

## Hatchery Scientific Review Group

### Pacific Salmon Hatchery Reform

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#### HSRG - Washington

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### **Subject: HSRG Review of Lower Columbia River HGMPs**

A sub-committee of the Hatchery Scientific Review Group (HSRG) has reviewed the draft Hatchery Genetic Management Plans (HGMPs) recently released by WDFW for the Lower Columbia River. Two HGMPs (Coweeman Winter Steelhead and Kalama Falls Early Winter Steelhead) were reviewed in detail and are attached. The remaining HGMPs were only briefly reviewed to verify that our general concerns were found in others as well.

In many sections the Plans lack program specific supporting data and/or documentation and were found to contain errors in data calculations or typographical errors. Several sources of supporting data and documentation of goals exist, including earlier versions of these HGMPs provided to the public in 2004 and the Lower Columbia River Recovery Plan.

Unfortunately, we believe WDFW missed an opportunity to inform/educate the public as to the progress they have made and will make in implementing hatchery reform in the state over time. All these programs have undergone scientific review by the HSRG, but this review is underplayed in the HGMPs and focuses primarily on the pHOS standard. In several cases a reduction in the number of fish planted was reported in order to meet HSRG standards for pHOS, but a review of the provided planting data did not indicate any reductions had been made from recent 5-10 year averages. If the goal was a larger number of juveniles planted, but the hatchery had not been achieving that goal, it should be explained. A summary of all the HSRG's findings and how the programs were changed based on these findings would strengthen the documents. If the programs were not changed, then a rationale needs to be provided.

### **Use of AHA Modeling Results**

WDFW notes that AHA modeling was performed to evaluate each of the programs, but the results of this modeling are not discussed in any detail. Instead, the reader is pointed to Attachment 3 which describes the results for estimated pHOS and its impact on the program<sup>1</sup>.

The HGMPs could be strengthened if the AHA assumptions and results were used as the working hypothesis for the program. AHA documents a working hypothesis of how the natural and hatchery components of the population interact and provides an estimate of harvest benefits,

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<sup>1</sup> The attachment also has some interesting data/findings from the Conservation and Sustainable Fisheries Plan that should be discussed in the main body of the HGMP. For example, some programs were changed to "balance with conservation" but how this was achieved is not provided.

stray rates, how PHOS was calculated etc. Because many of the assumptions have a high level of uncertainty, WDFW could then show how existing field data supports or rejects those assumptions and how the M&E plan will address each and over what time frame.<sup>2</sup>

### **Program Description**

It is unclear as to the exact condition the HGMP is supposed to represent. Does it reflect the past, current or future hatchery program? The confusion comes from the write-up for section 1.16 and data presented in Attachment 3.

In many of the documents (Section 1.16) WDFW states that it will be evaluating program alternatives through the LCR regional watershed planning process and on-going M&E and research findings<sup>3</sup>. In Attachment 3, WDFW notes that programs may change based on the Columbia River EIS. The attachment also has implementation targets dates that range from 2008 to 2014 (some actually have a N/A in this field). It is difficult to see how NMFS can perform a NEPA analysis on such a document.

If the HGMP is required to meet legal obligations between now and 2014, then the programs need to prove they are being operated in a scientifically defensible manner given current knowledge. The current versions of the HGMP do not provide sufficient data or analysis to support such a conclusion, in most cases.

### **Program Goals**

The HSRG noted that hatchery programs need to have “clear, specific, quantifiable harvest and conservation goals for natural and hatchery populations” (HSRG 2009)<sup>4</sup>. Such goals are not provided in the HGMPs. Instead the HGMPs use language such as:

*The goal of this program is to provide maximum sport harvest under the selective fishery regulations (retention of adipose-clipped fish only) while eliminating a directed harvest on wild winter steelhead. Also serves as mitigation for development (including hydro-power) and habitat degradation.*

This is not a clear, specific or quantifiable set of goals.

Harvest and conservation goals are readily available from recovery plans and the AHA analysis and if included, would strengthen the HGMPs.

### **Lack of Supporting Evidence that Best Management Practices are being followed**

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<sup>2</sup> The WDFW does this to some extent in section 1.16 but the write-up for proposed M&E is not program specific, is general in nature, lists some studies that does not apply to the program, some studies that “may” be implemented, or has a study that has been completed but results are not provided

<sup>3</sup> NMFS states that the alternatives section should: Indicate alternative actions considered for attaining program goals, and reasons why those actions are not being proposed. This section needs to explain why these alternatives have been rejected...

<sup>4</sup> HSRG 2009. Report to Congress on Columbia River Basin Hatchery reform.

Throughout the documents WDFW states they have implemented certain practices that protect natural populations by reducing both direct and indirect effects. However, no data are presented to show these practices are followed. For example:

*“Steelhead release programs practice active pond management to remove fish less than 180 mm fl and greater than 250 mm fl on release or fish are released at 5.5 fpp (Tipping 2001). Or, “To maximize smolting characteristics and minimize residual steelhead, WDFW adheres to a combination of acclimation, volitional release strategies, active pond management, size, and release guidelines (Tipping 2001)”*

Data provided in fish size at release tables indicate fish are often released at sizes less than 5.5 fpp or are released directly to the river. Additionally, no data is presented describing how many fish less than 180 mm were culled each year and their resulting disposition by program. If these practices are indeed followed then the hatchery should have data that can be summarized and presented for each program (even if it's just a single year). The HGMP should state if this guideline is being followed for each program.

*“Steelhead Rearing Guidelines target release sizes, condition factors and coefficient of variation (CV) for length of less than 10.0% or less that result in actively migrating smolts that vacate the system and limit freshwater interactions with listed species.”*

Much of this data is not presented for most programs (especially CV). Data to show how fast fish migrate from the system is also not presented. Results from studies are available for the Cowlitz and other streams in the NW and were presented in earlier versions of these documents (2004). Condition factor is reported for some programs (See Kalama Early Winter for example), but not for others (Coweeman).

*“Returning hatchery fish are subject to selective harvest and are identified by adipose and LV or RV fin-clip. Recycling downstream for sport harvest opportunity eliminates as many fish as possible removing potential spawners” ...or “Returning hatchery fish are under heavy selective harvest and are identified by adipose fin-clip.”*

Harvest rates are not provided in the HGMPs. Additionally, it is unclear how releasing fish already in hand back to the stream (recycling) reduces potential spawners.

*“Prior to release, the population health and condition is established by the Area Fish Health Specialist. This is commonly done 1-3 weeks pre-release and up to 6 weeks on systems with pathogen free water and little or no history of disease.”*

No pathology information is provided to document these inspections occur or what the results of these inspections were. The in-hatchery survival rates by life stage in some tables can be quite low (See Kalama Early Winter Table 9.2 Rearing), but is not commented on. This gives the reader the impression that there are no disease issues at WDFW hatcheries, which is not the case.

*“WDFW proposes to continue monitoring, researching and reporting of hatchery smolt migration performance behavior, and intra and interspecific interactions with wild fish to assess, and adjust if necessary, hatchery production and release strategies to minimize effects on wild fish.”*

This is a generic statement made for most programs. Yet in other places in the documents it is stated this type of data are not available. If it's available it should be reported, or at least the study where the data was collected, cited.

*"Harvest of hatchery-produced fish minimizes impact to wild populations."*

Neither assumed hooking mortality rates or the number of NOR's killed each year are reported. The assumed impact on NORs can be taken from the harvest plans for the lower Columbia.

### **Ecological Effects of Programs not Described**

The ecological affect hatchery juveniles have on natural populations is not addressed for most programs in any quantifiable manner. We recognized this data is difficult to collect and is not available for most hatchery programs. Regardless, to be credible, the ecological effects must be considered. This could be done using the WDFW's PCD-Risk model which estimates losses due to predation, competition and disease. The results could be used to describe a range of risks and if found to be high (i.e. >10 percent loss) could be used to design the studies needed to confirm modeling results.

### **Lack of Specificity**

Much of the discussions regarding M&E are generic statements that may or may not apply to the program described in the HGMP. For example, the M&E activities simply summarize everything that is going on in the Lower Columbia River. How this M&E will be used to manage the hatchery programs is not well described.

### **Typos, Errors, Editing**

It appears that many sections of each HGMP were simply copied from one to another without undergoing a detailed review. Thus, some sections of an HGMP may refer to Salmon Creek, when the HGMP is for Coweeman, etc. Some data tables simply have inaccurate data, or refer to a formula that does not apply in the table. More examples can be found in the attached Coweeman and Kalama HGMPs.

I hope you find these comments helpful.



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