LEWIS RIVER AQUATIC COORDINATION COMMITTEE

Facilitator: ERIK LESKO
503-412-8401

Location: TEAMS MEETING ONLY

Date: November 10, 2022

Time: 9:30 AM – 12:00 PM

AGENDA ITEMS

9:30 AM Welcome
- Review and Accept 11/10/2022 Agenda
- Review and Accept 10/13/2022 Meeting Notes

9:45 AM Public Comment Opportunity

9:50 AM Aquatic Fund Applicant Presentations *(Lesko)*
- Pine Creek Restoration Design Project, Cramer Fish Sciences and Columbia Land Trust. (*Phil Roni, Ph.D.*)
- Clear Creek and Clearwater Creek Restoration Implementation, U.S. Forest Service. (*Greg Robertson*)

10:50 AM Merwin Conveyance System Design & Construction *(Karchesky)*

11:20 AM Study/Work Product Updates
- Flows/Reservoir Conditions Update
- Reservoir Shoreline Development Projects
- ATS Update
- FPS Update
  - *30% Yale downstream design meeting invite*
  - *Draft Lewis River Future Fish Passage Elements Document*
- Fish Passage/Operations Update
- Swift Reservoir Stranding Surveys
- Yale HPP spawning survey schedule

11:50 AM Next Meeting's Agenda
- Study/Work Product Updates

Public Comment Opportunity

12:00 PM Meeting Adjourn

Note: all meeting notes and the meeting schedule can be located at:
https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html

Join on your computer or mobile app

Click here to join the meeting

Or call in (audio only)

+1 563-275-5003,,644857650# United States, Davenport

Phone Conference ID: 644 857 650#

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
November 10, 2022
TEAMS Meeting Only

ACC Representatives and Affiliates Present (16)
Sarah Montgomery, Anchor QEA
Christina E. Donehower, Cowlitz Indian Tribe
Amanda Froberg, Cowlitz PUD
Steve West, LCFRB
Chris Karchesky, PacifiCorp
Erik Lesko, PacifiCorp
Mark Ferraiolo, PacifiCorp
Jeremiah Doyle, PacifiCorp
Peggy Miller, WDFW
Bryce Glaser, WDFW
Josua Holowatz, WDFW
Jim Byrne, Trout Unlimited
Bill Sharp, Yakama Nation
Keely Murdoch, Yakama Nation
Jeffrey Garnett, USFWS
JD Jones, USFS

Guests (4)
Phil Roni, Cramer Fish Sciences
Reid Camp, Cramer Fish Sciences
Tyler Rockhill, Cramer Fish Sciences
Phillip Thompson, USFS

Calendar:

November 10, 2022	ACC Meeting	TEAMS Meeting

Assignments from November 10, 2022	**Status**
Karchesky: Discuss potential impacts of Merwin conveyance system work with the ATS to determine broodstock collection modifications.	**Ongoing.**

Assignments from July 14, 2022	**Status**
Erik Lesko: Update Teams meeting invitation to add and remove staff as needed. (Full update planned for 2023 meeting invitations.)	**Ongoing.**

Assignments from April 14, 2022	**Status**
Erik Lesko: Coordinate with the TCC regarding the timing for WSDOT's Cougar Creek culvert project.	**Ongoing. (Currently**

	planned for 2023.)

Opening, Review of Agenda and Meeting Notes
Erik Lesko (PacifiCorp) called the meeting to order at 9:32 a.m. and reviewed the agenda.

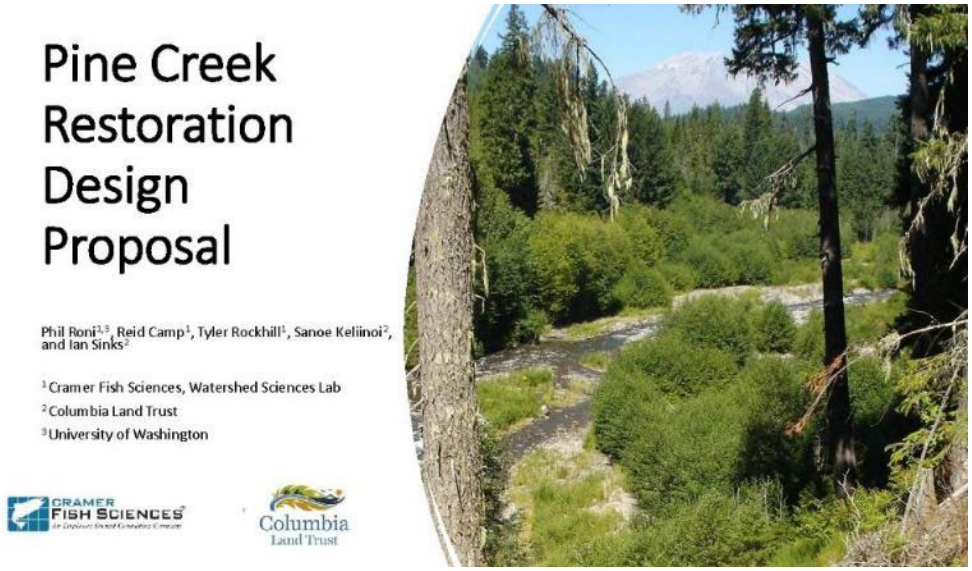
Lesko reviewed the October 13, 2022 meeting notes. All edits were accepted and the notes were approved by the ACC.

Public Comment Opportunity
None.

Aquatic Fund Applicant Presentations
Erik Lesko introduced the Aquatic Fund application process. He said there is $200,000 added to the fund annually until 2027 (and the $200,000 is adjusted annually for inflation from year 2008 dollars), plus the $3.9 million currently available in the fund (of which approximately $675,000 is dedicated bull trout funds). Including current and future contributions, the Aquatic Fund will have about $5 million in funding after all contributions have been completed in year 2027. Lesko said PacifiCorp received two proposals for 2023 funding by the October 21 deadline, and sponsors will present their proposals today to the ACC. The ACC has received the proposals for review and is encouraged today to ask questions and identify any significant flaws that could prevent an application from being approved. Written comments are due back to PacifiCorp by November 30. Then, those comments are summarized and provided back to the sponsors by December 2, with final proposals due on December 30.

Pine Creek Restoration Design Project – Cramer Fish Sciences and Columbia Land Trust

Phil Roni introduced the Cramer Fish Sciences and Columbia Land Trust Team. He provided a presentation detailing the Pine Creek Restoration Design Project proposal, for which the slides are provided below and in Attachment B. Questions and comments from the ACC are provided below.

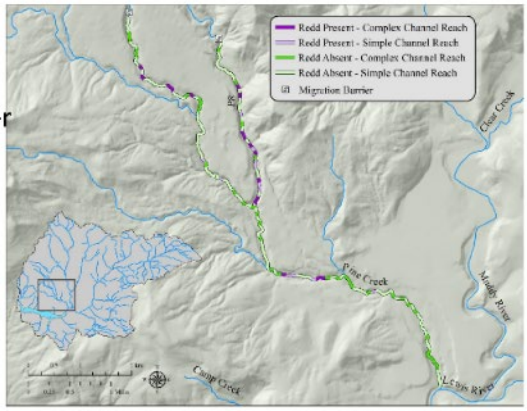


Background

- One of most important Bull Trout spawning streams
- Multiple reaches are priorities for Bull Trout, Steelhead, and Coho
- LCFRB Recovery plan indicates that Pine is the number 1 trib for current and potential Bull trout production in Upper NF
- CLR purchased/obtained easement more than 5,000 acres in 2013/2014 to project Pine Creek from development and manage the lands to benefit Bull Trout, spotted owls, and wolves

Previous Assessment Data

- Roni and Timm 2016
  - Watershed assessment
- Lamperth et al. 2017 Lewis River Bull Trout habitat restoration identification assessment
- Other
  - USFS 1995,1996
  - LCFRB 2010
  - Beechie and Imaki 2014
  - USGS/PacifiCorp 2016
  - Hudson et al. 2019



Lamperth et al. 2017

LCFRB SalmonPort – Priority Reaches

Restoration Needs	Pine Creek Reaches and Multi-Species Priority				
	P1	P2	P4	P5	P6
Off channel and side channel habitat	H	H	H	H	H
Riparian conditions & functions	H	H	H	H	H
Stream channel habitat structure & bank stability	H	H	H	H	H
Watershed conditions & hillslope processes	H	H	H	H	H
Floodplain function and channel migration processes	H	H	H	H	M
Instream flows	M	H	M	M	M
Access to blocked habitats	L	L	L	L	L
Regulated stream management for habitat functions	L	L	L	L	L
Water quality	L	L	L	L	L

H = High priority, M – medium priority, and L –Low priority

Problem

- Heavily impacted by the eruption of Mt. St. Helens with long recovery times for full recovery
- Subbasin Plan indicates it could benefit from targeted riparian and stream channel restoration
- Assessments have outlined the restoration needs for priority reaches
- Need for a comprehensive holistic restoration plan and designs that protects existing areas of Bull Trout spawning while restoring areas of degraded instream and riparian habitat

Species that will benefit

- Bull Trout
- Steelhead
- Coho
- Chinook?
- Wildlife
- Meets ACC Fund Objectives
  - Benefit ESA listed species
  - Support reintroduction
  - Enhance Habitat

Overall Project Goal

- Improve instream habitat complexity and riparian habitat in Pine Creek for Bull Trout and other salmonids

Specific Objectives

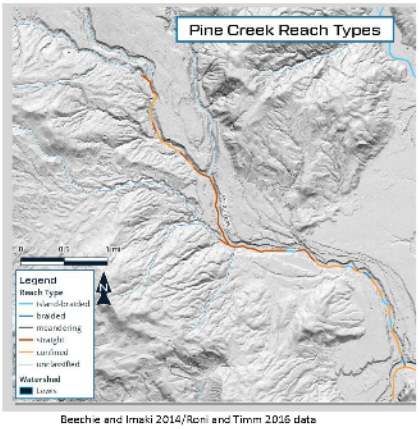
1. Improve habitat complexity in simplified reaches through large wood placement
2. Stabilize sediment to allow for riparian succession to mature conifer forest
3. Increase side channels and spawning habitat for Bull Trout and steelhead
4. Protect existing quality spawning habitat for Bull Trout and steelhead
5. Create resting areas for spawning adult Bull Trout and steelhead
6. Improve holding pools for juvenile Bull Trout and steelhead
7. Improve overwintering habitat for salmonids
8. Reduce or stabilize incision rates in areas with floodplain pockets

Project Tasks

- Task 1: Investigation and baseline assessment
- Task 2: Design
  - 15% concepts and alternatives
  - 30% basis of design
  - 60-80% & permit applications
  - 100% bid ready package
- Task 3: Monitoring and photo documentation
- Task 4: Project management and coordination

Task 1: Site Investigation & Baseline Assessment

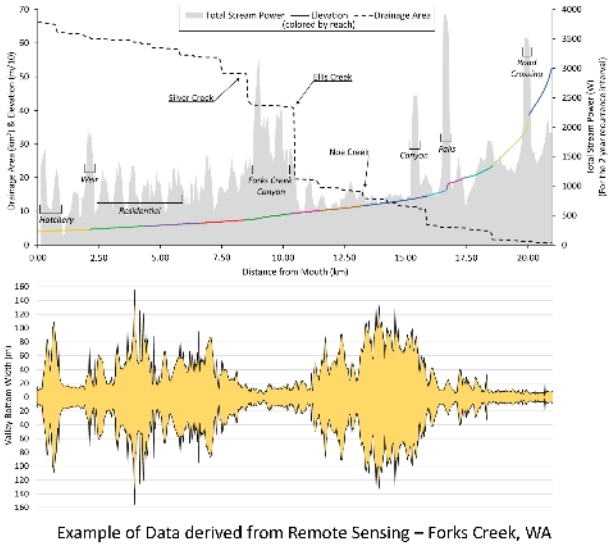
- Existing data review and analysis
  - Focus on Priority Reaches
  - Identify suitable areas within reaches
- Site survey and field data collection
  - Targeted new field data
  - Focusing on suitable areas identified
- Geomorphic and riparian assessment
  - Using field, existing, and remote sensed data
- Hydrologic assessment
- Hydraulic analysis



Beechie and Imaki 2014/Roni and Timm 2016 data

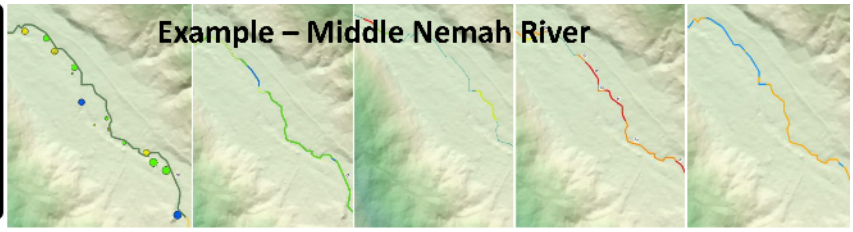
Existing Data Analysis

- Lidar and remote sensing
  - 2018 LiDAR
- Channel typing
  - Beechie and Imaki 2014
- Habitat Surveys
  - Lamperth et al. 2014
- Fish data
  - Spawner surveys
- Sediment and other data
  - Roni and Timm 2016



Example of Data derived from Remote Sensing – Forks Creek, WA

Example – Middle Nemah River



iPad App
-Long Profile
-Fluvial Features

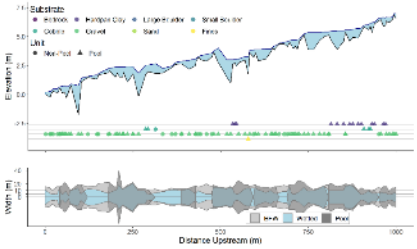
Sediment Sources
-Surficial Area
-Substrate Size

Dominant Substrate
-Substrate Size

Incision Depth
-Red = >2m
-Green = <0.25m

Wood Location
-Single vs Jam
-Functionality

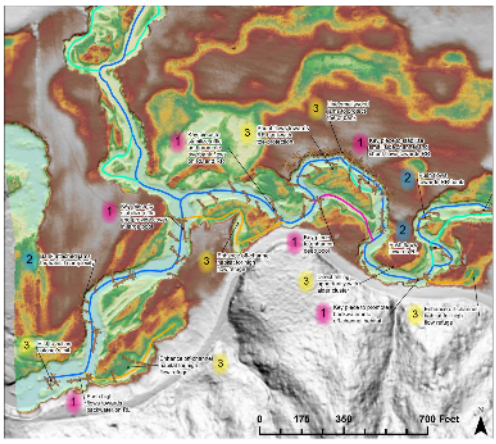
Channel Units
-Pool vs Non-pool



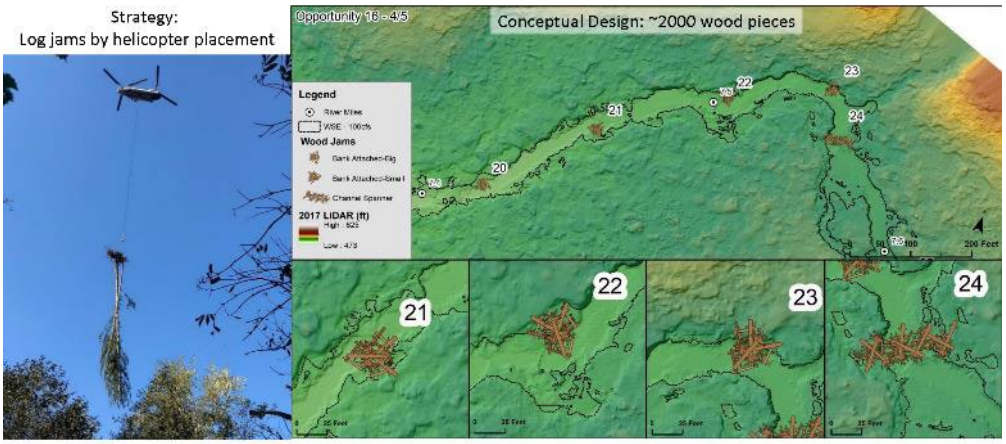
Compilation/Interpretation of Data Informed:
- ID of Geomorphic Segments and Geomorphic Reaches
- ID of restoration opportunities
- Concepts for highest priority areas

Task 2 -Design

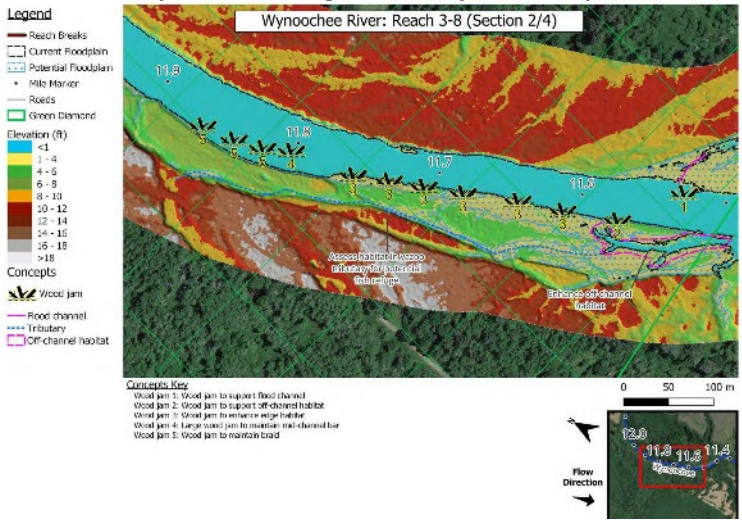
- Alternatives analysis and conceptual design – 15%
- Preliminary design – 30%
- Permit ready designs – 60-80%
- Final design – 100%
- Environmental compliance and permitting
- Submit final design plan set and basis of design report



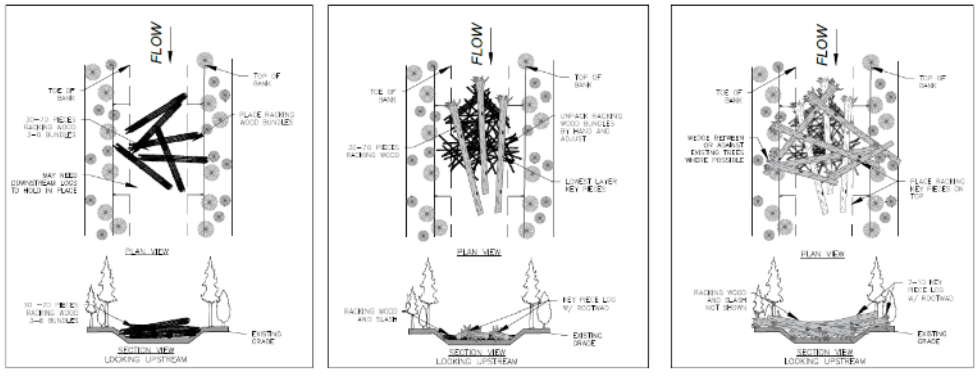
Task 2 – Design Example – Middle Nemah River



Task 2 – Conceptual Design Example – Wynoochee

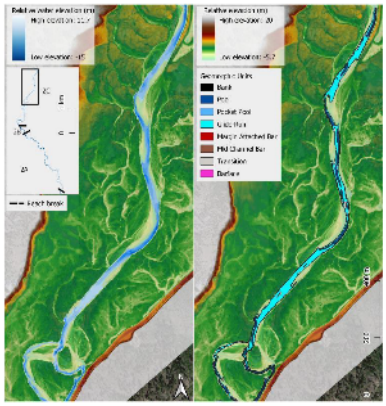


Permit Ready & Final Designs



Task 3 – Monitoring and photo documentation

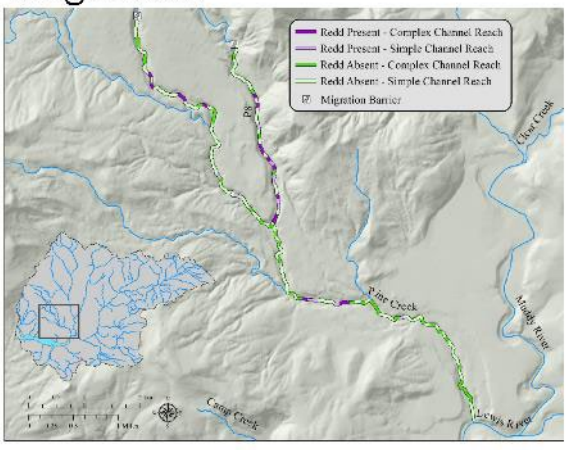
- Required photo documentation
- Pre-project effectiveness monitoring
  - Collected as part of design process
  - Latest techniques using remote sensing and supplemental field data
  - Based on BPA AEM, SRFB Pilot Studies, etc.
  - GUT, MQI, HSI, DoD etc.



Task 4 – Project Management and Coordination

- Work closely with Columbia Land Trust on
  - Assessment
  - Riparian treatments
  - Complement upland restoration
- Periodic check-ins with ACC
- Third-party review of designs

Challenges and Contingencies



Project Team

Cramer Fish Sciences	
Phil Roni, Principal Scientist	• 30 plus years of research related to habitat restoration
Reid Camp, Fluvial Geomorphologist	• >12 years of experience in restoration assessment and design
Tyler Rockhill, Restoration Engineer	• Experience in hydraulic modeling, engineering, and restoration design
Rocko Brown, Senior Fluvial Geomorphologist & Restoration Engineer	• 20 years of experience in hydraulic modeling, habitat assessment, and restoration design
Columbia Land Trust	
Ian Sinks, Stewardship Director	• Responsible for all care and management of all of Columbia Land Trust's lands
Sanoie Kelliinoi, Natural Area Manager Pine Creek	• Area manager for CLT Pine Creek lands and associated conservation easements

Project Schedule

	2023								2024									
Task	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**
Task 1 - Assessment	X	X	X	X														
Task 2 - Design				X	X	X	X	X	X	X	X	X	X					
Task 2.2 - 30% Design							X	X	X									
Task 2.3 - 60-80% Design									X	X	X							
Task 2.4 - Final Design											X	X	X	X	X	X	X	X
Task 3 - Monitoring														X	X	X	X	X
Task 4 – Project mgt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Budget

Task	Totals
Task 1: Site investigation and baseline assessment	**$65,151**
Task 2: Design	**$77,314**
Task 3: Monitoring and photo documentation	**$11,966**
Task 4: Project Management and Reporting	**$36,791**
Total Project Costs	**$191,222**

Primary assumptions
- Treatments primarily LW and riparian
- Existing LiDAR is adequate

Summary

- Pine Creek is priority Bull Trout spawning stream and a priority for restoration
- Degraded instream and riparian areas due to Mt St Helens and other factors that will take many decades to recover naturally
- Work with Columbia Land Trust to develop restoration plan and designs for riparian and instream area that will compliment CLT upland restoration efforts
- Build out from existing areas of high-quality Bull Trout habitat to improve habitat
- Complete a holistic analysis and successful restoration design to restore riparian and aquatic habitat function for Bull Trout and other salmonids in Pine Creek.
- Meets all major objectives of Lewis River Aquatic Fund

Peggy Miller asked what is the estimated cost to construct the design and whether there are additional funding sources identified if the cost to construct exceeds the available Aquatic Funds? Roni said he can provide a construction estimate with assumptions in the final proposal. It will depend on what the total amount of stream channel proposed for restoration, which he anticipates being about 6 or 7 river miles. The work could also be divided into multiple phases for funding or construction purposes.

Miller noted that the riparian work would include tasks like planting conifers in riparian areas; this type of action may not be appropriate for funding through the Aquatic Fund, but she suggested the project team look into matching funds available through the TCC. Roni said Columbia Land Trust would direct that part of the work, as they have ownership and easements for restoration of forest and riparian zones. He will look into this and can provide more detail in the final proposal. Lesko noted that riparian restoration does fall within what could be approved for Aquatic Funds.

Miller asked for more details on Task 2.1. Roni said the conceptual design would include up to three alternatives. One of them may be a no action alternative. In a wood placement project, the

alternatives are generally different amounts of wood. Then, they are evaluated, and the preferred alternative is moved forward to final design. There would be one conceptual design for each section of the river.

Lesko provided more details about the schedule for funding. Approvals are made in February, then funds are disbursed as early as April. He also noted that while resumes are not required in the final proposal, it can help demonstrate the level of expertise of the team, which is part of the evaluation.

The ACC discussed whether the project would qualify for bull trout funds. Roni said on Salmon Port, the stream is identified as a priority area for steelhead, but there are increasing numbers of coho as well as Chinook salmon. It is known as a bull trout stream but supports other species too. Roni said the project purpose started with the focus on bull trout but then the team realized how many other species can benefit too. Lesko said typically bull trout specific projects are placed into the bull trout fund.

Jim Byrne said Pine Creek is a very mobile stream with few places to anchor log jams or large woody material. Roni agreed – it is a fairly mobile stream with some high energy reaches that move sand and sediment. In a stream like this, with few areas accessible by equipment, root wads would be flown in. These pieces will have to be large enough to be immobile in the channel. This project would probably not involve anchoring or pile driving; the goal is to size the material correctly and let the river do the work. Byrne said while the channel itself is narrow, the floodplain widens and the channel can move around through the floodplain. Roni said that is typical behavior for a river that does not have much wood to help anchor material and encourage growth of mature vegetation. Adding large wood in these areas will help stabilize the channel.

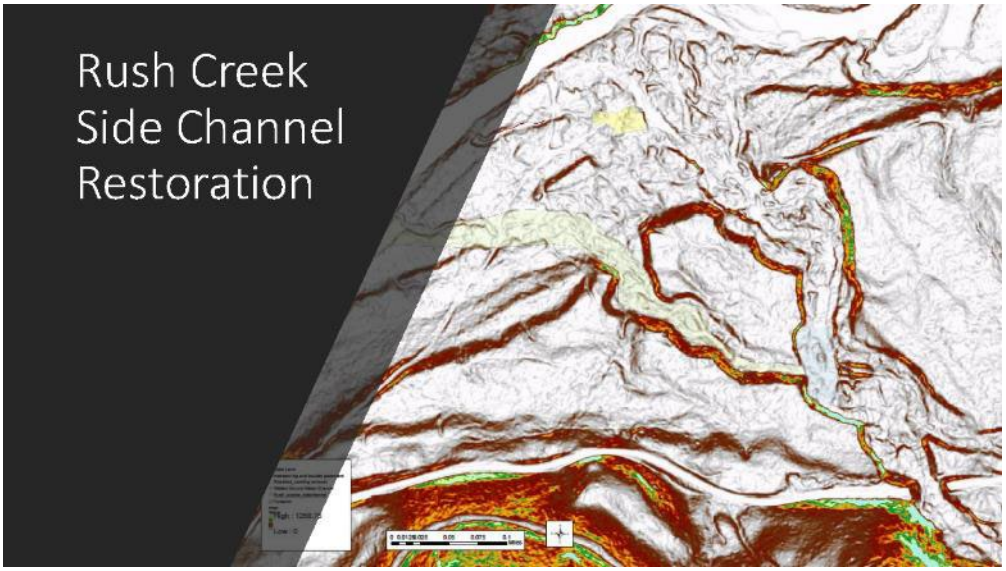
Bill Sharp said watershed trajectories are included in the hydrologic assessments. He asked whether this incorporates climate change and asked about glacial input that may have occurred since 1980. Roni said climate change is incorporated into the assessment. Tyler Rockhill said the eruption has been important to this system. In order to incorporate those factors into the design, the team conducted a literature review to help evaluate post-eruption watershed trajectories. Reid Camp added that the volcanic and glacial soils help provide sediment that can be recruited to the channel to build good habitats.

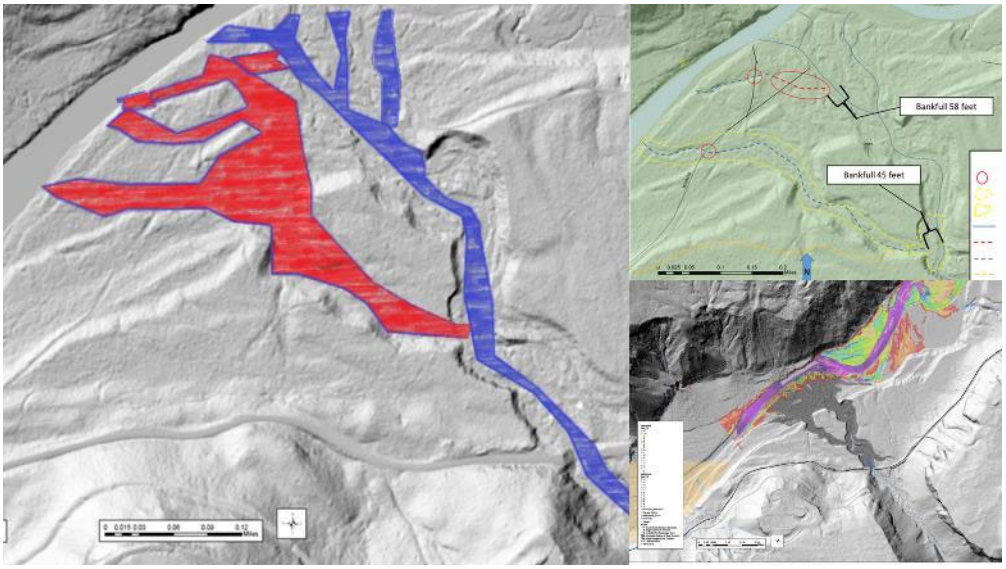
Lesko provided a few editorial comments for the final proposal. It would be helpful if Figure 1 had pattern recognition instead of colors because they are sometimes printed in grayscale. He suggested including the reaches available on Salmon Port. He noted some of the USGS gages in the area are not active anymore. He said it would be helpful to have more clarification on whether the assessment is on the whole stream or just the reaches with higher potential for restoration (1, 2, and 4). Rockhill said the assessment will include all reaches, and the design will focus on the priority reaches. Roni added they want to avoid piecemealing the assessment and design. Rockhill is aware of the USGS gages, and they use coincident records for basin extrapolation. Roni said if data are available, they will evaluate before and after eruption flow conditions.

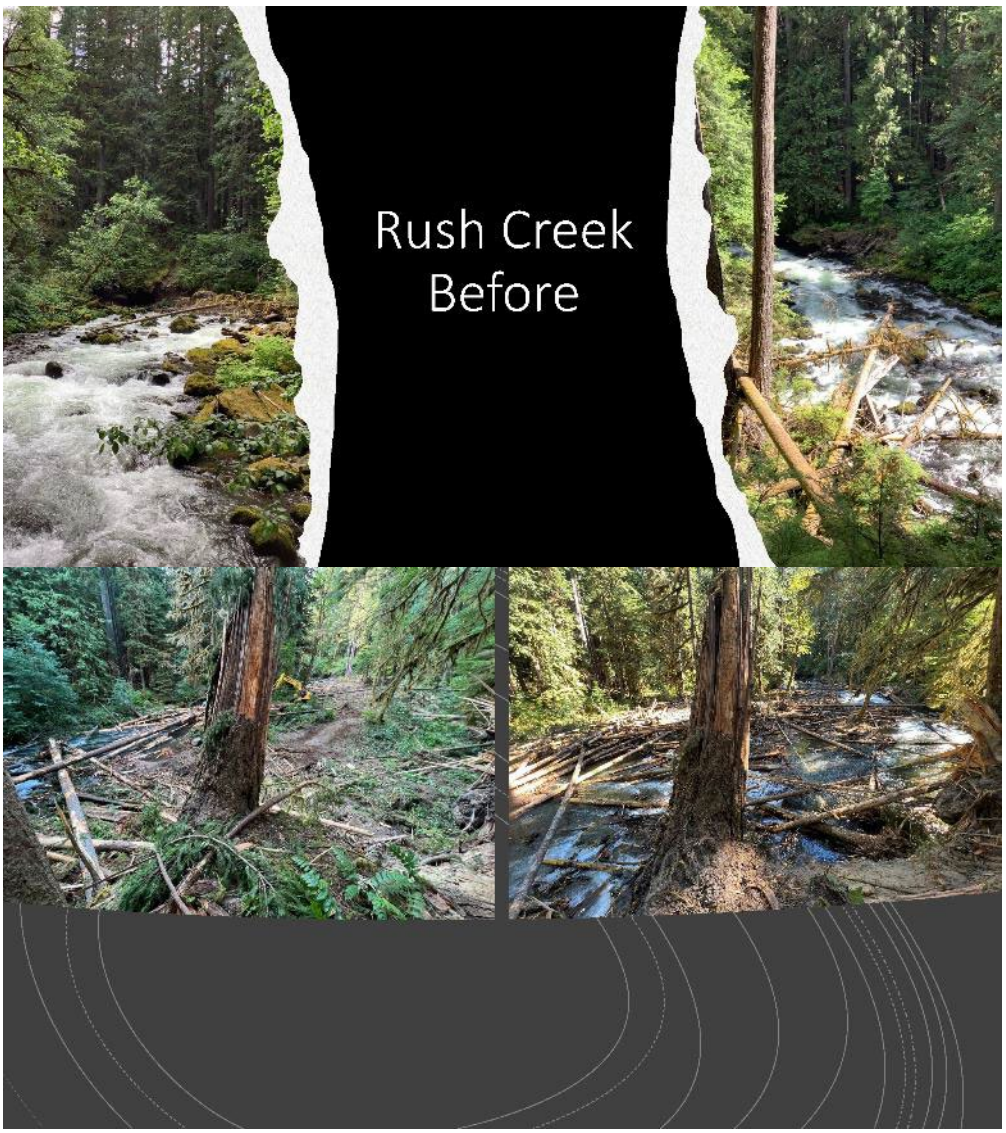
Jeff Garnett said he appreciates the attention to bull trout. Thinking forward to implementation, depending on the cost, it might make sense to prioritize certain sections or reaches that have the most habitat benefit. Roni agreed and said there will be a prioritization based on habitat benefit. JD Jones said because Pine Creek has one of the few populations of bull trout within the Lewis River basin, it would be great to prioritize bull trout benefits.

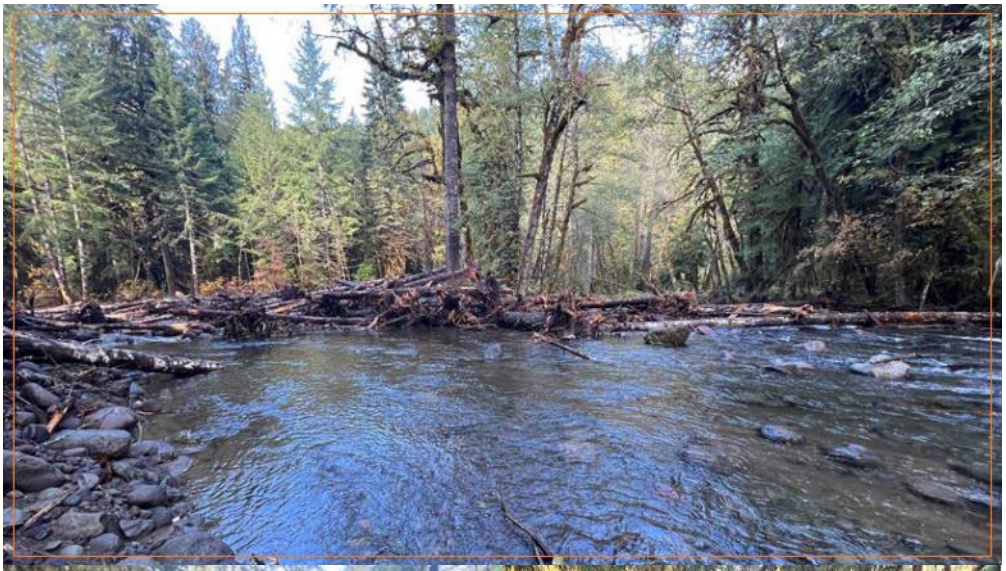
Lewis River Restoration Plan and Implementation – USFS

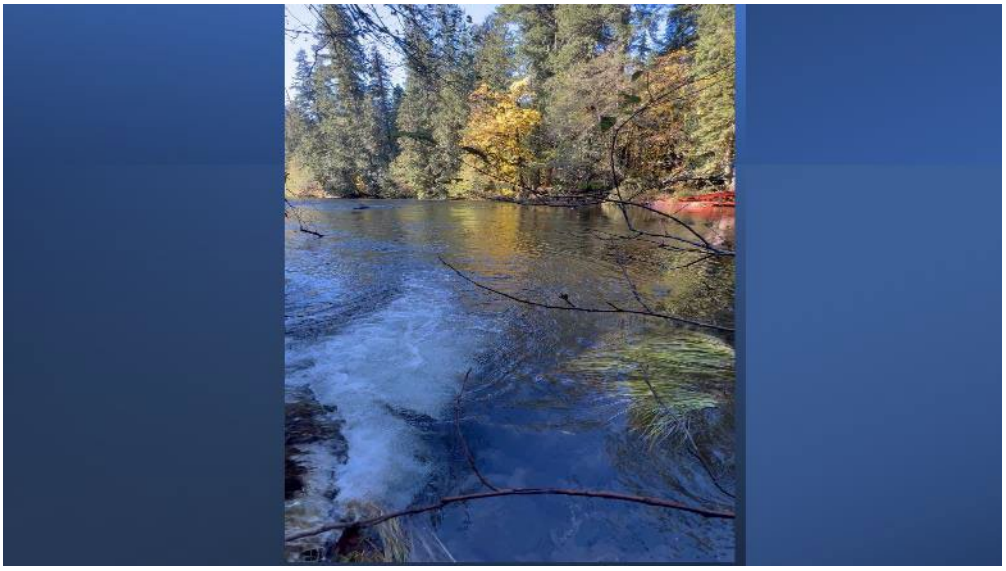
JD Jones provided a progress update on restoration projects in the Lewis River basin and then introduced the Aquatic Fund proposal for work starting in 2023 in the Clear and Clearwater creek basins. Slides are provided below and in Attachment B. Questions and comments from the ACC followed.

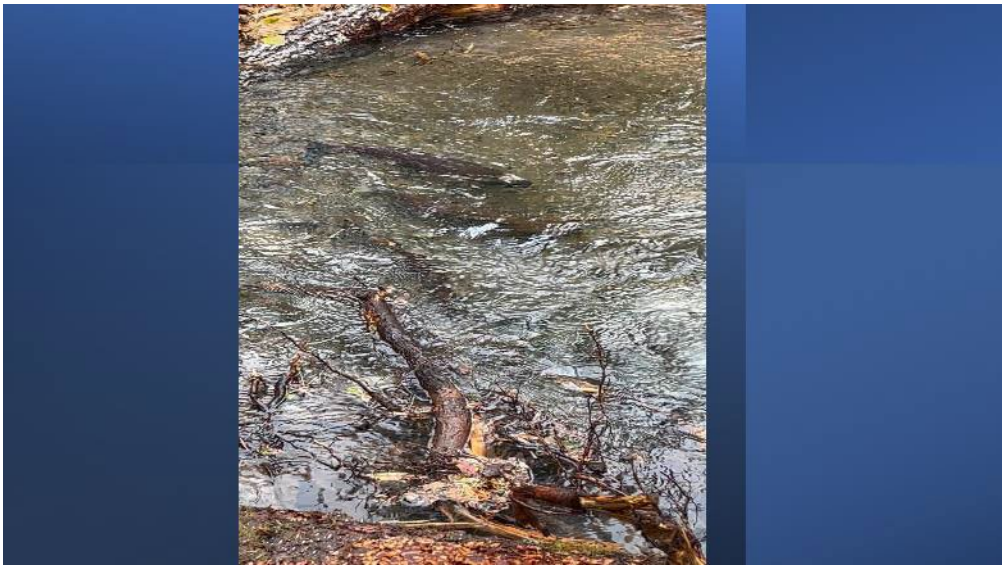


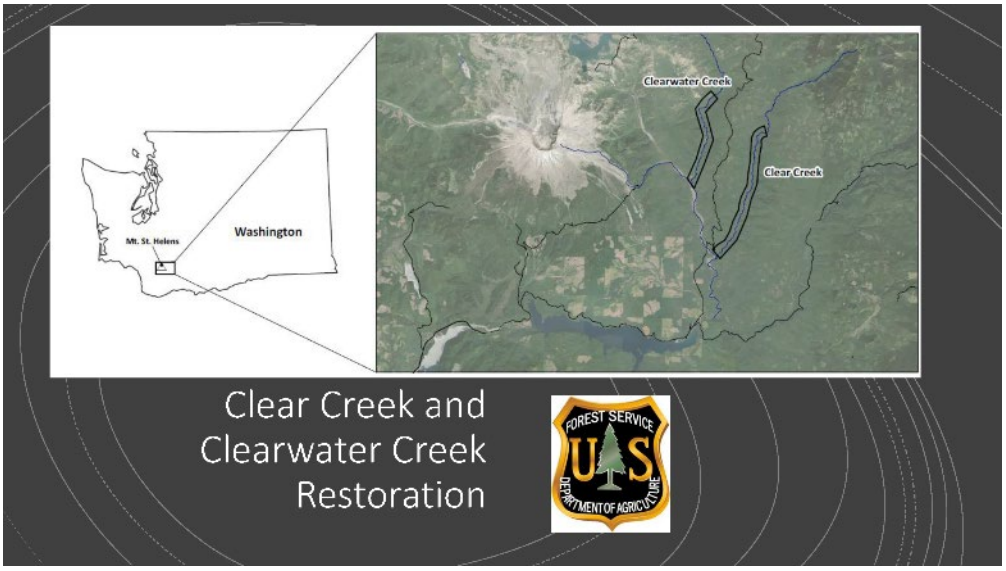

Bankfull 58 feet
Bankfull 45 feet


Rush Creek
Before

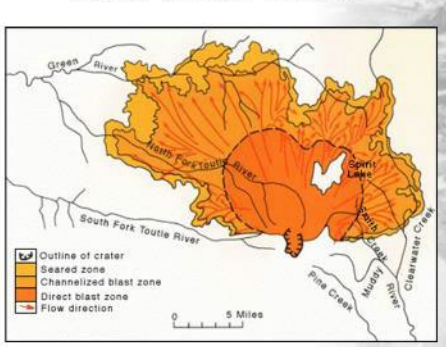


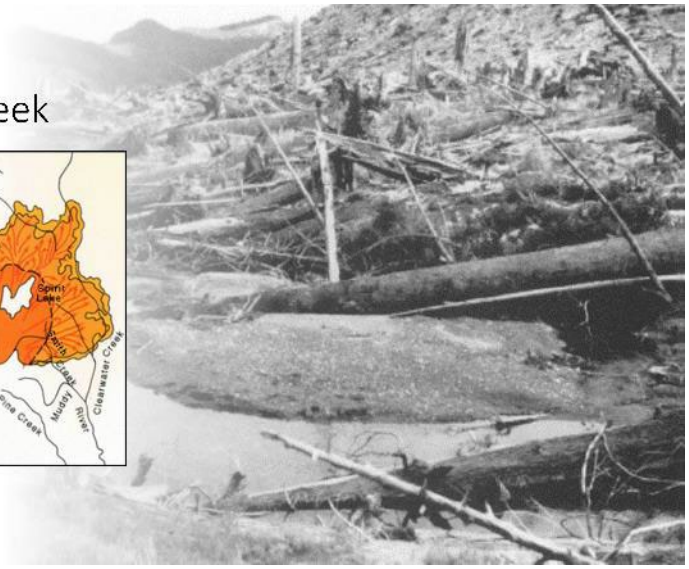





Clearwater Creek
Clear Creek
Mt. St. Helens
Washington
Clear Creek and
Clearwater Creek
Restoration
FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

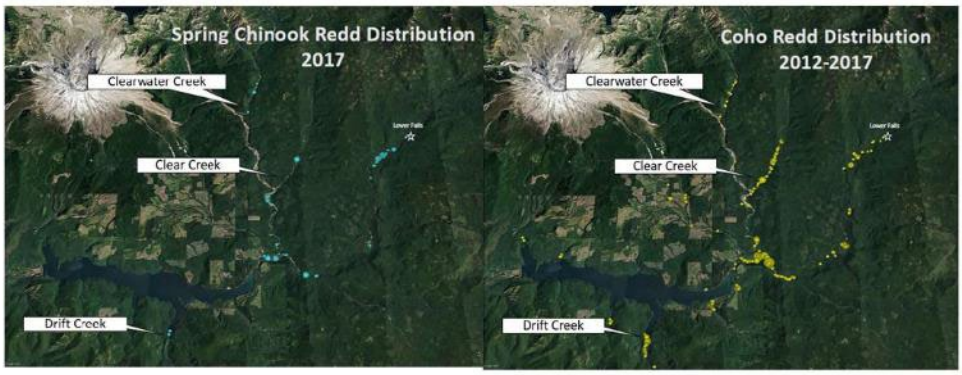
Clearwater Creek

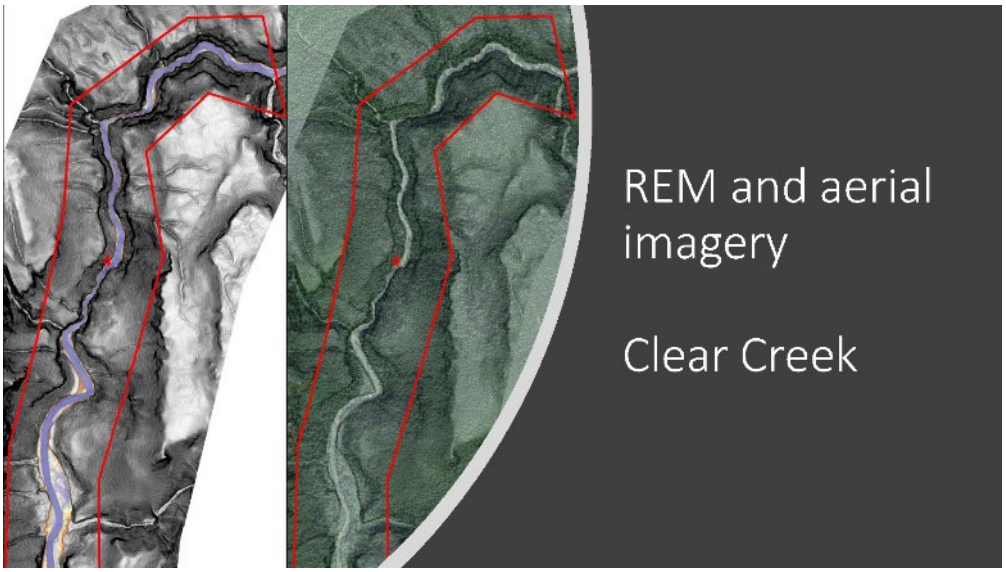


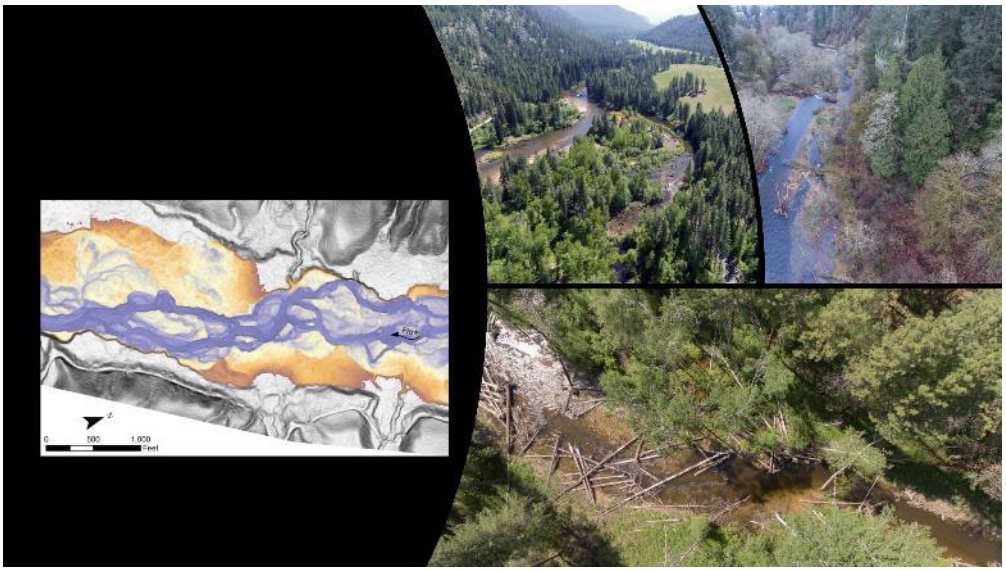


Clearwater Timber Salvage

Clear Creek


Spring Chinook Redd Distribution
2017
Clearwater Creek
Clear Creek
Drift Creek
Coho Redd Distribution
2012-2017
Clearwater Creek
Clear Creek
Drift Creek


REM and aerial imagery
Clear Creek



Clear and Clearwater Creeks Alternatives Analysis

SUBMITTED TO
Gifford Pinchot National Forest
Mt Adams Ranger District

PREPARED BY
Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031

DJ&A, P.C.
2000 Maple Street
Missoula, MT 59808

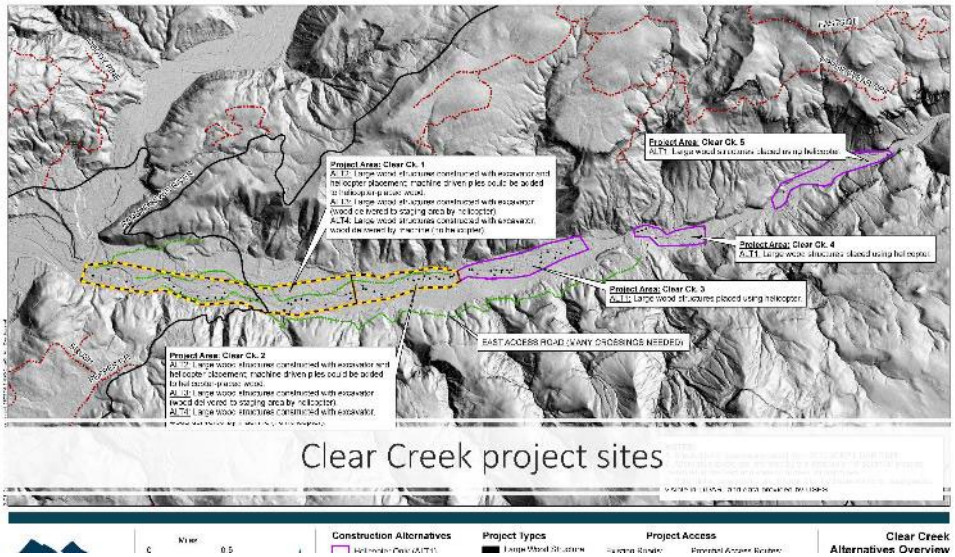
October, 2022

Clear Creek

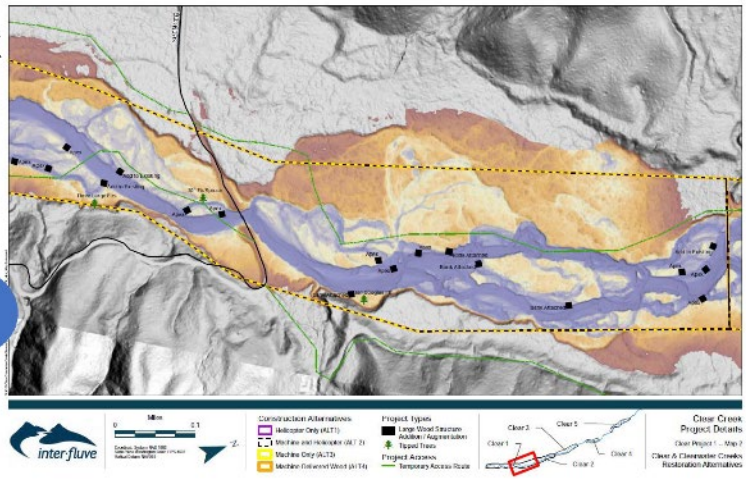
Alt	Project Areas[1]	Total Stream Length[2] (ft)	Proposed Volume of Wood Additions[3,4] (ft^3)	Estimated Number of Trees[3,4]	Expected Habitat Uplift	Construction Considerations
1	1,2,3,4,5	30,430 (5.8 mi)	576,040	4,600	Distributed wood treatment, via heavy lift helicopter, would add much needed complexity to largest possible treatment area.	Distances to source decks, turn times, size of trees, total volume of wood, and accessibility for ground crews all need to be considered for Alternative 1. Wood stability depends on volume of wood placed.
2	1,2	17,560 (3.3 mi)	457,495	3,700	Achieves wood placement in areas most deficient of in situ, stable large wood. Vertical logs increase longevity, and likely, geomorphic effectiveness of structures.	Distances to source decks, turn times, size of trees, total volume of wood, and accessibility for ground crews all need to be considered for Alternative 2. Wood stability improved with vertical logs and/or burial.
3	1,2	17,560 (3.3 mi)	185,200	1,500	Achieves wood placement in areas most deficient of in situ, stable large wood. Vertical logs increase longevity, and likely, geomorphic effectiveness of structures.	Distances to source decks, turn times, size of trees, total volume of wood, and accessibility for ground crews all need to be considered for Alternative 3. Wood stability improved with vertical logs and/or burial. Establishment of temporary access through wetlands and potentially sensitive areas will need to be evaluated.
4	1,2	17,560 (3.3 mi)	185,200	1,500	Achieves wood placement in areas most deficient of in situ, stable large wood. Vertical logs increase longevity, and likely, geomorphic effectiveness of structures.	Wood stability improved with ground-based machine placement, vertical logs, and/or burial. Establishment of temporary access through wetlands and potentially sensitive areas will need to be evaluated.

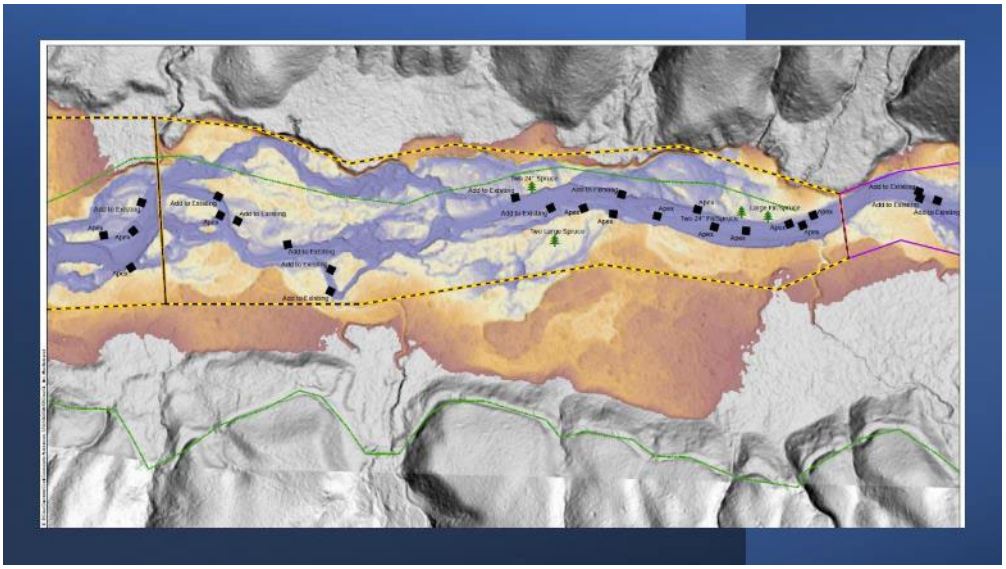
Clearwater Creek

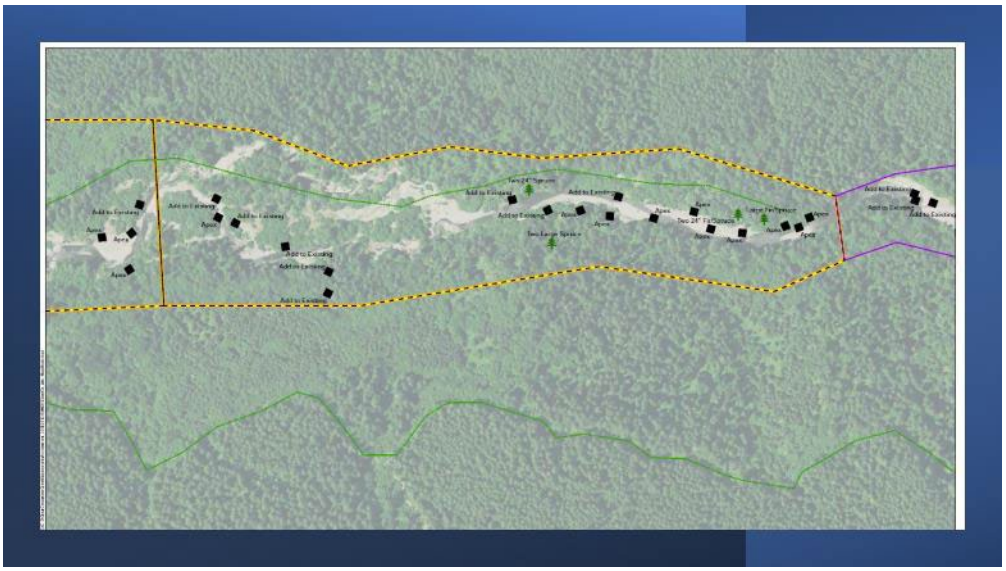
Alt	Project Areas[1]	Total Stream Length[2] (ft)	Proposed Volume of Wood Additions[3,4] (ft^3)	Estimated Number of Trees[3,4]	Expected Habitat Uplift	Construction Considerations
1	1,2	14,820 (2.8 mi)	278,510	2,200	Distributed wood treatment, via heavy lift helicopter, would add much needed complexity to largest possible treatment area	Distances to source decks, turn times, size of trees, total volume of wood, and accessibility for ground crews all need to be considered for Alternative 1. Wood stability depends on volume of wood placed.
2	1	9620 (1.8 mi)	190,400	1,500	Achieves wood placement in areas most deficient of in situ, stable large wood. Vertical logs increase longevity, and likely, geomorphic effectiveness of structures.	Distances to source decks, turn times, size of trees, total volume of wood, and accessibility for ground crews all need to be considered for Alternative 1. Wood stability improved with vertical logs and/or burial.
3	1	9620 (1.8 mi)	136,600	1,100	Achieves wood placement in areas most deficient of in situ, stable large wood. Vertical logs increase longevity, and likely, geomorphic effectiveness of structures.	Distances to source decks, turn times, size of trees, total volume of wood, and accessibility for ground crews all need to be considered for Alternative 1. Wood stability improved with vertical logs and/or burial. Establishment of temporary access through wetlands and potentially sensitive areas will need to be evaluated.

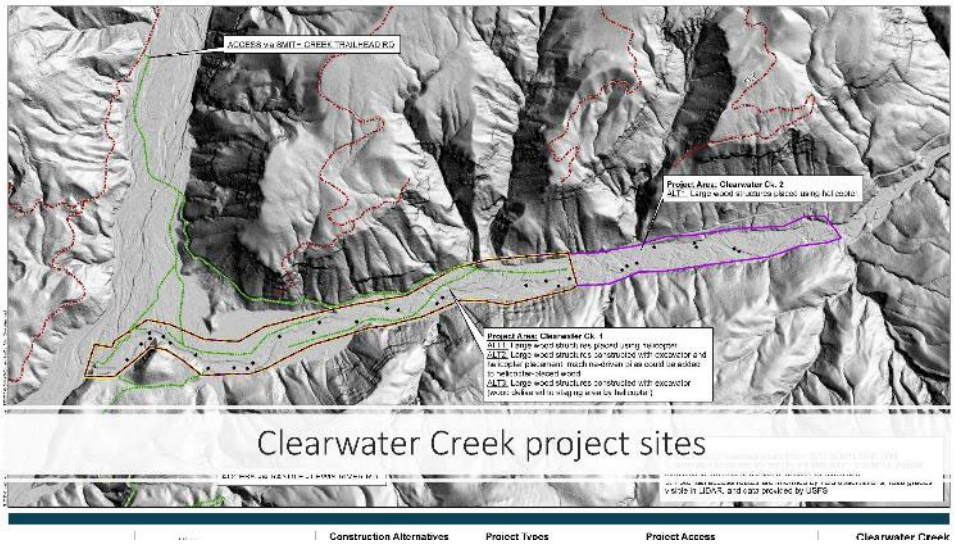


Clear Creek Instream Structures

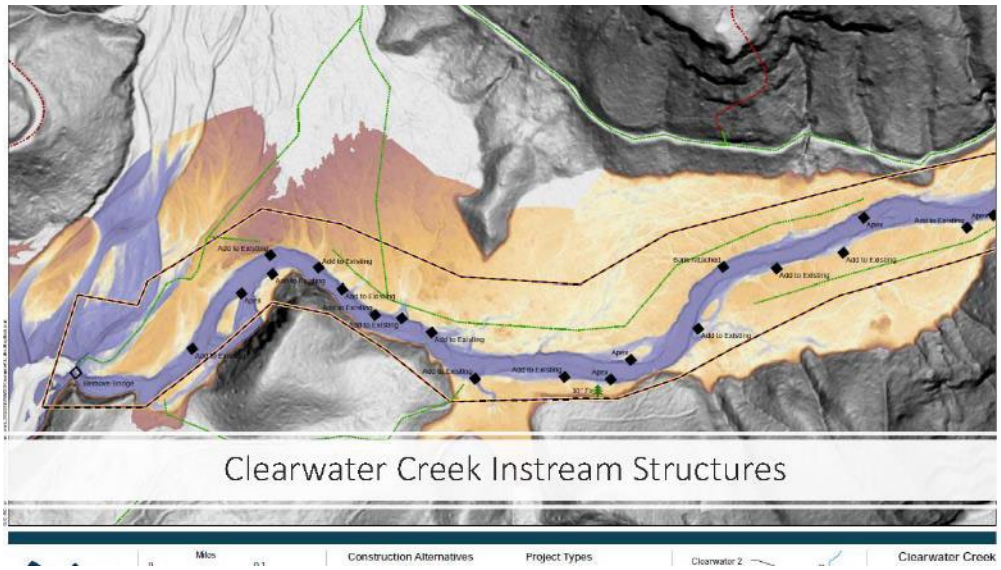


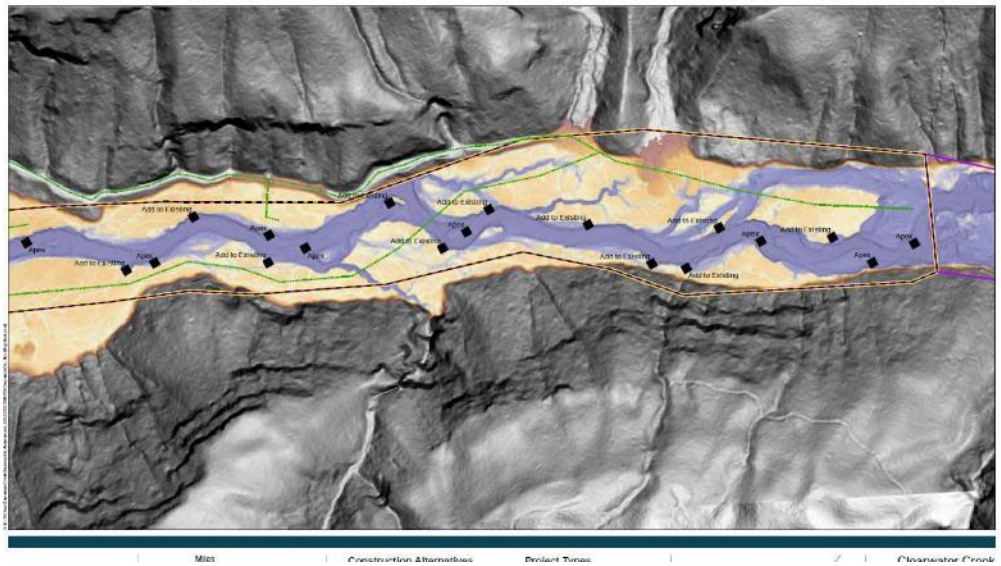


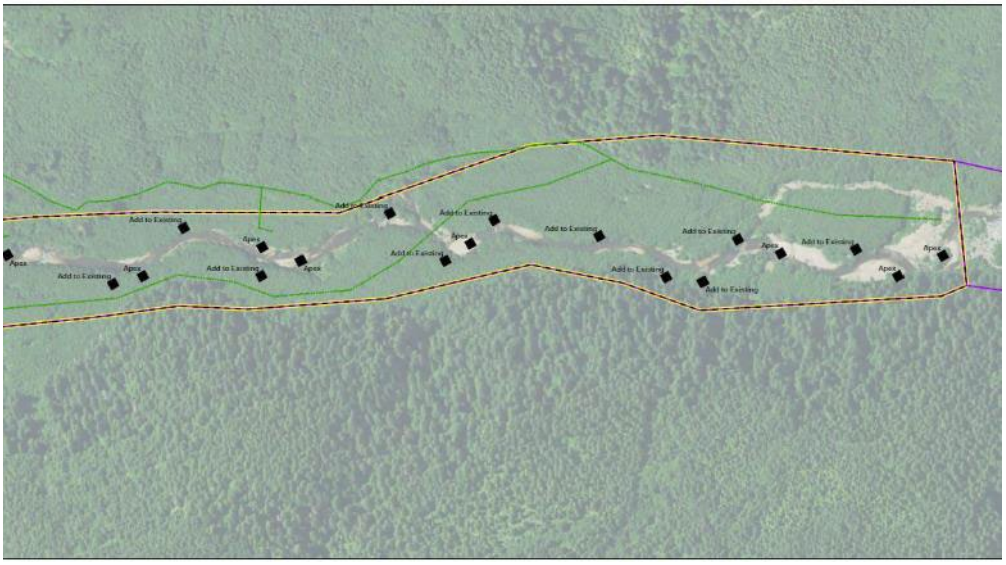


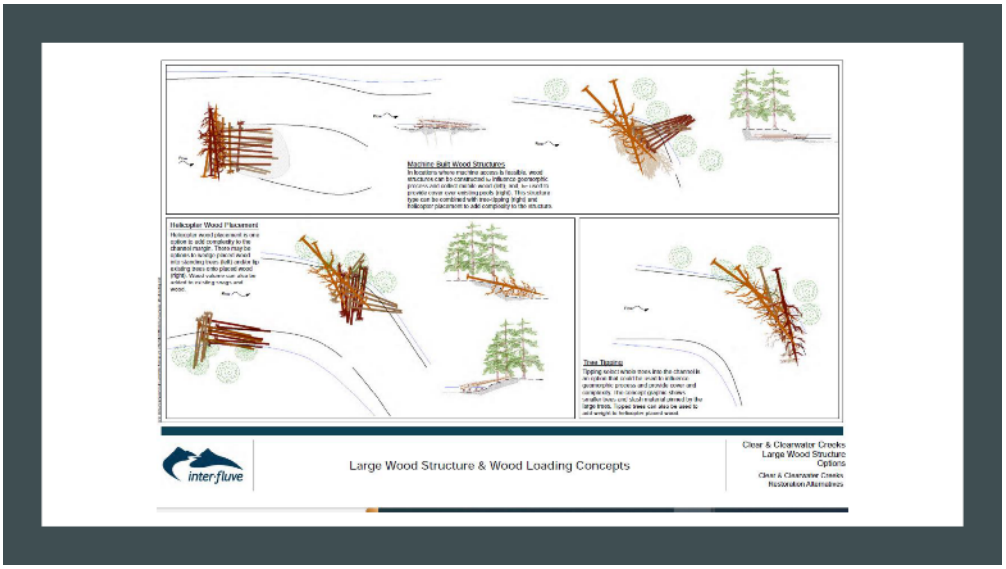

Clearwater Creek project sites
Construction Alternatives
Project Types
Project Access
Clearwater Creek


Clearwater Creek-
Helicopter only


Clearwater Creek Instream Structures
Miles
Construction Alternatives
Project Types
Clearwater 2
Clearwater Creek


Miles
Construction Alternatives
Project Types
Clearwater Creek




Machine Built Wood Structures
Helicopter Wood Placement
Tree Tipping
inter-fluve
Large Wood Structure & Wood Loading Concepts
Clear & Clearwater Creeks
Large Wood Structure
Options
Clear & Clearwater Creeks
Restoration Alternatives

Apex-type wood structures built with a helicopter (left) and ground-based equipment (right).

Cost estimate for Clearwater Creek project alternatives.
Alternative 1 – helicopter only

	Clearwater Creek									
	Quantity				Unit Cost			Cost		
	Alt 1	Alt 2	Alt 3	Unit	Alt 1	Alt 2	Alt 3	Alt 1	Alt 2	Alt 3
Miscellaneous[1,2]								**$ 140,000**	**$ 140,000**	**$ 115,000**
Mobilization/Demobilization[1]	1	1	1	LS	$100,000.0	$100,000.0	$75,000.00	$ 100,000	$ 100,000	$ 75,000
Bridge Removal[2]	1	1	1	LS	$ 40,000.0	$ 40,000.0	$ 40,000.0	$ 40,000	$ 40,000	$ 40,000
Staging, Storage, Access[3]								**$ 4,000**	**$ 14,000**	**$ 14,000**
Staging Areas	2	1	1	AC	$ 2,000	$ 2,000	$ 2,000	$ 4,000	$ 2,000	$ 2,000
Temporary Access	0	4	4	MI	$ -	$ 3,000	$ 3,000	$ -	$ 12,000	$ 12,000
Large Wood[4,5]								**$ 3,900,000**	**$ 3,300,000**	**$ 1,700,000**
Large Wood Installation[4]	278,505	190,400	136,600	CF	$ 14	$ 17	$ 12	$ 3,900,000	$ 3,300,000	$ 1,700,000
Equivalent Log Quantity[5]	*2,200*	*1,500*	*1,100*	EA		*Per-Log Project Cost*		*$ 1,800*	*$ 2,300*	*$ 1,600*
							Sub-Total	**$ 4,044,000**	**$ 3,454,000**	**$ 1,829,000**
							Contingencies (30%)	$ 1,213,200.0	$ 1,036,200.0	$ 548,700.0
							Project Totals (Rounded Up)	**$ 5,300,000**	**$ 4,500,000**	**$ 2,400,000**

Cost estimate for Clear Creek project alternatives
Alt 1 and 2 chosen

	Clear Creek												
	Quantity					Unit Cost				Cost			
	Alt 1	Alt 2	Alt 3	Alt 4	Unit	Alt 1	Alt 2	Alt 3	Alt 4	Alt 1	Alt 2	Alt 3	Alt 4
Miscellaneous[1]										**$ 100,000**	**$ 100,000**	**$ 75,000**	**$ 75,000**
Mobilization/Demobilization	1	1	1	1	LS	$ 100,000	$ 100,000	$ 75,000	$ 75,000	$ 100,000	$ 100,000	$ 75,000	$ 75,000
Staging, Storage, Access[3]										**$ 6,000**	**$ 16,000**	**$ 14,000**	**$ 32,000**
Staging Areas	3	2	1	1	AC	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 6,000	$ 4,000	$ 2,000	$ 2,000
Temporary Access	0	4	4	4	MI	$ -	$ 3,000	$ 3,000	$ 7,500	$ -	$ 12,000	$ 12,000	$ 30,000
Large Wood[3,4]										**$ 8,100,000**	**$ 7,800,000**	**$ 2,300,000**	**$ 2,300,000**
Large Wood Installation[3]	576,000	457,985	185,200	185,200	CF	$ 14	$ 17	$ 12	$ 12	$ 8,100,000	$ 7,800,000	$ 2,300,000	$ 2,300,000
Equivalent Log Quantity[4]	*4,600*	*3,705*	*1,500*	*1,500*	EA			*Per-Log Project Cost*		*$ 1,800*	*$ 2,100*	*$ 1,500*	*$ 1,500*
									Sub-Total	**$ 8,206,000**	**$ 7,916,000**	**$ 2,389,000**	**$ 2,407,000**
									Contingencies (30%)	$ 2,461,800.0	$ 2,374,800.0	$ 716,700.0	$ 722,100.0
									Project Totals (Rounded Up)	**$ 10,700,000**	**$ 10,300,000**	**$ 3,200,000**	**$ 3,200,000**

Forest Service Implementation Cost

For Project Implementation– estimated 11.4 total miles of stream, with 4 miles of excavator access and 7.4 miles of helicopter access.		
Item	**Clear Creek**	**Clearwater Creek**
Tree acquisition, push over, full tree	$250,000	$50,000
Excavator placement	$170,000	$0
Helicopter placement	$2,100,000	$466,667
Equipment mobilization	$80,000	$10,000
Creek Total Cost	$2,600,000	$526,667
	Project Request	**$3,126,667**

***Total Project Cost with request and in-kind contribution: $3,986,667**

Timeline

- NEPAfy trees 2023
- 2024-2027 Implement

Questions???

Jeff Garnett noted the potential high cost of the projects compared to the available funds and asked if there are opportunities to combine work with other projects to reduce the cost of helicopter mobilization and use. Jones agreed and said there are projects in the Cispus basin that could potentially garner cost-savings. Jim Byrne said there was a very large log jam on Clearwater Creek – is that still present in the system and where? Jones said it is above the proposed projects. Between that log jam and the Lewis River, there are no other complex jams. Byrne asked if it would be feasible to use some of that wood from the jam. Jones said it is an old jam that is already deteriorating, so removing wood from it is not desirable. The focus now is on adding new wood.

Miller noted that funding this entire project would use most of the available Aquatic Funds. Jones said the two highest priority reaches have been proposed for this work, and it would be helpful to discuss phasing the work. Lesko said he thinks the ACC funding the entire 3.1 million is unlikely, especially given that the cost of the helicopter work alone is 2 million. The ACC can provide feedback on highest priorities and a cost breakdown would be helpful in the final proposal.

Roni said though he is not an ACC member, as someone who is familiar with the Rush Creek work and Lewis River basin, he wanted to add that he noticed evidence of a channel-spanning jam that had blown out below the bridge, which could potentially inform design work below the bridge. Jones said they are proposing two or three jams in that area.

Josua Holowatz said in the long-term, a channel-spanning jam would strain recruited wood from upstream reaches. Would more wood need to be added after construction to keep the jams functioning? Jones said there are some locations upstream where large trees will recruit in the near future, so the design team thinks those jams would hold, but it is not guaranteed.

Bill Sharp noted that logs could be staged as close as possible to the installation sites to reduce helicopter costs. Jones agreed and said the Clear Creek project has lower costs due to being accessible by an excavator. Miller asked the ACC whether a stamped design is required for Aquatic Fund approvals, because that would result in a higher design cost. Lesko said he is not aware of a requirement to have a stamped design, it is up to the applicant to evaluate that risk. Jones said the USFS typically would pay for a stamped design if there are homes or infrastructure downstream that could be affected. Steve West noted the Manual 18 does not specify stamped designs are required (Manual 18 a regional standard but not specifically applicable to the ACC Aquatic Fund). Glaser agreed and said WDFW would also consider recreational use when deciding whether a stamped design is needed. Jones noted the USFS sought input from the kayaking community when evaluating the projects but there is not much recreation in these streams because of the lack of access and logistical challenges.

The ACC thanked both project proponents for their presentations and will provide written comments to Lesko by November 30.

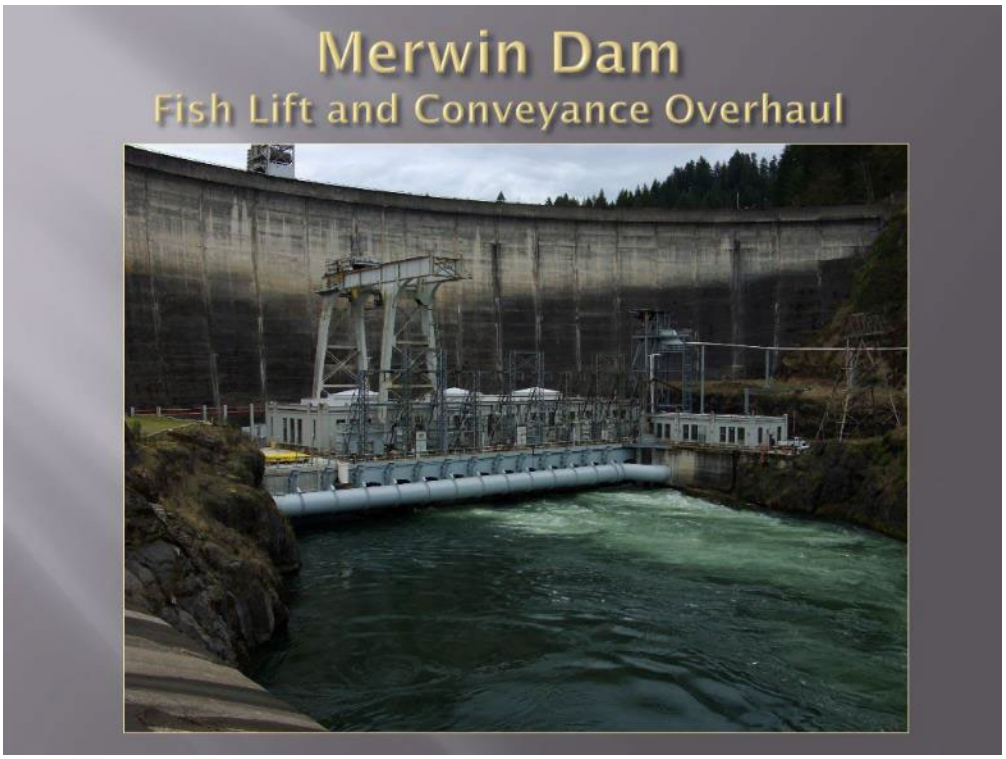
Study/Work Product Updates

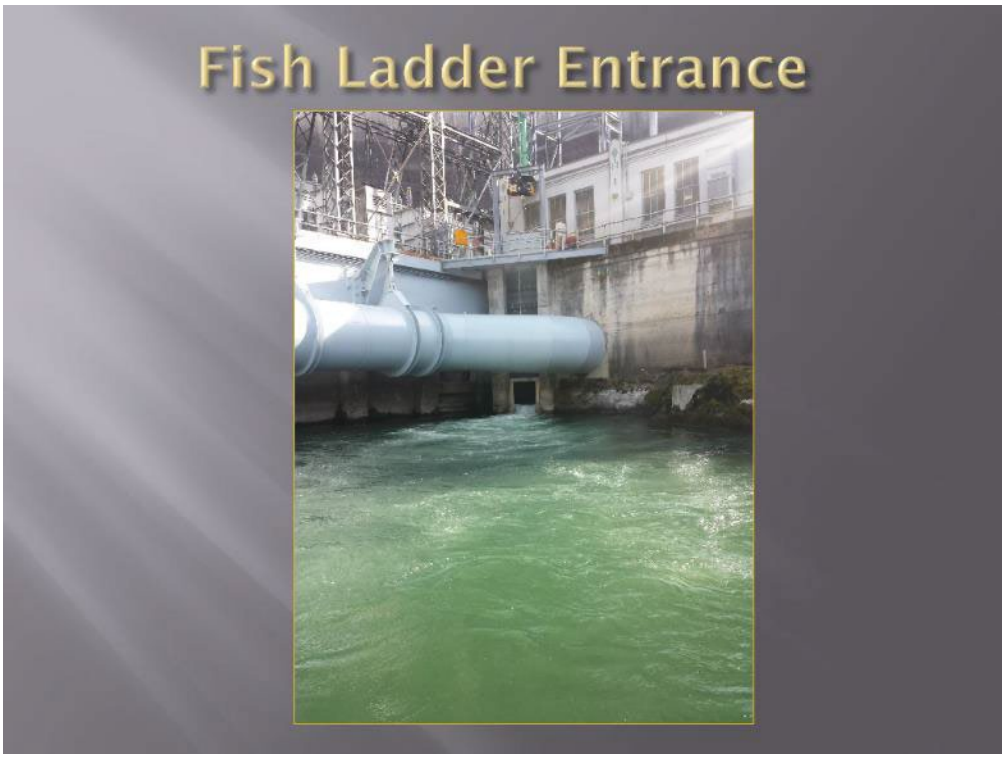
ATS Update

Erik Lesko said the Aquatic Technical Subgroup (ATS) is working to finalize the Annual Operating Plan. It's out for review. The ATS has also recently revisited their priority items and upcoming deliverables and are working to reorganize their work plan so that priorities and ongoing work can be tracked well. The Draft AOP is being reviewed by the ATS and staff are

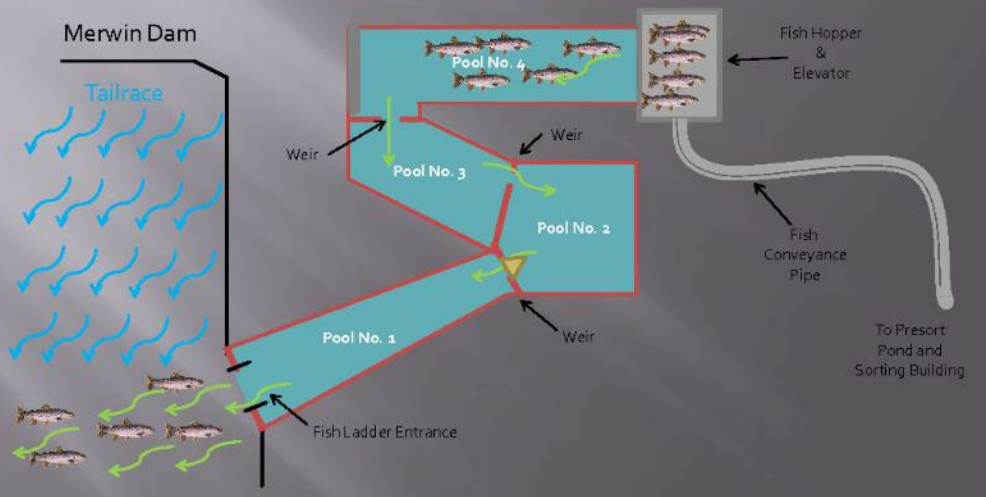
also working to finalize the genetics monitoring plan. Glaser added that WDFW is working to accelerate the development of Hatchery and Genetic Management Plans and will have an updated draft of the coho program transition plan for the ATS to discuss soon.

Merwin Conveyance System
Chris Karchesky provided an update on work that is planned to update the conveyance system at Merwin Dam in 2023. The slides are provided below and in Attachment C.





Fish Ladder and Conveyance System



PACIFICORP

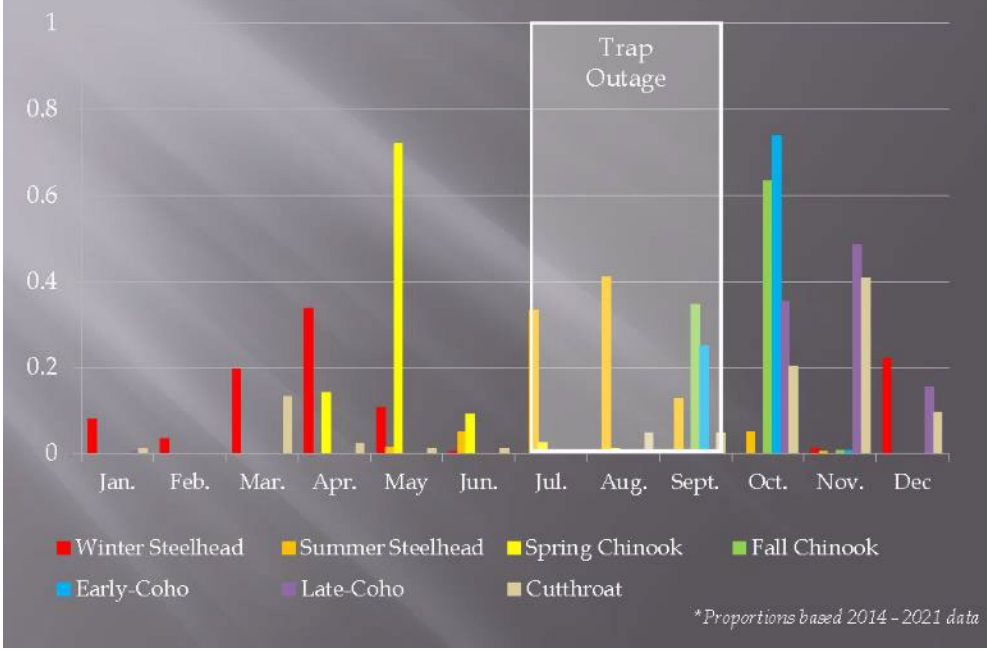
Merwin Dam
Fish Lift and Conveyance Overhaul

- Goal: To improve overall operational reliability and fish retention of the existing Merwin Dam Fish Lift and Conveyance System.
- Source: Based on results of multi-year Adult Trap Efficiency Study (2015-2019) found that:
  - Collection Efficiency was high (>90%) but below the Performance Standard of 98% CE.
  - Fish enter the trap at a higher rate than they are captured and including a temporary V-Style Weir reduced fish leaving the trap once entering the ladder.
  - Unscheduled outages to repair of the system's fish crowding mechanism due to mechanical failures attributed to reduced trap performance.
  - In review of ATE Study data, ACC determined that reliable operation of the Facility's lift and conveyance system was the largest contributor to the success of fish being captured at Merwin Dam.
- The Work:
  - Existing crowder to be replaced in kind from the original design although upgraded to allow for repairs and maintenance to be preformed without dewatering fish ladder.
  - Replace temporary V-Style Weir with permeant weir that allows access for cleaning and inspection.

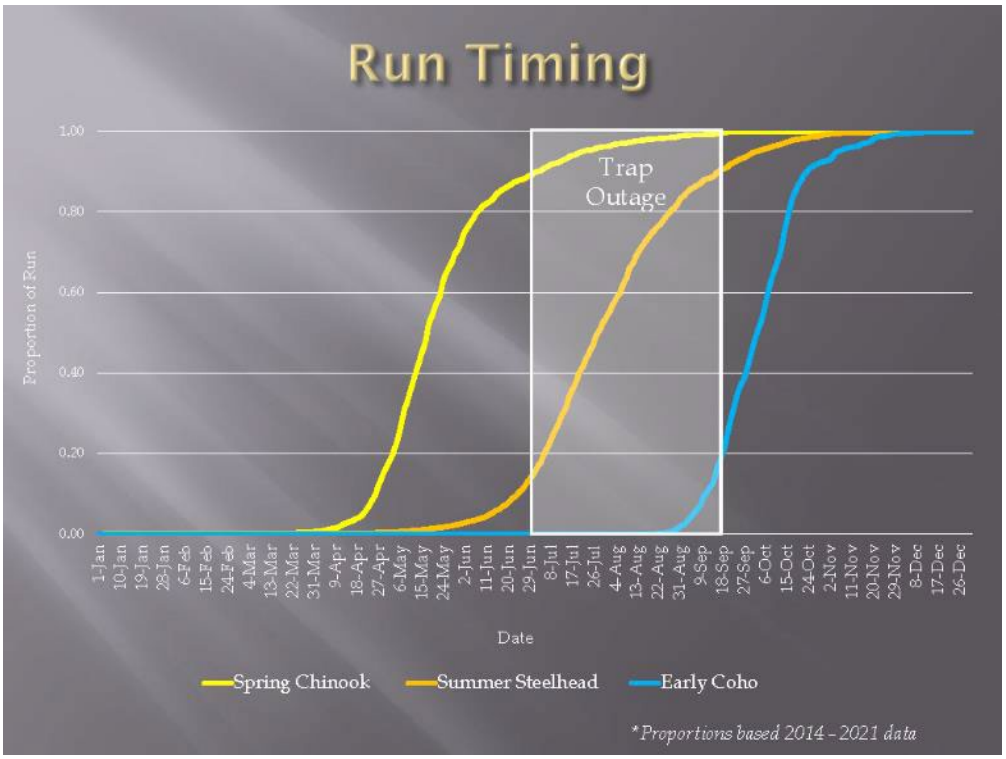
Proposed Project Schedule

- Contract Issuance – by December 31, 2022
- Fabrication and parts sourcing – January to June 2023
- Trap Outage – July through mid-September, 2023
  - Decommissioning & removal of existing crowder and temporary V-Style Weir
  - Install replacement crowder and permeant V-Style Weir
  - Electrical and Controls
- Start-up and Commissioning
- Schedule Considerations:
  - Daily Trap and Haul Operations suspended from July through mid-September
  - Species affected:
    - Spring Chinook
    - Summer Steelhead
    - Early-Coho

Monthly Collection Proportions



*Proportions based 2014 - 2021 data



Karchesky said he can provide more information on the construction schedule as it develops. Glaser thanked Karchesky for the update and provided two comments: what are the plans for collecting broodstock for summer steelhead during the outage, and what would be the plan if the schedule over-runs past the identified outage? Karchesky said those are both important discussions. Unfortunately, the crowding mechanism is the bottleneck for the system so the entire trap will need to be dewatered and trapping cannot occur during the construction period. One consideration is for WDFW to tangle-net for summer steelhead to collect broodstock during the outage if not enough fish can be collected on either side of the outage window. However, the water levels will be low so it is not certain yet whether that would be a viable option. Glaser said it will be important to clearly identify and discuss all potential impacts. He said he is also curious about potential impacts to other species that are not identified in the license, like lamprey. Are there opportunities to consider in these updates to the trap design to address passage for additional species? Karchesky said lamprey were not considered in the Settlement Agreement as a reintroduction species, and therefore the lift and conveyance system was not designed to accommodate passage of lamprey. This adjustment to the crowding mechanism will not address lamprey passage as other components including the elevator and flume system, which are not conducive to lamprey passage, will remain unchanged. Glaser suggested the ACC consider any species that may be encountered during the outage.

Holowatz suggested considering using attraction flow at Lewis River Hatchery to collect fish during the outage period. Flow to the hatchery's ladder could be increased to make the location more attractive for adult fish, and similarly, other adult fish could be used to provide cues to the ladder. Perhaps putting some summer steelhead in the holding raceway at Lewis River Hatchery would help fish recruit to the facility. Karchesky agreed this is an option to consider and thanked Holowatz for the suggestion, which they can discuss further.

Due to the technical nature of the potential impacts and solutions to this outage, Glaser suggested the ATS take on the effort for better understanding the proposed impacts and modifications to

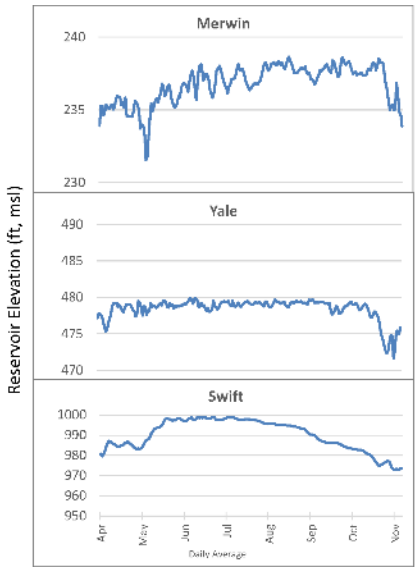
broodstock collection that will be needed. Lesko said it may also be helpful to look back on how broodstock collection was completed when the trap was being built. Karchesky agreed and said he will tee this up with the ATS early next year. Karchesky noted that he is paying very close attention to the risks of not meeting schedule on work that needs to be conducted during the outage.

Flows/Reservoir Conditions Update

Erik Lesko shared the flows and reservoir conditions update:

Daily Average Reservoir Elevations – April 1 to November 9, 2022

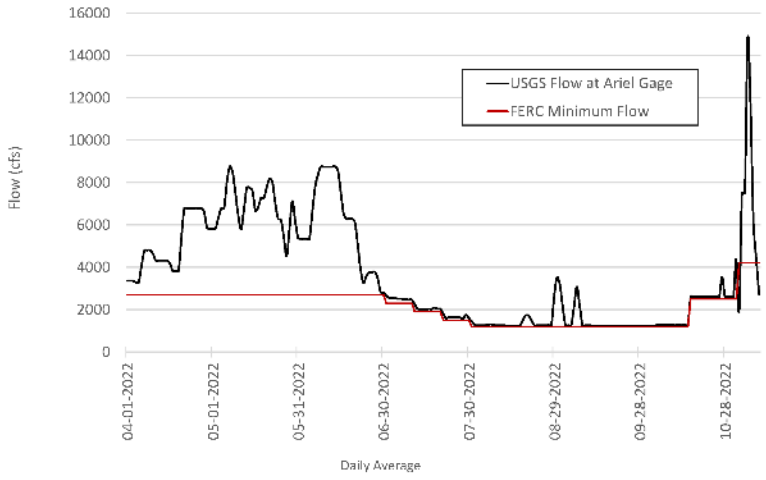
Total Draft: -45.73 feet
(-35.73 with Yale restriction)



-5.73 feet

-13.18 feet

-26.82 feet



Lesko noted the total draft is about 45 feet, or 35 feet including the Yale restriction. Swift Reservoir continues to draft and is currently around 972 feet elevation. The boat ramp at Swift Reservoir is still accessible and has around 5 feet of freeboard. Miller asked whether the rain event was captured in the reservoir. Lesko said yes, the rain event did slightly and temporarily raise reservoir elevations.

Shoreline Development Update
Lesko provided an update on known shoreline development projects within the project limits. He said there will be some spillgate work at Swift Dam next year after the recreational season, and he can share more information about that when it is available.

Steve West provided an update on the Camper's Hideaway project. The county has asserted shoreline jurisdiction, so a shoreline permit and SEPA will be needed. He said the project is confusing; there is one project for the boat ramp extension and another for the dock extension with the total change being a more than doubling in dock size with no proposed mitigation (though the surface of the docks will now be grated instead of solid). Holowatz added that he discussed this project with the WDFW Habitat Biologist in the region and they saw the pre-application paperwork and are tracking the project. The implementation date for this project will depend on permitting.

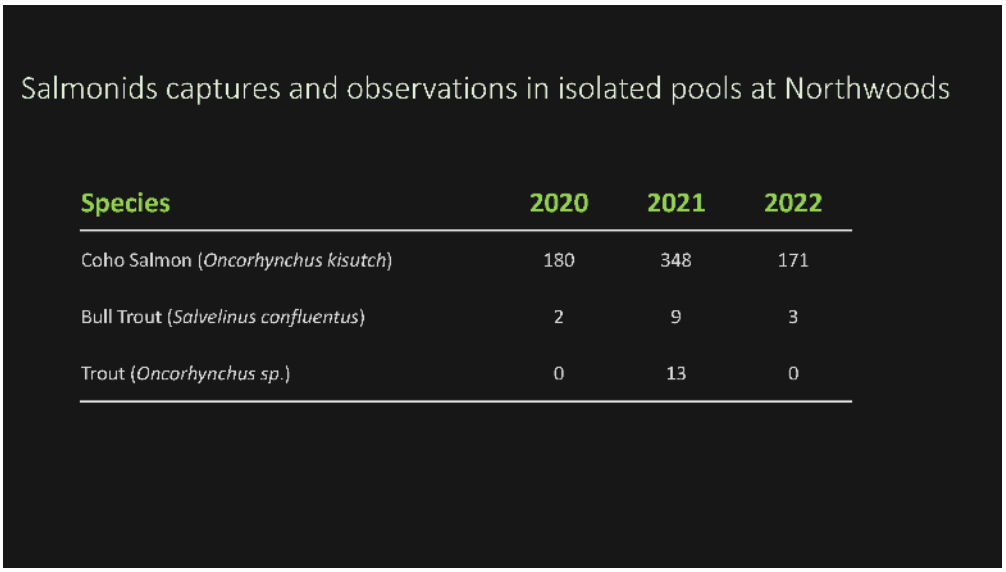
FPS Update
Bryce Glaser said the FPS has been having regular meetings to discuss upstream and downstream design updates. They are working to finalize the "Elements of Fish Passage" document, to get alignment before bringing it to the ACC for approval. On December 14, the design teams will be presenting the 30% design, so anyone interested in those designs is welcome to attend. Overall, the FPS is working to find a balance of providing input to the design team on the alternatives analysis without slowing down progress on the design, though the compressed schedule has been challenging given the overlap between alternatives analysis and design. In today's FPS meeting, they will also be discussing new dam safety requirements for the Merwin spillway that may affect the designs.

Swift Reservoir Stranding Survey Schedule
Erik Lesko shared an update on the Swift Reservoir stranding surveys.


Swift Reservoir elevation of 991.1 feet on September 1, 2022

Swift Reservoir elevation of 986.2 feet on September 19, 2022

Swift Reservoir elevation of 983.8 feet on October 3, 2022



Lesko said multiple sets of drone imagery have been collected for the surveys, which will be included in the annual report. The reservoir is currently at 983 feet elevation, and another survey is planned for November 15. Lesko summarized the number of fish that have been collected, which are consistent with species composition observations in prior years.

Merwin Fish Passage Update (see also Attachment D)
Karchesky said passage at Merwin is ongoing, and the late run of coho are beginning to show and are being transported. The 2022 collection numbers continue to exceed the historical average.

Swift Floating Surface Collector (see also Attachment E)
Chris Karchesky reported that the Swift Floating Surface Collector is currently in operation; it was returned to service on October 21 following the summer maintenance outage. Not many fish have been collected so far, and those that are being collected are mostly coho.

Lewis River Fish Passage
See Attachment F.

Yale Habitat Preparation Plan
Erik Lesko said implementation of the Yale Habitat Preparation Plan is underway. 1,801 coho have been transported upstream. The bull trout monitoring work is also ongoing. 23 bull trout redds and 73 coho redds have been observed so far during the monitoring for bull trout. Observations of coho in Yale Reservoir and its tributaries has been consistent with what was expected, though the ACC has not been able to schedule a field visit to evaluate additional tributaries. Jeremiah Doyle said while there is some overlap between the redds, bull trout tend to go higher in the tributaries and past log jams. Of the 23 bull trout redds observed, two have been superimposed by coho. The redds are clearly marked so their success can be evaluated. Holowatz asked about the Passive Integrated Transponder (PIT) detections. Doyle said 900 of the coho were tagged, and the wagon-wheel antenna on the Cedar Creek weir is likely picking up those detections. USFWS monitors that weir, so he does not have those data yet. The weir was removed last week. Glaser asked how the number of bull trout redds compares to previous years. Doyle said the range is 9 to 27 redds so the 2022 redds are comparatively higher in abundance.

Administrative Updates
No items.

Public Comment Opportunity
None present.

Agenda Items for December 8, 2022
- Review November 10, 2022 Meeting Notes
- Saddle Dam Project Update
- Study/Work Product Updates

Adjourn 12:30 pm

Next Scheduled Meeting

December 8, 2022
Teams Call
9:30 a.m. – 12:00 p.m.

Meeting Handouts & Attachments
- Meeting Notes from 10/13/2022
- Agenda from 11/10/2022
- **Attachment A –** Pine Creek Restoration Design Project – Aquatic Fund Proposal
- **Attachment B –** Lewis River Restoration Plan and Implementation – Aquatic Fund Proposal
- **Attachment C –** Merwin Conveyance System
- **Attachment D –** Swift FSC Facility Collection Report (October 2022)
- **Attachment E –** Merwin Adult Trap Collection Report (October 2022)
- **Attachment F** – Lewis River Fish Passage Report (October 2022)