



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Fish and Game

B6 Chinook Under ESA Review
JUNE 2024
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Jon Kurland
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Re: Wild Fish Conservancy Petition to list wild Alaska Chinook Salmon under Endangered Species Act

Dear Mr. Kurland:

We have reviewed the Wild Fish Conservancy's January 11, 2024, *Petition to Designate Evolutionary Significant Units and List Alaskan Chinook Salmon under the Endangered Species Act* and have identified inconsistencies and factual errors. Accordingly, we provide the following comments.

The Conservancy's petition requests that NMFS initiate a status review of Chinook in "southern Alaska", a geographic region that they define as encompassing "all Chinook populations that enter the marine environment of the Gulf of Alaska (GOA)." The rationale for the petition is largely based on escapement performance of a limited suite of Chinook stocks and on perspectives from Pacific Northwest concepts of harvest, hatchery, and habitat management that have limited applicability to Alaska. Specifically, the Conservancy does not acknowledge or misrepresents Alaska's (1) escapement evaluation of Chinook stocks founded on the principles of sustained yield, (2) commercial and sport fishery harvest numbers, (3) hatchery practices, and (4) relatively pristine Chinook habitat throughout most of the population range.

Escapement Evaluation

The petition erroneously conflates stock performance relative to escapement goals with risk of extinction. Under the *Policy for the Management of Sustainable Salmon Fisheries* (SSFP, 5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223), Alaska's policies for setting escapement goals and management objectives, escapement goals are set at levels of escapement that support sustained yield, well above levels for which a stock has consistently demonstrated its ability to sustain itself. This approach to management differs from that of the Pacific Northwest wherein a variety of methods and management objectives are used to set escapement targets including escapement floors, low abundance thresholds, upper management thresholds, management entity agreements (i.e., *U.S. v Oregon*), and sustained yield. Stocks listed as threatened under the ESA are managed under a ceiling exploitation rate relative to these escapement targets.

Alaska Chinook stocks are not at risk of extinction when they are listed as a Stock of Concern under the SSFP. ADF&G escapement goals are developed to attain maximum sustained yield from a stock. When a stock chronically fails to achieve these goals despite management action, the Board of Fisheries designates the stock as a stock of management concern and establishes an action plan to rebuild the stock to achieve sustainable levels of maximum yield. A failure to provide for yield does not mean a stock is at risk of extinction now or in the foreseeable future. Even the late run Kenai River Chinook salmon stock which is listed as a stock of management concern is returning over 12,000 chinook salmon annually, a level that does not put the stock at risk of becoming endangered.

While we agree that there was a general downward trend in Chinook salmon population abundances throughout most systems that enter the Gulf of Alaska (and range wide) beginning around 2007, the trend did not continue in all populations as asserted in the petition. Chinook population levels of most stocks have not continued to decline, and many appear to have stabilized at lower levels of productivity. As such, a number of Alaska Chinook populations have been listed as a Stock of Management Concern. A stock of Management Concern is defined as a stock which has demonstrated a “chronic inability, despite the use of specific management measures, to maintain escapements for a salmon stock within the bounds of the escapement goal or other specified management objectives for the fishery.” To date there have been no Chinook populations in Alaska designated as a Stock of Conservation Concern, defined in the SSFP as a stock for which there is “a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a stock above a sustained escapement threshold (SET); a Conservation Concern is more severe than a Management Concern.”

There are 31 Chinook salmon escapement goals currently monitored in Alaska in watersheds that drain into the Gulf of Alaska (Munro 2023)¹. Yet the Conservancy chooses to focus on only 13 of these 31 Chinook stocks and portrays them as representative of all stocks in the petition’s area of interest. In so doing, the petition omits the robust Copper River Chinook population s. Notably, the Conservancy omits any Chinook stocks that are not identified as a Stock of Management Concern as defined in the state’s SSFP. It is unclear if those omissions were in error or deliberate because the abundance status and trends do not fit the narrative of declining Chinook populations which the petition is trying to assert.

As required by the SSFP, all Alaska Chinook populations designated as a Stock of Concern have an associated action plan with proscriptive management measures to address the low yields based on established escapement ranges. This is contrary to the Conservancy’s claim that there are only action plans for “at least 7 of the 14” stocks of concern. If the Alaska Board of Fisheries designates a Stock of Concern, an action plan is adopted concurrently. The ADF&G is statutorily obligated to implement the action plans which typically involve a combination of fishery restrictions and new research.

Harvest

We reviewed the harvest information presented in Figures 1, 2, and 3 of the petition (note: there are two sets of figures in the report labeled Figures 1 to 3, here we refer to figures on pages 43-45). We were unable to reproduce these catch estimates using ADF&G catch databases. The commercial catch information in Figure 1 is inaccurate. Based on ADF&G data, commercial harvest of Chinook in the GOA from 2012-2021 ranged from 199,000 to 475,000 Chinook with an average harvest of 308,000 Chinook. By contrast, the Conservancy’s commercial harvest

¹ Munro, A. R. 2023. Summary of Pacific salmon escapement goals in Alaska with a review of escapements from 2014 to 2022. Alaska Department of Fish and Game, Fishery Manuscript No. 23-01, Anchorage.
<https://www.adfg.alaska.gov/FedAidPDFs/FMS23-01.pdf>

estimates, as interpolated from Figure 1, appear to range somewhere between 400,000 to well over a million fish for the same time period. Because the source data are not cited and the captions have scant detail relative to commercial catch, it was not possible to pinpoint the source of the discrepancies in the numbers provided. The only directed commercial Chinook fisheries in the area of interest are in SEAK and off the Copper River under prescribed management plans crafted to ensure sustainability. Though Chinook are also harvested commercially in fisheries targeting other salmon species, that harvest is minor in comparison to SEAK. If all commercial harvest of Chinook in Alaska are included, the number of fish would still not sum to the levels indicated in Figure 1.

The Conservancy's approach to catch accounting overestimates impacts. Sport harvest information presented in Figures 1 through 3 include catches from both kept and released fish. While this is noted in the figure captions, the inclusion of released fish inflates the estimates of "catch" and is therefore misleading; oddly, these numbers do not seem to account for released fish in commercial fisheries. The total impact, or what is commonly referred to as total mortality, associated with these catches would be significantly lower as a high proportion of released fish survive. The Chinook Technical Committee, per requirements under the 2019 Treaty Agreement was charged with recommending standards for estimating incidental mortality and uses 12.3% for fish greater than or equal to 33 cm and 32.2% for fish smaller than 33 cm for all sport fisheries (CTC 2022).² Total mortality, which is the sum of landed catch and incidental mortality, is the more appropriate metric to assess utilization where available. The Chinook Chapter of the Treaty is built upon a total mortality management framework and the Chinook Technical Committee is required to report annually on catches and incidental mortality for all Chinook fisheries and stocks harvested within the Treaty area. These are published in Appendix A of the Annual Report on Catches and Escapements (CTC 2023a)³. For the SEAK Chinook fishery, landed catch has averaged 240,000, incidental mortality has averaged 48,000, and total mortality has averaged 289,000 Treaty fish over the past decade (2012-2021; CTC 2023a Appendix A23-A25). Again, these fisheries account for the vast majority of Chinook caught in the area of interest (i.e., GOA), yet these estimates, which also include incidental mortality from commercial fisheries, represent less than half of the catches presented by the Conservancy in Figure 1.

It is also important to note that commercial and sport fisheries occurring in the marine waters of SEAK, Prince William Sound, Cook Inlet, and Kodiak are required to release any Chinook when escapement goals are not being met. Both sport and commercial fisheries are closed inriver and in the terminal areas in marine waters for any Chinook populations listed as a Stock of Concern.

Finally, ADF&G has the most robust assessment program for Chinook salmon harvest management on the Pacific coast. Our assessment program has annual operational plans and is reviewed annually. Our escapement goals are reviewed tri-annually in conjunction with the Board of Fisheries regulatory structure. Harvest management plans are also reviewed tri-annually and adjusted as needed by the Board of Fisheries. Finally, the Commissioner has Emergency Order authority to adjust or close fisheries to ensure for sustained yield as required under the State of Alaska Constitution.

² Chinook Technical Committee. 2022. Review of the Uncertainty and Variance in Catch and Release Estimates of Chinook Salmon Fisheries. Pacific Salmon Commission, [TCCHINOOK \(22\)-01](#). Vancouver BC.

³ Chinook Technical Committee. 2023a. Annual Report on Catch and Escapement for 2022. Pacific Salmon Commission, Vancouver, BC. <https://www.psc.org/publications/technical-reports/technical-committee-reports/chinook/>

Hatchery Production

The Conservancy states that hatchery production in Alaska is having a negative effect on wild Chinook stocks based on studies in the Pacific Northwest showing impacts from increased competition and predation, transmission of disease, and reduction of the fitness and productivity of wild salmon populations through interbreeding and genetic introgression (HSRG 2014)⁴. In contrast, the Alaska salmon hatchery program was built upon lessons learned from the Pacific Northwest ensuring that precautionary plans, permits, and policies were in place to guide salmon enhancement in Alaska in a manner that protects wild stocks. These consist of rigorous permitting processes that include genetics, pathology, and fishery management reviews, policies that require hatcheries to be located away from significant wild stocks, use of local brood sources, laws that give priority to wild stocks in fisheries, provisions for marking of hatchery fish; and as necessary, requirements for special studies on hatchery/wild stock interactions. Over 157 million Chinook smolt are released annually in Washington, Oregon, and Idaho with many releases occurring in freshwater. In Alaska, Chinook hatchery production levels are relatively small, with roughly 10 million smolts released annually on average. The vast majority of Alaska's hatchery production is released in saltwater with limited freshwater releases in some Cook Inlet tributaries to provide sport fishing opportunities. This is counter to the petition's assertion on page 46 that Alaska's wild fish are at risk because "out planting of juvenile and adult fish can transfer disease upstream of the rearing site." Such practices are not permitted in Alaska salmon hatchery production. Alaska hatchery practices prohibit the introduction of diseases to salmon systems, or the amplification of existing diseases already present in streams.

Habitat

The Conservancy asserts that the primary threats are logging, roads, mining, pollutants, and other habitat degradation. While this list of threats may be common in the Pacific Northwest, habitat degradation is much less pervasive and widespread in Alaska owing to the remoteness and ruggedness of the Alaskan landscape and low population density. With the exception of the Chilkat River and some watersheds in Cook Inlet where there has been some limited road access and infrastructure development, the majority of freshwater spawning and rearing habitat for Chinook is roadless and considered intact. In most cases, habitat is pristine, with a large proportion protected within the boundaries of state and federal parks, preserves, and refuges. There are limited impacts from mining which mostly are small scale operations in the Chilkat watershed and some larger-scale operations in the upper portions of transboundary rivers in Canada. Logging is not a dominant land use practice except in parts of SEAK, though mainland watersheds are too mountainous to allow for logging, except some limited activity in the Chilkat River drainage. Despite having a level of natural resource development, the habitat in Chinook bearing river systems is generally high quality. This contrasts with Pacific Northwest Chinook populations which contend with dams impeding passage and forming reservoirs that increase water temperatures, land clearing and diking for agriculture, water withdrawal for irrigation, water diversions and migration barriers, and extensive road networks that straighten streams, alter floodplains, increase stream temperature, increase fine sediment, reduce levels of stream complexity, concentrate tire chemicals, and alter watershed hydrology. These habitat degrading factors are not present in Alaska to the extent that they are in the Pacific Northwest, and we are not aware of any studies documenting habitat degradation as a major negative pressure on Chinook salmon stocks in Alaska.

⁴ Hatchery Scientific Review Group (HSRG). 2014. On the Science of Hatcheries: An updated perspective on the role of hatcheries in salmon and steelhead management in the Pacific Northwest. A. Appleby, H.L. Blankenship, D. Campton, K. Currens, T. Evelyn, D. Fast, T. Flagg, J. Gislason, P. Kline, C. Mahnken, B. Missildine, L. Moberand, G. Nandor, P. Paquet, S. Patterson, L. Seeb, S. Smith, and K. Warheit. June 2014; revised October 2014.

Miscellaneous Errors

Here we present a non-exhaustive list of errors and oversights.

- The petition asserts that fishery related incidental mortality (FRIM) is not accounted for in stock assessment of several SEAK rivers (Unuk, Stikine, Andrew, Chilkat, Alsek), when it is. These stocks are managed under the terms and provisions of the Pacific Salmon Treaty. While stock-specific total mortality is difficult to determine, each of the fisheries that are listed in the petition as not calculating FRIM have incidental mortality estimated by the Pacific Salmon Commission's Chinook Technical Committee that is reported in the annual Exploitation Rate Analysis report (CTC 2023b)⁵.
- In the discussion of the Chickamin River, the petition wrongly cites McKinley et al. 2022 to discuss genetic baseline performance for Chinook in Alaska. This report is an escapement goal review report and is not listed in the references cited, though McKinley et al. 2019 is, which is a Kodiak escapement goal review report.
- The petition's reasoning that "the genetic identifiability of Chinook populations in the south-southeast region due to the source of local wild populations as hatchery broodstock significantly compounds the ability of managers to identify harvest impacts of southeast Alaska fisheries on population of management/conservation concern," is inaccurate. The genetic mixed stock analysis of Chinook in SEAK in Shedd et al. 2021⁶, which is cited but also missing from references, is not the primary mechanism used to identify Chinook stocks in SEAK fisheries which are managed under the Pacific Salmon Treaty. Estimates of stock composition in Treaty fisheries are based on coded-wire tag (CWT) recoveries of indicator stocks. High sampling rates in Alaska, far in excess of the 20% coast-wide standard, provide precise harvest rate estimates, even for small Chinook stocks.
- In the petition's discussion of the Chilkat River, the river's name is incorrectly spelled "Chilcat" several times and is also confused with the Chignik River system which is on the opposite side of the GOA.
- The Chignik River system is referred to as a southern Aleutian Islands system. Chignik River is on the south side of the Alaska Peninsula and is several hundred miles from the Aleutian Islands. It is the furthest west known spawning stock of Chinook in the GOA. The petition also cites the Chignik Chinook escapement goal as pertaining to only large Chinook, however, that goal applies to Chinook salmon of all sizes. This is further evidence that they have conflated Chignik with Chilkat River escapement goal which is based on large fish.
- The petition duplicates several figures and uses date ranges that are inconsistent among figures. Figures 1, 4, and 6 are duplicated in the petition. The figures for Kenai River early- and late-run Chinook escapement are shown at the end of the petition without any supporting language in the text. Some figures go through 2022, while others only have information until 2019 often excluding recent years in which escapement goals were achieved. Table 1 lists escapement from 2014 to 2021.

⁵ Chinook Technical Committee. 2023b. 2023 Exploitation Rate Analysis. Pacific Salmon Commission Joint Technical Committee Report [TCCHINOOK \(23\)-06](#). Vancouver, BC.

⁶ Shedd, K. R., D. F. Evenson, and J. V. Nichols. 2021. Mixed stock analysis of Chinook salmon harvested in Southeast Alaska commercial troll and sport fisheries, 2017. Alaska Department of Fish and Game, Fishery Data Series No. 21-02, Anchorage.

In summary, the Conservancy's petition to list Alaska Chinook as threatened or endangered under the ESA and to designate critical habitat contains significant factual errors, omits important data that is widely available, and does not accurately describe the status of Chinook salmon in "southern Alaska." For additional detail about the status and management of Chinook salmon in this area, we refer you to the document ADF&G provided to NOAA Fisheries in July 2023 titled "Overview of Alaska Chinook Salmon Stock Status, Management, Policies, and Regulations."

The purpose of this letter is to provide NMFS the above factual information to ensure NMFS is aware of the errors and inconsistencies in the petition. While it is outside the purview of what NMFS will consider in reviewing the petition, the Department does not think the petition provides sufficient information to meet a positive 90-day finding under the ESA. In addition, the Department does not think the best available science justifies a listing of Chinook salmon in the Gulf of Alaska under the ESA.

Sincerely,



Doug Vincent-Lang
Commissioner

Cc: Anne Marie Eich—Assistant Regional Administrator for Protected Resources, NMFS
Alaska Region
Robert Foy—Director, NMFS Alaska Fisheries Science Center