



July 22, 2011

Congressman Norm Dicks
6th Dist Washington
2467 Rayburn Bldg
Washington, DC 20515

RE: Response to Columbia Inter-Tribal Fish Commission's Letter to Charimen Hastings, Simpson and Wolf

Dear Congressman Dicks:

Per your request, and in the capacities as Chairs of the Columbia River and Washington Hatchery Scientific Review Groups (HSRGs) we have reviewed the recent letter, July 11, 2011, from the Columbia River Inter-Tribal Fish Commission (CRITFC) to Chairman Doc Hastings, Chairman Mike Simpson and Chairman Frank Wolf. Our review focused on the science concerning the role of hatchery fish in the recovery of salmon populations in the Columbia Basin. We did not review or comment on the various policy issues raised in the letter.

The letter states that, "Hatcheries can be used as a very effective tool to increase naturally spawning populations of salmon using biologically appropriate hatchery fish (called supplementation)". This claim is misleading. Hatcheries can indeed play a role in salmon recovery, but this role is limited to short term interventions to avert extinction and to accelerate re-colonization of extirpated habitat. When attempts are made to use hatcheries to increase naturally spawning populations, it is at a cost of reduced fitness (i.e. lower survival) of the natural population through domestication. This is the predominant viewpoint in the scientific community. This is evidenced, for example, by the conclusion of the National Marine Fisheries Service (NMFS) that:

"..., NMFS believes hatchery intervention is a legitimate and useful tool to help avert, at least in the short-term, salmon and steelhead extinction, but otherwise managers should seek to limit interactions between hatchery and natural-origin fish..." (p. 93-94 of the 4(d) rule for the Puget Sound Harvest Management PLAN (PSHMP), May 27, 2011.)

In the same report NMFS further states:

"At this time, based on the weight of available scientific information, NMFS believes that artificial breeding and rearing will result in some degree of genetic change and fitness reduction in hatchery fish and in the progeny of naturally spawning hatchery fish relative to desired levels of diversity and productivity of natural populations. **Hatchery fish thus pose a threat to natural population rebuilding and recovery when they interbreed with fish from natural populations.**" (P.93, Emphasis Added)

Furthermore, Dr Eric Loudenslager, Chair of the Power and Conservation council's (NPCC) Independent Science Review Panel (ISRP), reiterated the ISRP's concern about the effectiveness of using supplementation for purposes of salmon recovery in his testimony at the NPCC June 7, meeting in Whitefish, Montana. Citing a recent assessment of supplementation in Imnaha River, Dr. Loudenslager noted that: "There is no evidence presented that supplementation was increasing the abundance of

natural origin fish.” In fact the study showed the opposite, productivity was reduced. Dr. Loudenslager further noted that “that calls into question whether or not to use hatcheries as a conservation tool.”

In its recent review of the spring Chinook supplementation programs (state, federal, and tribal hatcheries) in the lower Snake River, the ISRP concluded that “hatchery programs could reduce the risk of extinction but supplementation was not yielding an increase in natural returns.” The ISRP report further states “This is cause for concern about the prognosis of the entire supplementation strategy.”

It has indeed NOT been demonstrated that “Hatcheries can be used as a very effective tool to increase naturally spawning populations of salmon using biologically appropriate hatchery fish (called supplementation)” as the CRIFC letter suggests.

A corollary to this conclusion is also that the value of investment in habitat improvements, in terms of increased natural production, is reduced if hatchery fish are used to populate the improved habitat. Locally adapted natural origin fish will use the improved habitat significantly more effectively. This is a fundamental principle of conservation biology.

It is also clear to most scientist and managers, that hatcheries can produce fish for harvest. The HSRG recognizes that hatcheries in fact are necessary to meet harvest goals and obligations in the foreseeable future. The question is: how should hatcheries be operated to meet harvest needs without significant adverse effects on recovery of naturally spawning salmon populations? Part of the answer to this question is the ability for managers to distinguish natural origin fish from hatchery origin fish, when they return to freshwater as adults. Mass-marking of hatchery fish makes this possible. It allows the managers to use all the tools at their disposal to manage the contribution of hatchery fish to natural spawning. These tools include, size and location of hatchery programs, e.g. releasing hatchery fish at locations where they can be recaptured as they return. The HSRG has also concluded that the acceptable contribution of hatchery fish to natural spawning is not 0%. The risk due to hatchery fish spawning in the wild, depends upon the status of the natural population and the genetic make-up of the hatchery population. However in order to manage this risk, it is necessary measure the contribution of hatchery fish. Currently the most cost effective and efficient to accomplish this is to clip off the adipose fin to visibly mark hatchery fish.

The letter asserts that mass marking is an impediment to recovery of wild fish: “Mass marking programs prioritize allocation over recovery, primarily benefiting mark selective non-Indian fisheries. These kinds of programs result in wild fish mortalities and are not a recovery program.” In its analysis of the Columbia River hatchery programs, the HSRG concluded that moderate reforms focused on broodstock management (to reduce hatchery influence on natural spawning) and some selective harvest would in fact return more harvestable fish to the terminal areas, where they would be available for harvest in tribal fisheries.

The necessity to mark hatchery fish for genetic and harvest management reasons is strongly endorsed by the scientific community and has been advocated by independent scientific review groups and the Washington State Legislature.

In National Research Council’s *Upstream* report, independent scientists said “All hatchery fish should receive identifiable marks. Visible marks, such as clipped fins, have advantages...Marking hatchery fish is important so that managers can distinguish between hatchery and wild runs.” (P. 322-323)

The HSRG in its' 2009 *Report to Congress on Columbia River Basin Hatchery Reform* recommend mass marking of hatchery fish to maximize potential harvest and to assess stray rates and genetic risks to naturally spawning populations.

In "A Blueprint for Hatchery Reform in the 21st Century" Rick Williams et.al. recommends "mass marking for all production of all species".

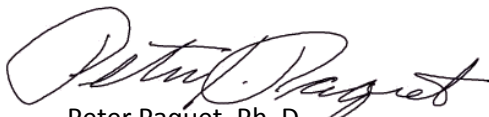
The California-Nevada Chapter of the American Fisheries Society passed a resolution supporting mass marking of all California Hatchery produced fall Chinook salmon to improve the genetic fitness of hatchery fish, maintain the genetic fitness and diversity of natural origin fish, and the option for selective harvest of hatchery fish.

In 1995, the 54th Washington State Legislature passed Substitute Senate Bill 5157 mandating that all appropriate Chinook and coho salmon released from department (WDFW) hatcheries be marked so they are externally recognizable.

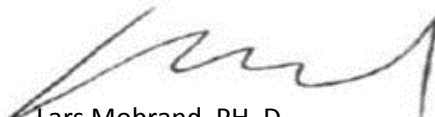
The HSRG analysis suggests that productivity and natural-origin spawner abundance would double if hatchery and harvest reforms are implemented. The key components to achieving the "doubling effect" are limiting hatchery spawners on the natural spawning grounds and selective fisheries. Both of these components require mass marking with an easily identifiable mark.

In conclusion, there is no scientifically supportable conservation justification for expanding supplementation programs in the Columbia River. And, until there is another method that enables fisheries managers, biologist and fishers to distinguish hatchery fish from wild fish, mass marking of hatchery fish needs to continue.

Respectfully,



Peter Paquet, Ph. D.
Chair Columbia River HSRG



Lars Mobrand, PH. D.
Chair Puget Sound and Coastal Washington HSRG

Cc: Chairman Doc Hastings
Chairman Frank Wolf
Chairman Mike Simpson
Chairman Bruce Jim
Representative Chaka Fattah
Representative James Moran
Representative Edward Markey
William Stelle Jr., Regional Administrator, NOAA/NMFS