



## 2020 Chinook Salmon Management Strategy

May 8, 2020

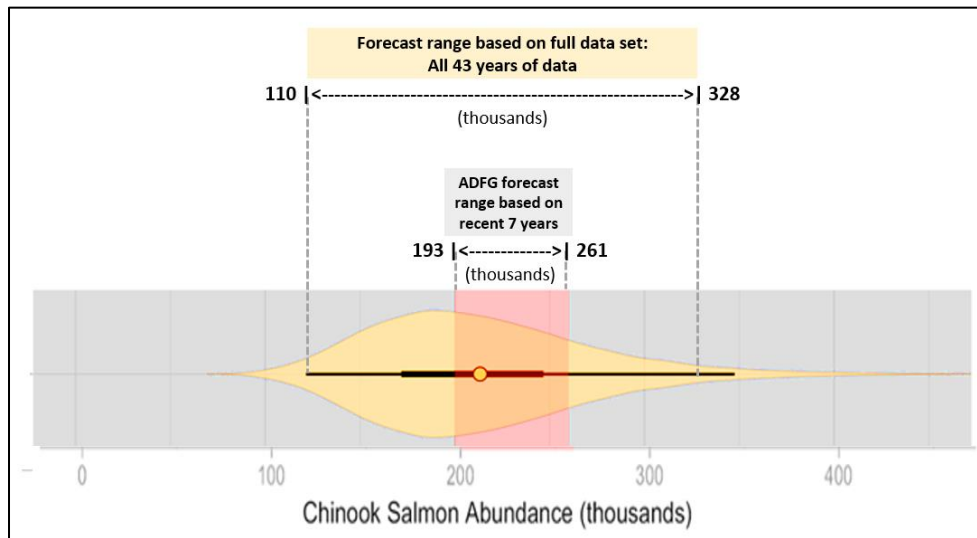
### Summary of Goals & Objectives:

- **Rebuild and sustainably manage healthy Chinook salmon populations** within the Kuskokwim River watershed.
  - Take a conservative approach to management by considering uncertainty and risk factors.
  - Respond to uncertainty and risk factors through precautionary management approach by applying a precautionary buffer.
  - Address decline in size of salmon returns and threats to stock diversity.
- **Integrate meaningful local and traditional knowledge** into the fisheries management decision-making process.
  - Actively consider and utilize local and traditional knowledge to inform in-season fisheries management decisions.
- **Provide for and preserve the continuation of customary and traditional subsistence harvest** of Chinook salmon by rural residents.
  - Provide maximum opportunity for customary and traditional harvest of Chinook salmon for Federally qualified users during rebuilding stage.
  - Provide equity of harvest opportunity across the entire watershed.
- **Develop a unified fisheries management approach** for the entire Kuskokwim River watershed prioritizing conservation and priority subsistence uses.

### Summary of Uncertainty and Risk Factors Facing 2020 Run:

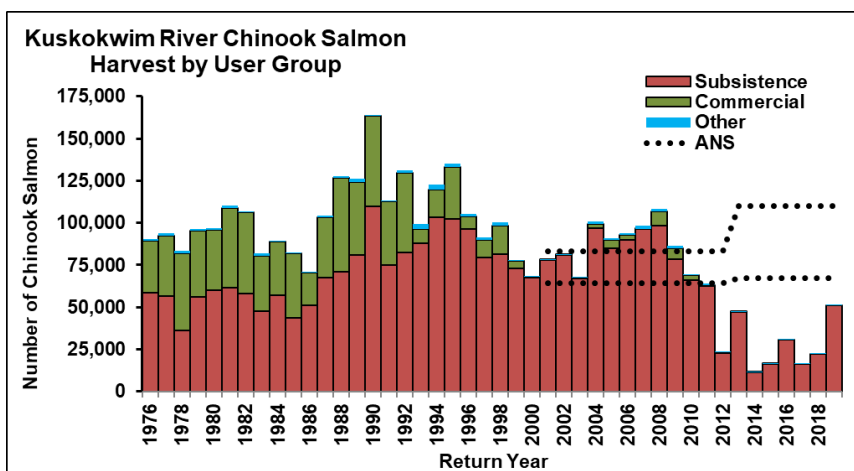
In addition to major sources of uncertainty that affect whether we can meet our management objectives, new western science has revealed risk factors that are unaccounted for in previous management models including:

- **High Forecast Uncertainty:** The true level of uncertainty associated with the forecast is much greater than the uncertainty previously reported (see Figure 1).



**Figure 1.** 2020 forecast uncertainty showing the difference between ADFG uncertainty estimate (pink bar) using recent 7 years of data and Bayesian uncertainty estimate (yellow torpedo) informed by all years of data.

- **Kuskokwim Chinook salmon population is not yet recovered resulting in the trend of long-term Average Subsistence Needs (ANS) that have not been met for nine years:** Those of us that have fished prior to 2009 know that the Chinook salmon runs have not recovered, before there was more fish to harvest and we worried the net would catch too many. A significant risk factor facing assessment of the 2020 run by the FSMP is that the long-term average subsistence needs, a priority use under ANILCA, has not been met since 2010 (see Figure 2).



**Figure 2.** Kuskokwim river Chinook salmon harvest by user groups from 1976 through 2019, showing subsistence harvest needs have not been met since 2010.

- **High degree of in-season management uncertainty because management decisions must be made using limited in-season run abundance and harvest information.**
  - It is inherently risky to have to make management decisions for the largest Chinook subsistence fishery in the world mainly using information from a single test fishery.
- **Significant decline in Kwethluk river freshwater productivity (juvenile productivity) of about 50% each year – from 2015 to 2018** in one of the two most productive of the monitored tributaries in the drainage.
- **Decline in salmon size and reduced escapement quality of Chinook salmon.**
  - **40% decline in average total reproductive potential** of Kuskokwim River Chinook salmon over the period 1976-2018.
  - **Decline in caloric value of salmon:** 100 fish caught in the early 1970s provided on average the same amount of caloric energy as roughly 138 fish caught in recent years in the Kuskokwim River.
- **Existing escapement goals and harvest do not account for risk factors.** Because these risk factors are not being accounted in stock assessment and escapement goal analysis by either the state or federal fisheries management program, it can lead the managers to believe that populations are more productive than they are.

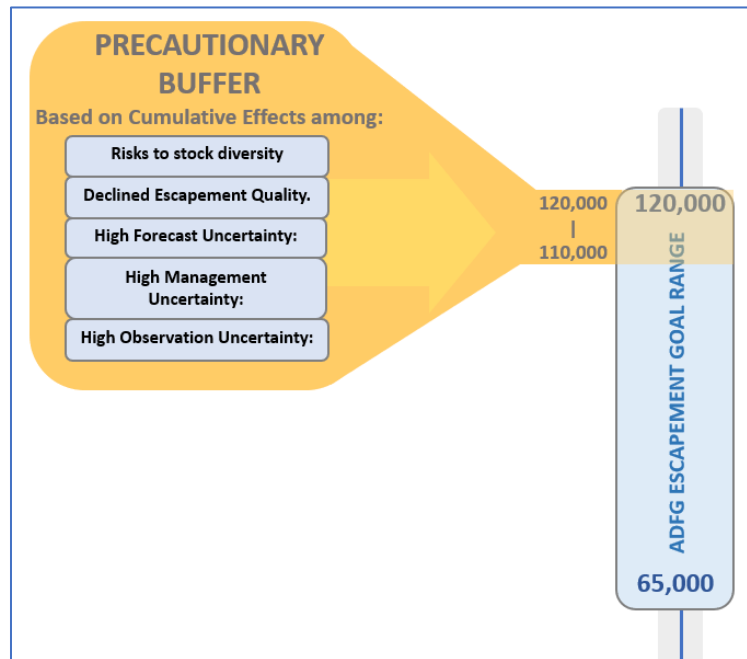
### **Pre-Season & In-Season Management Strategy – Ensuring Sustainable Harvest Management during Rebuilding Phase:**

- **Review annual forecast and uncertainty of forecast. Review risk factors and other sources of uncertainty.**
- **Assess degree of conservation needed during 2020 season,** based on risk factors, uncertainty, and a single year of improved abundance.
- **In response to uncertainty, risk factors and inability to meet long-term subsistence requirements, Tribes request Federal Subsistence Board to begin season under federal management** through ANILCA. Federal management will continue until there is reasonable in-season evidence that abundance is sufficient to turn management over to an agency that does not have the same objectives as ANILCA.
- **Communicate to member Tribes the need for a conservative management approach based on assessment between openings to avoid overharvest.**

- Avoiding overharvest, as occurred in 2013, can result in some underharvest.
- Underharvest can help provide equity of harvest across the watershed, help to rebuild salmon populations and protect salmon population diversity.
- **Apply a precautionary buffer to account for cumulative effects of risk and uncertainty.**

- **Escapement target range with precautionary buffer: 110,000 - 120,000** to account for:

- 1) 40% long-term decline in the number and size of eggs in the average female spawner, and;
- 2) threats to currently less productive stocks (see Figure 3).



**Figure 3:** Precautionary Buffer based on cumulative effects among multiple risk factors and sources of uncertainty.

- **Apply a precautionary buffer to account for decline in caloric content of harvest.**
  - **Subsistence harvest target (achieving target dependent on in-season abundance): 88,000 - 110,000** to address long-term declined caloric content of harvest due to shrinking size of returning Chinook salmon.
- **Prior to June 1, announce at least one fishing opportunity per week during the front-end closer dates of June 1 through June 11** with enough time between harvest opportunities for assessment.
- **Prior to June 11, announce a maximum of three harvest opportunities** with enough time between harvest opportunities for stock assessment.
- **Collect and use in-season subsistence harvest data.** The Community Based Harvest Monitoring (CBHM) program provides valuable real-time in-season harvest data and

catch-per-unit-effort for the subsistence fleet data that should be integrated into the in-season management decision-making process.

- **Collect local and traditional knowledge from rural subsistence users during weekly call-ins.** A weekly call-in will be provided by the KRITFC starting in May and run through the end of the Chinook salmon season. These call-ins are intended to provide an information exchange and solicit local and traditional knowledge concerning management options.
- **Evaluate in-season salmon population data and harvest assessment data between harvest opportunities.** KRITFC and USFWS in-season managers regularly examine a variety of in-season indices when making in-season management decisions.
- **Maintain relationship between KRITFC & USFWS established under the Memorandum of Understanding (MOU).** The MOU between KRITFC and USFWS formalized the fishery management partnership between the parties. The MOU shall guide the relationship between the KRITFC and USFWS, and both the KRITFC and USFWS shall comply with the term of the MOU when collaboratively making fisheries management decisions and implementing fishery management projects.