriation under the public land laws except for location for metalliferous minerals under the mining laws" with Public Land Order 5150." The Trans-Alaska Pipeline Act" of 1973 adopted and affirmed that action. The State of Alaska had not selected the Central Brooks Range by 1971. The State of Alaska has over selected other lands that were open to selection. The "Utility Corridor" BLM property was closed not only to the State of Alaska selection, it excluded Native Corporations selection as well.*
- *Opening PLO 5150 and conveying more lands to the State of Alaska would be in violation of the "Federal Land Policy and Management Act" of 1976. Sec. 102. [43 U.S.C. 1701] (a) The Congress declares that it is the policy of the United States that– (1) the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will serve the national interest. It is not in the National interest to allow the State of Alaska selection of any lands in the utility corridor. The lands the State proposed for selection are choice oil and gas lands, or gold mineral worth eventually billions of dollars to the Nation.*
- *The State's request for additional lands, especially reserved and appropriated lands after 1993, is neither proper nor valid, citing the 1980 ANILCA Sec. 906 (a)(2) Extension Of Selection Period. In furtherance and confirmation of the State of Alaska's entitlement to certain public lands in Alaska, §6(b) of the Alaska Statehood Act is amended by substituting "thirty-five years" for "twenty-five years."*
- *Finding the State's request for modification of PLO 5150 to be invalid, an ANILCA Title VIII Section 810 analysis would need to be adhered to, except for sec. 810(3)(C) (c), with diligence paid to the extreme detriment to the communities of Wiseman and Coldfoot.*
- *The Middle Fork/Dietrich Valleys provided the primary subsistence for these communities for 120 years. As the author Robert Marshall wrote in 1932, "If it were not for living off of the country, civilization on the Koyukuk could not*

survive today...were it not for the additional subsistence provided by the animal and plant life of the region." These biological resources are made available through hunting, trapping, fishing, berrying, logging and gardening.

- *Wiseman is one of 10 Resident Zone Communities that have Customary and Traditional use eligibility inside of the Gates of the Arctic National Park. The only winter access to traditional areas to the west, is with snowmobile through the Wiseman Valley or up the Hammond River drainage. In dry season highway vehicles are used to get as close as possible on the Nolan and Hammond River roads. If these areas were State land, it would preclude access to traditional hunting and trapping areas inside the Gates of the Arctic National Park, under State regulations.*
- *State regulations in the Dalton Highway Corridor Management Area, five miles from each side of the road, currently do not allow the use of motorized vehicles except licensed highway vehicles within ¼ mile of the Dalton Highway, boats, and aircraft. Large and small game hunting is closed except for the use of bow and arrow. State regulations would preclude use of snowmobile for any subsistence use, and would preclude transporting any hunter, game or gear with a highway vehicle no further than ¼ mile from the Dalton Highway. Wiseman Village is three miles from the Dalton. Wiseman would effectively be isolated from Park or other Federal land access by Title VIII sec. 811 customary use of snowmobile, or even licensed highway vehicles to homes with game resources.*

Further elaborating on these points, the Council emphasizes the importance of the area to providing subsistence resources to meet the food security needs of the region. The closest store is 275 miles away and takes 13 hours to complete a round trip. If the State receives these lands as a gift, it would put local people in grave hardship. State regulations provide only sport-hunting opportunities with archery. The loss of the ability to harvest subsistence resources with customary and traditional methods adjacent to these communities on Federal public lands would place a great hardship on the local residents.

The Council asks the Board to communicate these concerns to the BLM with a request to include an alternative not to open the utility corridor to State selection. The Council further asks the Board to request the BLM to evaluate the impacts to subsistence use in each alternative. And since this is rulemaking outside of the Board's scope and authority, the Council also requests that these concerns be elevated to the attention of the Secretary of the Interior, per the directives in the Secretarial Review. The Council requests the evaluation of subsistence use (where people hunt, fish, and gather by season) and important ecological areas (where fish and wildlife feed, breed, raise young, and migrate by season) in the vicinity of each affected community in each alternative incorporating scientifically defensible methods and local traditional knowledge. The information gathered through the evaluation should be peer-reviewed both by scientists and residents alike, to clarify knowledge gaps and ensure the accuracy of results using a transparent public and participatory process.

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Response:

The activities of the Bureau of Land Management with regard to its modifications to the Central Yukon Resource Management Plan are outside the scope of the Board's authority. However, by bringing it to the attention of the Board, you are bringing it to the attention of the Regional Director for the BLM, who will ensure that your concerns are addressed by that agency. Additionally, the BLM will be conducting an analysis under ANILCA Section 810 in connection with action on this matter.

2. Timeline requested for improving Tribal Consultation

The Council believes there is a need to improve tribal consultation. Addressing Fisheries Proposal 17-02, the Council noted tribal consultation did not effectively engaged tribal members in the region. The Council recommends that the Office of Subsistence Management (OSM) Native Liaison utilize the subsistence staff of the Refuges, the Bureau of Land Management, and the National Park Service to disseminate information to the tribes, and receive input from the tribes to better answer questions and promote the sharing of information. Tribal consultation should be occurring on all proposals that affect subsistence use of tribal members prior to the meeting of the Council. This approach is needed to ensure that communities understand how the proposals could affect them. The subsistence staff at the Refuges should explain how the proposals could affect the communities, travel to the affected communities to answer questions, receive input from tribal councils, and help convey information to Board. Greater coordination on tribal consultation between OSM, Refuge staff, and tribes is needed, rather than the current approach. The Council requests a process be defined that will relay the Tribes input back to the Regional Advisory Councils so that the Councils effectively advocate for the interests of Federally qualified subsistence users in their communications with the Board.

During our fall 2016 meeting, the Chair noted the significance of this issue, adding that the Native Liaison is not at fault and emphasizing the task is too big a job for one person. The Chair recommended the coordinated use of all subsistence staff in all conservation units, to effectively disseminate information to tribes, to bring feedback to the Councils, and to share this information with the Board. The Council requests that a timeline be submitted to detail how OSM will provide strategies to implement a workable tribal consultation in coordination with tribes on proposals and related issues affecting their communities.

Response:

The Board acknowledges that the Council would like to see improvement in the tribal consultation process. The input from the tribes, Native corporations, and Council members has helped strengthen analyses on proposals, special actions, and discussions during Board and Council meetings. The Board fully supports the consultation process and believes that it will continue to improve and strengthen communications between the Federal Subsistence Management Program and subsistence users.

The formal process reflected in the Federal Subsistence Board's *Government-to-Government Tribal Consultation Policy* is relatively new,[1] and the consultation process is increasingly becoming more meaningful and appreciated by those involved in the consultations. The Board's *Implementation Guidelines for the Federal Subsistence Board Government-to-Government Tribal Consultation Policy* provides that consultation shall occur at least two weeks in advance of the Subsistence Regional Advisory Council meeting cycle. In addition, there are opportunities at both Board and Council meetings for tribal and corporation input on proposals and action items. Soliciting tribal and ANCSA comments is part of normal proceedings of these meetings and is stated on the proposal procedures for those meetings. Additionally, according to the Board's policy, a tribe can request consultation from the Board at any time related to any subject.

The OSM Native Liaison has expanded the program considerably since the process was formally implemented. An ever-increasing number of special actions and consultation requests, with sometimes limited staff, occasionally can result in a breakdown in outreach communication. A lack of a tribal consultation on FP17-02 was due in part to short turnaround time and the Native Liaison not being available for non-work related reasons.

The policy and guidelines are in place, and there is no specific timeline for further modifying tribal consultation. The *Implementation Guidelines* is meant to be a living document, and the Policy provides for an annual review to assess its effectiveness. Thus, improving tribal consultation is meant to be an ongoing process. The Board encourages the Councils and tribes to provide suggestions for improvement of these documents.

3. Timeline requested for establishing a Wildlife Resource Monitoring Program

The Council reiterates the unmet need for establishing a Wildlife Resource Monitoring Program, as previously requested in last year's annual report and as detailed in the Secretarial Review. The program is needed to obtain information such as harvest data, required by land managers to effectively manage subsistence resources. For example, in instances where harvest data is wanted, necessitating door-to-door harvest surveys in communities, and where the State is unable to meet this need, the Wildlife Resource Monitoring Program would be prepared to fill the data gap. This is the eighth time the Council has requested the establishment of Wildlife Resource Monitoring Program. Previously, the Council was told by the Board that the budget limits prohibit development of such a program. The Council requests an explanation as to what efforts are being made to bridge that budget gap and for a timeline of how the Board plans to implement the program.

Response:

The Board agrees with the Council about the need to establish a Wildlife Resource Monitoring Program (WRMP). However, as stated in previous replies, budgetary constraints make this unlikely in the near future. The budget for the Department of Interior for Fiscal Year 2018 is

[1] The guidelines to implement that policy were adopted January 2015.

expected to be substantially less than in previous years and there is no clear funding mechanism for a WRMP at this time. The Assistant Regional Director for OSM has been exploring avenues of funding for a WRMP, but no sources are currently available. The Federal Subsistence Management Program funding is legislatively mandated for fisheries related purposes. The only way to fund a WRMP would be to have a funding source dedicated to wildlife monitoring and research. Additionally, the current proposal for a FY2018 budget suggests up to 13% cuts to the Department of the Interior budget. The Board cannot give this Council a timeline for establishment of a WRMP in the current environment of budgetary uncertainty.

4. Obtain digital photography of caribou to enhance management of this important subsistence resource

The Federal Subsistence Management Program should make efforts to obtain access to high resolution digital photography images of caribou to enhance management of this important subsistence resource. Such information could be made available to land managers for instantaneous viewing by computer and could assist them in obtaining more timely and cost-effective estimates of caribou herd population than is presently available through radio collaring and aerial film photography.

Response:

The Alaska Department of Fish and Game uses two planes to conduct photocensuses of caribou herds. The Alaska Department of Fish and Game (ADF&G) has purchased digital cameras for both planes. One camera is already installed and will be used for the first time in 2017. Flights to test this camera are scheduled in the upcoming months. The second camera is pending installment and may also be used by summer 2017.

The Council mentions the cost-effectiveness and timeliness of caribou population estimates. Each camera is very expensive, although the price has come down in recent years. Cost is the reason that ADF&G has not transitioned to digital cameras sooner. Digital cameras are able to photograph in broader light conditions than film cameras, which will enhance ADF&G's ability to complete successful and timely photocensuses. Digital photographs are also easier to stitch together (necessary to prevent double counting) than film photographs. This should speed up processing time. Currently, there is no computer program that can accurately recognize and count caribou from photos. However, ADF&G is keeping tabs on the technology and would consider using computer programs if accuracy improved. Additionally, the timeliness of caribou population estimates is related to prioritization by ADF&G. For example, Western Arctic caribou herd (WACH) population estimates have historically not been available until December of the year that photos were taken. In 2016, however, these estimates were available by late August because ADF&G prioritized determining the WACH population estimate in order to inform a special action request to the Board.

The Council also mentions providing digital photographs to the Federal Subsistence Management Program (FSMP) and to land managers. Providing such information would likely require a data sharing agreement between State and Federal agencies. Furthermore, the Board sees limited utility in providing these digital photographs to the FSMP and Federal land mangers as the photographs' value is in estimating caribou populations, which is a very labor and time intensive process already accomplished by ADF&G. Additionally, ADF&G shares the relevant management information (population estimates) with the FSMP and other land managers when the data becomes available and has demonstrated their sensitivity and response to imminent data needs such as the 2016 WACH population estimate.

5. Request for an analysis of in-season tools to enhance the assessment of salmon run strength along the Yukon River

The Council requests an analysis of in-season tools, including, though not limited to, sonar, to enhance the assessment of salmon run strength along the Yukon River. Such an assessment could examine the need for additional run strength estimates and the most effective distribution of assessment tools as the run progresses upriver. The assessment should also include an analysis of current locations of monitoring stations to determine if they are effective and meeting desired data objectives.

Response:

The Board believes that the current set of in-season tools utilized by fisheries managers to estimate the run sizes and timing of Yukon River salmon is appropriate and functioning well.

The ADF&G, along with the U.S. Fish and Wildlife Service (USFWS), the Yukon Delta Fisherman's Development Association (YDFDA) and the Tanana Chiefs Conference (TCC) utilize test net fisheries, sonars, weirs, and counting towers to assess in-season abundance of Chinook, Chum, and Coho Salmon. The test net fisheries are operated on the Lower Yukon River by the ADF&G and YDFDA, downstream of the Pilot Station sonar near the mouth of the river. These test net fisheries provide run timing and relative abundance information as fish enter the Yukon River. This information is used to identify pulses and help time subsistence and commercial fishing openings downstream of Pilot Station; however, they do not provide enough data to estimate escapement.

The ADF&G uses sonars at Pilot Station and Eagle on the Yukon River for Chinook, Chum, and Coho Salmon to provide run timing and in-season abundance estimates for the Yukon River, while other sonars are used to monitor escapement into tributaries located on the Anvik River (ADF&G; Chinook and summer Chum Salmon) and Chandalar River (USFWS; fall Chum Salmon). Sonars are utilized in large and turbid waters to enumerate fish where weirs would be impractical. The main drawbacks to sonars are the initial cost and species identification when multiple species of similar size are present. In addition to enumerating salmon at the Pilot Station sonar, the Alaska Department of Fish and Game and the U.S. Fish and Wildlife service conduct genetic mixed stock analysis on Chinook and Chum Salmon captured at the sonar

location. The samples are collected, shipped to the genetics labs in Anchorage, analyzed, and the data is returned to fisheries managers giving them stock composition estimates within 24-48 hours. This allows managers to differentiate between fish stocks, giving them the ability to time fishing opportunities to potentially minimize harvest on weak stocks as they travel up the river. Netting programs are used to apportion species in this situation. In smaller, clear water streams, weirs and counting towers are utilized to estimate escapement. Weirs are utilized in the Alaska portion of the Yukon River Drainage by the USFWS, and TCC on the Andreafsky, and Gisasa Rivers, along with Henshaw Creek. Advantages of weirs include more accurate 1) counts of fish, 2) run timing at the tributaries, and 3) sex and age information. The disadvantages are that weirs cannot be utilized on a large river like the Yukon River, as high water can interrupt operations. The advantages and disadvantages of counting towers are similar to weirs, although they can be less accurate and are more susceptible to poor water conditions. The ADF&G operates the counting towers located on the Chena and Salcha Rivers.

6. Request to minimize the effects of salmon bycatch in the Bering Sea on Federally qualified subsistence users of the Koyukuk and Yukon River

The Council reiterates its concern that the Bering Sea and Aleutian Island (BSAI) trawl fleet is still fishing 10 months a year. The Council repeats its request, noted in its previous annual report, calling for the Board to directly address the Secretary of Commerce and the Secretary of the Interior and state that this is a violation of the national standards. The BSAI trawl fleet is fully executing a commercial fishery. The salmon bycatch associated with this fishery adversely impacts the Federally qualified subsistence users of the Koyukuk and Yukon River, who are restricted in their harvest. The Council believes that this practice violates the Magnuson-Stevens Act.

Response:

The Board understands the continued concern coming from Federally qualified subsistence users regarding the bycatch of Chinook Salmon in the Bering Sea/Aleutian Islands commercial Pollock fishery. Federally qualified subsistence users have had to abide to restrictions and closures of fisheries while each year the commercial Pollock fisheries incidentally catch salmon species that are an important resource for subsistence. Currently, the commercial Pollock fishery is allowed to fish for up to 9 months of the year. The upper cap on the Chinook Salmon bycatch quota is 60,000 Chinook. The fishery is currently managed at a lower cap level (47,000) under incentive programs (vessel level closures). Some additional provisions have made the Chinook Management Program more robust, which includes 100% observer coverage, 100% census of all salmon species by observers, increased genetic sampling for stock of origin, and increased reporting on the results of the genetics and effectiveness of the incentive programs.

On April 11, 2015, the North Pacific Fishery Management Council passed an amended package of Chum and Chinook Salmon bycatch avoidance measures, including reductions in the performance standards and hard caps for Chinook Salmon bycatch in the Bering Sea Pollock fishery. The North Pacific Fishery Management Council's unanimous decision was to reduce the

bycatch hard cap from 60,000 to 45,000 fish and the performance standard bycatch from 47,591 to 33,318 fish in years of low Chinook Salmon abundance. Low abundance is defined as less than 250,000 Chinook Salmon in the three-river index of run reconstructions on the Upper Yukon, Kuskokwim, and Unalakleet Rivers stock groupings. In the commercial Pollock season following a year of less than 250,000 Chinook Salmon, the bycatch reductions will be enacted. The Board believes that the Council's concerns have been properly and adequately addressed by the North Pacific Fisheries Marine Council and the National Marine Fisheries Service, which manages U.S. Federal fisheries off Alaska 3 to 200 miles under the Magnuson Stevens Act. Together, these two agencies make recommendations directly to the Secretary of Commerce.

7. Request for studies to better understand the effect of warming waters on subsistence fisheries

The Council is concerned about the effect of warming waters on subsistence fisheries. Studies are needed to understand how warming waters impact spawning, fish behavior, and harvest timing. Council members are experiencing the impacts of global warming and the tracking of these benefits is needed as gradual changes can magnify over time.

Response:

The Board recognizes the unique challenges climate change presents to subsistence users and understands that these changes could have significant impact to users. It should be noted that it is not the role of OSM to develop studies. However, OSM staff does work closely with the ten Federal Subsistence Regional Advisory Councils to identify subsistence fisheries priority information needs specific to each region. These priority information needs are the guidelines used by investigators to develop studies within their region of focus when applying for Fisheries Resource Monitoring Program (FRMP) funding.

The Office of Subsistence Management also encourages investigators to consider examining or discussing climate change effects as a component of their project when applying for funding through the FRMP. In addition, a stream water monitoring project has been ongoing since 2008 at FMRP funded fisheries projects throughout Alaska. This monitoring project provides standardized methods for collection and reporting of water and air temperatures. Thus far, most sites have remained within optimal temperature ranges for rearing juvenile salmon.

The Alaska National Wildlife Refuge (NWR) Water Resource Division is also engaged with monitoring water temperatures in rivers and lakes on several NWRs. This data is being compiled and used by refuges and shared with others upon request. The final project report (OSM project number 14-701) contains the data collected from this project and is available from the Office of Subsistence Management upon request.

Chairman Reakoff 11

8. Emphasis on the importance of rural seats on the Federal Subsistence Board and request for an additional Board member

Rural seats on the Board are incredibly important and the Council requests the Board to take action necessary to initiate Secretarial rulemaking to provide for an additional Board member. This would create a nine-member Board with four seats occupied by rural users. It would enhance the rural voice on the Board and eliminate the potential for tie votes on controversial matters.

Response:

As the Council is aware, membership on the Board used to consist solely of the Alaska regional directors of the five federal agencies involved in the Federal Subsistence Management Program, plus a chair selected among rural subsistence users. In response to the directive of then-Secretary Ken Salazar in a letter dated December 17, 2010 as part of the Secretarial Review, the Board developed a proposed regulation that would add two additional public members to the Board representing subsistence users. The final regulation adopting that change was published, and two public members were added in 2012. The addition of the two public members has certainly changed the dynamic of the Board's deliberative process. And, it is generally beneficial for decision-making bodies to have odd numbers, as this helps to prevent tie votes, and thus, inaction. However, the regulations fall within the portion of the Federal subsistence regulations that are solely under Secretarial authority. In order to add a new public member, and increase the Board's numbers to nine, the Secretaries would have to approve of such rulemaking.

9. Recognition of and appreciation for Mr. Robert Walker's service on the Council

At its fall meeting, the Council recognized Mr. Robert Walker for his 15 years of service on the Western Interior Alaska Subsistence Regional Advisory Council. His current term expired in December 2016, and he decided to retire from the Council. The Council requests that the Board transmit a letter of appreciation to Mr. Walker recognizing his service.

Response:

The Board thanks you for this information and joins you in celebrating Mr. Walker's contributions to the Council. Mr. Walker was among those recognized with a certificate recognizing his 15 years of service at the All Council meeting in March 2016. At the Council's request, the chairman of the Board has transmitted a letter thanking Mr. Walker for his service upon his retirement from the Council.

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 Western Interior Region are well represented through your work.

Chairman Reakoff 12

Sincerely,

Anthony Christianson
Chair

cc: Federal Subsistence Board
Western Interior Alaska Subsistence Regional Advisory Council
Eugene R. Peltola, Jr., Assistant Regional Director, Office of Subsistence Management
Thomas Doolittle, Deputy Assistant Regional Director, Office of Subsistence Management
Carl Johnson, Council Coordination Supervisor, Office of Subsistence Management
Zachary Stevenson, Subsistence Council Coordinator, Office of Subsistence Management
Jill Klein, Special Assistant to the Commissioner, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

Federal Subsistence Board

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

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

FOREST SERVICE

OSM 17058.JH

Refuge Manager
U.S. Fish and Wildlife Service
Yukon Delta National Wildlife Refuge
P.O. Box 346
Bethel, Alaska 99559

Dear Yukon Delta National Wildlife Refuge Manager:

This letter delegates specific regulatory authority from the Federal Subsistence Board (Board) to the Manager of the Yukon Delta National Wildlife Refuge (Refuge Manager) to issue emergency special actions when necessary to ensure the conservation of a healthy fish population, to continue subsistence uses of fish, for the continued viability of a fish population, or for public safety reasons. This delegation only applies to Federal public waters subject to the Alaska National Interest Lands Conservation Act (ANILCA) Title VIII in the Kuskokwim Area, including the Goodnews and Kanektok Rivers.

It is the intent of the Board that Federal subsistence fisheries management by Federal officials be coordinated, prior to implementation, with the representatives from Regional Advisory Councils (Councils), the Kuskokwim River Inter-tribal Fish Commission (KRITFC), the Kuskokwim River Salmon Management Working Group (KRSMWG), the Office of Subsistence Management (OSM), and the Alaska Department of Fish and Game (ADF&G), to the extent possible. The OSM will be used by managers to facilitate communication of actions and ensure proposed actions are technically and administratively aligned with legal mandates and policies. Federal managers are expected to cooperate with managers from the State and other Federal agencies, the Council Chair(s), and applicable Council members to minimize disruption to subsistence resource users and existing agency programs, consistent with the need for emergency special action.

Comment [A1]: New language – Associated with changes stemming from FP17-05

DELEGATION OF AUTHORITY

1. Delegation: The Refuge Manager is hereby delegated authority to issue emergency special actions affecting fisheries in Federal public waters as outlined under the **Scope of Delegation** below. Although a public hearing is not required for emergency special actions, if deemed necessary by you, then a public hearing on the emergency special action is recommended. 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 issuance of emergency special actions as defined by 36 CFR 242.19(a) and 50 CFR 100.19(a). Such an emergency action may not exceed 60 days, and may not be extended.

This delegation permits you to open or close Federal subsistence fishing periods or areas provided under codified regulations. It also permits you to specify methods and means; to specify permit requirements; and to set harvest and possession limits for Federal subsistence fisheries.

This delegation also permits you to close and re-open Federal public waters to nonsubsistence fishing, but does not permit you to specify methods and means, permit requirements, or harvest and possession limits for State-managed fisheries. This delegation may be exercised only when it is necessary to conserve healthy populations of fish or to ensure continuation of subsistence uses.

All other proposed changes to codified regulations, such as customary and traditional use determinations or requests for special actions greater than 60 days, shall be directed to the Board.

The Federal public waters subject to this delegated authority are those within the Kuskokwim Area (as described in the Subsistence Management Regulations for the Harvest of Fish and Shellfish on Federal Public Lands and Waters in Alaska). You will coordinate all local fishery decisions with all affected Federal land managers.

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

5. Guidelines for Review of Proposed Special Actions: You will use the following guidelines to determine the appropriate course of action when reviewing proposed special actions.

a) Does the proposed special action fall within the geographic and regulatory scope of delegation?

b) Have you communicated with the OSM to ensure the emergency special action is aligned with Federal subsistence regulations and policy?

c) Does the proposed action need to be implemented immediately as an emergency special action, or can the desired conservation or subsistence use goal be addressed by deferring the issue to the next regulatory cycle?

d) Does the supporting information in the proposed special action substantiate the need for the action?

e) Are the assertions in the proposed special action confirmed by available current biological information and/or by affected subsistence users?

f) Is the proposed special action supported in the context of available historical information on stock status and harvests by affected users?

g) Is the proposed special action likely to achieve the expected results?

h) Have the perspectives of the Chair or alternate of the affected Council(s), the KRITFC, the KRSMWG, OSM, and affected State and Federal managers been fully considered in the review of the proposed special action?

Comment [A2]: New Language – Associated with FP17-05.

i) Have the potential impacts of the proposed special action on all affected subsistence users and non-Federally qualified users within the drainage been considered?

j) Can public announcement of the proposed special action be made in a timely manner to accomplish the management objective?

k) After evaluating all information and weighing the merits of the special action against other actions, including no action, is the proposed emergency special action reasonable, rational, and responsible?

6. Guidelines for Delegation: You will become familiar with the management history of the fisheries in the region, with the current State and Federal regulations and management plans, and be up-to-date on stock and harvest status information.

You will provide subsistence users in the region a local point of contact about Federal subsistence fishery issues and regulations and facilitate a local liaison with State managers and other user groups. For in-season management decisions and special actions, consultation is not always possible, but to the extent practicable, two-way communication will take place before decisions are implemented. You will also establish meaningful and timely opportunities for government-to-government consultation related to pre-season and post-season management actions as established in the Board's Government to Government Tribal Consultation Policy (Federal Subsistence Board Government to Government Tribal Consultation Policy 2012).

By [INSERT DATE] of each year, you will convene a meeting of representatives from the Yukon Delta NWR, the Kuskokwim River Intertribal Fish Commission, and other Federally sanctioned entities to determine, in consultation with the OSM and ADF&G, if conditions warrant Federal management of subsistence fisheries on the Kuskokwim River.

Comment [A3]: Request input on this section from YKD and WI Councils, KRITFC, and in-season manager

In addition to any guidelines collaboratively established for issuing emergency special actions via this delegated authority, you will review emergency special action requests or situations that may require an emergency special action and all supporting information to determine (1) consistency with 36 CFR 242.19 and 50 CFR 100.19, (2) if the request/situation falls within the scope of your delegated authority, (3) if significant conservation problems or subsistence harvest concerns are

Comment [A4]: New language – Associated with FP17-05

indicated, and (4) what the consequences of taking an action may be on potentially affected subsistence uses and nonsubsistence uses. Requests not within your delegated authority will be forwarded to the Board for consideration.

You will maintain a record of all special action requests and justification of your decisions. A copy of this record will be provided to the Administrative Records Specialist at OSM no later than sixty days after development of the document.

You will immediately notify the Board through the Assistant Regional Director for the OSM, and coordinate with the Chair or alternate of the affected Council(s), the KRITFC, the KRSMWG, local ADF&G managers, and other affected Federal conservation unit managers concerning emergency special actions being considered.

Comment [A5]: New language – Associated with changes stemming from FP17-05

If the timing of a regularly scheduled meeting of the affected Council(s) permits without incurring undue delay, you may seek Council recommendations on the proposed emergency special action.

You will issue decisions in a timely manner. Before the effective date of any decision, reasonable efforts will be made to notify Council representatives, the KRITFC, the KRSMWG, the public, OSM, affected State and Federal managers, and law enforcement personnel. If an action is to supersede a State action not yet in effect, the decision will be communicated to Council representatives, the KRITFC, the KRSMWG, the public, OSM, and State and Federal managers at least 24 hours before the State action would be effective. If a decision to take no action is made, you will notify the proponents of the request immediately.

Comment [A6]: New language – Associated with changes stemming from FP17-05

Comment [A7]: New language – Associated with changes stemming from FP17-05

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

7. Reporting: If pre-season meetings result in the need for Federal management of the fishery, you will submit a written report to the Board by [INSERT DATE] of each year documenting the outcome of this determination process, as well as outlining the in-season collaborative decision making process adopted by the group to include input from the KRITFC, the KRSMWG, the OSM, and ADF&G, proposed strategies for in-season management, and agreed upon guidelines for issuing emergency special actions via delegated authority.

Comment [A8]: Request input on this section from YKD and WI Councils, KRITFC, and in-season manager

You must provide to the Board, through the Assistant Regional Director for the OSM, a report describing the pre-season coordination efforts, local fisheries management decisions, and post-season evaluation activities for the previous fishing season by November 15. A summary of emergency special action requests and your resultant actions must be provided to the coordinator of the appropriate Council(s) at the end of the calendar year for presentation during regularly scheduled Councils meetings.

Yukon Delta National Wildlife Refuge Manager 5

8. <u>Support Services</u>: Administrative support for your local Federal subsistence fisheries management activities will be provided by the Office of Subsistence Management, U.S. Fish and Wildlife Service, Department of the interior

Should you have any questions about this delegation of authority, please feel free to contact the Assistant Regional Director for the OSM, U.S. Fish and Wildlife Service, at toll-free 1-800-478-1456 or (907) 786-3888.

Sincerely,

Anthony Christianson
Chair

Enclosures

cc: Federal Subsistence Board
Chair, Yukon-Kuskokwim Delta Subsistence Regional Advisory
Chair, Western Interior Subsistence Regional Advisory Council
Superintendent, Lake Clark/Katmai National Parks and Preserve
Superintendent, Denali National Park and Preserve
Manager, Togiak National Wildlife Refuge
Manager, Alaska Maritime National Wildlife Refuge
Assistant Regional Director, Law Enforcement, U.S. Fish and Wildlife Service
Commissioner, Alaska Department of Fish and Game
Assistant Regional Director, Office of Subsistence Management
Administrative Record

Winter 2018 Regional Advisory Council Meeting Calendar

February-March 2018

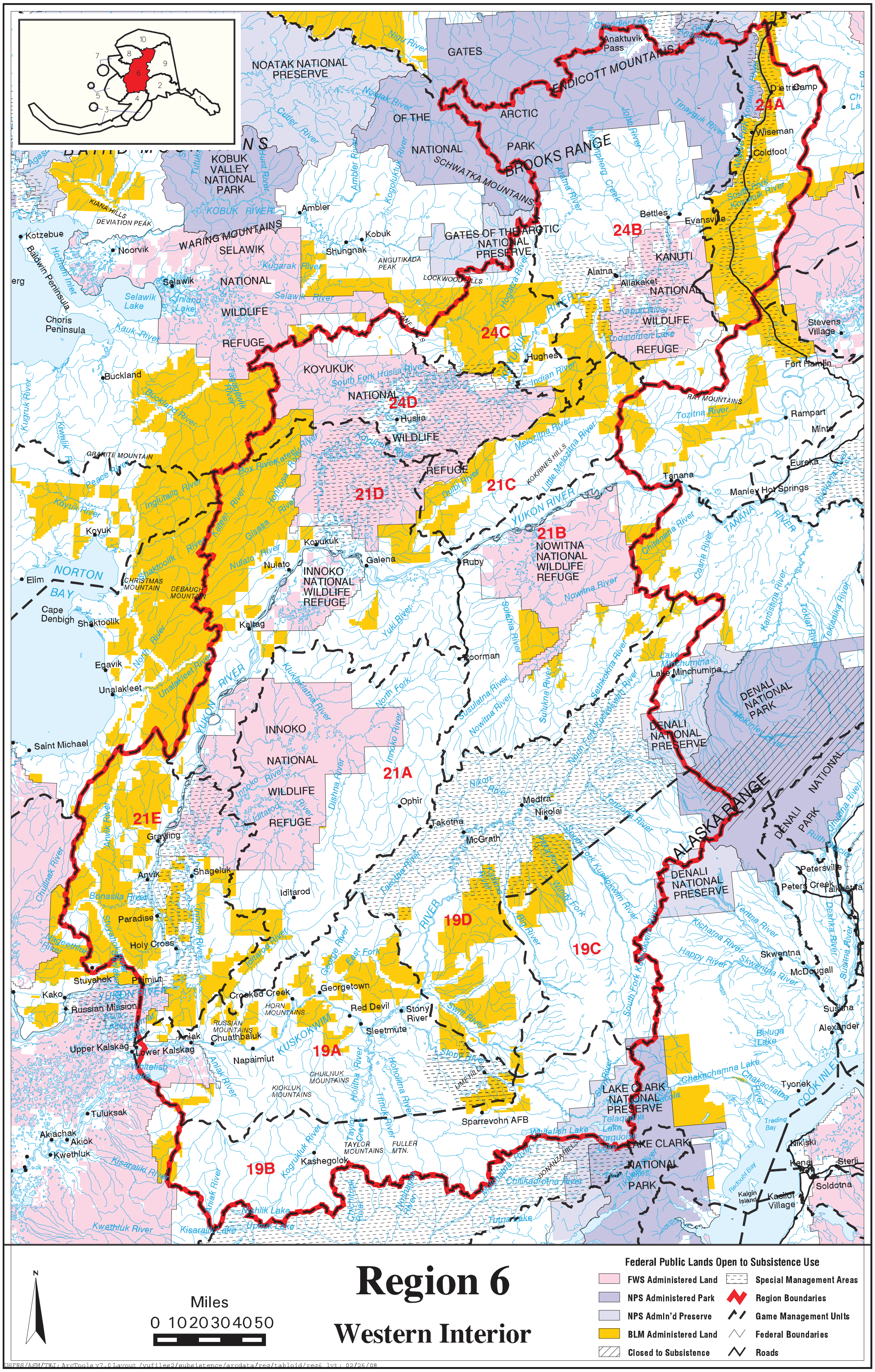
Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Feb. 4	*Feb. 5* *Window Opens*	*Feb. 6*	*Feb. 7* **EI — Fairbanks** **SE — Wrangell**	*Feb. 8*	*Feb. 9*	*Feb. 10*
Feb. 11	*Feb. 12*	*Feb. 13* **NS — Utqiaġvik**	*Feb. 14*	*Feb. 15*	*Feb. 16*	*Feb. 17*
Feb. 18	*Feb. 19* ***PRESIDENT'S DAY*** ***HOLIDAY***	*Feb. 20* **WI — Anchorage**	*Feb. 21* **KA — Kodiak**	*Feb. 22*	*Feb. 23*	*Feb. 24*
Feb. 25	*Feb. 26*	*Feb. 27* **BB — Naknek (1st opt.)**	*Feb. 28*	*Mar. 1* **NWA — Kotzebue**	*Mar. 2*	*Mar. 3*
Mar. 4	*Mar. 5* **SP — Nome**	*Mar. 6* **SC — Anchorage**	*Mar. 7*	*Mar. 8*	*Mar. 9*	*Mar. 10*
Mar. 11	*Mar. 12*	*Mar. 13* **BB — Naknek (2nd opt.)**	*Mar. 14*	*Mar. 15* **YKD — Bethel**	*Mar. 16* *Window Closes*	*Mar. 17*

Fall 2018 Regional Advisory Council Meeting Calendar

Meeting dates and locations are subject to change.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug. 19	*Aug. 20*	*Aug. 21*	*Aug. 22*	*Aug. 23*	*Aug. 24*	*Aug. 25*
Aug. 26	*Aug. 27*	*Aug. 28*	*Aug. 29*	*Aug. 30*	*Aug. 31*	*Sept. 1*
Sept. 2	*Sept. 3* ***LABOR DAY HOLIDAY***	*Sept. 4*	*Sept. 5*	*Sept. 6*	*Sept. 7*	*Sept. 8*
Sept. 9	*Sept. 10*	*Sept. 11*	*Sept. 12*	*Sept. 13*	*Sept. 14*	*Sept. 15*
Sept. 16	*Sept. 17*	*Sept. 18*	*Sept. 19*	*Sept. 20*	*Sept. 21*	*Sept. 22*
Sept. 23	*Sept. 24*	*Sept. 25*	*Sept. 26*	*Sept. 27*	*Sept. 28*	*Sept. 29*
Sept. 30	*Oct. 1*	*Oct. 2*	*Oct. 3*	*Oct. 4*	*Oct. 5*	*Oct. 6*
Oct. 7	*Oct. 8* ***COLUMBUS DAY HOLIDAY***	*Oct. 9* **SE — TBD**	*Oct. 10*	*Oct. 11*	*Oct. 12*	*Oct. 13*
Oct. 14	*Oct. 15*	*Oct. 16*	*Oct. 17*	*Oct. 18* **AFN — Anchorage**	*Oct. 19*	*Oct. 20*
Oct. 21	*Oct. 22*	*Oct. 23*	*Oct. 24*	*Oct. 25*	*Oct. 26*	*Oct. 27*
Oct. 28	*Oct. 29*	*Oct. 30*	*Oct. 31*	*Nov. 1*	Nov. 2	*Nov. 3*
Nov. 4	*Nov. 5*	*Nov. 6*	*Nov. 7*	*Nov. 8*	Nov. 9	*Nov. 10*


Region 6
Western Interior
Miles
0 10 20 30 40 50
N
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Park
NPS Admin'd Preserve
BLM Administered Land
Closed to Subsistence
Special Management Areas
Region Boundaries
Game Management Units
Federal Boundaries
Roads
NOATAK NATIONAL PRESERVE
GATES OF THE ARCTIC NATIONAL PARK
GATES OF THE ARCTIC NATIONAL PRESERVE
KOBUK VALLEY NATIONAL PARK
SELAWIK NATIONAL WILDLIFE REFUGE
KOYUKUK NATIONAL WILDLIFE REFUGE
KANUTI NATIONAL WILDLIFE REFUGE
NOWITNA NATIONAL WILDLIFE REFUGE
INNOKO NATIONAL WILDLIFE REFUGE
DENALI NATIONAL PARK
DENALI NATIONAL PRESERVE
LAKE CLARK NATIONAL PARK
LAKE CLARK NATIONAL PRESERVE
BROOKS RANGE
ENDICOTT MOUNTAINS
SCHWATKA MOUNTAINS
ALASKA RANGE
YUKON RIVER
KUSKOKWIM RIVER
NORTON BAY
COOK INLET
24A
24B
24C
24D
21A
21B
21C
21D
21E
19A
19B
19C
19D
Anaktuvik Pass
Wiseman
Coldfoot
Bettles
Evansville
Alatna
Allakaket
Hughes
Huslia
Koyukuk
Galena
Nulato
Kaltag
Ruby
Tanana
Rampart
Manley Hot Springs
Stevens Village
Ambler
Kobuk
Shungnak
Kotzebue
Noorvik
Selawik
Buckland
Koyuk
Elim
Shaktoolik
Unalakleet
Saint Michael
Grayling
Anvik
Shageluk
Holy Cross
Paradise
Russian Mission
Upper Kalskag
Lower Kalskag
Aniak
Chuathbaluk
Napaimiut
Crooked Creek
Georgetown
Red Devil
Sleetmute
Stony River
McGrath
Takotna
Medfra
Nikolai
Ophir
Poorman
Iditarod
Lake Minchumina
Sparrevohn AFB
Kashegelok
Tuluksak
Akiak
Akiachak
Kwethluk

Department of the Interior
U. S. Fish and Wildlife Service

Western Interior Alaska Subsistence Regional Advisory Council

Charter

1. **Committee's Official Designation.** The Council's official designation is the Western Interior Alaska Subsistence Regional Advisory (Council).

2. **Authority.** The Council is renewed by virtue of the authority set out in the Alaska National Interest Lands Conservation Act (16 U.S.C. 3115 (1988)), and under the authority of the Secretary of the Interior, in furtherance of 16 U.S.C. 410hh-2. The Council is regulated by the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C. Appendix 2.

3. **Objectives and Scope of Activities.** The objective of the Council is to provide a forum for the residents of the Region with personal knowledge of local conditions and resource requirements to have a meaningful role in the subsistence management of fish and wildlife on Federal lands and waters in the Region.

4. **Description of Duties.** The Council has 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. Appoint one member to the Gates of the Arctic National Park Subsistence Resource Commission in accordance with Section 808 of Alaska National Interest Lands Conservation Act (ANILCA).

f. Make recommendations on determinations of customary and traditional use of subsistence resources.

g. Make recommendations on determinations of rural status.

h. 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 be inactive 2 years from the date the Charter is filed, unless prior to that date it is renewed in accordance with the provisions of Section 14 of the FACA. The Council will not meet or take any action without a valid current charter.

12. **Membership and Designation.** The Council's membership is composed of representative members as follows:

Ten members who are knowledgeable and experienced in matters relating to subsistence uses of fish and wildlife and who are residents of the Region represented by the Council. To ensure that each Council represents a diversity of interests, the Federal Subsistence Board in their nomination recommendations to the Secretary will strive to ensure that seven of the members (70 percent) represent subsistence interests within the Region and three of the members (30 percent) represent commercial and sport interests within the Region. The portion of membership representing commercial and sport interests must include, where possible, at least one representative from the sport community and one representative from the commercial community.

The Secretary of the Interior will appoint members based on the recommendations from the Federal Subsistence Board and with the concurrence of the Secretary of Agriculture.

Members will be appointed for 3-year terms. A vacancy on the Council will be filled in the same manner in which the original appointment was made. Members serve at the discretion of the Secretary.

Council members will elect a Chair, Vice-Chair, and Secretary for a 1-year term.

Members of the Council will serve without compensation. However, while away from their homes or regular places of business, Council and subcommittee members engaged in Council, or subcommittee business, approved by the DFO, may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under Section 5703 of Title 5 of the United States Code.

13. **Ethics Responsibilities of Members.** No Council or subcommittee member will participate in any 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 6.2, and other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

Sally Jewell

Secretary of the Interior

NOV 2 0 2015

Date Signed

DEC 0 3 2015

Date Filed

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