



3.

Consistency with Council Requirements and Comparison to Regional Guidelines



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Consistency with Council Requirements and Comparison to Regional Guidelines

The following chapter is included to make clear the consistency of the CJDHP with the Council's 17 Master Planning requirements. Although it is only necessary for a Master Plan to address these 17 Council requirements, in this chapter the CJDHP is also compared to recommendations presented in two recent regional examinations of artificial production. Those two include the *Independent Science Advisory Board's (ISAB), 2003 Review of Salmon and Steelhead Supplementation (ISAB 2003)*, and a Trout Unlimited commissioned issue paper titled, *Integrating artificial production with salmonid life history, genetic, and ecosystem diversity: a landscape perspective (Williams et al 2003)*.

Together, the Council's Master Planning requirements along with these two documents represent an important sequential progression in thinking about the role and implementation of artificial production in the Columbia River Basin. In developing this Master Plan, the Colville Tribes believed a comparison of the proposed CJDHP against these three different, but complimentary, sets of artificial production guidance would be useful to reviewers.

Meeting the unmet trust obligations owed to the Colville Tribes was a significant consideration in the design of the CJDHP. Neither the ISAB recommendations nor Trout Unlimited issue paper address the Federal Government's trust obligations to the Tribes and cannot be used as the sole measure of the

proposed CJDHP. Nevertheless, the Colville Tribes believe comparison with this broader regional guidance highlights the thoughtful, innovative and ecologically sound nature of the proposed CJDHP.

3.1 CONSISTENCY WITH COUNCIL'S MASTER PLANNING REQUIREMENTS

The Council's 17 Master Plan requirements are listed below along with references to the pertinent chapter section(s) in the CJDHP Volume 1 Master Plan. Where appropriate, references to the relevant appendices in Volume 2 are also included. The following section addresses the CJDHP summer/fall Chinook components in one response and the proposed spring Chinook program components in a separate response.

COUNCIL REQUIREMENT 1:

Address the relationship and consistencies of the proposed project to the eight scientific principles.

- Summer/fall Chinook response: See chapter sections 3.3, 4.4, 4.5, 4.7, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 7.1, 7.2, 9.1, 9.4, 9.5, 9.7, 10.1, 10.2, and 10.3. See also Appendix C.
- Spring Chinook response: See chapter sections 4.4, 4.5, 6.1, 6.1, 6.2, 6.3, 6.4, 6.7, 7.1, 7.2, 13.2, 13.3, 13.8, and 13.9. See also Appendix D.

COUNCIL REQUIREMENT 2:

Describe the link of the proposal to other projects and activities in the subbasin and the desired end state condition for the target subbasin.

- Summer/fall Chinook response: See chapter sections 3.3, 6.6 and 6.7.
- Spring Chinook response: See chapter sections 6.6, 6.7 and 13.3.

COUNCIL REQUIREMENT 3:

Define the biological objectives with measurable attributes that define progress, provide accountability and track changes through time associated with this project.

- Summer/fall Chinook response: See chapter sections 3.3, 9.4, 9.5, 10.1, and 10.3. See also appendices C and H.

- Spring Chinook response: See chapter sections 10.1, 13.6, and 13.9. See also appendices D and H.

COUNCIL REQUIREMENT 4:

Define expected project benefits (e.g. preservation of biological diversity, fishery enhancement, water optimization, and habitat protection).

- Summer/fall Chinook response: See chapter sections 3.3, 9.1, 9.4, and 9.5. See also Appendix C.
- Spring Chinook response: See chapter sections 13.2, 13.5, and 13.6. See also Appendix D.

COUNCIL REQUIREMENT 5:

Describe the implementation strategies as they relate to the current conditions and restoration potential of the habitat for the target species and the life stage of interest.

- Summer/fall Chinook response: See chapter sections 2.1, 2.2, 2.3, 3.3, 5.1, 5.2, 5.3, 6.1, 6.6, 6.7, 7.1, 7.2, 9.4, and 9.5. See also appendices C and E.
- Spring Chinook response: See chapter sections 2.1, 2.2, 2.3, 6.5, 6.6, 6.7, 7.1, 7.2, 13.2, 13.3, 13.5, 13.6, and 13.8. See also appendices D and E.

COUNCIL REQUIREMENT 6:

Address the relationship to the habitat strategies.

- Summer/fall Chinook response: See chapter sections 3.3, 5.1, 5.2, 5.3, 6.5, 6.6, 6.7, 7.1, 7.2, 9.4, and 9.5. See also Appendix C.
- Spring Chinook response: See chapter sections 6.5, 6.6, 6.7, 7.1, 7.2, 13.2, 13.3, 13.5, 13.6, and 13.8. See also Appendix D.

COUNCIL REQUIREMENT 7:

Ensure that cost-effective alternate measures are not overlooked and include descriptions of alternatives for resolving the resource problem, including a description of other management activities in the subbasin, province and basin.

- Summer/fall Chinook response: See chapter sections 2.1, 2.2, 2.3, 3.3, 6.5, 6.6, 7.1, 7.2, 8.1, 8.2, 8.3, 9.2, 10.3, 10.4, 11.13, 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6. See also appendices B and E.
- Spring Chinook response: See chapter sections 2.1, 2.2, 2.3, 6.5, 6.6, 7.1, 7.2, 10.4, 11.13, 13.3, 13.4, and 13.12. See also appendices B and E.

COUNCIL REQUIREMENT 8:

Provide the historical and current status of anadromous and resident fish and wildlife in the subbasin most relevant to the proposed project.

- Summer/fall Chinook response: See chapter sections 5.1, 6.3, and 6.4. See also Appendix C.
- Spring Chinook response: See chapter sections 6.3, 6.4, and 13.2. See also Appendix D.

COUNCIL REQUIREMENT 9:

Describe current and planned management of anadromous and resident fish and wildlife in the subbasin.

- Summer/fall Chinook response: See chapter sections 6.6, and 6.7.
- Spring Chinook response: See chapter sections 6.6, and 6.7, and 13.3.

COUNCIL REQUIREMENT 10:

Demonstrate consistency of the proposed project with NOAA Fisheries recovery plans and other fishery management and watershed plans.

- Summer/fall Chinook response: See chapters 6.6 and 7.2. See also appendices A and C.
- Spring Chinook response: See chapters 6.6, 7.2. See also appendices A and D.

COUNCIL REQUIREMENT 11:

Describe the status of the comprehensive environmental assessment.

- Summer/fall Chinook response: See chapter subsection 6.2.
- Spring Chinook response: See chapter subsection 6.2.

COUNCIL REQUIREMENT 12:

Describe the monitoring and evaluation plan.

- Summer/fall Chinook response: See chapter subsections 2.1, 2.2, 2.3, 3.3, 10.1, 10.2, 10.3, and 10.4. See also Appendix H.
- Spring Chinook response: See chapter subsections 2.1, 2.2, 2.3, 10.1, 10.4 and 13.9. See also Appendix H.

COUNCIL REQUIREMENT 13:

Describe and provide specific items and cost estimates for 10 Fiscal Years for planning and design (i.e. conceptual, preliminary and final), construction, operation and maintenance and monitoring and evaluation.

- Summer/fall Chinook response: See chapter sections 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6. See also Appendix B.
- Spring Chinook response: See chapter section 13.12. See also Appendix B.

COUNCIL REQUIREMENT 14:

Address the relation and link to the Council's artificial production policies and strategies.

- Summer/fall Chinook response: See chapter sections 3.3, 4.4, 4.5, 5.1, 5.2, 5.3, 6.1, 6.3, 6.4, 7.1, 7.2, 9.1, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 10.1, 10.2, 10.3, and 10.4. See also specific responses to the summer/fall Chinook HGMP alignment with the Council's artificial production policies and strategies in Appendix C.
- Spring Chinook response: See chapter sections 4.4, 4.5, 6.1, 6.3, 6.4, 7.1, 7.2, 13.2, 13.3, 13.5, 13.6, 13.8, and 13.9. See also specific responses to the spring Chinook HGMP alignment with the Council's artificial production policies and strategies in Appendix D.

COUNCIL REQUIREMENT 15:

Provide a completed Hatchery and Genetic Management Plan (HGMP) for the target population(s).

- Summer/fall Chinook response: See Appendix C.
- Spring Chinook response: See Appendix D.

COUNCIL REQUIREMENT 16:

Describe the harvest plan.

- Summer/fall Chinook response: See chapter sections 3.3, 7.2, 9.5, 9.7, 9.8, 10.1, 10.2, 10.3, and 10.4. See also Appendix C.
- Spring Chinook response: See chapter sections 7.2, 13.5, 13.6, and 13.9. See also Appendix D.

COUNCIL REQUIREMENT 17:

Provide a conceptual design of the proposed facilities, including an assessment of the availability and utility of existing facilities.

- Summer/fall Chinook response: See chapter sections 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 11.10, 11.11, and 11.12. See also appendices F and G.
- Spring Chinook response: See chapter section 13.10. See also appendices F and G.

3.2 COMPARISON TO INDEPENDENT SCIENTIFIC ADVISORY BOARD RECOMMENDATIONS

In 2003, the ISAB completed a review of salmon and steelhead supplementation in the Columbia River Basin. The ISAB report concluded that given the "...substantial uncertainty that is likely to remain for the foreseeable future concerning the efficacy and risks of supplementation, and recognizing that the objective of supplementation is to increase natural production while maintaining the long-term fitness of the population," all supplementation projects should be implemented following a conservative approach (ISAB 2003). In their report the ISAB outlined eight artificial production recommendations which are consistent with the artificial production policies identified in the Council's Master Plan requirements - but which expand and refine those concepts a little farther.

As noted at the outset of this document, the CJDHP is based on the comprehensive management programs outlined in the summer/fall Chinook HGMP (and spring Chinook HGMP). Both the summer/fall and spring Chinook HGMPs include specific responses to each of the eight ISAB recommendations. [See Appendix C, SF HGMP, pages 105-108 and Appendix D; SP HGMP, pages 108-111.]

The eight ISAB recommendations were:

ISAB RECOMMENDATION 1:

Only natural-origin adults should be used as broodstock.

ISAB RECOMMENDATION 2:

Performance standards for natural-origin and hatchery origin adult abundance and per capita production rates should be established.

ISAB RECOMMENDATION 3:

All supplementation programs should be conducted within an explicit experimental design.

ISAB RECOMMENDATION 4:

Reference populations should be established as experimental controls.

ISAB RECOMMENDATION 5:

Program plans should contain an objective means to assess when supplementation should be terminated.

ISAB RECOMMENDATION 6:

Multiple supplementation projects across the Columbia River Basin should be coordinated so that in the aggregate they constitute a basinwide adaptive management experiment.

ISAB RECOMMENDATION 7:

Supplementation projects should collect the data necessary to test their effectiveness.

ISAB RECOMMENDATION 8:

Supplementation should be used sparingly, focusing in areas where natural spawning populations are not replacing themselves, where habitat capacity is available to accommodate the additional production and where landscape conditions are suited to the experimental design.

3.3 COMPARISON TO LANDSCAPE HATCHERY MODEL

Trout Unlimited recently commissioned an issue paper titled, *Integrating artificial production with salmonid life history, genetic, and ecosystem diversity: a landscape perspective*. In that paper the author's coin the term 'landscape perspective' to describe an approach that "...grounds the management program's natural and artificial production activities within the subbasin and its ecology, geology, climate, patterns of annual variation, species diversity, and also with the target species' demographic, life history, and genetic attributes" (Williams et al 2003).

The landscape hatchery model extends the "...normative ecological concepts introduced in *Return to the River* (ISG 2000), into an alternative approach to managing artificial production activities and facilities in program and subbasin, where the management goal is to integrate natural and artificial production of steelhead and salmon populations" (Williams et al 2003). In addition to extending concepts presented in *Return to the River*, the landscape hatchery paradigm builds upon critiques of salmon management and hatchery operations presented in the Independent Scientific Advisory Board's *Review of Salmon and Steelhead Supplementation* (ISAB 2003), the Council's *Artificial Production Review* (1999), and a number of other recent notable publications. In the issue paper, Williams et al (2003) note that hatcheries within the Columbia basin currently fall within a continuum bracketed by conventional hatchery management at one end and the landscape perspective at the other – with most contemporary hatcheries falling somewhere in between.

In its programmatic entirety, the proposed CJDHP falls nearest the landscape perspective end of the continuum, although specific individual components of the Chief Joseph Dam Hatchery may fall closer to the conventional hatchery model. To understand the CJDHP it is essential to view the program in its entirety, and in relationship to the ecosystem within which it is proposed.

Table I summarizes the relationship of the CJDHP to the core attributes of the landscape hatchery concept as defined in the Trout Unlimited issue paper (note: these landscape attributes also correlate closely with the Council’s eight scientific principles). While the proposed CJDHP does not entirely align with the

landscape hatchery model – and it is important to note that some aspects of the CJDHP are intended specifically to address the Federal Government’s trust obligations to the Colville Tribes – many aspect of the program are very consistent with the overall concept.

Table I: Relationship of CJDHP to the Attributes of the Landscape Hatchery Perspective

DESCRIPTION OF LANDSCAPE HATCHERY ATTRIBUTES (Williams et al 2003)	RELATIONSHIP OF CJDHP TO LANDSCAPE HATCHERY CONCEPT
<p>Statement 1: Management of hatchery operations and the hatchery environment must be consistent with the attributes of the ecosystem.</p> 	<ul style="list-style-type: none"> • Only local, Okanogan River broodstock will be used, improving the productivity of the population to the unique attributes of the Okanogan River. • Broodstock will be collected from the full run (i.e. include early-arriving and later-arriving run) to restore full life history of Okanogan summer/fall Chinook that is best suited to ecological conditions in subbasin. • CJDHP includes production and release of subyearling summer/fall Chinook (the natural life history characteristic) to evaluate their success and attributes against the release of yearling smolts that have historically shown better survival rates when negotiating the nine downstream dams. • CJDHP will rely on a combination of hatchery facilities and acclimation ponds to rear fish. <ul style="list-style-type: none"> • The acclimation ponds yield a more natural setting than standard hatchery facilities. Additional integration of rearing techniques intended to mimic natural conditions will be considered at the acclimation facilities. • The majority of fish will be transferred to acclimation ponds approximately 6 months prior to release. • In all of the acclimation ponds fish will be reared at very low densities on local river water. • Fish will be volitionally released from acclimation ponds.
<p>Statement 2: Attributes of the wild population must be the model, the goal of the hatchery.</p>	<ul style="list-style-type: none"> • Broodstock for CJDHP will be entirely natural-origin fish when appropriate. • Broodstock for the CJDHP will be derived only from Okanogan River Chinook. • Hatchery broodstock will reinstate propagation of fish from throughout the adult run (early-arriving and later-arriving) with an initial emphasis on the later-arriving Chinook to restore their depleted numbers in historical habitats. • The acclimation and release sites are situated specifically to restore spawning distribution throughout historical habitats (including reinstatement of later-arriving runs to lower reaches of the Okanogan River). • The proportion of hatchery-origin summer/fall Chinook allowed to spawn in the wild will be closely monitored and managed through selective harvest to optimize the integrity of the natural population.

<p>Statement 3: Hatchery operations must take into account and support the keystone role of salmon and steelhead in the ecosystem.</p>	<ul style="list-style-type: none"> • At present the bulk of mitigation hatcheries are concentrated at downstream locations and therefore do not contribute to replenishing nutrients to the upper reaches of the Columbia Basin. • CJDHP is expected to increase runs past Wells Dam by 3,000 to 15,000 early-arriving summer/fall Chinook and 3,000-14,000 later-arriving summer/fall Chinook. A primary objective of the CJDHP is to restore naturally-spawning populations of summer/fall Chinook throughout their historical habitat - this will ultimately result in increased distribution of nutrients throughout the Basin. • The CJDHP includes both integrated recovery and integrated harvest programs. A key objective of the integrated harvest program is establishment of a stable ceremonial and subsistence fishery for the Colville Tribes. The program will include a terminal fishery below Chief Joseph Dam. • The Colville Tribes will develop and test live-capture, selective harvest gear to specifically target hatchery-origin fish in order to assure adequate escapement of wild stocks to historical habitat. • In low run years management actions will focus on achieving escapement and broodstock needs and provide a minimal ceremonial and subsistence fishery for the Colville Tribes. In years when higher runs sizes are achieved tribal and recreational selective fisheries would be expanded to capture surplus hatchery-origin fish. Only in years characterized by notable run sizes would harvest of natural-origin fish take place. • Initial and repeated spawning of hatchery-origin fish in the Okanogan River will help cleanse under-used spawning grounds impacted by sediments.
<p>Statement 4: Hatchery operations should not disrupt important ecological processes in the watershed.</p>	<ul style="list-style-type: none"> • The carrying capacity of the Okanogan subbasin for summer/fall Chinook is estimated to be roughly 33%. • The carrying capacity of the Okanogan subbasin for other anadromous species has been considered in the development of the CJDHP. • The CJDHP is anticipated to have minimal deleterious effects on ESA-listed species in the Okanogan subbasin (or upper Columbia basin). Interactions will be closely monitored and the CDJHP will be modified as necessary should negative interactions occur. • Competition for food is not anticipated to be significant due to the timing and life stage of releases. • Predation on acclimation pond released fish is not anticipated to be significant due to timing and life stage of releases. • Terminal fisheries for the Colville Tribes and recreational anglers will be substantially selective, thereby protecting natural-origin Chinook • CJDHP has taken into account ocean and Columbia River harvest management (<i>U.S. v Oregon</i>) to the extent possible. • The carrying capacity of the Columbia River and its estuary for migrating smolts and rearing subyearlings is not presently known. Basinwide research addressing this critical unknown has been proposed and is much needed. Adjustments to the program size will be made, if necessary, when additional information is available. • The capacity of the Columbia River and its estuary to support additional hatchery-origin fish produced through the CJDHP is likely to fluctuate substantially in relation to the highly variable returns from natural-origin populations and existing hatchery programs, variable hydrologic conditions (spring and summer flows and temperatures), and the ongoing reduction of releases from other (mostly lower river) hatchery programs.

<p>Statement 5: Hatchery operations must be tightly linked to all other management functions: habitat protection and restoration, and harvest regulation.</p>	<ul style="list-style-type: none"> • Due in large part to the extensive negative out-of-subbasin impacts on Okanogan summer/fall Chinook populations (i.e. nine dams downstream from Okanogan subbasin), it is improbable that the conservation and harvest goals of the CJDHP could be met without assistance of artificial production. • The CJDHP, and need for the management programs it implements, is based on information gathered through regional and local assessments (i.e. BAMP, <i>Okanogan/Similkameen Subbasin Summary</i>, draft <i>Okanogan Subbasin Plan</i>, <i>Okanogan Limiting Factors Analysis</i>) as well as the summer/fall Chinook HGMP. • The CJDHP compliments habitat protection and restoration actions that have been, and will be, implemented throughout the Okanogan subbasin. • CJDHP production and harvest levels will be specifically connected to the success of natural populations in the Okanogan subbasin. • The CJDHP is consistent with, and complimentary to, salmon recovery management activities being implemented throughout the Okanogan subbasin. • CJDHP integrated recovery programs are intended to increased abundance, distribution and diversity of naturally-spawning populations, while CJDHP integrated harvest programs will provide for a stable ceremonial and subsistence fishery and an increased recreational fishery based primarily on hatchery-origin fish. • The CJDHP takes into account Transboundary coordination efforts.
<p>Statement 6: Monitoring activities should give equal attention to concerns and management targets inside and outside the hatchery.</p>	<ul style="list-style-type: none"> • The CJDHP monitoring and evaluation program, in combination with the Okanogan Baseline Monitoring and Evaluation Program, will measure “progress” against a set of specific performance standards and performance indicators which include: legal standards, harvest standards, conservation standards, life history characteristics, genetic characteristics, operation of artificial production facilities, and socio-economic effectiveness of the programs. • The CJDHP monitoring and evaluation program will be closely coordinated with a complementary Okanogan Baseline Monitoring and Evaluation Program. • Information gleaned through the combined monitoring and evaluation programs will be actively incorporated into adaptive management of the CJDHP – particularly in terms of establishing broodstock collection levels, assuring adequate wild escapement, monitoring interactions of hatchery and wild conspecifics and ESA-listed species, managing the integrated harvest program, etc. • Information gathered through regional and Basinwide monitoring and evaluation programs will be used to help guide adaptation of the CJDHP. • Information gathered through the CJDHP will be made available to other managers through annual reports and web-based data archives. 