

KUSKOKWIM RIVER SALMON MANAGEMENT PLAN

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**KUSKOKWIM RIVER INTER-TRIBAL FISH COMMISSION
FEDERAL SUBSISTENCE BOARD
OFFICE OF SUBSISTENCE MANAGEMENT
OFFICE OF THE REGIONAL DIRECTOR FOR ALASKA,
U.S. FISH AND WILDLIFE SERVICE**

EXECUTIVE SUMMARY

This management plan proposes the Kuskokwim River Inter-Tribal Fish Commission's (KRITFC's) strategy for management of Chinook salmon fisheries of the Kuskokwim River. It outlines how the KRITFC intends to co-manage Kuskokwim River Chinook salmon stocks in order to conserve those stocks while still providing for maximum customary and traditional harvest opportunities by federally qualified users.

This management plan seeks to achieve four primary goals:

- 1) The meaningful integration of tribal and rural stakeholder local and traditional knowledge into the in-season fisheries management decision-making process;
- 2) Providing for and preserving the continuation of customary and traditional subsistence harvest of all species of salmon by rural residents;
- 3) Rebuilding and sustainably managing healthy Chinook salmon populations within the Kuskokwim River watershed; and
- 4) The development of a unified fisheries management plan for the entire Kuskokwim River watershed that prioritizes conservation and customary and traditional subsistence harvests.

MANAGEMENT OBJECTIVES

The KRITFC proposes five management objectives to guide in-season management decisions.

OBJECTIVE 1: Meaningfully integrate local and traditional knowledge into in-season fisheries management decisions.

The KRITFC involves local tribal organizations, community members, and other rural stakeholders in the process of identifying and implementing management strategies. Both federal and KRITFC in-season managers will acknowledge local and traditional knowledge and will ensure that local and traditional knowledge is actively considered, utilized, and integrated into important in-season fisheries management decisions. At the end of every subsistence season, KRITFC and Fish and Wildlife Service (FWS) in-season managers will conduct a post-season review to identify in-season management achievements and to discuss how the stewardship and fisheries management process can be improved by the integration of local and traditional knowledge.

OBJECTIVE 2: Provide maximum opportunity for customary and traditional harvest of Chinook salmon for Federally qualified users.

The KRITFC proposes setting a drainage-wide harvestable surplus target at 110,000 Chinook salmon for all Federally qualified subsistence users. If the pre-season harvestable surplus estimate falls below the 110,000 Chinook salmon, the KRITFC and FWS will agree to exercise its closure authority and the subsistence fishery will be restricted to federally-qualified rural residents identified in the Section 804 Analysis completed by the Office of Subsistence Management (OSM) in 2014.

A 110,000 harvestable surplus is a reasonable and necessary harvest target for a number of reasons. The importance of salmon – particularly Chinook salmon – to local residents extends well beyond nutrition and economic values: use and consumption of Chinook salmon is a crucial aspect of socio-cultural identity and has been a backbone to a traditional way of life for thousands of years (Ikuta et al. 2013). The Kuskokwim River supports the largest subsistence salmon fishery in the state of Alaska, according to the number of residents who participate in the fishery and the number of salmon harvested (Fall et al. 2011). With some of the lowest per capita monetary incomes in the state, this region is characterized by a high production of wild foods for local use (Wolfe and Walker 1987). In recent years, rural residents in the Kuskokwim region have annually harvested an estimated 361-390 pounds of wild foods per person for human consumption, with fish comprising up to 85 percent of the total poundage of subsistence harvests, and salmon contributing up to 53 percent of subsistence harvests (Simon et al. 2007).

Since 2007, Kuskokwim River Chinook salmon stocks have been in a period of low productivity and Federal and state managers have implemented significant harvest restrictions in order to meet established escapement goals. Since 2009, subsistence harvests of Chinook salmon in the Kuskokwim River have consistently fallen below 67,200-109,800, the range designated by the Alaska Board of Fisheries in 2013 as the amount reasonably necessary for subsistence uses (ANS) of Chinook salmon for the Kuskokwim River (Poetter 2015; Lipka et al. 2016; 5 AAC 01.286(b)(1)). Although the KRITFC believes that the ANS does not accurately reflect the full extent of subsistence uses on the Kuskokwim River, the KRITFC believes that targeting the upper range of the ANS as a drainage-wide harvestable surplus is a reasonable way to ensure that in-season management decisions prioritize the continuation of customary and traditional subsistence uses of Chinook salmon. Targeting the upper range of the ANS also compensates for the decline in Chinook salmon size and the need for greater numbers of salmon to provide similar amounts of food documented in the ANS.

OBJECTIVE 3: Ensure the conservation and propagation of Chinook salmon through escapement quantity.

The KRITFC proposes adopting a precautionary escapement target of 110,000 as a drainage-wide escapement goal. If the pre-season escapement target falls below 110,000 Chinook salmon, the KRITFC and FWS will agree to exercise its closure authority and the subsistence fishery will be restricted to federally-qualified rural residents identified in the Section 804 Analysis completed by OSM in 2014.

The drainage-wide escapement goal range established by the state of Alaska in 2013 for Kuskokwim River Chinook salmon is 65,000 – 120,000. However, this stock has just undergone several years of some of the lowest returns in the past 40 years and recovery has been slower than in previous declines. During rebuilding of the run, the KRITFC proposes to manage toward the upper 75% of the current drainage-wide escapement goal range for Chinook salmon.

A 110,000-escapement target is necessary for a number of reasons. It protects sub-stock diversity, which is important when some populations have different: ecological characteristics,

production capacity, and resilience to environmental change. It also reduces variability in harvest throughout the drainage.

OBJECTIVE 4: Apply a precautionary buffer to compensate for uncertainty.

Fisheries policy and management in Alaska routinely adopts and applies precautionary buffers to account for uncertainty in stock assessments and management implementation. These buffers have ranged from 10% to 50%.

The KRITFC proposes adding a 25% precautionary buffer to the sum of the subsistence harvest target and escapement goal to account for uncertainty in either the stock assessment or management implementation. This proposed buffer looks at the subsistence harvest target and existing point estimates of the escapement goal and gives additional consideration to uncertainty in these estimates and the ability to implement these management targets.

The 25% buffer in this strategy is reasonable and accounts for several uncertainties that include: (1) observational errors that are increasing with fewer stock assessment projects, (2) process errors that account for natural variability from freshwater and marine drivers, (3) declining escapement quality (female Chinook salmon are smaller and results in a decline in female egg potential and reducing the reproductive potential in the population), (4) climate change impacts such as heat stress, and (5) uncertainty in the escapement and forecast numbers.

OBJECTIVE 5: Use structured decision-making to establish a threshold for federal management.

The KRITFC proposes adopting and utilizing the following structured decision-making process to develop fisheries management and stewardship decisions and to determine when FWS will exercise its management authority:

Phase One: Identify Threshold. There are three steps to identify a threshold: (1) identify subsistence harvest needs; (2) set an escapement target for rebuilding and maintaining a strong Chinook run; and (3) apply a 25% precautionary buffer, calculated by adding a 25% buffer to the sum of the subsistence harvest and escapement goal. That number is the proposed interim threshold.

Phase Two: Apply Threshold. The proposed interim threshold automatically triggers federal closure authority and limitation of subsistence fishing for Chinook in federal waters to qualified rural residents. If the threshold is below 275,000, the KRITFC and FWS will co-manage the Chinook salmon subsistence fishery and consult with ADFG about management decisions. If the threshold exceeds 275,000, KRITFC, FWS, and ADFG will co-manage the Chinook salmon subsistence fishery.

Regardless of whether the proposed interim threshold exceeds or falls below 275,000, FWS maintains discretion to exercise its in-season closure authority in order to comply with the Alaska National Interest Lands Conservation Act (ANILCA) and provide for customary and traditional subsistence harvest of Chinook salmon.

STRATEGY TO ACHIEVE OBJECTIVES

The KRITFC proposes adopting the following strategy to achieve the objectives of this management plan.

1. REVIEW ANNUAL FORECAST MODEL AND MODEL ESTIMATES. The ADFG pre-season run forecast is used to forecast the strength of the Chinook run in the upcoming season. This forecast is based on a “prior year” estimate where the forecast is simply the estimated total return in the previous year based on a run reconstruction model. But, available assessment data varies in both quality and quantity. The run reconstruction model should use the best available data, and the model structure and data application should be independently and collaboratively reviewed by the KRITFC and FWS. In order to improve the level of uncertainty in ADFG’s pre-season forecast, the KRITFC proposes developing a three-year running average for the run forecast. This is done by averaging the sum of the ADFG run forecast with the total run for the prior two years. For example, ADFG’s pre-season Chinook run forecast in 2019 was 132,500. The KRITFC’s 2019 pre-season Chinook run forecast would have been 143,892, which is the average of ADFG’s 2019 forecast of, 132,500 plus the 2018 and 2017 total runs of 132,312 and 166,863, respectively.

2. IDENTIFY A SUBSISTENCE HARVEST TARGET. The subsistence harvest target is identified by KRITFC and FWS in-season managers based on the pre-season run forecast minus escapement target. This number is calculated as the difference between the pre-season run forecast, as identified through the KRITFC three-year running average (described above), and the Chinook salmon escapement target as identified above. KRITFC and FWS will set the subsistence harvest target by February 1.

3. PROJECT SUBSISTENCE HARVEST. Both qualitative indices and expert local and traditional knowledge are significant components of projecting potential subsistence harvests in Federal-KRITFC co-management. In addition to consideration of qualitative indices, such as the Bethel Test Fishery, the calculation of subsistence harvest projections will also consider and be based upon data provided by community harvest interviews, local and traditional knowledge, and historic patterns of run timing and total returns, . These data demonstrate how recent run strength and the corresponding catch has changed. Local and traditional knowledge is a key co-management component because it anticipates the numbers of people that might fish and how their harvest target might change based on catch composition, abundance, and environmental conditions (e.g., drying weather, water temperatures, water levels, tidal influences, etc.).

4. ADDRESS POSSIBILITY OF SPORT FISHING AND COMMERCIAL HARVESTS BASED ON STATE OF CHINOOK SALMON STOCK RECOVERY. During the period of stock rebuilding, all returning Chinook salmon are needed to provide for subsistence needs and escapement goals. There will be no consideration of sport or commercial harvest of Chinook salmon until federally qualified subsistence users have harvested the upper range of the ANS and escapement goals have been met for three consecutive years. Regardless of whether sport or commercial harvest occurs, FWS will retain authority to manage, either through direct action or delegation of authority, federal subsistence fisheries in federal waters, and must also continually monitor Chinook salmon stock habitat and escapement.

5. COLLECT LOCAL AND TRADITIONAL KNOWLEDGE FROM RURAL SUBSISTENCE USERS DURING WEEKLY CALL-INS. A weekly call-in hosted by the KRITFC will be open to all stakeholders to share information about the subsistence Chinook salmon fishery. These call-ins are intended to provide an information exchange and solicit local and traditional knowledge concerning management options. The legitimacy of management decisions and stakeholder buy-in to those decisions depends upon stakeholders being provided an opportunity to ask questions and share local and traditional knowledge that may assist or otherwise inform management strategies. Weekly public call-ins will be provided by the KRITFC starting in May and run through the end of the Chinook salmon season.

6. MAINTAIN THE RELATIONSHIP BETWEEN KRITFC AND FWS ESTABLISHED BY THE MOU. The Memorandum of Understanding (MOU) between KRITFC and FWS formalized the fishery management partnership between the parties. The MOU shall guide the relationship between the KRITFC and FWS, and both the KRITFC and FWS shall comply with the term of the MOU when collaboratively making fisheries management decisions and implementing fishery management projects. In order to achieve the purposes of this management plan, all communication and information sharing between the KRITFC and FWS shall comply with the terms and procedures established by the MOU. During these communications, when appropriate, the parties may invite observers, including representatives from ADFG and Kuskokwim River Salmon Management Working Group (KRSMWG), to attend.

7. COLLECT AND USE IN-SEASON SUBSISTENCE HARVEST DATA. In 2016, the decline of Kuskokwim River Chinook salmon resulted in the development of the Community-Based Harvest Monitoring (CBHM) program to estimate in-season subsistence harvests in designated communities throughout the Kuskokwim River drainage. This program is managed by the Bering Sea Fisherman Association (BSFA) and relies on harvest monitors recruited from local communities who conduct post-harvest interviews with subsistence users in those communities. Harvest monitors collect information on: catch size, gear, time fished, and quality of catch. Since 1999 KRITFC member Orutsararmuit Native Council (ONC) has operated a similar, independent program monitoring and collecting in-season harvest information on Kuskokwim River Chinook salmon in Bethel. The data collected by all harvest monitors is then combined with FWS aerial survey counts of boats and nets in the water to refine effort estimates. The data are then used to extrapolate or expand interview survey counts to broader total harvest estimates within the monitoring area (i.e. Tuntutuliak to Tuluksak portion of the river), which historically represents the majority of Chinook salmon harvests within the Kuskokwim River fishery. Community harvest monitors serve as central points of contact through whom KRITFC and FWS in-season managers can relay information to subsistence users, and through whom subsistence users can relay harvester concerns back to KRITFC and FWS in-season managers.

The CBHM program provides valuable in-season data that should be integrated into the in-season management decision-making process. KRITFC proposes that all in-season management decisions take into consideration the most recent available post-harvest data collected by CBHM monitors and ONC. This will help ensure that in-season management decisions are made and supported by real-time harvest data.

8. EVALUATION OF IN-SEASON AND HARVEST ASSESSMENT DATA. KRITFC and FWS in-season managers regularly examine a variety of in-season indices when making in-season management decisions. The KRITFC recognizes that management is complicated, given that over 85% of the subsistence harvest occurs in the middle to lower portion of the Kuskokwim River, but escapement projects to count spawning Chinook salmon are located upstream of the primary harvest areas and occur weeks after harvests in the middle and lower portion of the Kuskokwim river occur.

The KRITFC and FWS agree that the most meaningful data to inform in-season management decisions are in-season subsistence harvest estimates gathered by CBHM harvest monitors, local and traditional knowledge of Kuskokwim river fishers and the KRITFC in-season managers, and stock ratios (Chum/Sockeye:Chinook) information gathered by the Bethel Test Fishery, and commit that all in-season management decisions shall consider and account for this data. A new ADFG sonar project upriver of Bethel was implemented in 2017, but it will take several years to understand the relationship between sonar counts and total returns, supporting the need for continued consideration of uncertainty.

9. CONSIDERATION OF RETURNING MANAGEMENT TO ADFG. The decision to lift federal fishing restrictions and return responsibility for management of Kuskokwim River Chinook stocks to ADFG is typically informed by species ratios at the Bethel Test Fishery – traditionally, the Chum/Sockeye:Chinook ratio. However, this ratio is difficult to set as a single target because of changing: environmental conditions, fish behavior, and the increasing abundance of sockeye salmon in the Kuskokwim River drainage. Before FWS lifts federal fisheries restrictions and return management of Kuskokwim river Chinook salmon to ADFG, FWS shall inform the KRITFC of its intention at least 48-hours in advance of lifting those restrictions and shall then consult with KRITFC in-season managers to ensure that the goals of this plan have been achieved before management is returned to ADFG.

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