Northwest **Power** and **Conservation** Council

June 29, 2022

MEMORANDUM

TO: **Fish and Wildlife Committee Members**

FROM: **Mark Fritsch**

SUBJECT: **Update on the Kelt facility at Nez Perce Tribal Hatchery**

BACKGROUND:

Presenter: Becky Johnson - Production Division Director, Nez Perce Tribe

Summary: Becky will provide a brief overview of a unique genetic trait that steelhead in the Columbia River Basin can exhibit (i.e., ability to spawn multiple times), and discuss how using this characteristic is being supported to increase total reproductive potential of steelhead populations. In addition, Becky will provide an update on the kelt[1] steelhead facility, as approved by the Council in December 2016, being built at the Nez Perce Tribal Hatchery to increase survival and abundance of these natural-origin repeat spawning steelhead.

Relevance: Kelt reconditioning as a conservation tool intended to enhance populations that have suffered decline and minimize loss of genetic and life history diversity. Re-establishment or enhancement of repeat spawning in listed steelhead populations can improve productivity, diversity, and demographic stability and is particularly important during times of low steelhead abundance.

[1] Steelhead that return to the sea after spawning and may return to natal streams to spawn again.

Workplan: Fish and Wildlife Division preliminary work plan 2020; Program Implementation (2014 Program and 2020 addendum): Other program implementation

Background: A unique adaption that steelhead have, over the other anadromous salmonids in the Columbia Basin, is their ability to spawn multiple times in their lifetime (*iteroparity*). The abundance of this life history pattern is currently lower than it was historically due to the difficulty with downstream passage of adult fish at mainstem hydropower facilities. Efforts to recover declining steelhead stocks within the Columbia River Basin have ranged from harvest reduction, habitat restoration, passage improvements at mainstem Columbia River hydropower facilities, and hatchery propagation. The use of reconditioned post-spawned steelhead (kelts) provides an opportunity to increase total reproductive potential of steelhead populations within the Columbian Basin as well as preserve a unique steelhead life-history trait. Kelt reconditioning consists of the collection of post-spawned steelhead, transport to a facility where fish are encouraged to begin eating again, provided with fish health treatments and basically reconditioned to maturation again. Reconditioned fish are then released back to their natal waters to spawn again. Although kelt reconditioning is classified as hatchery propagation, this is somewhat misleading as the only hatchery influence is providing an environment for wild fish to rest, rejuvenate and recover.

Project #2007-401-00, *Kelt Reconditioning and Reproductive Success Evaluation Research* is a research, monitoring, and evaluation (RM&E) category project funded through the Columbia Basin Fish Accords. The project has been ongoing since 2000 and represents a merger of two projects (Project #2000-017-00 and #2003-06-200) and builds on information that is currently being generated by the only other Program funded kelt project (Project #2008-458-00, *Steelhead Kelt Reconditioning*[2]).

The CRITFC and NPT kelt project has studied and evaluated two topics with respect to post-spawn steelhead. First, it assessed the ability to collect and recondition steelhead kelts to preserve this life history and protect this diversity, and second, it monitored the reproductive success of the reconditioned steelhead. The federal agencies included the kelt reconditioning effort in the 2008/2014 BiOp as part of the reasonable prudent alternative actions to aid listed Snake River steelhead populations. NOAA estimated a potential six percent improvement in steelhead escapement from the kelt reconditioning efforts as part of the

[2] This a Yakama Nation Accord project to enhance the abundance and life history diversity of naturally produced steelhead in the Upper Columbia River. The Council approved this Project on November 4, 2014.

jeopardy analysis. The project specifically addresses FCRPS BiOp Reasonable and Prudent Alternative Actions 33 and 42[3].

On March 28, 2016, the Nez Perce Tribe (NPT) and Columbia River Inter-Tribal Fish Commission (CRITFC) submitted to the Council as part of the Three-Step Review Process a master plan for the *Snake River Basin Steelhead Kelt Reconditioning Facility,* as part of Project # 2007-401-00, *Kelt Reconditioning and Reproductive Success Evaluation Research.*

This master plan proposed to develop a facility to support kelt reconditioning for the purpose of improving ESA listed steelhead abundance in the Snake River. Upon release, these fish are intended to return to natal populations, thereby increasing escapement. The 2008 Biological Opinion (BiOp) on the Federal Columbia River Power System (FCRPS) and the Columbia Basin fish Accords recognized the potential for kelt reconditioning to contribute to steelhead populations and the 2008 FCRPS BiOp identified actions in the Reasonable and Prudent Alternative (RPA Actions 33 and 42) to fund reconditioning programs in the upper-Columbia River and Snake River.

The proposed facility located at Nez Perce Tribal Hatchery (NPTH) and is the most cost-effective and reliable solution. Specifically, the installation of six twenty-foot and four fifteen-foot circular tanks and a building to support the long-term reconditioning of up to 750 kelts is proposed, supporting the goal of an annual release of 180 reconditioned B-run kelts. In addition, due to the decline in abundance of Snake River steelhead in the last several years A-run natural fish have now been included in the reconditioning project.

On December 14, 2016 the Council approved the Master Plan (Step 1) for the *Snake River Basin Steelhead Kelt Reconditioning Facility Master Plan* associated with Project # 2007-401-00, *Kelt Reconditioning and Reproductive Success Evaluation Research*. The specific language of the recommendation is as follows.

> *"The Council approve the Snake River Basin Steelhead Kelt Reconditioning Facility Master Plan and recommend to Bonneville that the project sponsors for with Project # 2007-401-00, Kelt Reconditioning and Reproductive Success Evaluation Research, proceed with the next steps of the major facility planning process,*

[3] RPA Action 33 requires the Action Agencies to develop and implement a Snake River steelhead kelt management plan designed to provide at least a 6% improvement in B-run population productivity. Toward that goal, a variety of approaches are being tested and implemented including passage improvements and reconditioning kelt steelhead. RPA Action 42 focuses on the reconditioning component and seeks to preserve and rebuild genetic resources through safety-net (kelt reconditioning) and mitigation actions to reduce short-term extinction risk and promote recovery.

> *on the condition that the project sponsors address in their next review the four issues raised by the ISRP in this review"*

The project was reviewed as part of the Anadromous Fish Habitat and Hatchery (AFHH) Review and was highlighted in the *Accomplishments* section of the ISRP's final review (ISRP 2022-1) as follows.

> *The steelhead kelt reconditioning and reproductive success evaluation project (200740100) has been underway since 2000, at which time little was known about reconditioning kelts (i.e., repeat spawners). Over the past decade this Columbia River Inter-Tribal Fish Commission (CRITFC) project has developed a successful strategy for kelt reconditioning by identifying how to collect kelts; successfully rear them to maturation; and assess maturity status, release location criteria, benefits to target populations, reproductive success, physiology, and homing fidelity. Many critical uncertainties have been resolved and sound production strategies have been identified. The project has demonstrated that kelt reconditioning and release back to natal areas is a viable option for enhancing spawner abundance. The project has progressed to the point that it is time to shift into production mode with much broader management application, once additional kelt holding facilities are constructed. This project provides an excellent example of developing a relatively uncertain approach into a viable management alternative to enhance spawner abundance in natural steelhead populations. The extensive monitoring and evaluation have been instrumental in the success of the project and its rate of progress.*

As part of the AFHH review the project received a favorable review (Meets Scientific Review Criteria – Conditional) and the Council recommendation is as follows.

> *Bonneville and Sponsor to consider condition #1 (plan) and address in project documentation if appropriate. Continue coordination of reconditioned steelhead kelt activities in the basin (i.e., projects: #1996-040-00, #1983-350-00, #1988-115-25). See Policy Issue I.b.*