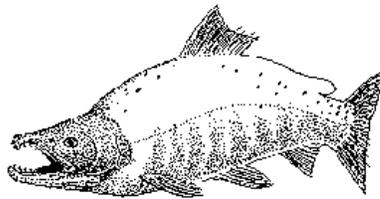


DRAFT

PRIORITY INFORMATION NEEDS

FEDERAL SUBSISTENCE FISHERIES



2016 Fisheries Resource Monitoring Program

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The Office of Subsistence Management (OSM) invites the submission of proposals for fisheries investigation studies to be initiated under the 2016 Fisheries Resource Monitoring Program (Monitoring Program). Taking into account funding commitments for ongoing projects, and contingent upon Congressional funding, we anticipate approximately \$4.0 million available in 2016 to fund new monitoring and research projects that provide information needed to manage subsistence fisheries for rural Alaskans on Federal public lands. Funding may be requested for up to four years duration.

Although all proposals addressing subsistence fisheries on Federal public lands will be considered, the 2016 Notice of Funding Availability is focused on priority information needs. The Monitoring Program is administered among six regions: Northern Alaska, Yukon, Kuskokwim, Southwest Alaska, Southcentral Alaska, and Southeast Alaska regions. Strategic plans developed by workgroups of Federal and State fisheries managers, researchers, Regional Advisory Council members and other stakeholders, have been completed for three of the six regions: Southeast, Southcentral (excluding Cook Inlet Area), and Southwest Alaska. These plans identify prioritized information needs for each major subsistence fishery and can be viewed on or downloaded from OSM's website: <http://www.doi.gov/subsistence/monitor/fisheries/index.cfm> . Independent strategic plans were completed for the Yukon and Kuskokwim regions for salmon in 2005, and jointly for whitefish in 2012. For the Northern Region and the Cook Inlet Area, priority information needs were developed with input from Regional Advisory Councils, the Technical Review Committee, Federal and State managers and staff from OSM.

This document summarizes priority information needs for 2016 for all six regions and a multi-regional category that addresses priorities that extend over two or more regions. Investigators preparing proposals for the 2016 Monitoring Program should use this document and relevant strategic plans, and the Notice of Funding Availability, which provides foundational information about the Monitoring Program, to guide proposal development. While Monitoring Program project selections may not be limited to priority information needs identified in this document, proposals addressing other information needs must include compelling justification with respect to strategic importance.

Monitoring Program funding is not intended to duplicate existing programs. Agencies are discouraged from shifting existing projects to the Monitoring Program. Where long-term projects can no longer be funded by agencies, and the project provides direct information for Federal subsistence fisheries management, a request to the Monitoring Program of up to 50% of the project cost may be submitted for consideration. For Monitoring Program projects for which additional years of funding is being requested, investigators should justify continuation by placing the proposed work in context with the ongoing work being accomplished.

Because cumulative effects of climate change are likely to fundamentally affect the availability of subsistence fishery resources, as well as their uses, and how they are managed, investigators are requested to consider examining or discussing climate change

effects as a component of their project. Investigators conducting long-term stock status projects will be required to participate in a standardized air and water temperature monitoring program. Calibrated temperature loggers and associated equipment, analysis and reporting services, and access to a temperature database will be provided. Finally, proposals that focus on the effects of climate change on subsistence fishery resources and uses, and that describe implications for subsistence management, are specifically requested. Such proposals must include a clear description of how the project would measure or assess climate change impacts on subsistence fishery resources, uses, and management.

Projects with an interdisciplinary emphasis are encouraged. The Monitoring Program seeks to combine ethnographic, harvest monitoring, traditional ecological knowledge, and biological data to aid in management. Investigators are encouraged to combine interdisciplinary methods to address information needs, and to consider the cultural context of these information needs.

Collaboration and cooperation with rural communities is encouraged at all stages of research planning and implementation of projects that directly affect those communities. The Notice of Funding Availability describes the collaborative process in community-based research and in building partnerships with rural communities.

The following sections provide specific regional and multi-regional priority information needs for the 2016 Monitoring Program. They are not listed in priority order.

All Fisheries Resource Monitoring Program Proposals must clearly articulate the relevance to Federal subsistence management. Proposals that do not demonstrate a clear link to Federal subsistence management will not be considered.

Northern Alaska Region Priority Information Needs

The Northern Alaska Region is divided into three areas which reflect the geographic areas of the three northern Regional Advisory Councils (Seward Peninsula, Northwest Arctic, and North Slope). Together, the three areas comprise most of northern Alaska, and contain substantial Federal public lands. Since 2001, the three northern Regional Advisory Councils have identified important fisheries issues and information needs for their respective areas. For the Northern Alaska Region, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Understanding differences in cultural knowledge, beliefs, and perceptions of subsistence resources between fishery managers and subsistence users in Northwestern Alaska.
- Document rural resident's beliefs, attitudes, and knowledge about beavers and perceptions of changes to fish habitat related to beavers.
- Spawning locations for broad whitefish in the Northwest Arctic region.

- Traditional/local knowledge of subsistence fish. Include application to Federal subsistence management, such as identifying critical habitat, refining range maps, and shedding light on ecological relationships.
 - Whitefish on the northern Seward Peninsula in the communities of Buckland, Deering, and the north coast in the community of Kivalina.
 - Dolly Varden in the communities of Noatak, Kobuk, and Kivalina
- Selawik River Clams (freshwater mussels) traditional harvest and use of, abundance and life history.
- Description and analysis of sharing networks and customary trade of salmon in villages in northern Alaska.
- Documentation of longevity, age of maturity, and the abundance of fish of a given size range or maturity status for lake trout in the upper Anaktuvuk River.
- Description of temporal changes in subsistence harvest patterns and resource availability of broad whitefish, Arctic cisco and burbot in the Niglik River.
- Description of changes in harvests and relative abundance of broad and round whitefish observed by subsistence fishers in the context of climate change on the Meade River.
- Description of environment conditions leading to increased expression of Saprolegnia fungus in broad whitefish in the Colville River drainage.
- Identification of overwintering areas for Dolly Varden in the Hulahula River including demographic qualities of overwintering fish, and estimating overwintering fidelity of fish.
- Reliable estimates of Chinook salmon escapement for the Unalakleet River drainage.

Yukon Region Priority Information Needs

Since its inception, the Monitoring Plan for the Yukon Region has been directed at information needs identified by the three Yukon River Regional Advisory Councils (Yukon-Kuskokwim Delta, Western Interior, and Eastern Interior) with input from subsistence users, the public, Alaska Native organizations, Federal and State agencies, and partner agencies and organizations. The U.S./Canada Yukon River Salmon Joint Technical Committee Plan has been used to prioritize salmon monitoring projects in the Alaskan portion of the Yukon River drainage. Additionally, a research plan for whitefish

has identified priority information needs for whitefish species in the Yukon and Kuskokwim river drainages.

For the Yukon Region, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Reliable estimates of salmon escapements (for example, projects using weir, sonar, or mark-recapture methods).
- Geographic distribution of salmon and whitefish species. Of specific interest are the Nulato River, Salmon Fork of the Black River, Porcupine River and Chandalar River.
- An indexing method for estimating species-specific whitefish harvests on an annual basis for the Yukon drainage. Researchers should explore and evaluate an approach where sub-regional clusters of community harvests can be evaluated for regular surveying, with results being extrapolated to the rest of the cluster, contributing to drainage-wide harvest estimates.
- Methods for including “quality of escapement” measures (for example, potential egg deposition, sex and size composition of spawners, spawning habitat utilization) in establishing Chinook salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements.
- A review of escapement data collection methods throughout the Yukon drainage to ensure that test fisheries are accurately accounting for size distribution and abundance of fishes (e.g., are smaller Chinook salmon being counted accurately).
- Assessment of incidental mortality with gillnets, with particular consideration for delayed mortality from entanglement or direct mortality from drop-outs (e.g. loss of Chinook salmon from 6” mesh chum fisheries).
- Harvest and spawning escapement changes through time in relation to changes in gillnet construction and use (for example, set versus drift fishing, mesh size changes) for Chinook salmon subsistence harvests in the mainstem Yukon River.
- Bering cisco population assessment and monitoring.
- Burbot population assessments in lakes and rivers known to support subsistence fisheries.

Kuskokwim Region Priority Information Needs

The Yukon Kuskokwim Delta and Western Interior Regional Advisory Councils have identified issues and information needs in the Kuskokwim Region. Additionally, strategic plans for salmon and whitefishes have been developed. These strategic plans were reviewed to ensure that remaining priority information needs were considered.

For the Kuskokwim Region, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Reliable estimates of Chinook, chum, sockeye, and coho salmon escapement (for example, projects using weir, sonar, mark-recapture methods).
- Methods for including “quality of escapement” measures (for example, potential egg deposition, sex and size composition of spawners, spawning habitat utilization) in establishing Chinook salmon spawning goals and determining the reproductive potential and genetic diversity of spawning escapements.
- Estimate the size and growth of the sport fishery over the next 30 years, including the impacts of the sport fishery on cultural values and social systems.
- An understanding of the meaning and significance of sharing in the context of the social, cultural, and economic life of people in the lower Kuskokwim Area.
- Local knowledge of whitefish species to supplement information from previous research in central Kuskokwim River drainage communities. Groups of communities might include Kalskag, Lower Kalskag, Aniak, and Chuathbaluk or Red Devil, Sleetmute, and Stony River.
- Local knowledge of whitefish species to supplement information from previous research in lower Kuskokwim River drainage communities. A group of communities might include Kwethluk, Akiachak, and Tuluksak.
- An indexing method for estimating species-specific whitefish harvests on an annual basis for the Kuskokwim drainage. Researchers should explore and evaluate an approach where sub-regional clusters of community harvests can be evaluated for regular surveying with results being extrapolated to the rest of the cluster, contributing to drainage-wide harvest estimates.

Southwest Alaska Region Priority Information Needs

The Bristol Bay and Kodiak Aleutian Regional Advisory Councils have identified issues and information needs in the Southwest Alaska Region. Additionally, separate strategic plans were developed for the Bristol Bay-Chignik and Kodiak-Aleutians areas, corresponding to the geographic areas covered by the Bristol Bay and Kodiak Aleutians Regional Advisory Councils. These strategic plans were reviewed to ensure that remaining priority information needs were considered.

For the Southwest Alaska Region, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Reliable estimates of sockeye and coho salmon escapements in the Lake Clark watershed (for example, from projects utilizing a weir, sonar, tower and/or mark-recapture methods).
- Historical salmon escapement to the Lake Clark watershed using isotopic analysis of lake sediment cores.
- Document the diversity in size and age structure of sockeye salmon among spawning populations within Lake Clark National Park and Preserve.
- Identify location and extent of rearing habitat capacity for juvenile sockeye salmon in Lake Clark National Park and Preserve.
- Distribution and timing of spawning by sockeye salmon in the major Bristol Bay watersheds of Katmai National Park and Preserve.
- Reliable estimates of Chinook salmon escapement and evaluation of “quality of escapement” measures (for example, potential egg deposition, sex and size composition of spawners, spawning habitat quality and utilization) for determining the reproductive potential of spawning stocks in the Meshik River.
- Evaluation of quality of escapement measures (for example, potential egg deposition, sex and size composition of spawners, spawning habitat quality and utilization) for determining the reproductive potential of spawning stocks in Big Creek, the Naknek River, the Alagnak River, the Nushagak River and the Chignik River.
- Reliable estimates of Chinook salmon escapement into the Togiak River (for example, from projects utilizing a weir, sonar, tower and/or mark-recapture methods).
- Description and analysis of the social network underlying the distribution of fish harvested for subsistence by residents of the Bristol Bay Area and Chignik Area.

- Harvest of salmon for subsistence by residents of the communities of Cold Bay, King Cove, and Sand Point, including harvest methods by species and distribution practices.
- Comparative ecological evaluation of lake rearing habitats of subsistence sockeye salmon stocks in southwest Kodiak Island, Alaska, including Olga Lakes and Akalura Lake watersheds; assessment of (1) the decline in salmon stocks and associated subsistence harvest opportunities, and (2) the potential effects of climate change on salmon production in these lake systems.

Southcentral Alaska Region Priority Information Needs

The Southcentral Alaska Regional Advisory Council has identified issues and information needs in the Southcentral Alaska Region. Additionally, a strategic plan was developed for Prince William Sound and the Copper River drainage. The plan was reviewed to ensure that remaining priority information needs were considered.

For the Southcentral Region, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Obtain reliable estimates of Chinook and sockeye salmon escapement into the Copper River drainage (for example, projects utilizing weir, sonar, mark-recapture methods).
- Abundance, run timing, spawning site fidelity and timing, and age, sex, and length composition for Chinook and coho salmon that stage or spawn in waters of the Kenai River and its tributaries below Skilak Lake under federal subsistence fishery jurisdiction.
- Abundance, run timing, spawning site fidelity and timing, and age, sex, and length composition for Chinook and coho salmon that stage or spawn in waters of the Kasilof River and its tributaries under federal subsistence fishery jurisdiction.
- Assessment of Ibeck Creek coho salmon harvest and escapement.
- Russian River: Change in subsistence-user attitude concerning the harvest of salmon since the establishment of the Russian River dipnet fishery, including: dependence on the fish as a food source; the significance of sharing, barter and customary trade; harvest methods (including methods of access); and, processing/preservation methods.

Southeast Alaska Region Priority Information Needs

The Southeast Alaska Regional Advisory Council has identified issues and information needs in the Southeast Alaska Region. Additionally, a strategic plan was developed for the Southeast Alaska Region in 2006 and was reviewed to ensure that priority information needs are identified.

For the Southeast Alaska Region, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Reliable estimates of sockeye salmon escapement. Stocks of interest include: Gut Bay, Red, Kah Sheets, Karta, Salmon Bay, Sarkar, Hoktaheen, Klawock, Eek, Kutlaku, Port Houghton, Kasook, Hunter Bay and Manhattan Lake.
- In-season subsistence harvest of sockeye salmon. Stocks of interest include: Hatchery Creek, Gut Bay, Red, Kah Sheets, Salmon Bay, Sarkar, Kanalku, Hoktaheen, Eek, Kutlaku, Port Houghton, Kasook, Hunter Bay and Manhattan Lake.
- Escapement index for Yakutat Forelands eulachon (continuation).

Multi-Regional Priority Information Needs

The Multi-regional category is for projects that are applicable in more than one region. For the Multi-Regional category, the 2016 Notice of Funding Availability is focused on the following priority information needs:

- Changes in subsistence fishery resources and uses, in the context of climate change where relevant, including, but not limited to, fishing seasons, species targeted, fishing locations, fish quality, harvest methods and means, and methods of preservation. Include management implications.
- Effects of the Bering Sea and Gulf of Alaska pollock fishery on Federal Chinook and chum subsistence resources throughout Alaska.
- Changes in subsistence fishery resources, in the context of climate change, including but not limited to fish movement and barriers including permafrost slump, water quality and temperature, draining of tundra lakes, changing patterns of precipitation both snow and rain, changing freeze-up and break-up.