

**Fairbanks Fish and Game Advisory Committee (FAC)
Alaska Board of Fisheries Prince William Sound meeting 12/24
FAC Record Copy submission**

THE UNDERLYING INTENT OF PROPOSAL #78

Proposal #78 does not come out of some “special interest” group far removed from the realities of Prince William Sound, the Copper River or commercial fishing. It comes from many of us in the Interior who have *decades* of experience in harvesting, processing, promoting salmon all over Area E and within the Copper River for commercial, subsistence, sports and Personal Use. Some of us are embedded in the history of the region, deeply appreciating the character of the people who live and work there. We have raised our families with the same core values that many residents of the Sound and Copper River communities have. Some of us have marine science, legal and engineering degrees or are business owners invested in fishing. Most of us have spent years in fisheries policy and regulatory arenas. Whether generational transplant or indigenous, our collective knowledge is extensive. This knowledge, of not just Area E or the Copper River Basin, but in fact, South Central, the AYK and many other regions in Alaska, is why we feel our warning is based in solid fact.

To that end, the Fairbanks Fish and Game Advisory Committee (FAC) has been submitting proposals for many years to reduce egg production in Alaska’s PNP hatcheries. The intent is not punitive or without thousands of hours of research, hard work and dialogue. It comes from the heart of Alaskans who want to see Alaskan wild salmon survive our tenure on this earth.

The situation of Chinook and chum loss on the Yukon River is so acute that it should be a flashing red light to the rest of the state as the crisis spreads.

It’s heart-breaking and terrifying to watch a once-thriving and iconic fishery die. Just over 15 years ago, the Yukon River could provide a decent commercial fishery and could feed thousands of subsistence users with Chinook, summer and fall chum, sockeye and coho and even some pinks down in the Lower River. 50% of the Chinook in the Yukon River were Canadian bound and users on both sides of the border had enough fish for commercial as well as subsistence. About 25 years ago, Canadians in the Upper Yukon started noticing continued declines in their spawning populations and then in the size of their kings. A small commercial fishery in Dawson City had to cease. The Treaty obligations for border crossing were not being met. Subsistence ANS in both Alaska and the Yukon were not being met. Tribes in Canada began the painful process of standing down from subsistence fishing so that salmon could reach spawning grounds in enough numbers to repopulate. The mitigation hatchery in Whitehorse, that exists to replace wild salmon displaced by the only real dam on the Yukon River, began to see fewer returns. Through the Yukon River Panel, the Canadians began warning Alaskans of these changes but the Alaska side was very slow to take notice, much less any action. But eventually, commercial fishing for Chinook and then summer chum ceased in Alaska. Subsistence fishing was greatly reduced or had to cease as well. The rapidity of loss of Chinook salmon in both

Canadian and Alaska stocks became an accelerating crisis and with it, loss of summer and fall chum as well. More recently, coho salmon are showing the same rates of decline. ***The loss has been a terrible shock as income and food security have been eliminated.*** People are desperately seeking reasons and answers. For a short time, there was discussion of a production hatchery but that option was discarded in the light of reality in science, cost, mixed stock linear system and further threats to wild stock. Searches for root causes have been massive. These efforts have more recently resulted in an influx of research and moratoriums. But our efforts are likely too late to save some discrete stocks. We have learned, all of us within the Yukon River Watershed, a tremendous amount in the last several years but what we have learned is not comforting.

So this is the messaging to the rest of the state because the signs of wild stock collapse are spreading from system to system. This is not hyperbole. Expect that this could get a whole lot worse before it gets better.

Here is what we know so far. There is no single cause of wild salmon decline. There is great temptation to only blame ocean conditions and changing riverine environments, but those factors are just part of many. Decline is complicated and cumulative and the smaller the populations become, the more urgent it becomes to act on what we have learned so far: (1) Bycatch, even in “small” percentages, matters. (2) The same for intercept. (3) Ocean carrying capacity has reached its limits and the over-production of hatchery fishⁱ has greatly contributed to the decline of forage for wild species to thrive. Fish are entering their natal watersheds smaller and with less fat reserves to make it to spawning grounds, much less reproduce.ⁱⁱ (4) Gear type has a big influence on size of fish. (5) We are all in this together.

While humans cannot mitigate ocean conditions and warming rivers, what we can mitigate are bycatch, intercept and reducing hatchery fish that compete with wild salmon for forage and habitat. Tremendous discussions dominate conversation, politics and measures on bycatch within the federal and state fisheries regulatory arenas. Fishery intercept mitigation lags far behind but those realities are also driving action. Hatchery production constraints are the farthest behind because of the economic dependency on hatcheries in some sectors and simply because we lack a platform for having the kind of in-depth conversation we need. Sadly, as the Pacific Northwest has long known, we have to examine many realities of production hatcheries.

Egg reduction at the Alaska Board of Fisheries and discussions at the Board Hatchery Committee are the only venues that we currently have in Alaska for any discussion at all about hatcheries and those venues are both severely limited. We cannot get to a true understanding of hatchery production impacts without a broader, long-term public dialogue. And we cannot get to a true picture of net benefit without both an environmental impact review and a cost-benefit analysis.

How did all this happen? In the early 1970's, Alaska was facing dramatic wild stock fluctuations as well as threat of farmed fish markets competing with our wild fisheries. We wisely chose to ban net-pen farming but we instituted, as an outgrowth of years of federal hatcheries, a new

system of private non-profit hatcheries. Under the original intent of the 1974 Hatchery Act is this statement:

The program shall be operated without adversely affecting natural stocks of fish in the state and under a policy of management which allows reasonable segregation of returning hatchery-reared salmon from naturally occurring stocks.

We now, after 50 years, have an obligation to our wild stocks to assess whether or not the Alaska PNP hatchery program has lived up to that original intent. It takes decades for impacts of hatcheries on wild stocks to show up. It is only in more recent years that we have the research and data that illustrates those impacts more empirically. (See RC007.) There are now literally hundreds of papers that illustrate the negative impacts of hatchery outputs. *The abundance of this science far out-weighs any science that proves otherwise.*

But we have no mechanism for a comprehensive review of these impacts and for a discussion of equal comparisons of data so that the lay community can understand what dots are being connected. This discussion needs to include international researchers as well.

Further, there is a reluctance to accept most of the peer-reviewed science illustrating negative hatchery impacts as legitimate. At this Board meeting we have heard over and over again a belief from hatchery-dependent sectors that they do not accept any science that does not support hatcheries. The objections are always about economic harm. There is rarely mention of concern over the state of *wild* salmon stocks other than what is required by rule. This does not assume that those sectors are not concerned about wild stock impacts but it is over-ridden by economics. That's denial. A true look at the aggregate science that is not generated by the Department rarely gets into the public arena for serious consideration because of the implications to an economic engine.ⁱⁱⁱ **The burden of proof *proving no harm* should be on the hatcheries themselves but that has not happened.**

The fear of loss of salmon opportunity is terrifying for all of us, no matter what sector. The economic fear is completely understandable but greatest is the fear of thousands of Alaskans solely dependent on wild salmon resources for food security that they cannot fish at all.

Have we now created a hatchery dependency that precludes sustainability for wild stocks? This is one of those times in Alaska fishing history when we are faced with the grim reality that the way we have been doing business may not be working.

Economics alone cannot drive this discussion. If we are not careful, at some point we will have no wild fish to argue over. This has happened all over the world. Moreover, history and science are teaching us that we cannot rely on hatchery production to save our wild salmon and even provide for the common good over time.

Commercial harvest for pinks in Prince William Sound has consistently been higher hatchery stock versus wild stock. Straying studies so far have indicated an increasing spread of hatchery

pink straying into wild streams.^{iv} Significant studies have indicated that interbreeding between hatchery-bred and wild-born pinks could reduce general resiliency of fish stocks.^v Aside from direct competition for forage food or straying, there are many other associated negative hatchery impacts. Hatchery fish are expensive to raise and, despite claims, PNP hatcheries are not without significant costs to the State. Permitting, monitoring, reporting, loan programs, are all additional costs to the State. Hatchery fish have to be fed and are raised in holding tanks/ponds until released into the wild which creates associated problems. Finally, hatchery fish do not feed ecosystems.

Because we lack all the science we need or want, the general tendency is just to ask for more research and not do anything. We will never get all the science we want because of cost and time. We have to make judgements on what we do know, and to that end **we need to complete the Alaska Hatchery Research Program and release *all* the AHRP reports.** Lacking a true environmental impact statement and audit of hatchery programs, we still know, from both universal science and from specific Prince William Sound studies, **that there is enough evidence for hatchery negative impacts to warrant reduced production.**^{vi}

If hatchery production is a one of the recognized threats to wild Chinook, chum and coho decline and displacement as well as a threat to average size in all species, including sockeye, then having a statewide dialogue is paramount. In the meantime, if we can reduce hatchery production and then have some sense of measurement over the next five years, that would be a start.^{vii}

ⁱ North Pacific harvest vs. hatchery outputs (North Pacific Anadromous Fish Commission, Newsletter #56, August 2024) "Pink salmon constituted the majority of the total commercial catch (63% by weight) followed by chum (19%) and sockeye salmon (15%). Coho comprised 2% of the catch, while Chinook salmon, cherry salmon, and steelhead trout were each less than 1% of the catch by weight. The 2023 catch of pink salmon was the highest pink salmon harvest on record."In 2023, a total of 3.0 billion hatchery salmon were released, which is the fourth highest on record. In 2023, hatcheries released 2,184 million fish (40.3%) in the United States, 1,640 million (30.2%) in Russia, 1,369million(25.2%)in Japan,222.5million(4.1%) in Canada (hatchery releases and spawning channel production combined), and 11.7 million (< 1%) in Korea

ⁱⁱ As early as 2005, Scientists Greg Ruggerone and Jennifer Nielsen suggested "that pink salmon may be the dominant competitor among salmon in marine waters." "Since a number of studies have recently examined pink salmon interactions with other salmon, we reviewed them in an effort to describe patterns of interaction over broad regions of the ocean." the wrote in a paper published in Reviews in Fish Biology and Fisheries. "research consistently indicated that pink salmon significantly altered prey abundance of other salmon species (e.g., zooplankton, squid), leading to altered diet, reduced total prey consumption and growth, delayed maturation, and reduced survival, depending on species and locale." Evidence for competitive dominance of Pink salmon (*Oncorhynchus gorbuscha*) over other Salmonids in the North Pacific Ocean / Published: 08 June 2005 Volume 14, pages 371–390, (2004)

ⁱⁱⁱ According to Bill Templin, chief fisheries scientist for salmon at the ADF&G, the department recognizes the concerns of many scientists about releasing more hatchery pinks into the ecosystems, but it is responsible for making decisions based on a broad range of considerations. "If it becomes clear that hatchery pinks are having a detrimental effect on wild stocks, then we have an obligation to take action. The wild stocks have priority," says

Templin. “But we also have to look at the impacts that reducing hatchery releases will have on the pink salmon fishery and the communities that rely on it.” November 8, 2024 National Fishermen **Scientists warn pink salmon boom threatens other species** by Paul Molyneaux in News, Alaska

^{iv} “Although many hatchery programs are primarily designed to enhance commercial fishing opportunities, some returning hatchery-origin salmon that escape fisheries stray away from their natal hatchery and into natural spawning streams (e.g., Brenner et al. [2012](#); Zhivotovsky et al. [2012](#)). Importantly, concerns have been raised about genetic introgression between natural- and hatchery-origin salmon (Naish et al. [2007](#); Jasper et al. [2013](#)) and ecological interactions, including displacement of wild spawners by hatchery-origin spawners (e.g., Kostow [2009](#); Rand et al. [2012](#)). Further concerns arise when fisheries targeting hatchery-origin salmon sometimes overharvest comingled, nontarget, natural-origin salmon, which might also reduce the locally adapted diversity of less-productive or smaller populations (Gayeski et al. [2018](#) and references therein).” **Hatchery-Origin Stray Rates and Total Run Characteristics for Pink Salmon and Chum Salmon Returning to Prince William Sound, Alaska, in 2013–2015** E. Eric Knudsen, Peter S. Rand, Kristen B. Gorman, David R. Bernard, William D. Templin First published: 27 February 2021 <https://doi.org/10.1002/mcf2.10134>

^v **Salmon hatchery strays can demographically boost wild populations at the cost of diversity: quantitative genetic modelling of Alaska pink salmon** Samuel A. May, Kyle R. Shedd, Kristen M. Gruenthal, Jeffrey J. Hard William D. Templin, Charles D. Waters, Milo D. Adkison, Eric J. Ward Christopher Habicht, Lorna I. Wilson, Alex C. Wertheimer and Peter A. H. Westley 2024, Royal Society Open Science <https://doi.org/10.1098/rsos.240455>

^{vi} “There are too many fish being released,” says Peter Westley, a fisheries ecologist at the University of Alaska Fairbanks and an author of the paper (S. A. May *et al.* *R. Soc. Open Sci.* **11**, 240455; 2024). He suggests that pink-salmon hatcheries reduce their output.

^{vii} The 1993 opinion to Rosier by the Alaska AG states the need **for a regulation** twice on page 3 and that the commissioner “may alter an existing permit to mitigate adverse effects (or only) if operations are not in the best interests of the public”. AS 16.10.430 This does not mean just amending because a hatchery operator wants to increase production. Amending in this instance to increase production is clearly spoiled out in AS 16.10.440 (b) “by regulation in accordance with the administrative procedures act”

The 1993 opinion: Concerning an existing permit, the law authorizes you to alter a PNP permit “to mitigate the adverse effects of the (hatchery) operation” if you find that the “operation of the hatchery is not in the best interests of the public.” AS 16.10.430(b). Thus, before you may unilaterally add a project funding requirement to an existing permit, you must find that (1) the failure of the hatchery to fund such a project causes its operation to not be “in the best interests of the public” (for example, that its operation threatened the viability of wild salmon stocks), and (2) adding the funding requirement would mitigate the adverse effect caused by the hatchery’s operation (for example, would serve to protect wild salmon stocks). We also believe, consistent with our advice above, that the conditions and procedures for including this requirement in a permit **must first be established by regulation**.....Finally, we note that a regulation allows a PNP to propose an alteration of its permit or its management plan. 5AAC 40.850. You have indicated that most PNP proposals are to allow the hatchery to increase salmon production or to change release sites. We assume that the increased production or changed release sites create the need for a fish tagging evaluation nproject. In this event, you would have the opportunity to condition your approval on the added requirement that the PNP fund the project. **Before doing this, however, we again urge you to adopt regulations that set out the procedures and conditions for adding this requirement.**

References:

- (1) 2020 Transcripts of the Alaska Board of Fisheries Hatchery Committee meeting
- (2) July 16, 1993 letter to ADF&G Commissioner Carl Rosier from Stephen White, Assistant Attorney General
- (3) November 6, 1997 letter to Dr. John White, Chair, Alaska Board of Fisheries, from Robert Nauheim and Lance Nelson, Assistant Attorneys General, “Authority of the Board of Fisheries Over Private Non-Profit Hatchery Production”