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July 7, 2026

MEMORANDUM

TO: Council Members

FROM: Mark Fritsch

SUBJECT: Update on construction for Mid-Columbia Coho Restoration Program, Project #1996-040-00, *Upper Columbia Production Projects*¹

BACKGROUND:

Presenter: Cory Kamphaus, Policy Advisor-Projects Supervisor, Yakama Nation Fisheries Resource Management and Tom Scribner, Mid-Columbia Policy Advisor, Yakama Nation Fisheries

Summary: Cory and Tom will present an overview of the reintroduction of coho salmon in the Wenatchee and Methow subbasins and provide an update on the anticipated construction of the facilities associated with the reviewed and recommended master plan. This project, through experimental design, incorporating numerous studies and reviews, was able to demonstrate that the viability of non-local, domesticated hatchery stocks can be used to develop self-sustaining, naturally reproducing coho populations in the Wenatchee and Methow subbasins

Relevance: As part of the Council's recommendation in 2017 associated with the master plan the Council requested an update prior to construction.

¹ In 2020, the Project #2008-458-00 *Steelhead Kelt Reconditioning* and Project #2009-001-00 *Upper Columbia Spring Chinook and Steelhead Acclimation* were merged with Project #1996-040-00, *Mid-Columbia Coho Restoration Project* with a new title *Upper Columbia Production*. Project #1996-040-01, *Upper Columbia Production (CAP)* will implement the capital component of the effort.

Workplan: Fish and Wildlife Division work plan 2026; Project Review/Program Implementation; Task B. Project Review for follow-up.

Background: In April 1996 the project (FY1997 proposal #9604000, Wenatchee and Methow River Coho Restoration) was one of the 15 high-priority supplementation projects recommended for funding by the Council and was addressed in the 1994 Fish and Wildlife Program (program measures 7.1H, 7.4A, 7.4F, and 7.4O). These high-priority supplementation projects were forwarded to the Council with strong endorsements from both the *US v. Oregon* Policy Committee and the National Marine Fisheries Service.

Studies of the feasibility of reintroducing coho in the Wenatchee and Methow subbasins began in 1996. The Yakama Nation (YN), along with project participants and the Mid-Columbia Technical Work Group, developed two goals from which to determine the feasibility of reintroducing coho to mid-Columbia tributaries:

- 1) Determine whether a broodstock can be developed from lower Columbia River coho stocks whose progeny can survive in increasing numbers to return as adults to the mid-Columbia region, and*
- 2) Initiate natural reproduction in areas of low risk to sensitive species and in other select areas to study the risks and interactions with sensitive species.*

Feasibility studies' were achieved in 2005. The feasibility phase demonstrated that a local broodstock can be developed from lower river stocks and that a survival advantage can be achieved with one generation of selection.

On November 21, 2008, the YN submitted the Mid-Columbia Coho Restoration Master Plan for review by the Council and ISRP. Through numerous reviews (ISRP document 2009-6 and 2009-47) and meetings, on March 9, 2010, the Council approved the Step 1 review and recommended that Bonneville and the YN proceed with final design and a revised master plan addressing ISRP concerns for final review and recommendation.

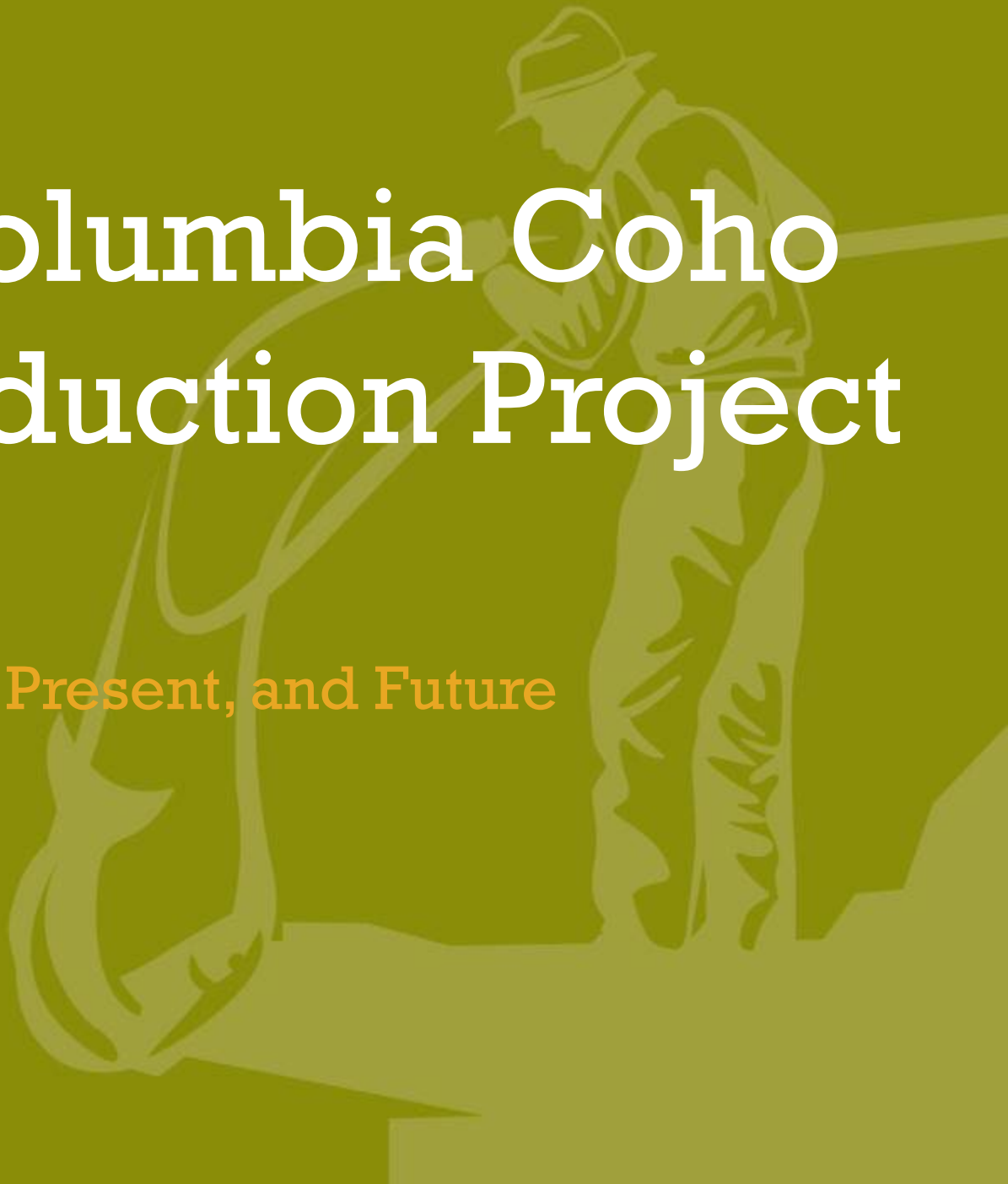
The revised Master Plan and supporting documents was received by the Council on February 9, 2017, and submitted to the ISRP. The ISRP requested a response (ISRP document 2017-4) on April 10, 2017, and on September 25, 2017, the Council received the response from the Yakama Nation. On October 20, 2017, the ISRP provided their final review (ISRP 2017-10). The ISRP found that the project meets science review criteria.

Through these reviews the ISRP noted the substantial level of progress had been achieved by the Yakama Nation over the past seven years in addressing the issues raised during their previous review. The ISRP also mentions that's findings from this project could also assist with other reintroduction programs in Columbia River Basin.

The Council, November 2017, based on the ISRP review, past reviews and recommendations, and the history of this project recommended to Bonneville that the conditions placed on this project have been met and the project can proceed to implementation. As part of the decision the Council requested that details associated with construction be presented to the Council prior to implementation. This presentation is to meet that request by the Council.

Mid Columbia Coho Reintroduction Project

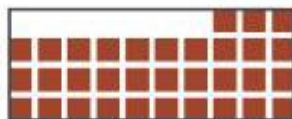
Past, Present, and Future



MID-COLUMBIA RESTORATION PROGRAM COHO

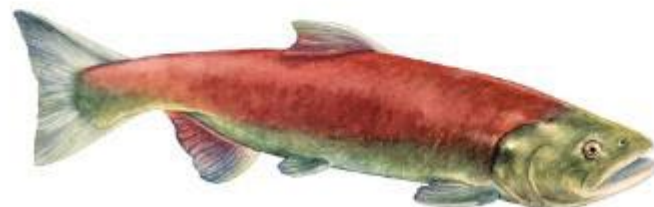


survival
goal: 40



33 hatchery adults
returned to the
Wenatchee and
Methow basins per
1,000 juveniles released

ENDANGERED SCKEYE



5 returned to
Snake River

Past- Salmon in the Columbia Basin

- Historically averaged 7-16 million salmon returning to Columbia Basin annually (Chapman 1986)
- Supported annual tribal harvest of 22 million pounds of salmon (Hewes 1973)



Past- Salmon in the Columbia Basin

- Historical coho abundance (Mulan 1983)
 - Entiat: 9,000-13,000
 - Methow: 23,000-31,000
 - Wenatchee: 6,000-7,000
- Coho decimated in early 1900's, functionally extirpated by early 1990's
- **Goal: Re-establish naturally spawning population of coho with sustainable opportunities for tribal harvest**



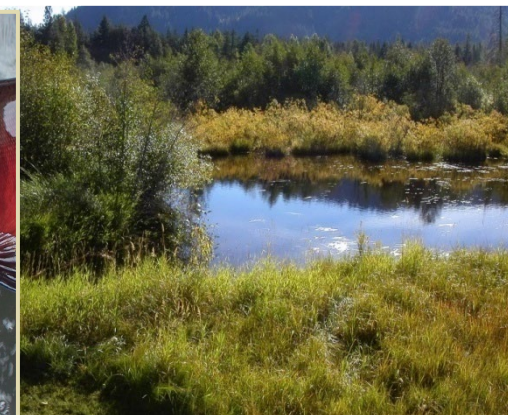
Past- Feasibility Efforts

- Feasibility study launched in 1996
- **Objective: Develop a locally-adapted, natural spawning coho stock**
 - 3-year mean escapement > 1,500 fish
 - 23% harvest rate
- *This didn't come without concerns....*



Past- Feasibility Efforts

- Challenges and limitations
- Identify evaluations needed to study interactions with endemic and sensitive species
 - Working with a multi entity, diverse Technical Working Group
 - Could a local broodstock be developed?
 - Could these fish initiate natural production?
 - Could they do this without harm to sensitive species (ESA listed and endemic populations)?



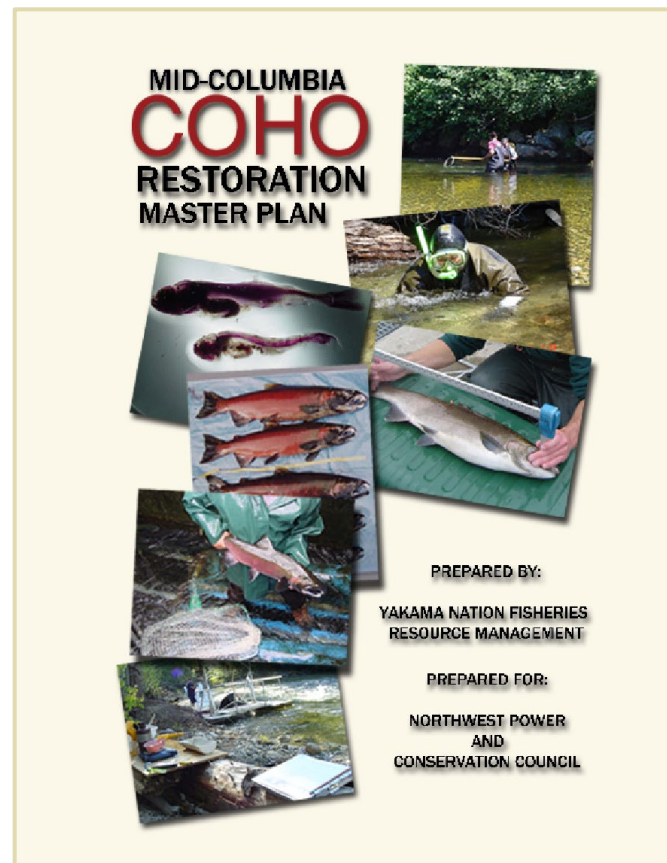
Past- Feasibility Efforts

- Feasibility studies completed....and a success!
 - Successful completion of studies with positive results
 - Program expansion in the Methow basin to initiate natural production and long term success
 - Permitting and NPPC approval for project long term implementation
- On to Master Plan Development..



Past- Master Plan Development

- Create a comprehensive long-term plan for coho reintroduction
 - Progress brood development towards “preferred habitats”
 - Initiate and focus on creating sustainable populations through natural production in both the Methow and Wenatchee basins



Past- Master Plan Development

■ **Broodstock Development Phase 1**

- Develop mid-Columbia broodstock from lower-Columbia coho
- Wenatchee ✓ Methow ✓

■ **Broodstock Development Phase 2***

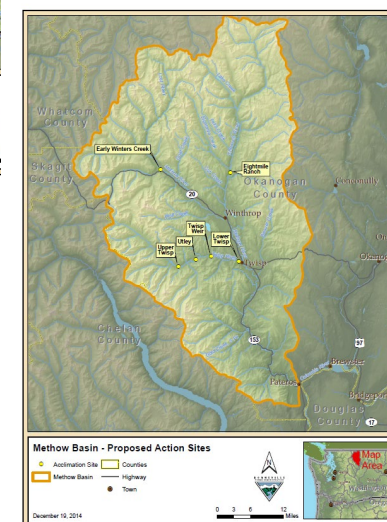
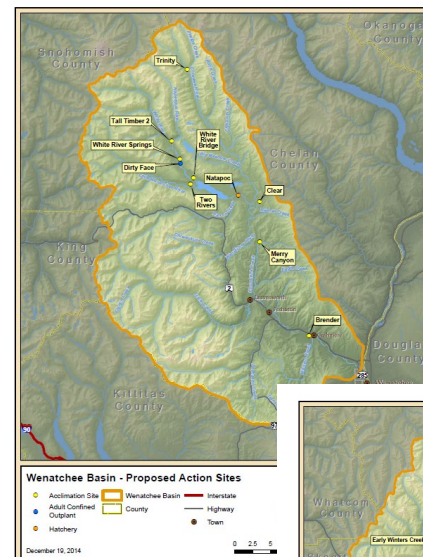
- Encourage local adaptation by moving adult capture sites upstream
- Methow ✓

■ **Natural Production Phases (NPIP, NPP 1* & NPP2)**

- Introduce coho to new habitat
 - Methow ✓
- Increase fitness in natural environment
 - Methow ✓
- Reduce reliance on hatchery-reared fish

Past- Evolving Process

- **Master Plan has been revised multiple times since it's inception of 2005**
- **2010 Revision**
 - Additional sites for development consideration in both basins
- **2017 Revision**
 - **FEIS and ROD completed: refined release locations approved for construction**
 - BDP II Contingency Plan
 - Adult Out planting Study



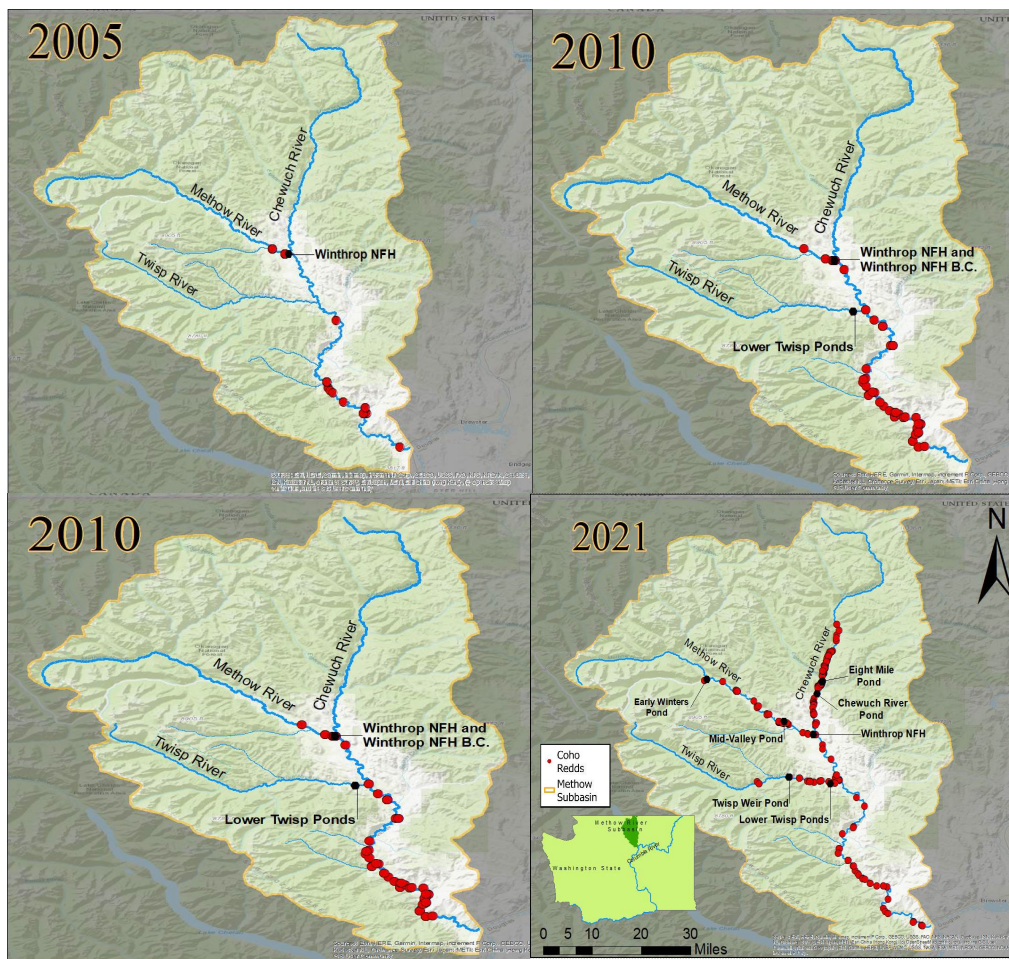
Past- Evolving Process

■ Sites Developed and Constructed

- Methow: 8mile and Early Winters (built in 2017)
 - Used for coho and steelhead; looking at spring Chinook in the future
- Wenatchee: Powerline (built in 2019)
 - Used for coho currently; steelhead in the near future



Past- Present- Evolving Process



- Increased dispersion of spawning coho over Phase progression
- Due in part to upstream expanding acclimation locations





HONOR. PROTECT. RESTORE.

Present

Present- Evolving Process

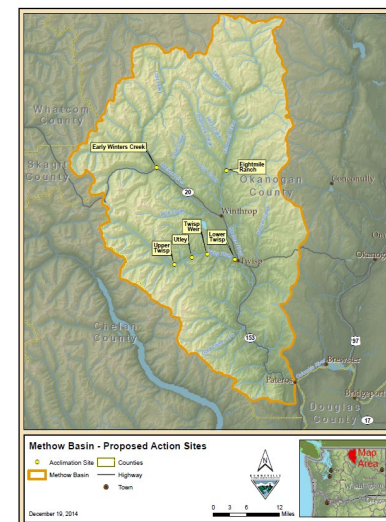
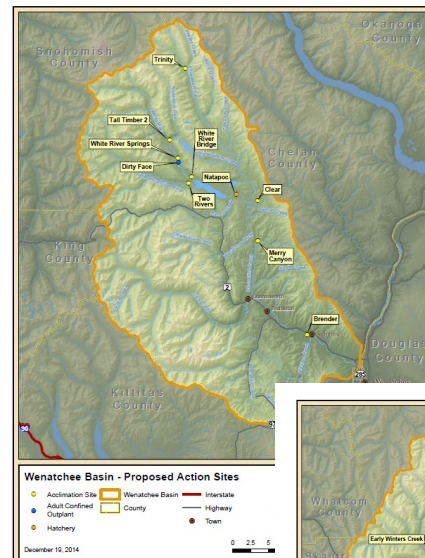
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 - **BDP II Contingency Plan**
 - **Adult Out planting Study**



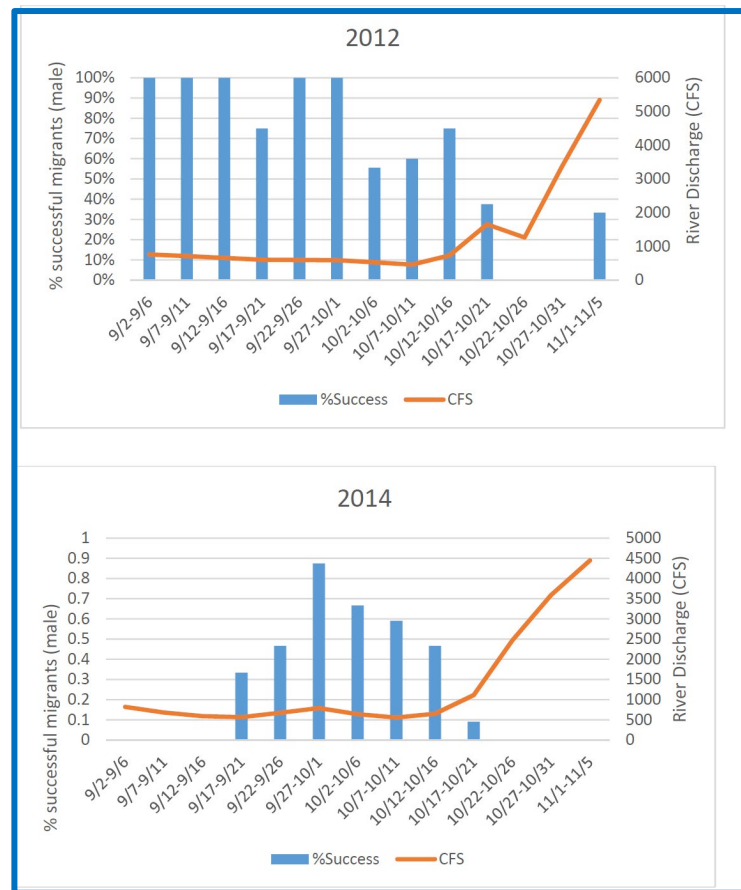
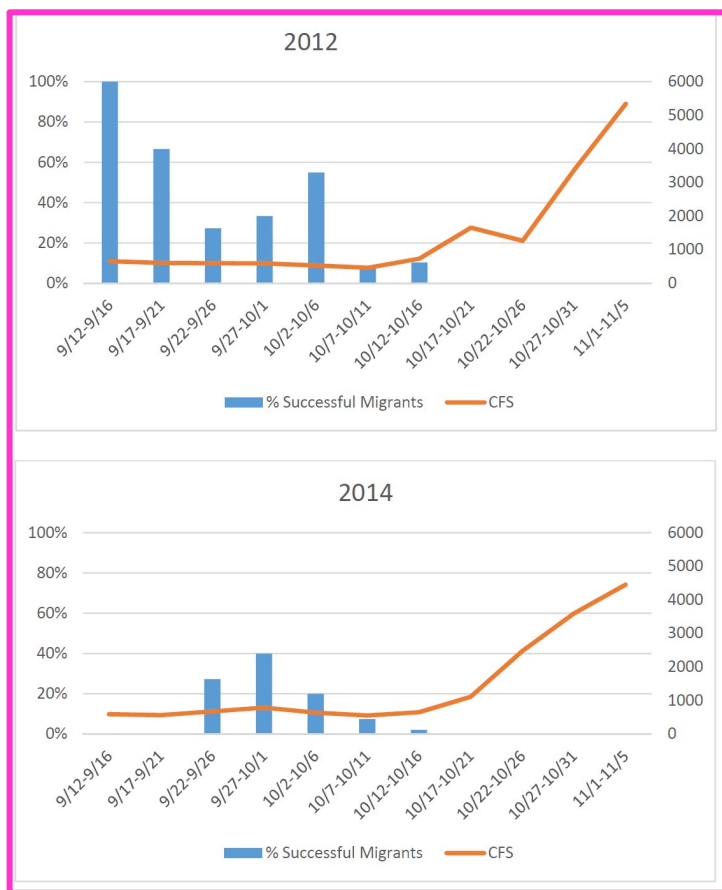
Present- Evolving Process

BDP II Contingency Plan

- Female coho have difficulty ascending Tumwater Canyon, especially later in fall as flows increase
- Modeling supports that quality habitat lies in the upper Wenatchee Basin
- We can't change the environment, but maybe we can “make” coho better able to ascend Tumwater canyon through selective spawning...
- Are there genetic markers underlying phenotypic characteristics associated with ascending Tumwater Canyon?

Present- Evolving Process

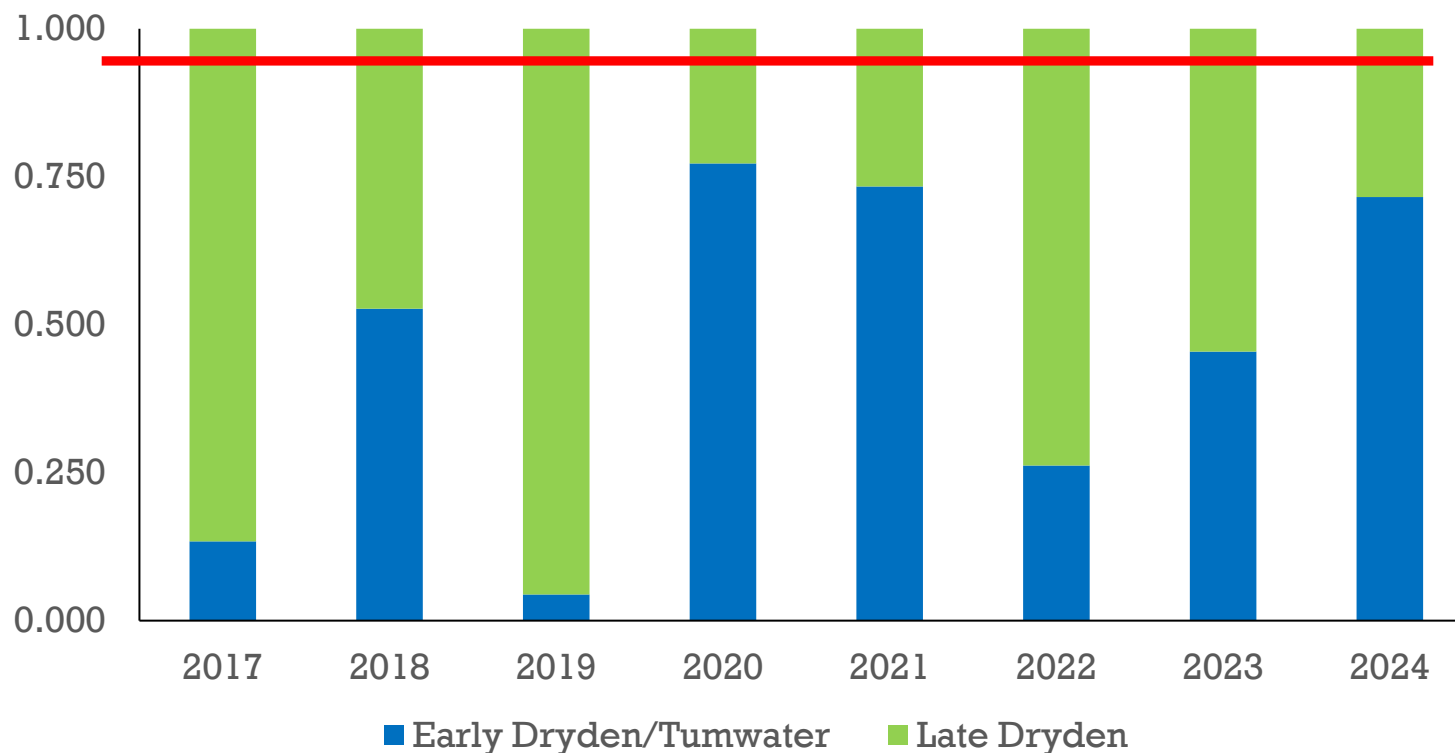
BDP II Contingency Plan



Present- Evolving Process

BDP II Contingency Plan

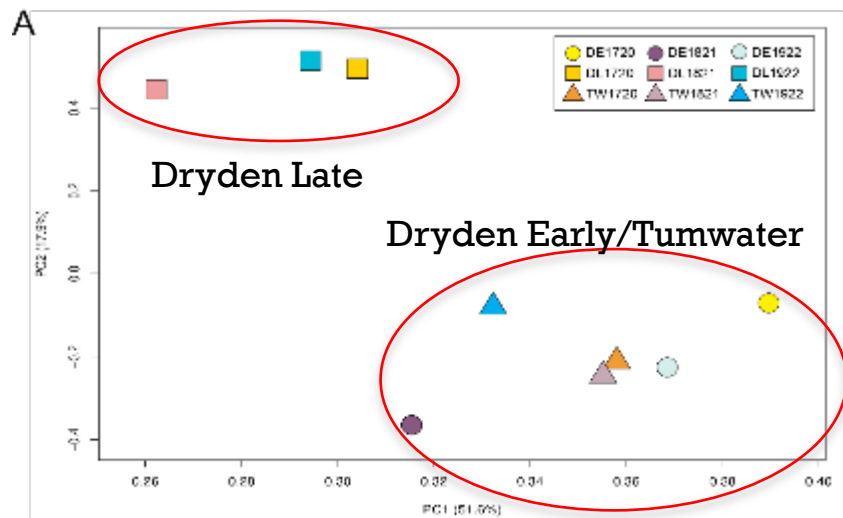
Female Broodstock Collection Proportion by Brood Year
and Collection Type



Present- Evolving Process

BDP II Contingency Plan

- Are there genetic markers that dictate return timing and location? **(YES!)**
- Are there genetic differences between broodlines that dictate return timing and location? **(NO!)**



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 Article



Genomic insights into local adaptation and migration success in reintroduced Coho Salmon of the Wenatchee River basin

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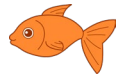
Present- Evolving Process

BDP II Contingency Plan

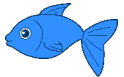
- There is a genetic association with return timing/ability to ascend Tumwater Canyon (females only)
- Continued selection of Dryden Early/Tumwater females for broodstock should increase number of returning females able to ascend Tumwater Canyon in future generations
- Can we “make” fish capable of ascending Tumwater Canyon and utilizing upstream habitat? **POSSIBLY**
- Is the preferred mating strategy going to provide an increase in performance over time?

Present-Evolving Process

BDP II Contingency Plan

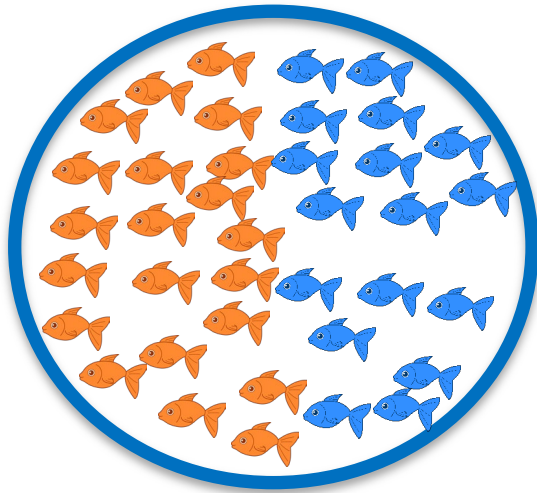


Early Dryden/Tumwater

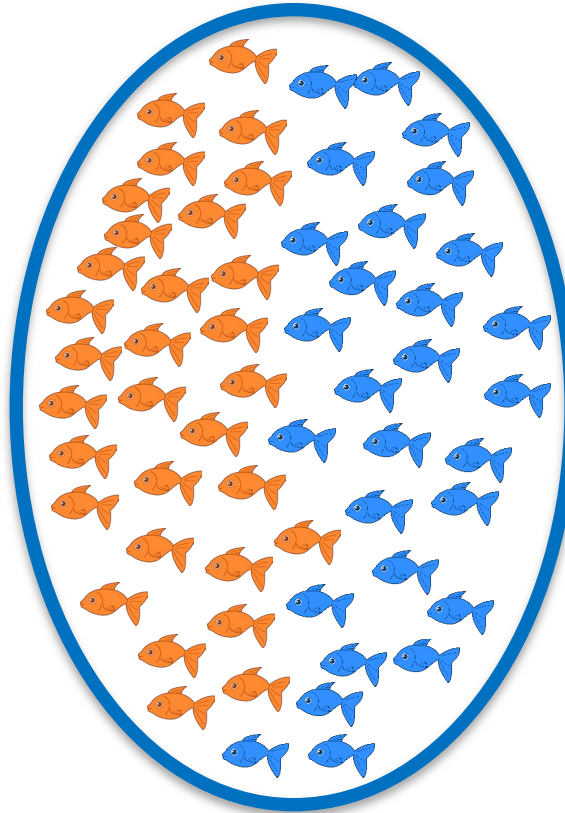


Late Dryden

Pond A: 21x19 mothers



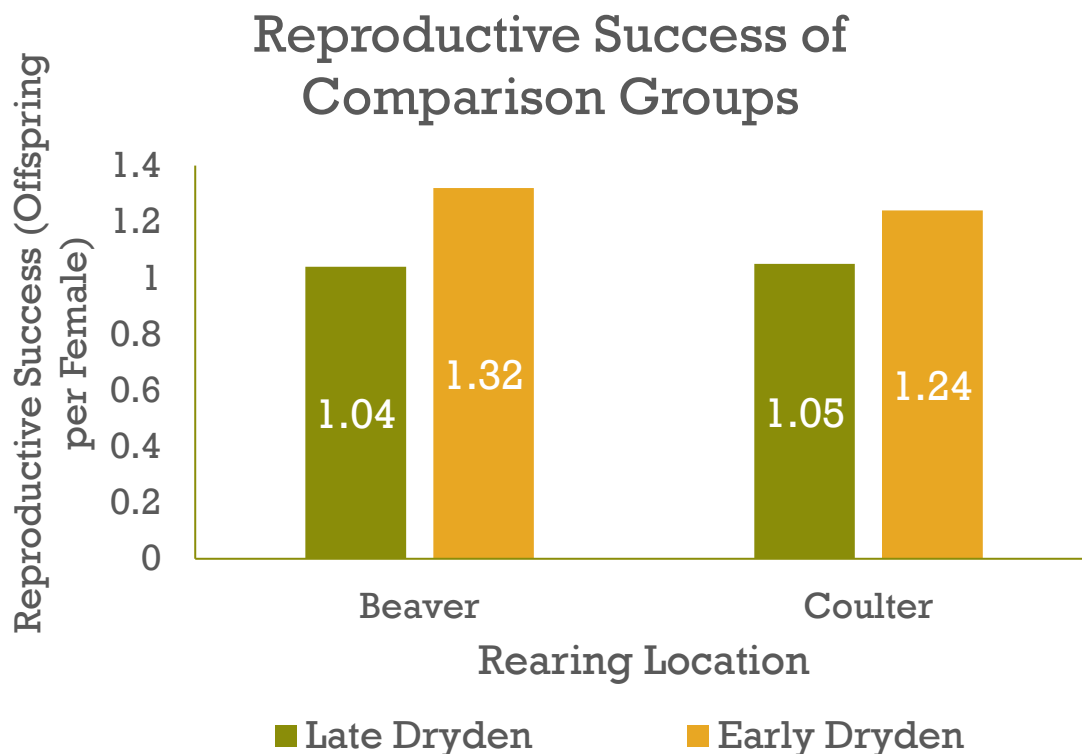
Pond B: 31x28 mothers



- Side-by-side rearing of juveniles from two collection groups
- 2 ponds x 3 years (BY 2022-2024)
- Groups differentiated via PBT and PIT tags
- Monitor reproductive success

Present- Evolving Process

BDP II Contingency Plan



- Higher reproductive success from selective broodstock than control group
- Shows current selective broodstock collection can yield greater reproductive success
- More brood years (BY2023-Present) to be analyzed

Present- Evolving Process Outplanting

- Supplemental measure in lieu of juvenile releases
- Encourage use of tributaries: high-quality spawning and rearing habitat
- Relieve adult densities adjacent to hatchery complex



Present- Evolving Process Outplanting

■ Summary for 2024 & 2025 (targets)

■ Upper Methow

■ 350 (454)

■ 176 (190)

■ Upper Twisp

■ 250 (250)

■ 94 (90)

■ Upper Chewuch

■ 10 (10)

■ 144 (234)



■ Interrogations post outplanting- 2024 & 2025

■ Upper Methow

■ 7F, 31M/4F, 25M

■ Upper Twisp

■ 1F, 15M/1F, 8M

■ Upper Chewuch

■ 0F/0M, 3F, 18M

■ **** 1% of fish were detected outside of release basin within 5 days**

	Female (Total)	Male (Total)
2024 (610)	2	3
2025 (414)	3	.2

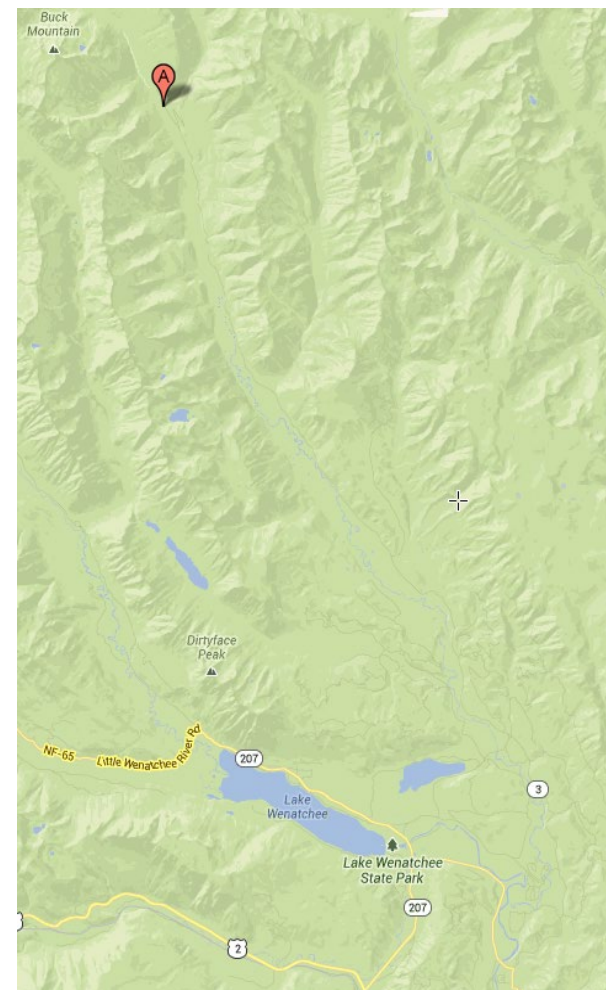
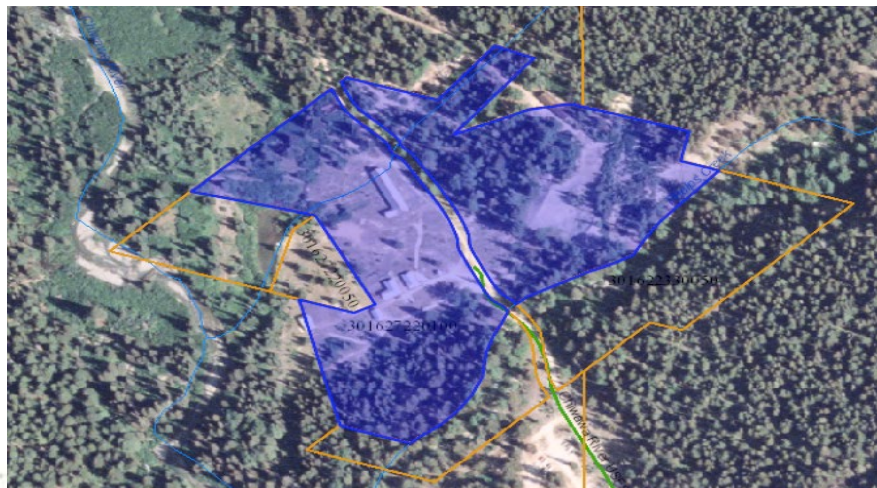


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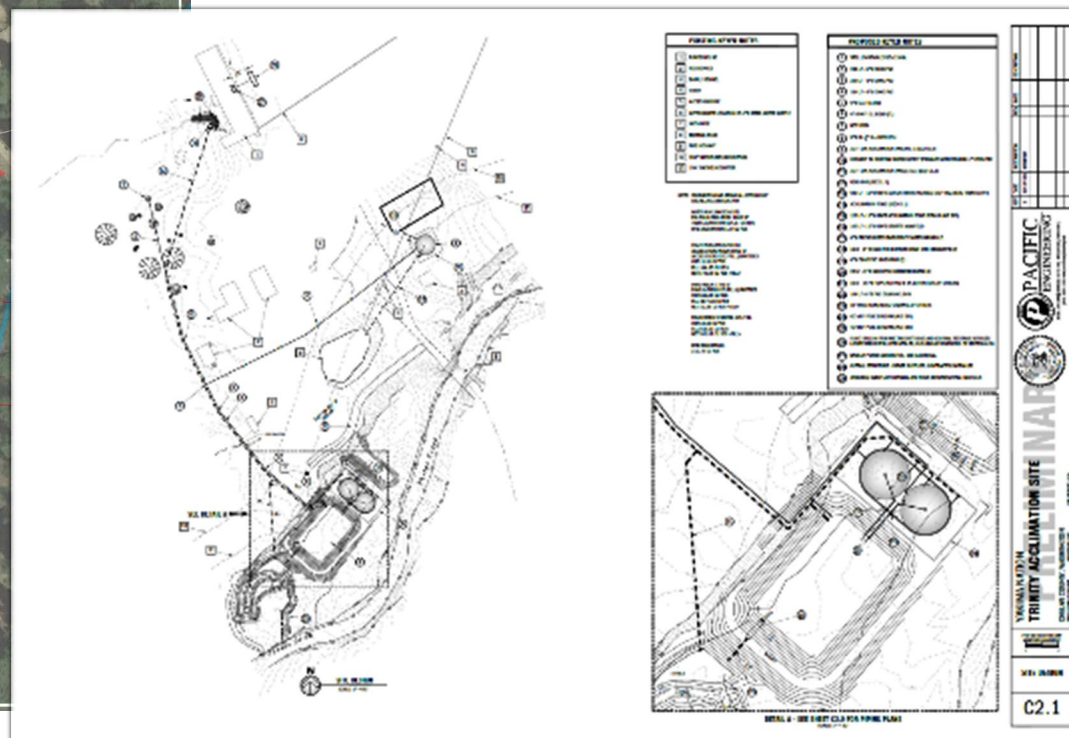
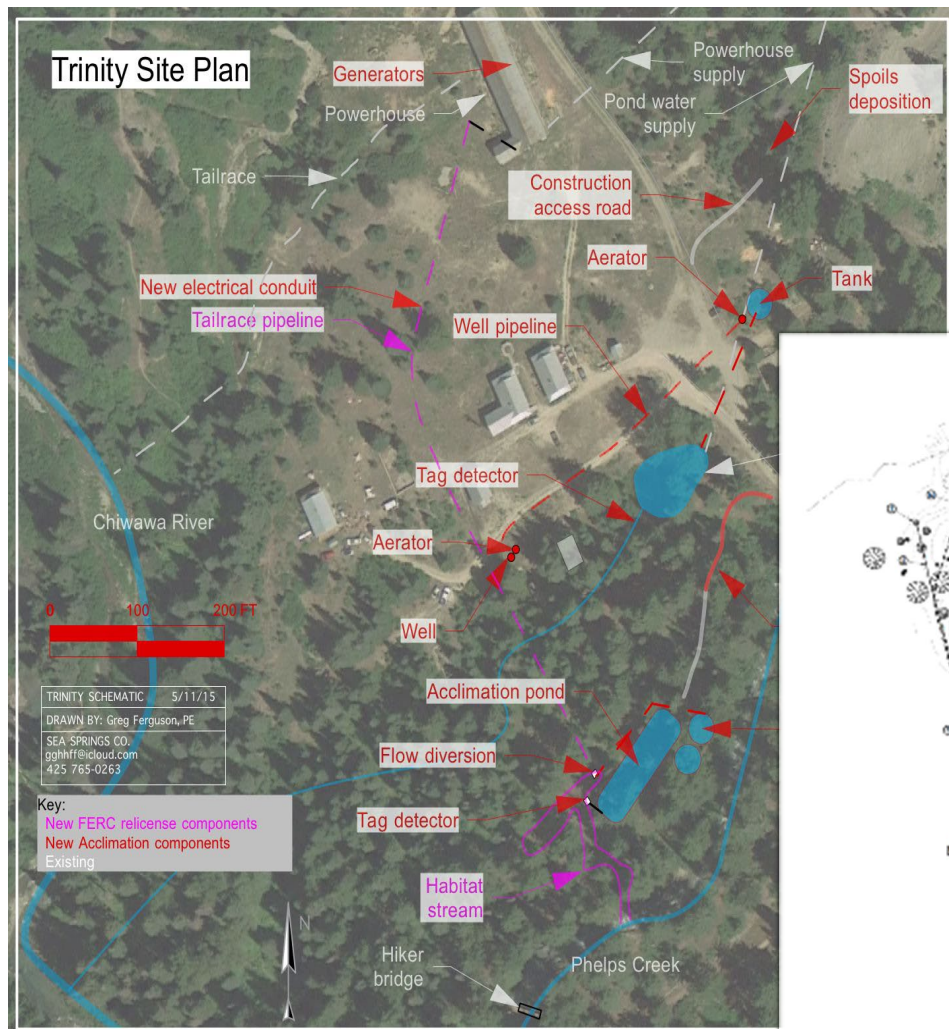
Future- Trinity Overwinter Facility

Site Design-Trinity

- Located on private property owned by the Trinity Conservancy Inc. in the upper Chiwawa basin (rkm 49.6)
- Site acclimation up to 150,000 coho and/or spring Chinook
- Designed to overwinter in circulars with surface water and supplemental groundwater for de-icing/emergency use.



Site Design-Trinity



Site Design-Trinity

- Pilot study began in 2021-test feasibility of overwintering
 - Late October transfers ($n=750-1,000$ fish)
 - Early May release
 - 5 years of evaluation determined:
 - Suitable growth to meet target release size achieved in 4 out of the 5 years (15-17fpp)
 - Environmental conditions (flow, temperature, rearing) were acceptable with no major fish loss (mortality less than 2%)
 - Transfer to pond and outmigration was successful (detections at both McNary and Bonneville in years tagged (2023,2024 & 2025))





HONOR. PROTECT. RESTORE.

Project Benefits

Coho Reintroduced....

- Provide increased opportunity for tribal harvest; both in basin and out of basin
- Increase the abundance of a keynote species within ecological communities
- Supplying marine derived nutrients at the onset of winter months
- Continued opportunity to study adaptation over time and the rate it can occur



Any Questions?

