

Clearwater Expansion Update

Chris Foster – Dworshak Coordinator
May 2025



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Lower Snake River Compensation Plan Office



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Clearwater Expansion Update

What is the Clearwater Expansion?

The Clearwater Expansion scoping aims to enhance water supplies to Clearwater Fish Hatchery and Dworshak National Fish Hatchery, allowing for increased production in underutilized ponds and securing water into the future.



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Dworshak National Fish Hatchery Overview

Purpose

- Dworshak National Fish Hatchery was established to mitigate the loss of fisheries in the North Fork Clearwater River due to Dworshak Dam (ACOE), which lacks fish passage facilities.

Key Details

- ~~Construction and initial operation in 1969~~
- 6 - 200 hp pumps with 11,500 gpm capacity each for a total of 69,000 gpm or 154 cfs (North Fork Clearwater)
- Owned by ACOE and operated by the Nez Perce Tribe in collaboration with the U.S. Fish and Wildlife Service



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Dworshak NFH



- DNFH was built with water treatment plant technology (1960's) with the intention for water to be recirculated (no longer used).
- Expansion occurred in 1982 to include 30 raceways for spring Chinook production (LSRCP) via a Real Estate Agreement with the ACOE.
- Boilers and chillers are used to manipulate desired water temperatures.



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Dworshak Surface Water Challenges

- Dworshak NFH is subjected to high total dissolved gas levels when the dam spills water.
 - Vacuum degassing system
 - Low Head Oxygenators (LHOs)



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What ongoing risk does the steelhead program face at Dworshak?

- Between 1982 and 1989, IHNV caused a loss of 14 million fish (out of 21 million hatched) at DNFH.
- Reservoir water supply in 1992 to the facility improved early rearing (incubation and nursery).



Figure 1. Steelhead fry infected with IHNV. Credit: USFW



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IHNV Strikes Again

- IHNV outbreak at Dworshak caused significant losses of steelhead juveniles:
 - 500,000 (25% program) in 2009
 - 1,000,000 (50% program) in 2010
- Through effective partnerships, Clearwater FH collaborated to supply additional low pathogen water (May – August).
- DNFH re-plumbed a reservoir connection to outdoor ponds

The screenshot shows the Hatchery International website. The header includes the logo, navigation links (Menu, News, Features, Genetics, Events, Webinars, Top 10 Under 40, Videos, Magazine, Jobs), a search bar, and a subscribe button. The main article is titled "Reducing IHN at Dworshak Hatchery" by Matt Jones, dated May 4, 2016. It features a photo of the hatchery facility and discusses a research project that confirmed a change in water source as the reason for a significant drop in IHNV infections. The article also mentions a "Significant threat" from IHN in the Columbia River system. On the right sidebar, there are sections for "SUCCESSION" (a conference), "Feed for Thought" (a list of topics), and "Hatchery Hack".

HATCHERY INTERNATIONAL

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Features > Research

Reducing IHN at Dworshak Hatchery

May 4, 2016 By Matt Jones

A case study in Idaho confirms the importance of disease-free hatchery water

A research project has confirmed that a change in water source at the federal Dworshak Hatchery in Idaho (DNFH) is indeed the reason for a significant drop in IHNV infections. The study reaffirms the importance of a secure, disease-free water source for hatcheries.

Rachel Breyta described her study, "Successful mitigation of viral disease based on delayed exposure rearing strategy at a large scale steelhead trout conservation hatchery," by phone from her office with the US Geological Service, Western Fisheries Research Center.

Significant threat

Breyta calls the threat from IHN in the Columbia River system "significant." "In terms of volume it is the number one threat," she said. But not all IHN is the same. Breyta works with genetic typing of the virus and three distinct strains have been identified in North America. By conducting genetic surveillance of the virus present at the Dworshak hatchery, Breyta was able to conclusively

SUCCESSION

May 21, 2025 | Vaughan, ON

SUCCESSION is must-attend conference for owner/operators in Canada's agriculture sector looking to sell their farm or business.

VIEW AGENDA

Feed for Thought

- Feed for Thought: Flocs and probiotics: friendly bacteria to the rescue!
- Feed for Thought: To leach or not to leach
- Feed for Thought: Feeding the future starts in the hatchery
- Feed for Thought: Effective and protective oral vaccinations for aquaculture
- Feed for Thought: From sensitive picky eaters to laid-back gluttons

View More

Hatchery Hack



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Clearwater Fish Hatchery Overview

Purpose

- Lower Snake River Compensation Plan, steelhead and spring Chinook Salmon.

Key Details

- Clearwater FH was completed and began rearing fish in 1992.
- Clearwater FH is owned by USFWS and operated by IDFG.
- Two Dworshak Reservoir Pipelines were constructed to supply water to the facility; primary and secondary.
 - Pipelines also tied into Dworshak NFH



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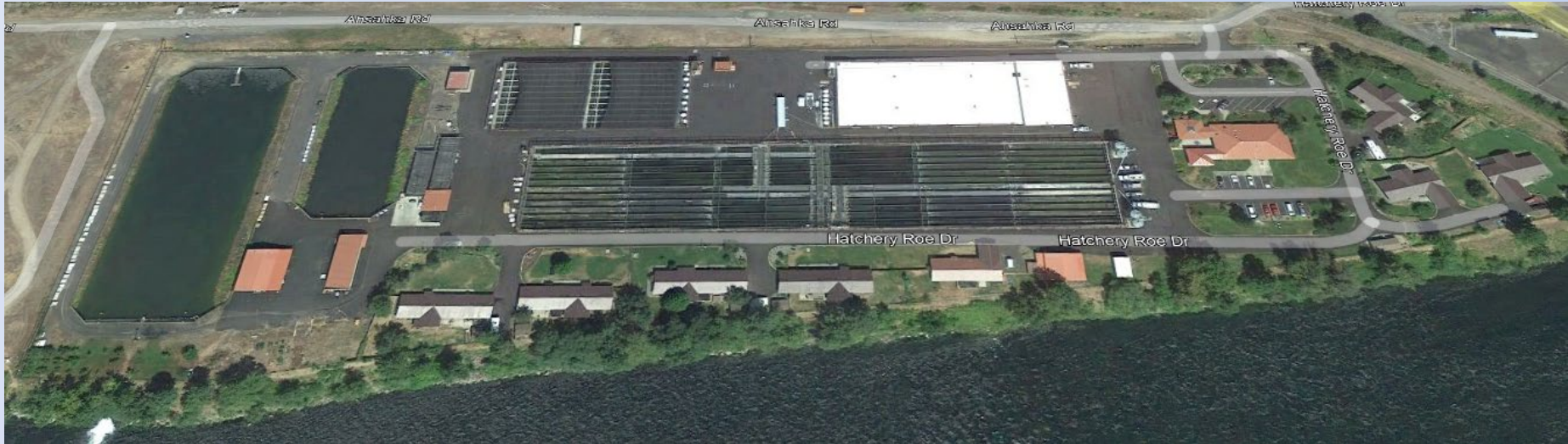
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Clearwater FH



- Clearwater FH 100% gravity fed water
- In practice, the maximum water drawn by the hatchery is 70.8 cfs from the primary and 9 cfs from the secondary pipelines
- When the power goes out, the biggest worry is finding the flashlight to navigate the bathroom, while the neighboring facility is out babysitting generators and pumps, praying the fish don't start holding their breath!



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Just kidding Denys!



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There was that memorable moment when the primary intake snorkel decided to take a vacation at the bottom of the lake when its cable broke.



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You can
burst

- W
- P
- P
- P
- S
- I



Clearwater Hatchery
Pipeline

Assessment Report

Report Status: Final
Revision No. 3

Apr 16, 2024



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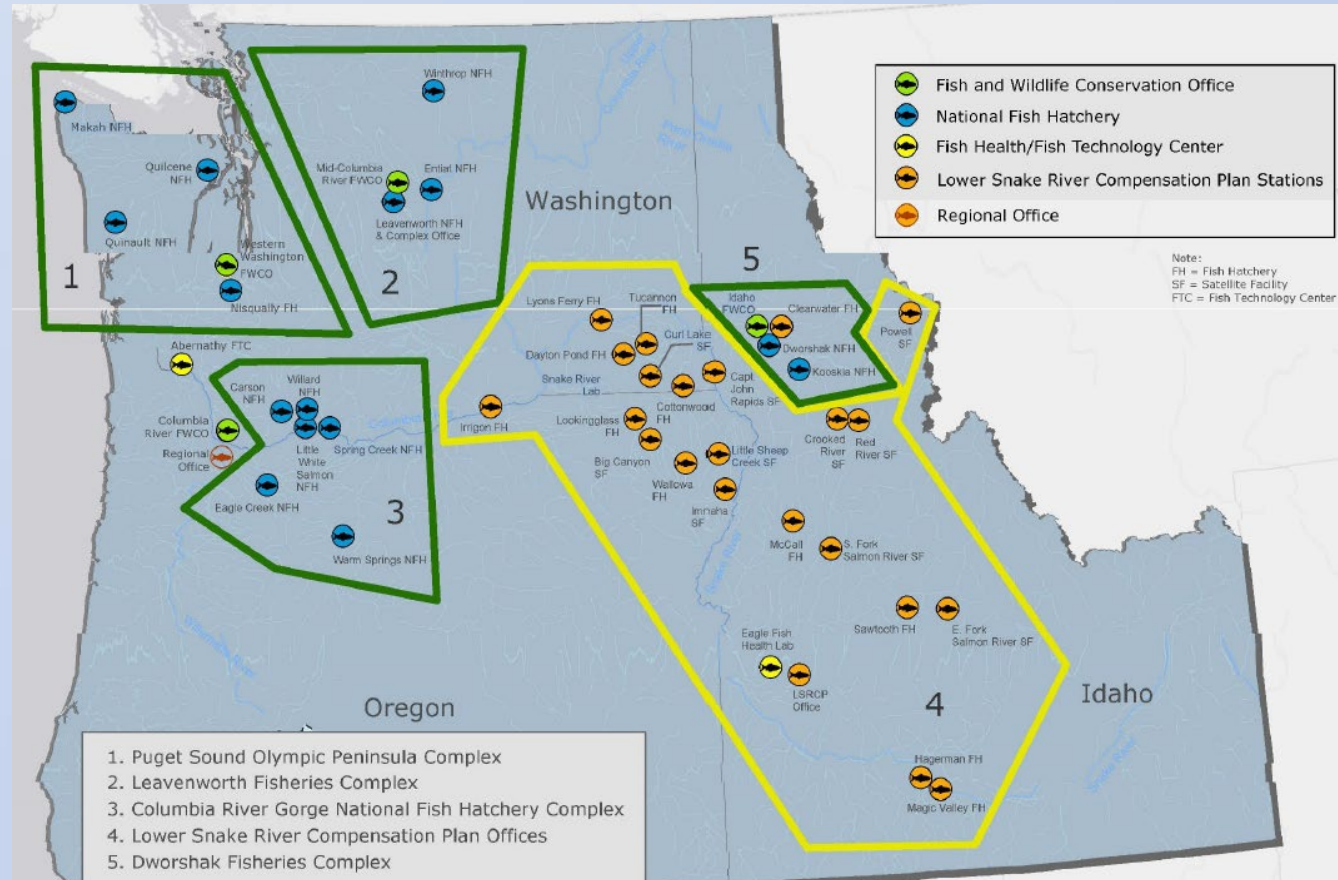


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Lower Snake River
Comp Programs
produce approximately
20 million smolts every
year.



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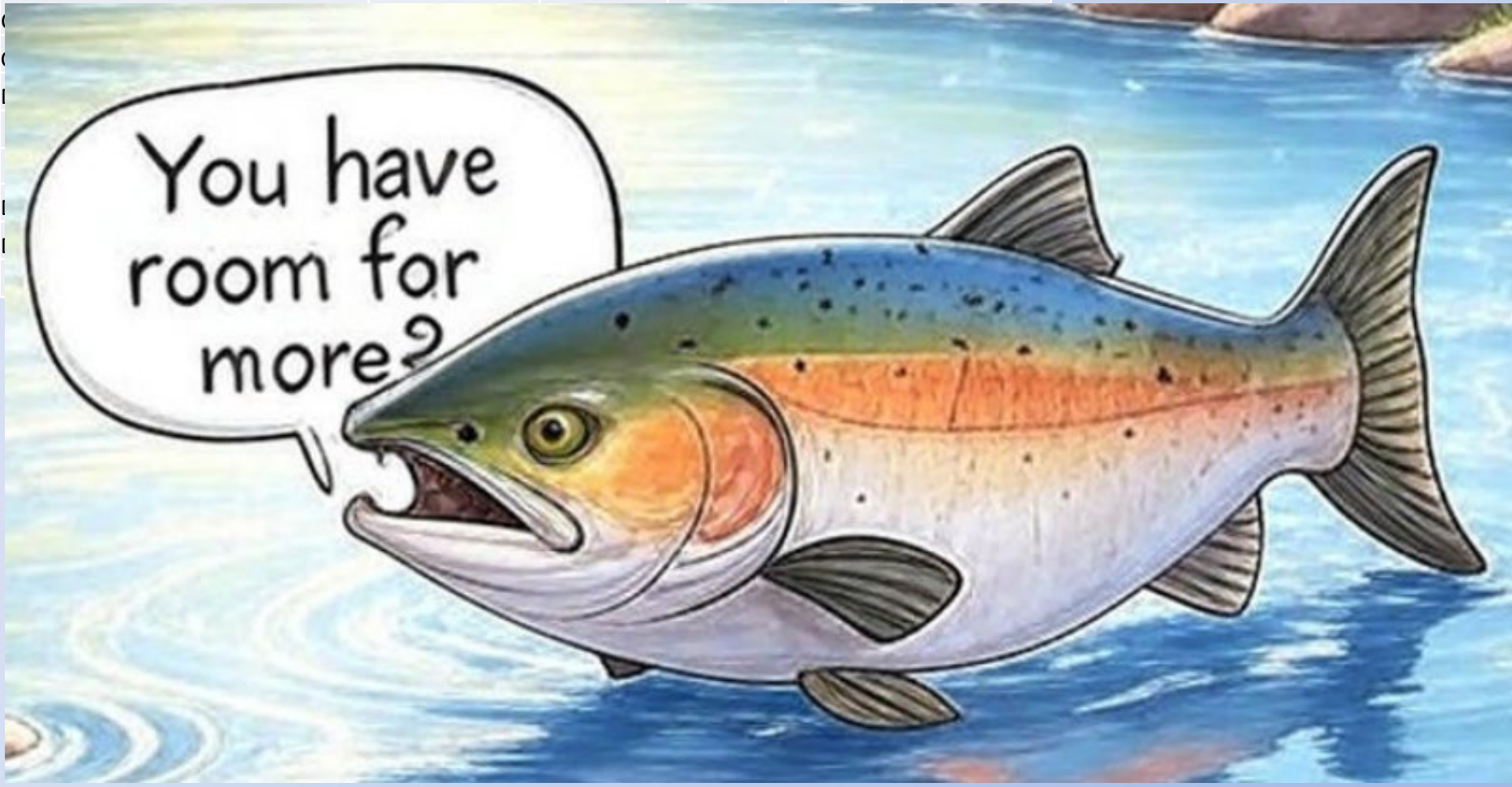


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Facility	Species	Program	Number	FPP	Total Pounds
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There are approximately 23 raceways that are underutilized at Clearwater FH due to water constraints.

An example of maximizing production with additional water supply: 1.6 million additional spring Chinook (~5,120 adults).

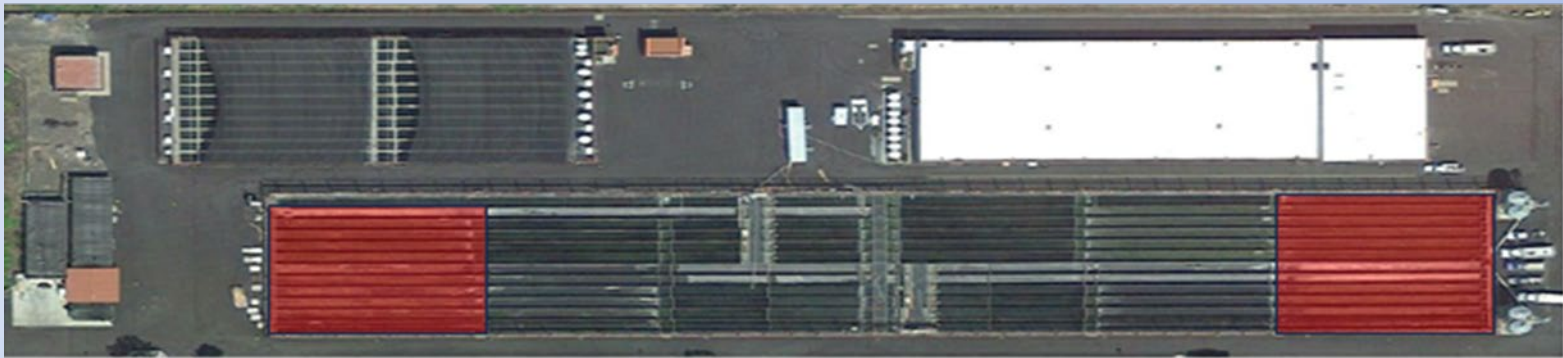
Infrastructure and Operations Audit of
Clearwater Fish Hatchery 2022



Clearwater Fish Hatchery
Lower Snake River Compensation Plan

Denys Chewning
Idaho Department of Fish and Game

Chris Starr
U.S. Fish and Wildlife Service



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Approximately 13 Burrows ponds that are underutilized at Dworshak NFH due to water constraints.

An example of maximizing production with additional water supply: 1.3 million additional spring Chinook (~7,670 adults).



Infrastructure and Operations Audit of
Dworshak National Fish Hatchery 2022



Dworshak National Fish Hatchery
Lower Snake River Compensation Plan

Jeremy Sommer
Nez Perce Tribe

Chris Starr
U.S. Fish and Wildlife Service



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What benefits would investing in the Clearwater Expansion provide to the Lower Snake River Compensation Plan?

Despite ongoing efforts, the LSRCP has not met its adult mitigation targets for spring Chinook salmon. Current LSRCP spring Chinook smolt production is 10.9 million and expected adult returns are **13,580 short of goals.**

2.9 million additional SCS smolts could result in ~13,000 more adults.



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- The AMRT reviewed a comprehensive list of proposed projects last year in preparation for the Columbia Basin Restoration Initiative.
- There was consensus among stakeholders on the **scoping** of the Clearwater Expansion.
- With the green light, two teams were established: Pipeline Advisory Committee and Pipeline Technical Committee.



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The Pipeline Technical Committee met multiple times to develop a scoping effort aimed at identifying alternative water supply options to enhance delivery from Dworshak Reservoir to both facilities, addressing adult salmon mitigation shortfalls under the Lower Snake River Compensation Plan. The document identified infrastructure needs, permit requirements, and economic analyses. It highlights current water supply limitations and emphasizes the need for optimal water temperatures to ensure fish health, aiming to secure sufficient water quality and quantity for production goals at both hatcheries into the future.

Dworshak/Clearwater Hatchery Water Supply Scoping
Lower Snake River Compensation Plan
March 19, 2025

1. GENERAL

The purpose of this scoping effort is to identify alternative water supply options to secure and increase water supply from Dworshak Reservoir to Clearwater Fish Hatchery (Clearwater FH) and Dworshak National Fish Hatchery (Dworshak NFH) and address Lower Snake River Compensation Plan (LSRCP) adult salmon mitigation shortfalls. The scoping will include infrastructure needs, permit requirements, economic analysis, pipe sizing and technical specifications, modifications to Dworshak Dam, construction cost estimates, and hydroelectric potential of these alternatives.

2. BACKGROUND

Clearwater FH was completed and began rearing anadromous fish in 1992 and is owned by the U.S. Fish and Wildlife Service (USFWS) and operated by the Idaho Department of Fish and Game (IDFG) for Lower Snake River Compensation Plan (LSRCP). Dworshak NFH was built in 1969 and is owned by the Army Corps of Engineers (COE) and operated by the Nez Perce Tribe (NPT). Dworshak NFH was expanded in 1982 to include 30 raceways for spring Chinook production under the LSRCP program via a Real Estate Agreement with the COE. The COE is working on a similar real estate agreement with the NPT on Coho production at Dworshak NFH.

Clearwater Hatchery Water Supply

The water supply for Clearwater FH is provided through two Dworshak Reservoir pipelines; primary and secondary. The pipelines were designed by Montgomery Consulting Engineers, Inc. and constructed prior to first use in 1992. The primary pipeline starts with a 48-inch diameter adjustable depth intake. Its design flow rate is 73.2 cfs with theoretical maximum of 99.0 cfs. Intake depth is controlled using a cable winch from the floating intake platform, located in Dworshak Dam's forebay. This essentially allows water to be pulled from a range of 10' to 60' (from pool surface) deep for the facility to select from a range of available water temperatures to best suit fish feeding and growth plans. The primary pipeline narrows to 24-inch diameter through the dam penetration. It then expands back out to 36-inch diameter and extends underground to the Distribution and Powerhouse Structure.

During the spring and summer of 1994, the COE Engineering Division conducted flow measurements on the two pipelines. Vibrations were observed in the primary supply valves at the distribution structure. Vibrations occur at approximately the same range at all pool elevations and were generally consistent within the 80 – 90% valve opening range. IDFG staff do not operate valves beyond 70-75% open for this reason with a maximum primary flow rate 77 cfs.

The secondary pipeline intakes through a drum screen located about 10 feet above the dam penetration, approximate elevation 1362'. Its design flow rate is 17.4 cfs with a theoretical maximum of 24.7 cfs. It is 14-inches steel pipe in the dam penetration. It expands to 18-inch diameter and extends underground to the Distribution and Powerhouse Structure.



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- The ACOE will provide the labor and expertise for the scoping effort (~\$610,000).
- Currently on hold until funding becomes available.



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- Funding for the design and construction of this project has yet to achieve consensus.
 - Design- \$2.5 million (est.)
 - Construction- \$65 million (est.)



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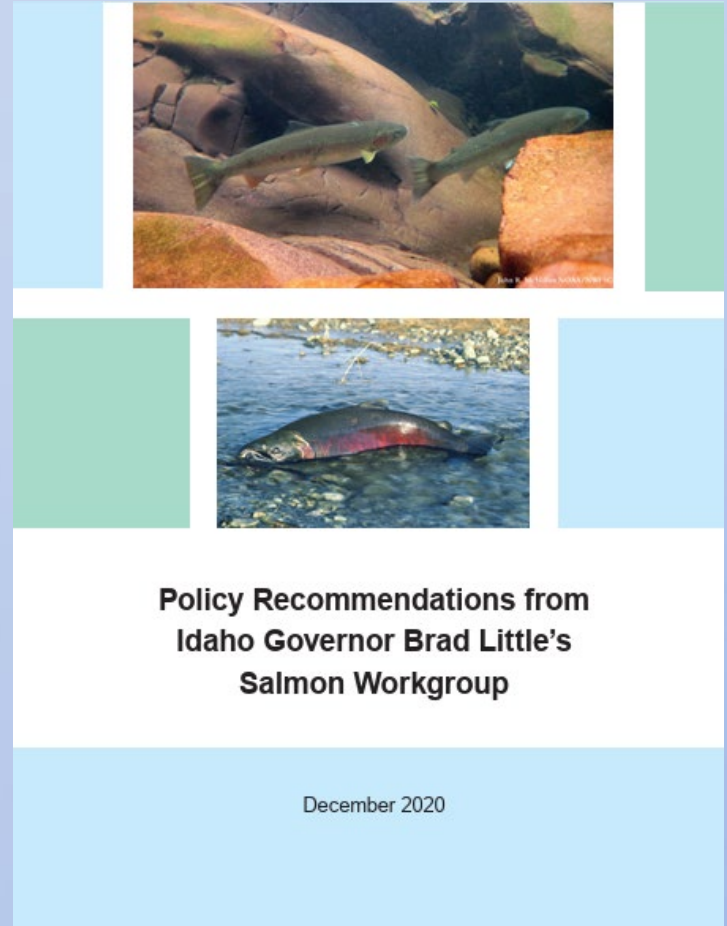


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Governor's Salmon Workgroup releases report; recommendations include: "Advocate for essential funding to restore, repair, or maintain hatchery infrastructure (including release sites, fish weirs, and equipment), and, where appropriate, enhance infrastructure with capital improvements (e.g., improving the Dworshak and Clearwater Fish Hatcheries water supply) to ensure that production goals as well as mitigation, supplementation, and conservation objectives are met."



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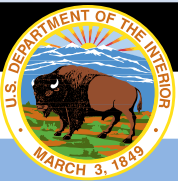


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Questions?



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