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RE: Emergency Petition to the Board of Fisheries

With the dramatic changes occurring in Alaskan ecosystems:

This petition alerts the board to the excessive inter-regional straying of up to 87% in 2014, and 70% in 2017, from Prince William Sound Region Hatcheries into Cook Inlet Regions wild spawning salmon streams and designated special use areas. This is unacceptable and needs to stop. (see attached ADFG otolith memo and comments below on this memo*)

We request the Alaska Board of Fisheries using their independent authority, reestablish the intent of wild spawning fish as priority from the distorted focus toward artificially propagated hatchery fish.

Unlike Prince William Sound, the Cook Inlet Region is over 96% wild fish with an incredible bounty of free ecosystem services. These relatively pristine ecosystems warrant maintenance and care not hatchery tinkering and straying. Purposely introduced predation and genetic desecration from this artificial manipulation put this bounty at risk. And must stop.

Only 2% of all salmon caught in Cook Inlet are hatchery-origin salmon (Sopha 2017) most of these salmon do not benefit the Common Property fisheries and haven't for decades. (ADFG 2016 Management Report)

The hatchery Act was created in 1974 to aid the depressed and depleted salmon fisheries of the early 1970's. This law was not designed to create an unbridled invasive predator biomass to overwhelm ecosystems for corporate plans.

Section 1. INTENT. It is the intent of this Act to authorize the private ownership of salmon hatcheries by qualified nonprofit corporations for the purpose of **contributing, by artificial means, to the rehabilitation of the states depleted and depressed salmon fishery.**

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.

5 AAC 39.222 "Rehabilitation" means efforts applied to a salmon stock to restore it to an otherwise natural level of productivity; "rehabilitation does not include an enhancement, which is intended to augment production above otherwise natural levels; (BOF definition)

Please take action to institute, safeguard, and uphold state mandates prescribed to protect wild fish and food webs. With all due respect, the state of Alaska has run off track failing to prioritize wild spawning fish

This PWS straying and those of the Lower Cook Inlet Hatcheries is a grave Conservation Concern. This puts our wild fisheries resources and their food webs at risk.

Hatcheries and straying creates an expensive impossible management debacle of mixed stock fisheries complexity that conflicts with the many mandates designed purposely to protect wild fish of the state of Alaska.

Inter-regional straying amplifies this costly debacle. It is a myth to think conservation of wild stocks can be prioritized consistent with sustained yield with this magnitude of straying.

As the science progresses, the American Fisheries Society has been exploring hatchery issues in a formalized process every 10 years.

The latest of these 10 year cycles have found common weaknesses, management strategies and principles we need to incorporate into the science of interactions and risk. Management strategies to mitigate the ecological risks of hatchery programs among others states:

Limit the total number of hatchery fish that are released at a regional scale. Ecological impacts can extend beyond immediate release sites and into major migration routes and the ocean.

The unwanted unasked for unutilized monoculture of this magnitude straying has grave repercussions far and above the genetic introgression and fitness risks under review in PWS.

It is imperative that the predator prey relationship and food web interactions of the huge predator biomass of pink salmon eating everything in its path in the Gulf of Alaska and now Kachemak Bay be considered.

In 2015 over 300,000,000 million pounds of artificially introduced predator biomass eating at least 2% of their weight a day equals close to 7,000,000 pounds per day of seafood. In 30 days this is 210,000,000 pounds of our seafood. Simplistic? Yes, but in 2015 the Murre were starving, the sockeye were a pound less in weight, and I wonder about the cod? The PWS studies do not answer all the questions of interregional straying so must not be used as a scapegoat for delay.

*Please note. To clarify the LCI straying data in this memo, it is important to cross reference "magnitude" of permitted release which was only 1/11th of the Tutka permitted capacity and 1/125th of the permitted capacity of the Port Graham Hatchery. As LCI hatcheries attempt to ramp up to full desired capacity of 250,000,000, the straying has potential to ramp up as well. Omitted information can easily bias a conclusion leading to partial comprehension of straying incidence.

An additional omission, yet deliberated at length at the CIRPT was that the ADFG Otolith Lab reported the difficulty to read the otolith marks of the Tutka Hatchery making it very hard to impossible to decipher the difference between hatchery marked and wild fish. This has the potential to skew the data. Again, please don't be deceived.

Please consider:

- impacts to food webs
- carrying capacity stress
- competition between hatchery fish vs other species and their food webs, like Dungeness crab, shrimp clams, herring.
- nest site competition in fresh water,
- massive over escapement causing instream suffocation,
- massive wanton waste,
- pollution to state water quality.
- Depressed stocks of Dungeness crab, shrimp clams, herring consumed.
- nest site competition in fresh water,
- massive over escapement causing instream suffocation,
- consistency with legislatively designated critical habitats, NOAA Habitat Focus Area, Special Purpose Site
- Food web interactions in known shellfish nurseries to ensure shellfish stocks are not kept suppressed from hatchery fish predation
- direct fishery impacts in an ADFG known shrimp, herring, and clam spawning concentration areas and Dungeness reproductive concentration areas,
- massive wanton waste,
- pollution to state water quality
- mixed stock fishery management nightmares
- Closed waters were opened up to the mouth of freshwater streams impacting wild coho chums and pinks in a well utilized salmon stream listed in the anadromous waters atlas
- Dungeness crab bycatch by purse seine in these shallows

In the U.S. Pacific Northwest, the Hatchery Scientific Review Group (HSRG; <http://www.hatcheryreform.us/>) established by the U.S. Congress **described three foundational principles** for best management practices for the operation of hatcheries. HSRG [2009](#) HSRG (Hatchery Scientific Review Group). 2009. System-wide report.

We need to incorporate this information. It is arrogant to think we can dodge some of these bullets as if there is not any relationship with the science from the Pacific Northwest.

John Hilsinger Director of Comm Fish in 2010 acknowledged the lessons and science of the Pacific Northwest,

”The Alaska enhancement program has learned many lessons from enhancement experiences in the Pacific Northwest and tries very hard not to repeat those mistakes.”
Placing large scale enhancement efforts on top of wild stocks has not worked well on the

Columbia River and has created numerous challenges that are still plaguing managers and agencies. We need to use this science to mine out any and all information to aid wild fish stocks.”

This petition requests an independent review by the Board of Fisheries to assess “the effect of enhanced stocks on wild stocks” The Sustainable Salmon Policy gives the Board a directive.

5 AAC 39.222 “the effect of enhanced stocks on wild stocks should be assessed. Wild stocks should be protected from adverse impacts from enhanced stocks.”

Please form an independent knowledgeable oversight task force of concerned scientists, geneticists, researcher’s professors or concerned citizens impartial and unconstrained by the aquaculture ideology that has stifled open scientific debate for decades. This task force must assess the many moving parts of this grave conservation concern and risk to wild fisheries belonging to the people of the state of Alaska.

It is imperative that an open honest Systematic Review of all literature and information comes to the table..

To openly debate in a healthy manner that leads to comprehensive constructive answers consistent with the law is sorely needed. Experimenting with our ecosystems without the most up to date science is foolhardy. Denial must cease being tolerated.

Please also assess for consistency the applicable mandates that serve conservation of the wild fish priority to find ambiguities that can weaken protection of wild fish resources. Below are some of these mandates.

Blurred Line of ADFG Authority needs to be brought back into focus

The concept of “Conservation of wild salmon stocks consistent with sustained yield shall be accorded the highest priority” is in jeopardy from the blurred line of authority between ADFG, the Regional Planning Teams, the aquaculture associations and processing corporations.

Oversight and monitoring of many aspects of aquaculture permitting has become lax to nonexistent. (please see attached example of ignored ADFG genetics review, ADFG FTP review Critical Habitat Permit comments) It has become lip service with no back-up monitoring.

This aquaculture ideology has infiltrated our ADFG and Regional Planning Teams weakening objective control of ADFG authority. This in itself is an emergency putting our wild fish at risk. This behavior needs to be curtailed so ADFG can do their job without intimidation.

ADFG with limited budgets is getting forced to devote valuable wild fish priority operating budgets and time, toward continual damage control , such as this straying disaster, from mixed hatchery/wild stock fisheries interactions without compensation. This diversion of funds and

time places our wild fisheries resources and the economic value of our majority bread winner, wild fish, at risk.

A very unhealthy situation of intimidation has occurred within the Department, other agencies or NGO's who question hatchery practices. Deny, ignore, or degrade the messenger is the mode used by hatchery advocates even within ADFG to reject responsibility to prioritize wild fish over artificial fish. This intimidation must also stop and ADFG must be able to freely uphold the wild fish priority without repercussion.

Regional Planning Teams (RPT) Restructuring for wild fish priority

With Regional Planning Teams dominated by hatchery factions an imbalance of ADFG authority has occurred. The same person who requests an FPT or a PAR is the same person who signs these permit alteration or transport request. There are no checks and balances to protect wild stocks.

To restructure the RPT framework to "regional" only ADFG employees versed in more than hatcheries such as habitat rehabilitation, would be a start to regain the needed checks and balances to uphold State of Alaska mandates using science for wild fish priority.

If consistency is needed, a Juneau based employee can be present at the RPT as an ex officio member but not as a voting member unless the RPT is in Southeast Alaska "Region"

As 16.05.730. Management of Wild and Enhanced Stocks of Fish. (a) Fish stocks in the state shall be managed consistent with sustained yield of wild fish stocks. (b) In allocating enhanced fish stocks...management to achieve an adequate return of fish to enhancement projects for brood stock shall be consistent with sustained yield of wild stocks.

Some mandates with authority for wild fish priority

AS 16.05.831. Waste of Salmon

5 AAC 39.220 Mixed Stock Salmon Fishery Policy Wild stock conservation priority: The conservation of wild stocks consistent with sustained yield is the highest priority in management of mixed stock fisheries.

5 AAC 39.223 Salmon Escapement Goal Policy Establishment of escapement goals: Management of fisheries is based on scientifically- based escapement goals that result in sustainable harvests.

5 AAC 39.222 Policy for the Management of Sustainable Salmon Fisheries Management principles and criteria:

Assessment of wild stock interaction and impacts: As a management principle, the effect of enhanced stocks on wild stocks should be assessed. Wild stocks should be protected from adverse impacts from enhanced stocks.

Use of Precautionary approach: Managers should use a conservative approach, taking into account any inherent uncertainty and risks.

to effectively assure sustained yield and habitat projection for wild salmon stocks, fishery management plans and programs require specific guiding principles and criteria, and the framework for their application contained in this policy

adverse environmental impacts on wild salmon stocks and the salmon's habitats should be assessed;

effects and interactions of introduced or enhanced salmon stocks on wild salmon stocks should be assessed; wild salmon stocks and fisheries on those stocks should be protected from adverse impacts from artificial propagation and enhancement efforts;

diversity should be maintained to the maximum extent possible, at the genetic, population, species, and ecosystem levels;

proposals for salmon fisheries development or expansion and artificial propagation and enhancement should include assessments required for sustainable management of existing salmon fisheries and wild salmon stocks;

plans and proposals for development or expansion of salmon fisheries and enhancement programs should effectively document resource assessments, potential impacts, and other information needed to assure sustainable management of wild salmon stocks;

Research and data collection should be undertaken to improve scientific and technical knowledge of salmon fisheries, including ecosystem interaction, status of salmon populations and the condition of salmon habitats.

effective management systems should be established and applied to regulate human activities that affect salmon

in the face of uncertainty, salmon stocks, fisheries, artificial propagation, and essential habitats shall be managed conservatively

a precautionary approach, involving the application of prudent foresight that takes into account the uncertainties in salmon fisheries and habitat management, the biological, social, cultural, and economic risks, and the need to take action with incomplete knowledge, should be applied to the regulation and control of harvest and other human-induced sources of salmon mortality;

a precautionary approach requires consideration of the needs of future generations and avoidance of potentially irreversible changes;

prior identification of undesirable outcomes and of measures that will avoid undesirable outcomes or correct them promptly;

initiation of any necessary corrective measure without delay and prompt achievement of the measure's purpose,

where the impact of resource use is uncertain, but likely presents a measurable risk to sustained yield, priority should be given to conserving the productive capacity of the resources;

appropriate placement of the burden of proof, of adherence to the requirements of this subparagraph, on those plans or ongoing activities that pose a risk or hazard to salmon habitat or production;

The principles and criteria for sustainable salmon fisheries shall be applied, by the department and the board using the best available information, as follows:

at regular meetings of the board, the department will, to the extent practicable, provide the board with reports on the status of salmon stocks and salmon fisheries under consideration

a stock by stock assessment of the extent to which management of salmon stocks and fisheries is consistent with the principles and criteria contained in the policy under this section;

descriptions of habitat status and any habitat concerns

Lower Cook Inlet streams opened to the mouth of anadromous streams to Common Property fishing intercepting wild stocks with the hatchery and scraping Dungeness crab up in the shallows

identification of any existing salmon escapement goals, or management actions needed to achieve these goals, that may have allocative consequences such as the identification of a new fishery or expanding fishery;

identification of any salmon stocks, or populations within stocks, that present a concern related to yield, management, or conservation; and

description of management and research options to address salmon stock or habitat concerns

in association with the appropriate management plan, the department and the board will, as appropriate, collaborate in the development and periodic review of an action plan for any new or expanding salmon fisheries, or stocks of concern; action plans should contain goals, measurable and implementable objectives, and provisions, including

fishery management actions needed to achieve rebuilding goals and objectives, in proportion to each fishery's use of, and hazards posed to, a salmon stock;

descriptions of new or expanding salmon fisheries, management concern, yield concern, or conservation concern; and

salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning as follows:

Salmon escapement should be managed in a manner to maintain genetic and phenotypic characteristics of the stock by assuring appropriate geographic and temporal distribution as well as consideration of size range, sex ratio, and other population attributes;

Effective management systems should be established and applied to regulate human activities that effect salmon as follows

Salmon management objectives should be appropriate to the scale and intensity of various uses and the biological capacities of target salmon stocks;

management objectives should be established in harvest management plans, strategies, guiding principles, and policies such as for mixed stock fishery harvest, fish disease, genetics, and hatchery production, that are subject to periodic review;

proposals for salmon fisheries development or expansion and artificial propagation and enhancement should include assessments required for sustainable management of existing salmon fisheries and wild salmon stocks;

plans and proposals for development or expansion of salmon fisheries and enhancement programs should effectively document resource assessments, potential impacts, and other information needed to assure sustainable management of wild salmon stocks;

Thank-you for your time. This is difficult to synthesize the many moving parts of this and be concise.

With Kind Regards,

Nancy Hillstrand

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Pioneer Alaskan Fisheries Inc is a 54 year old Alaskan fisheries Corporation now doing business as a Seafood Processor for the past 26 years on the Homer Spit to value add and ship seafood for Fisherman.

I have fished King and Tanner Crab, Tendered and fished for Salmon and herring and was a Fish Culturist rehabilitating habitat and the salmon resource with ADFG FRED Division for 21 years.

I was also a member of the Fish and Game Advisory Committee for 17 years, National Estuarine Reserve for 7 years and the Kachemak Bay Park Board for 8 years.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

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MEMORANDUM

TO: Bill Templin, Chief Fisheries Scientist, Division of Commercial Fisheries
Jack Erickson, Regional Research Coordinator, Central Region
Chris Habicht, Genetics Section, Division of Commercial Fisheries

FROM: Ted Otis, Lower Cook Inlet Area Finfish Research Biologist
Glenn Hollowell, Lower Cook Inlet Area Finfish Management Biologist

DATE: 1 December 2017

SUBJECT: *Lower Cook Inlet Pink Salmon Otolith Sampling Summary, 2017*

Lower Cook Inlet staff received data requests from the public, media, and the Marine Stewardship Council for results of pink salmon otolith sampling in 2017. The text, table, and map below provide a response to those data requests.

In 2017 Lower Cook Inlet staff continued a fourth year of sampling pink salmon otoliths as part of baseline data collection associated with two recently restarted hatchery production programs. Otolith sampling of harvest and escapement allows for a complete assessment of hatchery programs and wild stock performance. Beginning in brood year 2012, otoliths of all pink salmon cultivated at the Tutka Bay Lagoon Hatchery and Port Graham Hatchery were thermally marked. Otolith sampling associated with these programs is comprised of two components: 1) sampling otoliths from pink salmon commercial harvests (purse seine and set gillnet) in the Southern District, and 2) sampling otoliths from spawned out pink salmon carcasses in streams throughout the Southern and Outer districts (Figure 1). This is an ongoing work that is intended to continue as the two programs come up to full production levels.

Similar to the previous three years, pink salmon from Tutka and Port Graham Bay hatcheries were found to have spawned in 11 of the 16 Lower Cook Inlet streams surveyed (Table 1). Port Graham Hatchery marks were found in samples at low levels (1%) in three streams. Tutka Bay Lagoon Hatchery marks were found in 10 of the 16 streams at widely varying proportions (1%–87%) with highest proportions generally found closest to release sites. In addition, Prince William Sound hatchery-produced pink salmon were found at levels similar to previous years (2%–70%). Hatchery-marked pink salmon (Prince William Sound and Lower Cook Inlet combined) outnumbered unmarked pink salmon on 5 of the 16 streams sampled, including three small streams sampled in response to public reports of unusually high escapements (i.e., Beluga Slough, Fritz Creek, Lou's Creek). Preliminary escapement indices (either peak count or area-under-the-curve) derived from periodic ground surveys were estimated to provide context to the proportions of hatchery marks in the samples (Table 1).

cc: Prince William Sound Aquaculture Corporation, Cook Inlet Aquaculture Association, Valdez Fishery Development Association

Table 1.- Preliminary percentages of thermally marked pink salmon otoliths in samples from Lower Cook Inlet streams and commercial fisheries, 2017.

	Port Graham Hatchery, (LCI)	Tutka Lagoon Hatchery, (LCI)	LCI hatchery total	Armin F. Koernig Hatchery, (PWS)	Cannery Creek Hatchery, (PWS)	Wally Noerenberg Hatchery, (PWS)	Solomon Gulch Hatchery, (PWS)	PWS hatchery total	unmarked otoliths ¹	Total otoliths sampled	Preliminary 2017 escapement index
LCI streams											
1. Beluga Slough ²		1.4%	1.4%	30.2%	14.6%	10.4%	1.0%	56.3%	42.4%	288	2,500
2. Fritz Creek ²			0.0%	40.6%	20.8%	5.2%	3.1%	69.8%	30.2%	96	2,000
3. Humpy Creek			0.0%				1.6%	1.6%	98.4%	191	71,073
4. China Poot		1.1%	1.1%	4.3%	2.1%	2.1%	2.1%	10.6%	88.3%	94	2,379
5. Sadie Cove		4.2%	4.2%	2.1%			12.5%	14.6%	81.3%	96	5,790
6. Tutka Head End Creek ²		33.9%	33.9%				5.8%	5.8%	60.3%	189	19,786
7. Tutka Lagoon Creek ²		87.4%	87.4%	0.5%	1.6%	0.5%		2.6%	9.9%	191	61,369
8. L. Tutka Bay (Lou's Ck.) ²	1.0%	12.5%	13.5%	25.0%	14.6%	9.4%		49.0%	37.5%	96	3,000
9. Barabara Creek		2.1%	2.1%	4.2%			14.2%	18.4%	79.5%	190	25,002
10. Seldovia River			0.0%	3.7%	1.0%	0.5%	7.3%	12.6%	87.4%	191	27,025
11. Port Graham River	1.1%		1.1%	2.1%			3.2%	5.3%	93.7%	95	20,642
12. English Bay River	1.1%	2.9%	4.0%	9.2%	12.1%	1.7%	6.9%	29.9%	66.1%	174	30,000
13. Dogfish Lagoon Creeks			0.0%	13.3%	2.2%	1.1%	34.4%	51.1%	48.9%	90	13,331
14. Port Chatham			0.0%	29.2%	13.5%	4.2%	1.0%	47.9%	52.1%	96	44,291
15. Port Dick Creek		2.1%	2.1%	3.2%	1.1%			4.2%	93.7%	95	62,098
16. Port Dick-Island Creek		1.0%	1.0%	9.0%	3.5%	2.0%	3.5%	18.1%	80.9%	199	22,579
Commercial harvest, (Southern District)										Total harvest	
Purse Seine	1.0%	26.7%	27.7%	0.6%	0.5%	0.2%	0.8%	2.1%	70.2%	1,154	352,000
Set Gillnet	0.5%	15.6%	16.1%	4.2%	0.5%	1.0%	6.3%	12.0%	71.9%	192	44,000

¹Unmarked otoliths- otoliths without discernable hatchery thermal marks.

²Denotes streams where 100% of the otoliths were read a second time to evaluate reader agreement.

Figure 1. Map of Southern and Outer districts of Lower Cook Inlet, illustrating the locations of pink salmon hatcheries (denoted by asterisks*), pink salmon index streams, and the 16 streams that were targeted for otolith sampling in 2017 (numbers correspond with those in Table 1).

