With regard to:

***Chief Joseph Dam Hatchery Program Master Plan, Volume I* and**
Chief Joseph Dam Hatchery Program Master Plan, Volumes II; Appendices.

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Chief Joseph Dam Hatchery Program

Volume 1: Master Plan

May 2004

Chief Joseph Dam Hatchery Program

MASTER PLAN

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Executive Summary

"A Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and wildlife, mitigating across the basin for the adverse effects to fish and wildlife caused by the development and operation of the hydrosystem and providing the benefits from fish and wildlife valued by the people of the region. This ecosystem provides abundant opportunities for tribal trust and treaty right harvest and for non-tribal harvest and the conditions that allow for the recovery of the fish and wildlife affected by the operation of the hydrosystem and listed under the Endangered Species Act."

- Vision for the Columbia River Basin from the Northwest Power and Conservation Council's 2000 Fish and Wildlife Program

"An Okanogan Subbasin that supports self-sustaining, harvestable and diverse populations of fish and wildlife and their habitats, and supports the economies, customs, cultures, subsistence and recreational opportunities within the basin. Decisions to improve and protect fish and wildlife populations, their habitats and ecological functions are made using open and cooperative processes that respect different points of view, statutory responsibilities, and are made for the benefit of current and future generations."

- Vision for the Okanogan Subbasin from the Okanogan Subbasin Plan

INTRODUCTION

The upper reaches of the Columbia River once fostered some of the most abundant and extraordinary anadromous fish runs in the entire Columbia River Basin. Today all anadromous fish are extirpated from the Columbia River and its tributaries above Chief Joseph Dam. The Okanogan River is the uppermost tributary of the Columbia that is still available to anadromous fish.

The Okanogan subbasin presently supports summer/fall Chinook salmon, sockeye salmon, and summer steelhead. The Upper Columbia River Spring Chinook were listed as endangered in 1999. The listed Evolutionarily Significant Unit (ESU) includes all naturally-spawned populations of spring Chinook in accessible reaches of Columbia River tributaries between Rock Island and Chief Joseph dams, *excluding* the Okanogan River. Upper Columbia River Spring Chinook are at present considered extinct from the Okanogan subbasin.

Construction of Grand Coulee Dam eliminated salmon from the majority of the Colville Reservation. To provide partial mitigation for the anadromous fish losses caused by construction of Grand Coulee Dam, Congress authorized construction of four hatcheries. Only three of these hatcheries were built. The fourth hatchery, which was to be located on the Okanogan River was never constructed. In the 1980s the Colville Tribes reinitiated the question of the fourth hatchery and in 2000 the U.S. Bureau of Reclamation agreed that the full, authorized mitigation for construction of Grand Coulee Dam was still not complete and could be pursued.

Fish mortalities incurred at nine hydropower projects downstream from the Colville Reservation have further decimated the remaining anadromous fish populations returning to the waters around the Colville Reservation. However, the Colville Tribes never received hatchery mitigation for the loss of Okanogan subbasin anadromous fish that pass through the four federal hydroelectric projects on the lower Columbia River. Moreover, the formulas used to

establish mitigation levels for the mid-Columbia Public Utility District dams left out the fish that should have been produced at the missing fourth hatchery, further compounding the initial lack of mitigation.

As a result of the extirpation of anadromous fish from the majority of the Colville Reservation, tribal members are forced to rely solely on the Tribes' limited remaining fisheries in the Okanogan subbasin and Columbia River below Chief Joseph Dam. These fisheries are not adequate to meet even the most cursory ceremonial and subsistence needs. Because of the extirpation of spring Chinook from the Okanogan subbasin the Colville Tribes are also no longer able to celebrate the important First Salmon Ceremony welcoming the return of the first spring Chinook of the season.

Current levels of mitigation are not adequate to address the federal government's trust obligations to protect the Colville Tribes' reserved fishing rights and associated resources; nor are they adequate to sustain naturally-spawning populations of Chinook salmon in the Okanogan subbasin, or to provide stable recreational fisheries to citizens in the region.

CHIEF JOSEPH DAM HATCHERY PROGRAM

The Master Plan for the Chief Joseph Dam Hatchery Program (CJDHP) describes the rationale, local and regional context, conceptual design of artificial production facilities, conceptual monitoring and evaluation plans, and estimated costs necessary to implement a comprehensive management program for summer/fall Chinook salmon in the Okanogan subbasin and the Columbia River between Wells and Chief Joseph dams.

The content of the CJDHP Master Plan was developed to meet the Step 1 requirements of the Council's three-step process for artificial production initiatives. Additionally, in its overall design and through its programmatic objectives and actions, the CJDHP is consistent with recommendations presented in the Independent Science Advisory Board's *Review of Salmon and Steelhead Supplementation* and the Council's recently completed draft *Artificial Production Review and Evaluation*.

The primary content and focus of this Master Plan is a conceptual proposal to construct and operate facilities to propagate summer/fall Chinook salmon. However, as part of the contract to develop this Master Plan, Council staff and BPA representatives agreed that a separable conceptual design for spring Chinook propagation facilities could be included. The reasons for including the spring Chinook components in Step 1 were:

- Very low relative cost to include both summer/fall and spring Chinook in the Master Plan development.
- Provide an opportunity for the Council and the Independent Science Review Panel to review the summer/fall and spring Chinook programs together within the context of the Okanogan subbasin ecosystem.
- Identify opportunities to achieve cost savings by developing, designing and constructing the summer/fall and spring Chinook propagation facilities at the same time.

The spring Chinook components in the CJDHP Master Plan are presented in a single separate chapter and all costs and facility requirements are presented as separable components.

SUMMARY OF SUMMER/FALL CHINOOK CHIEF JOSEPH DAM HATCHERY PROGRAM COMPONENTS

The summer/fall Chinook components of the CJDHP consist of two complementary programs:

1) An integrated recovery program designed to increase abundance, distribution, and diversity of naturally-spawning summer/fall Chinook salmon within their historical Okanogan subbasin habitat.
2) An integrated harvest program designed to support a tribal ceremonial and subsistence fishery, and to provide increased recreational fishing opportunities for local citizens.

The summer/fall Chinook population in the Okanogan River is at present supported by a single hatchery program that produces 576,000 yearling smolts annually. The proposed CJDHP will increase production of juvenile summer/fall Chinook by 2,000,000 including 1,100,000 fish for conservation purposes, and 900,000 fish for harvest purposes.

The **summer/fall Chinook integrated recovery program** will be implemented through five conservation actions:

- Development of a local Okanogan River broodstock.
- Expansion of current broodstock collection by two months, in order to propagate the full historical run of summer/fall Chinook.
- Propagation of both the yearling and subyearling life histories to achieve full, natural diversity and provide necessary programmatic flexibility.
- Improved distribution of spawning throughout the historical summer/fall Chinook habitat.
- Control of the proportion of hatchery-origin fish spawning in the wild.

The **summer/fall integrated harvest program** is designed to support a tribal ceremonial and subsistence fishery and to provide increased recreational fishing opportunities for local citizens. To support the integrated harvest objectives 500,000 early-arriving, and 400,000 later-arriving summer/fall Chinook will be released at Chief Joseph Dam Hatchery.

To ensure programmatic flexibility, keep costs low, and improve distribution of spawning, the CJDHP will rely on a combination of new and existing facilities. These include a new hatchery at the base of Chief Joseph Dam, two new acclimation ponds, and use of two existing Oroville-Tonasket Irrigation District settling ponds which have been modified for use as acclimation ponds.

SUMMARY OF SPRING CHINOOK CHIEF JOSEPH DAM HATCHERY PROGRAM COMPONENTS

Spring Chinook once provided important fisheries to the Colville Tribes. Given the Tribes' almost non-existent remaining salmon fisheries, and the singular cultural importance of spring Chinook, restoration of a stable ceremonial and subsistence spring Chinook fishery is a particularly high priority for the Colville Tribes. The Colville Tribes have developed a two-phase management plan to reintroduce extirpated spring Chinook into select waters in and around the Colville Reservation. The CJDHP would provide the artificial production facilities necessary for this phased reintroduction. A combination of existing and new facilities will be used to accomplish the program objectives.

The CJDHP spring Chinook component includes two complementary parts:

1) An integrated recovery program designed to restore naturally-spawning spring Chinook populations to their historical habitats in the waters in and around the Colville Reservation.
2) An isolated harvest program designed to restore a stable ceremonial and subsistence fishery, and to provide increased recreational fishing opportunities for local citizens.

Ultimately, if the full two-phase program is implemented, spring Chinook produced in the second phase may also provide benefit in the recovery of the listed Upper Columbia River Spring Chinook ESU.

The CJDHP spring Chinook programs will increase production of Carson stock spring Chinook destined for the Okanogan subbasin to 900,000 smolts. The spring Chinook **integrated recovery program** will initially re-introduce naturally-spawning populations of Carson stock spring Chinook into Omak Creek on the Colville Reservation. The **isolated harvest program** will support selective fisheries in the Okanogan and Similkameen rivers, in the tailrace of Chief Joseph Dam and in the Wells Pool, and near the confluence of the Okanogan River. These fisheries will target the Carson-stock spring Chinook produced in the program.

The CJDHP spring Chinook program is an experimental program and includes mechanisms to identify any potentially adverse interactions with summer/fall Chinook and steelhead populations, and to document the extent of tribal and recreational harvest. Information collected through monitoring and evaluation in the early phases of the program will be used to adapt and refine secondary phases of the program.

CRITICAL RESEARCH NEEDS

The Master Plan also identifies research needs that are critical to Step 2 planning. The first of these is research to test the viability of live-capture, selective fishing gear for broodstock collection. The success of the live-capture, selective fishing methods will also be

vital to controlling the ratio of hatchery to natural fish on the spawning grounds. The second critical study consists of radio-telemetry research to determine where and when summer/fall Chinook migrate, where they congregate, the extent to which they are spatially separated from other population components, and whether the timing of passage over Wells Dam is related to timing and location of subsequent spawning. This information is critical to the development of broodstock protocol and subsequent acclimation of progeny.

CONCEPTUAL MONITORING AND EVALUATION

The CJDHP conceptual monitoring and evaluation design is based on quantifiable performance standards and indicators. The primary goals of the monitoring and evaluation program are to:

- Measure the relative success of the CJDHP integrated recovery programs in restoring the abundance, distribution, and diversity of naturally-spawning populations of Chinook in the Okanogan River and upper Columbia River above Wells Dam.
- Measure the relative success of the integrated harvest program (and if implemented, the isolated harvest program) in providing a stable ceremonial and subsistence fishery for the Colville Tribes, and in providing increased recreational fishing opportunities.
- Provide information necessary to adapt the CJDHP in order to minimize deleterious effects and maximize desired results.

The CJDHP is designed to be flexible and responsive to ecosystem conditions both within and outside of the subbasin. The Master Plan includes examples of a variety of contingency actions that could be implemented in response to changing conditions, these include specific intra- and inter-program adjustments. Information provided through the monitoring and evaluation program will be vital in determining when and where to adapt and adjust the CJDHP over time.

SUMMARY OF ESTIMATED COSTS

In developing estimated costs for the CJDHP substantial efforts were made to provide tangible levels of detail to back up estimated costs in all categories. The Colville Tribes believe the estimated costs presented in the Master Plan represent the uppermost limit of anticipated program costs – and that these costs are very reasonable relative to the size and complexity of the proposed CJDHP.

Estimated costs for the **summer/fall Chinook components** of the CJDHP are:

Capital construction costs for the Chief Joseph Dam Hatchery	$16,220,000
Capital construction costs for the acclimation ponds	$ 1,150,000
Total estimated capital expenses	**$17,370,000**
Operations and maintenance	$858,000
Monitoring and evaluation	$345,000
Total estimated annual operating expenses	**$1,203,000**

Estimated additional costs to include spring Chinook components to the CJDHP are:

Capital construction costs for additional Chief Joseph Dam Hatchery spring Chinook components	$5,400,000
Capital construction costs for the spring Chinook acclimation ponds	$170,000
Total estimated capital expenses	**$5,570,000**
Operations and maintenance	$222,000
Monitoring and evaluation	$163,000
Total estimated annual operating expenses	**$385,000**

With completion of the conceptual hatchery design and development of well-grounded cost estimates, the Colville Tribes have the basis for discussing potential cost sharing arrangements for hatchery construction, operation and maintenance with mid-Columbia parties that also have mitigation responsibilities to the Colville Tribes. Pending approval from the Council to move forward to Step 2, the Colville Tribes plan to seek funding partnerships for the summer/fall and spring Chinook programs during the next planning stage with the intent of broadening project sponsorship.

CONCLUSION

The Colville Tribes believe implementation of the proposed CJDHP will provide wide-ranging ecological, social, cultural, and economic benefits in the Okanogan subbasin and the Columbia River Basin. The proposed CJDHP is necessary to meet the federal government's trust obligations to the Colville Tribes, to correct long-standing mitigation inequities, to provide increased recreational fishing opportunities, and to restore populations of naturally-spawning summer/fall Chinook salmon, and possibly spring Chinook salmon, to their historical habitats in the Okanogan subbasin.

The Council's three-step process allows for a systematic review, evaluation and refinement of facility and program design at each step. The Colville Tribes request that the Council review and approve the following elements described in this Master Plan to proceed forward to the second step of the Council's three-step process:

- CJDHP summer/fall Chinook components.
- CJDHP spring Chinook components.
- Critical research necessary for Step 2, including testing of live-harvest, selective fishing gear, radio telemetry research, and refinement of water source information.

The long-term recovery and sustainability of natural-origin salmon and steelhead runs in the Columbia River Basin depends on cooperative, consistent and persistent actions by fishery co-managers, hydrosystem operators, local governments, and citizens throughout the Columbia Basin. The commitment to recovery of Chinook salmon in the upper Columbia, and to the citizens of the Okanogan subbasin, that would be signaled by the implementation of the CJDHP is key to building and sustaining these vital partnerships.

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