

The Washington Department of Fish and Wildlife developed the Cathlamet Channel Net Pen Spring Chinook and Hatchery and Genetic Management Plan (HGMP), placed a draft version on our web page on September 4, 2013, announced its availability, and solicited public comment through October 4, 2013.

WDFW received comments from only one organization during the public comment period: Hatchery Scientific Review Group (HSRG). WDFW would like to thank the HSRG for their review of the Cathlamet Channel HGMP. Their submitted comments are posted under separate cover, and our responses are appended below.

### **Response to Comments by the Hatchery Scientific Review Group – submitted to WDFW October 4, 2013.**

*Recommendation 1: Express conservation goals in terms of a population’s biological significance (Primary, Contributing, Stabilizing) and viability (natural-origin spawning abundance and productivity).*

**Comment 1:** *There is no natural population directly linked to this program; (no spring Chinook in the Elochoman River) and the natural populations potentially affected through straying have been designated (as Primary, Contributing or Stabilizing) (HGMP Table 2.2.2.1).*

**WDFW Response:** Comment noted.

*Recommendation 2: Express harvest goals in terms of a population’s contribution to specific fisheries.*

**Comment 2:** *HGMP lacks specific quantifiable goals for contribution to specific fisheries. HGMP section 1.7 identifies Goal of program as: “Mitigation/Augmentation. The goal of this program is to support fisheries in the basin and lower Columbia River, while eliminating a directed harvest on wild fish. Also serves as mitigation for development (including hydro-power) and habitat degradation.” HGMP section 1.10 “Performance Indicators” (Table 1.10.1) further identifies “This program provides mitigation for lost fish production due to development within the Columbia River Basin and contributes to a meaningful harvest in sport and commercial fisheries. While this is a new program, managers should specify numbers of fish expected to be contributed to specific fisheries, or at a minimum total number of fish expected to be harvested, (i.e. smolt-to-adult survival x # of smolts released x terminal harvest rate).*

**WDFW Response:** Survival of fish from the release of 250,000 spring Chinook is expected to range from 1,000 to 3,600 (based on average spring Chinook survival rates from lower Columbia hatcheries and other net pen programs). Average ex-vessel value to commercial fisheries is estimated at \$55,000 to \$270,000 (based on average weight and average price per pound from recent spring Chinook commercial fisheries). In addition, the program will provide benefits to the sport fishing community by providing additional fish for harvest.

*Recommendation 3: Ensure goals for individual populations are coordinated and compatible with those for other populations in the Region.*

**Comment 3:** *The proposal appears to adhere to this Recommendation. The HGMP states in Section 3.1 “WDFW (draft) Conservation and Sustainable Fisheries Plan (C&SFP). This*

*program is identified within the WDFW draft Conservation and Sustainable Fisheries Plan. This document addresses priorities of the LCFRB Recovery Plan (2010) and Fishery Management and Evaluation Plan (FMMP), the legal requirements of the Endangered Species Act (ESA), and recommendations of the Hatchery Scientific Review Group (HSRG). It describes the adaptation of general principles for hatchery management to the unique genetic and ecological setting of each watershed.”*

**WDFW Response:** Comment noted.

**Principle: Design and Operate Hatchery Programs in a Scientifically Defensible Manner.**

“Once a set of well-defined population goals has been identified, the scientific rationale for a hatchery program (in terms of benefits and risks) must be formulated, explaining how the program expects to achieve its goals. The purpose, operation and management of each hatchery program must be scientifically defensible. The strategy chosen must be consistent with current scientific knowledge. Where there is uncertainty, hypotheses and assumptions should be articulated.”

“Scientific defensibility should be a central consideration throughout all phases of a hatchery program—when determining whether a hatchery should be built or a program initiated; during the hatchery or program planning and design phase; and during the operations phase. This ensures a scientific foundation for hatchery programs, a means for addressing uncertainty, and a method for demonstrating accountability. Documentation for each program should include a description of analytical methods and should be accompanied with citations from the scientific literature.”

*Recommendation 4: Identify the purpose of the hatchery program (i.e., conservation, harvest or both).*

*Comment 4: Program is identified as a Harvest program (Section 1.6).*

**WDFW Response:** Comment noted.

*Recommendation 5: Explicitly state the scientific assumptions under which a program contributes to meeting the stated goals.*

*Comment 5: While the justification for a harvest program is provided in several places (Sections 1.8, 1.12, 3.3), no specific assumptions about smolt to adult survival, harvest rates or stray rates are provided. It can only be assumed that WDFW believes these fish will survive and be caught at some level. Those assumptions should have been provided in order to assess the program and its compatibility with other basin management objectives. There are several other spring Chinook net pen programs on the lower Columbia that should be used as surrogates.*

**WDFW Response:** See response to *Comment 2*.

*Recommendation 6: Select an integrated or segregated broodstock management strategy based on population goals and hatchery program purpose.*

*Comment 6: Program is identified as a segregated program (Section 1.6).*

**WDFW Response:** Comment noted.

*Recommendation 7: Size hatchery programs based on population goals and as part of an “all H” strategy.*

**Comment 7:** *The current production goal of 250,000 smolts appears to be based on either availability of donor stock or facility capacity. Without a specific harvest goal and assumptions about SAR, stray rate or catch, it is not known if this program is appropriately sized.*

**WDFW Response:** With the survival estimates shown above, operation of the weirs in the Elochoman and Grays rivers and no population designation for Lower Cowlitz River spring Chinook stock, it is not expected that this size program will have straying issues. 100% of these fish will be adipose fin-clipped have a CWT for the first year to determine where they stray.

*Recommendation 8: Manage harvest, hatchery broodstock and natural spawning escapement to meet HSRG standards appropriate to the affected natural population’s designation.*

**Comment 8:** *This is a segregated harvest program without an associated natural population. Nonetheless, like the other Select Area Fishery Evaluation Projects (SAFE) which this program is designed to emulate, it is important to consider strays to other populations such as ESA listed spring Chinook stocks upstream of the release site. Unlike the other SAFE areas which are more off-channel sloughs and bays, the Cathlamet Channel comprises a significant portion of the main-stem flow of the Columbia River, so imprinting and straying to upriver areas is likely. Additionally, since the Cathlamet Channel is more like a mainstem flow than an off-channel slough or bay, returning adults may not hold near the release site for as long and be less vulnerable to harvest before moving upstream. Specific acceptable upriver stray rates should be established prior to adult returns followed by adequate monitoring and adaptive management. Also see comments from **Recommendation 9**. In the early 1990’s, ODFW and WDFW (Paul Hirose and Mark Miller) conducted a survey of all potential terminal fishery areas in the lower Columbia River. Sites were sampled and evaluated based on a number of criteria. There is likely important information on the suitability of Cathlamet Channel in the resulting report submitted to BPA.*

**WDFW Response:** See response to **Comment 7**.

*Recommendation 9: Manage the harvest to achieve full use of hatchery-origin fish.*

**Comment 9:** *Two primary goals of SAFE areas and HSRG recommendations are to maximize harvest of returning hatchery adults while minimizing catch of non-hatchery stocks and non-target species (i.e. sturgeon). The WA/OR “Select Area Fishery Evaluation Project Report”, 2006, states that the spring Chinook SAFE areas (4 sites) had an average annual harvest rate of 91.2% of local hatchery fish and a 0.06% (26 fish) harvest rate of upriver stocks. Although Section 3.3.1 of the HGMP states that no harvest data is currently available for Cathlamet Channel spring Chinook, a test fishery was executed in the spring of 2013 and preliminary data suggests 50% of the fish caught (52 of 102) were from stocks above Bonneville. This is not surprising as Cathlamet Channel has historically been an important spring Chinook fishing area. Since ESA puts a limit on the harvest of upriver stocks, a high harvest rate in an area such as Cathlamet Channel could potentially close the entire fishery early and lose the potential of higher harvest rates of hatchery fish elsewhere along with additional straying of hatchery fish from that lost opportunity. Use of selective harvest gear in the Cathlamet*

*Channel with very low release mortality such as beach and purse seines has the potential to resolve these issues.*

**WDFW Response:** The fisheries that may occur to target these spring Chinook will be managed within the guidelines of ESA and the *US v Oregon* Management Agreement. There is some expectation that tangle nets would be used in this fishery, which has a low release mortality rate.

*Recommendation 10: Ensure all hatchery programs have self-sustaining broodstocks.*

**Comment 10:** *While this is a new program, it appears that the donor stocks (Cowlitz and/or Lewis River) have achieved broodstock goals for at least the last 12 years (see Section 6.1).*

**WDFW Response:** Comment noted.

*Recommendation 11: Coordinate hatchery programs within the Regions ecosystem to account for the effects of all hatchery programs on each natural population and each hatchery program on all natural populations.*

**Comment 11:** *Section 3 of the HGMP describes the coordination of hatchery production in the Region via WDFW (draft) Conservation and Sustainable Fisheries Plan (C&SFP) and LCFRB Recovery Plan (2010) and Fishery Management and Evaluation Plan (FMEP). These documents do take into account the impacts of hatchery production on natural populations.*

*The HGMP could be improved by indicating the pHOS of nearby primary and contributing populations of spring Chinook. This information would be useful in then calculating an upper limit for straying from the proposed net pen project. With an assumed SAR, terminal harvest rate, potential stray rate and pHOS of nearby populations, the HGMP could include a risk assessment that would be useful in then calculating the number of smolts that could be released in the initial years.*

**WDFW Response:** There are no existing populations of spring Chinook in the Coastal Strata. The closest population is in the Cowlitz River which is not managed for a lower river population within the basin. Populations within the Kalama and Lewis are managed for wild fish above falls or dams within their basins. 100% of these fish will be adipose fin-clipped have a CWT for the first year to determine where they stray to. Test fishing and monitoring and evaluation will continue. Program could reduce/increase in size in the future depending on monitoring and evaluation results.

*Recommendation 12: Assure that facilities are constructed and operated in compliance with environmental laws and regulations.*

**Comment 12:** *It appears that NPDES guidelines with regard to effluents will be adhered to (Table 1.10.2.1).*

**WDFW Response:** Comment noted.

*Recommendation 13: Maximize survival of hatchery fish consistent with conservation goals.*

**Comment 13:** *Fish appear to be released at a time and size aimed at maximizing survival for spring Chinook reared at Columbia River hatcheries (Section 10.3).*

**WDFW Response:** Comment noted.

**Principle: Monitor, Evaluate and Adaptively Manage Hatchery Programs.**

“In addition to establishing resource goals and a defensible scientific rationale for a hatchery program, the HSRG recommends that the managers’ decisions be informed and modified by continuous evaluation of existing programs, changing circumstances and new scientific information. Decisions about hatcheries must also be made in a broader, integrated context and hatchery solutions must meet the test of being better, in a benefit/risk sense, than alternative available means to meet similar goals. Systems affected by hatchery programs are dynamic and complex; therefore, uncertainty is unavoidable. The only thing certain is that the unexpected will occur.”

*Recommendation 14: Regularly review goals and performance of hatchery programs in a transparent, regional, “all-H” context.*

**Comment 14:** *The HGMP describes a process for updating information on survival, contribution to fisheries and contribution to natural spawning areas for this program. However, due to lack of clear harvest goals, it is unclear how these data will be used to modify the program (Section 1.10). After conducting a risk assessment (see Recommendation #11), the HGMP should include decision triggers to increase or decrease the number of smolts released based on straying, pHOS of local populations, sufficiency of harvest, and acceptable mortality to non-targeted Chinook, steelhead and sturgeon populations.*

**WDFW Response:** See response to **Comment 2** above.

*Recommendation 15: Place a priority on research that develops solutions to potential problems and quantifies factors affecting relative reproductive success and long-term fitness of populations influenced by hatcheries.*

**Comment 15:** *No ongoing research was described (Section 12).*

**WDFW Response:** Test fishing and fishery monitoring will continue. CWT returns will assist in determining the stray rates from this program.

*Recommendation 16: Design and operate hatcheries and hatchery programs with the flexibility to respond to changing conditions.*

**Comment 16:** *In the absence of clear harvest goals, it is difficult to see how (or why) hatchery operations would change due to changing conditions (social or environmental). A section on adaptive management should be included in the document (perhaps Section 3, or Section 11) that describes a process for altering hatchery programs based on changes to goals, or hatchery performance. The HGMP could include the use of quantified decision triggers and critical assumptions within an adaptive management framework.*

**WDFW Response:** Program could reduce/increase size in future depending on monitoring and evaluation results.

*Recommendation 17: Discontinue or modify programs if risks outweigh the benefits.*

***Comment 17:** Various monitoring activities are described within the HGMP to measure benefits (HGMP Table 1.10.1) and risks to natural populations (HGMP Table 1.10.2). While it is assumed that results from this monitoring could be used to alter hatchery programs, no level of impacts or benefits was identified as “unacceptable” so it is unclear why much of these data are being collected: see also comments on Recommendations 11, 14 and 16.*

**WDFW Response:** Program could reduce/increase size in future depending on monitoring and evaluation results.