

## *Salmon Management Plans (5 proposals)*

### **PROPOSAL 51**

#### **5 AAC 24.360. Copper River District Salmon Management Plan.**

Reduce commercial salmon fishing opportunity in the Copper River District, as follows:

To address this issue, we recommend that the *timing* of the commercial harvest be managed in a manner that avoids disproportionately high exploitation rates for early run Copper River salmon stocks, potential adverse effects on overall population diversity of Copper River salmon, and potential adverse impacts on food security for salmon-dependent subsistence users. To be clear and *sincerely respectful of all user groups* that are reliant on Copper River salmon, the solution that we propose is about *timing* of harvest *not allocation* of harvest among user groups with legitimate needs.

Specifically, we recommend that the board revise the Copper River District Salmon Management Plan, 5 AAC 24.360 as follows, with revised text **underlined in bold**, regulatory text to be deleted fully capitalized and enclosed in brackets, and explanatory comments (if any) *in italics* and enclosed in parentheses:

(a) The department shall manage the Copper River District commercial salmon fishery to achieve a sustainable escapement goal of 360,000 – 750,000 sockeye salmon into the Copper River.

(b) The department shall manage the Copper River District commercial salmon fishery to achieve an inriver goal of salmon, as measured at the sonar counter near Miles Lake, based on the total of the following categories:

Spawning escapement

Lower end of sockeye salmon escapement goal

17,500 other salmon

Glennallen Subdistrict subsistence fishery 61,000 – 82,500 salmon

Chitina Subdistrict personal use fishery 100,000 – 150,000 salmon

Sport fishery 15,000 salmon

Hatchery brood (sockeye salmon) estimated annually

Hatchery surplus (sockeye salmon) estimated annually

TOTAL announced annually

(c) Repealed 4/24/2009.

(d) Repealed 3/30/2000.

**(e) The department shall manage the Copper River District commercial salmon fishery to conserve and avoid disproportionate exploitation of early-run Copper River sockeye and king salmon stocks by comparing cumulative sonar passage and management objectives by date, as follows:**

**(1) After two commercial drift gillnet openings, the Copper River District shall not open to commercial drift gillnet fishing when cumulative sonar passage is less than 70 percent of the cumulative management objective for the same date.**

**What is the issue you would like the board to address and why?** The issue is that management of the Copper River District commercial fishery by the Alaska Department of Fish and Game (department) in five of the six most-recent years (2018-2023) resulted in disproportionately high

harvest (exploitation) rates for early run Copper River salmon stocks. Without action by the board to mitigate this issue, persistent disproportionate exploitation of stocks with early migratory timing has the potential to diminish the overall population diversity of Copper River sockeye and king salmon while threatening food security for Copper River subsistence users, and particularly those who fish upstream of the Gakona River in the uppermost portion of the Glennallen Subdistrict. The 2023 season is most representative of this concern, when more than 387,000 salmon were harvested by the commercial fishery before cumulative salmon passage at Miles Lake had reached 50 percent of the department's objective for cumulative inriver passage. (Note that this estimate for the degree to which Miles Lake salmon passage was lagging behind cumulative commercial harvest and management objectives accounts for the fact that the sonar sensor on the south bank was not operational for a full 24-hr period until 5/31.) Disproportionately high early season harvest rates occurred to a lesser extent in 2021 and 2022, and also occurred in low-run years of 2018 and 2020 before low sonar counts triggered extended closures of the commercial fishery.

Management that results in a recurring pattern of disproportionately high exploitation rates for early run salmon stocks is inconsistent with two statewide fisheries management policies. These are the Policy for the Management of Mixed Stock Salmon Fisheries (5 AAC 39.220), which specifies in part that "... conservation of wild salmon stocks consistent with sustained yield shall be accorded the highest priority;" and the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), which specifies in part that "... salmon escapement should be managed in a manner to maintain genetic and phenotypic characteristics of the stock by assuring appropriate geographic and temporal distribution of spawners ...."

Management that has the potential to adversely affect population diversity of Copper River salmon would be contrary to the "portfolio-effect" principle, which holds that conservation of population diversity is an important means of enhancing the resilience of salmon populations and associated fisheries to changing environmental conditions (Hilborn et al. 2003, Schindler et al. 2010).

Management that results in disproportionately high harvest rates for early run stocks also may exacerbate known food-security concerns of upriver subsistence users. Because of their location in the watershed, subsistence users from headwater communities have access to the fewest spawning populations, some of which are characterized by early run timing. A preliminary National Park Service assessment of 2005-2021 harvest data found that year-to-year catch stability (one measure of food security, here estimated as interannual variability in catch-per-unit-effort) was lowest (interannual variability was highest) during this period for subsistence users who fished upstream of the Gakona River compared with downstream subsistence users who fished between the Chitina River bridge and the Gakona River. This pattern of low catch stability in the uppermost reach of the Copper River applied to participants in the state subsistence fishery and as well as the federal subsistence fishery and is consistent with findings for the Fraser River in Canada (Nesbitt and Moore 2016). Past research and Alaska Native traditional knowledge indicate that Copper River salmon stocks associated with headwater tributaries are among the earliest to enter the river. Since at least 2004 (board proposal 53 in 2005) and as recently as 2023 (RC019 submitted during the board's October 12-13, 2023 work session), subsistence users have repeatedly urged fisheries managers to allow more early run salmon to reach headwater spawning tributaries.

We considered an alternative solution to this issue, but rejected it in favor of this proposed solution after conferring with department staff from the Division of Commercial Fisheries and the Division of Sport Fisheries. The alternative solution would have required the department to (1) establish a program for post-season estimation and assessment of annual exploitation rates for distinct spawning stocks of Copper River sockeye and king salmon on the basis of genetic stock composition data and other appropriate information; (2) ensure, to the extent practicable, that exploitation does not place distinct stocks at elevated risk of extirpation; and (3) report assessment results to the board on a schedule that conforms to the board cycle. We rejected the genetics-based solution in favor of *this sonar-based solution, which is far simpler and less expensive to implement, thereby enabling immediate action during this board cycle*. Nevertheless, we believe that the use of genetic data to estimate stock-specific exploitation rates ultimately may be required for ensuring the long-term conservation of diversity of Copper River sockeye and king salmon populations and the resilience of these populations and dependent fisheries, livelihoods, and cultural traditions in the context of changing environmental conditions.

We will provide further analyses and context for the issue and additional justification for the proposed regulatory change in a letter submitted to the board following issuance of the proposal book.

## References

Hilborn, R., T.P. Quinn, D.E. Schindler, & D.E. Rogers. 2003. Biocomplexity and fisheries sustainability. *Proceedings of the National Academy of Sciences* 100(11):6564-6568.

Nesbitt, H.K., and J.W. Moore. 2016. Species and population diversity in Pacific salmon fisheries underpin indigenous food security. *Journal of Applied Ecology* 53:1489-1499.

Schindler, D.E., R. Hilborn, B. Chasco, C.P. Boatright, T.P. Quinn, L.A. Rogers, & M.S. Webster. 2010. Population diversity and the portfolio effect in an exploited species. *Nature* 465:609-612

**Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain.** Prior to submission of this proposal, we consulted with the following groups and benefitted from the perspectives that they offered: ADF&G Division of Commercial Fisheries staff, Cordova & Anchorage, ADF&G Division of Sport Fisheries staff, Glennallen & Fairbanks, Copper Basin Fish and Game Advisory Committee, Copper River / Prince William Sound Fish and Game Advisory Committee, and Wrangell-St. Elias National Park Subsistence Resource Commission

**PROPOSED BY:** Wrangell-St. Elias National Park and Preserve (HQ-F24-059)

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## **PROPOSAL 52**

### **5 AAC 24.360. Copper River District Salmon Management Plan.**

Reduce commercial salmon fishing opportunity in the Copper River District, as follows:

**5 AAC 24.360 (x) Allow two Copper River District commercial salmon fisheries 12-hour openers during the week of May 15th, then delay openers by two weeks or until a daily management objective for fish passage is met at the Miles Lake Sonar.**

**What is the issue you would like the board to address and why?** Protecting genetic diversity of salmon in the Copper River Watershed.

Traditional Ecological Knowledge (TEK) of Tribal citizens and accounts from local residents indicate the run timing of Copper River salmon has been delayed by about two weeks in recent years. These accounts are validated and quantified by various projects in the Copper River including radio telemetry studies, genetics and bioenergetics studies, Miles Lake Sonar passage, Tanada Creek Weir passage, and harvest data from subsistence, commercial, and sport fisheries. Local managers and biologists have stated when the Copper River has a late ice-out, and when stream temperature remains cool late into the historical return time, salmon “mill” in the sound where they are susceptible to disproportionately high catch rates. Among these cohorts are king salmon and sockeye salmon destined for the furthest reaches of the Copper River. TEK is science, and it has long documented that the earliest returning salmon are those that spawn furthest upstream. This knowledge is being reconfirmed by a multitude of studies around Alaska and in the Copper River Basin.

Uneven targeting of these specific stocks decreases the diversity of the Copper River salmon genetic portfolio. On top of this, the Gakona to Slana reach of the Glennallen Subdistrict Subsistence Area has failed to meet Amounts Necessary for Subsistence (ANS) 17 of the past 19 years. These are the early returning fish. By delaying the PWS commercial fishery by two weeks or until a daily management objective is met at the Miles Lake Sonar, we are taking a step in the right direction in protecting the diversity of Copper River salmon. If salmon returns are earlier than that of recent years (a daily management objective is typically met around June 1-4), and a daily management objective is met before this two-week period, then we would expect these upriver stocks to return in numbers and the ensuing commercial fishery will not be disproportionately impacting Chinook and upriver sockeye stocks.

**Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain.** Ahtna Intertribal Fish and Wildlife Committee and Ahtna Tene Nene’ jointly recommended this change to address Tribal concerns of sustainability of Chinook and upper Copper River sockeye stocks. This change in management will help prevent future restrictions and closures.

**PROPOSED BY:** AITRC Fish and Wildlife Committee (HQ-F24-102)

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**PROPOSAL 53**

**5 AAC 24.360 Copper River District Management Plan.**

Allow the Copper River District commercial salmon fishery to open for the first two periods, then close until the Copper River cumulative salmon management objective is met, as follows:

Allow commercial fisheries to open for the first two openers as a test fishery, then close until the Copper River cumulative management objective is met.

This will spread the commercial use throughout the season and allow earlier stock to go upstream.

**What is the issue you would like the board to address and why?** We have concerns of early run wild stocks reaching the upper Copper River tributaries.

**Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain.** We spoke with Wrangell St. Elias NPS and ADF&G about our concerns regarding Salmon in the Copper River and its tributaries.

**PROPOSED BY:** Copper Basin Advisory Committee (HQ-F24-113)

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**PROPOSAL 54**

**5 AAC 24.361. Copper River King Salmon Management Plan.**

Restrict use of Copper River District inside closure area during statistical weeks 20 and 21, as follows:

(b) In the commercial fishery, during the statistical weeks 20 and 21, the commissioner may not **close** [open] more than **three** [ONE] 12-hour fishing periods within the inside closure area of the Copper River District described in 5 AAC 24.350(1)(B).

**What is the issue you would like the board to address and why?** The 3 mandatory inside closures have been taken way too far by management. We no longer have an inside district fishery at all until July, even on years of Chinook abundance like 2023 we were shut out of our traditional fishing areas for far too long. This proposal would maintain the 3 inside closures currently in regulation but the change would require the opening of one inside district during a potential fourth fishing period during weeks 20 and 21, but only if there is an opener.

**Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain.** This idea is widely supported by the Cordova fleet.

**PROPOSED BY:** Kenneth B. Jones (HQ-F24-011)

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**PROPOSAL 55**

**5 AAC 24.361. Copper River King Salmon Management Plan and**

Restrict commercial guide services in the Upper Copper River District when the Copper River District commercial fishery is restricted, as follows:

If the commercial fishery is closed for king conservation measures on the inside waters during the commercial season for more than two consecutive non-mandatory inside closures then the commercial guide services in the Upper Copper River drainage will be limited to at least one conservation measure listed below for a period of no less than one week.

**What is the issue you would like the board to address and why?** The disconnect between conservation measures upriver and downriver. The commercial fisheries upriver and downriver

should be tethered together in a way that promotes stewardship and shared conservation when necessary amongst commercial interest.

**Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain.** In coordination with others in reviewing historical data.

**PROPOSED BY:** Shawn Gilman

(EF-F24-026)

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