PRCC Habitat Subcommittee

Conference Call

Thursday, 13 March 2025
1:00 p.m. – 4:00 p.m.

Meeting Minutes

PRCC Habitat Subcommittee Members

Kate Terrell, Shelby Fowler (alt), USFWS	Chris Fisher, CTCR
Dave Duvall, Deanne Pavlik-Kunkel (alt), GPUD	Brandon Rogers, Hans Smith (alt), YN[1]
Justin Yeager, NMFS	Carl Merkle, CTUIR
Jeremy Cram, Cody Gillin (alt), WDFW	Erin Harris, GPUD
Nathan and Clayton Buck, Wanapum	Tracy Hillman, BioAnalysts, Chair

Meeting Attendees

Kate Terrell, USFWS	Dave Duvall, GPUD
Jeremy Cram, WDFW	Justin Yeager, NMFS
Deanne Pavlik-Kunkel, GPUD	Chris Fisher, CTCR
Cody Gillin, WDFW	Erin Harris, GPUD
Tom Kahler, Douglas PUD*	Catherine Willard, Chelan PUD*
Lisa Foster, Trout Unlimited*	Ryan Lefler, Trout Unlimited*
Mark Noble, Appraiser*	Tracy Bowerman, USFWS**
Tracy Hillman, BioAnalysts	

* Guests who joined the PRCC Habitat Subcommittee meeting for the Beaver-Powered Stream Restoration presentation and/or the Appraisal Discussion.
** Guest who joined the entire PRCC Habitat Subcommittee meeting.

Action Items:

- Dave Duvall will request a status report from the Okanagan Nation Alliance on the ORRI Okanagan Falls project.

[1] Brandon Rogers provided his votes on decision items before the meeting.

- Dave Duvall will request a rate sheet from Noble Ag Land Valuation, American West Ag Appraisals, and Agri/Com Appraisals.
- Jeremy Cram will provide Dave Duvall with a list of PRCC HabSC-funded equipment and identify the status of the equipment.

Decision Items[2]:

- ***Decision:*** *On 3 March 2025, PRCC Habitat Subcommittee members approved $874,758 for the Completed 30% Design of Selected Action Alternatives to Remove Enloe Dam Project. Funding for this project will come from Fund 602.*
- ***Decision:*** *PRCC Habitat Subcommittee members declined the opportunity to fund the Beaver-Powered Stream Restoration Project.*
- ***Decision:*** *PRCC Habitat Subcommittee members approved $150,000 for the Methow River Riparian Stewardship Project. Funding for this project will come from Fund 602.*
- ***Decision:*** *PRCC Habitat Subcommittee members approved $673,670 for the M2@3R Habitat Construction Project. Funding for this project will come from Fund 602.*
- ***Decision:*** *PRCC Habitat Subcommittee members approved $336,553 for the Libby Creek Fish-Passage Barrier Dam Removal Project. Funding for this project will come from Fund 602.*
- ***Decision:*** *PRCC Habitat Subcommittee members approved $342,550 for the Sugar Channels Reconnection Project: Phase I Project. Funding for this project will come from Fund 602.*

I. Welcome and Introductions

Tracy Hillman welcomed everyone to the meeting and participants introduced themselves.

Tracy noted that the PRCC Habitat Subcommittee (PRCC HabSC) and HCP Tributary Committees will meet jointly for the Beaver-Powered Stream Restoration Project presentation. Following the presentation, the PRCC HabSC will take a short lunch break and reconvene to discuss PRCC HabSC items.

II. Beaver-Powered Stream Restoration Project Presentation (with the HCPs Tributary Committees)

Lisa Foster and Ryan Lefler (TU) joined the meeting to present on their proposed Beaver-Powered Stream Restoration Project (see Attachment 1). Lisa began by describing that they are proposing to (1) do low-tech process-based restoration work in three streams and (2) conduct beaver coexistence work on 20 sites in Chelan and Douglas counties. Restoration work would occur in Brush Creek (a tributary to the Chiwawa River) and in Tillicum and Indian creeks (watershed in the Entiat River basin). She noted that beaver coexistence work includes education and outreach, site visits, tree caging, flow devices, and culvert protection. She showed the following table, which identifies the cost for each project task and the benefits associated with each project task.

[2] All decision items listed here were approved by PRCC HabSC members.

Project	Brush Creek	Tillicum Creek	Indian Creek	Beaver Coexistence 3 years	TOTAL COST
Total cost	$101,492.70	$102,232.90	$96,760.11	$113,957.50	$495,176.75
Benefit	0.25 miles floodplain reconnected & instream habitat improved	0.25 miles floodplain reconnected & instream habitat improved	0.25 miles floodplain reconnected & instream habitat improved	20 sites (11-20 miles* instream habitat maintained /improved)	11.75-20.75 miles floodplain reconnected & instream habitat improved

Lisa then described how they selected the sites for restoration work. This included the use of the Upper Columbia Salmon Recovery Board Prioritization Tool, geospatial analysis, Upper Columbia Beaver-Powered Restoration Decision Support System, fish presence, and field assessments. She also noted how the proposed work fits within the Upper Columbia Salmon Recovery Plan. That is, the project will benefit recovery goals by enhancing instream habitat, stream flows, and water temperatures. Lisa then showed the locations of the three target streams and identified their limiting factors and the fish species present within the streams.

The second part of the project is beaver coexistence management. She stated that beavers create, maintain, and improve habitat that supports survival, capacity, and distribution of salmonid species in several ways including cold-water refugia creation, enhanced baseflows, increased invertebrate food sources, lower downstream turbidity, increased channel aggradation, floodplain reconnection, and increased woody material. Beavers also benefit upland communities and ecosystems by creating natural fire breaks, inducing flooding, increasing groundwater recharge, and increasing surface water retention. The intent of the coexistence project is to allow beavers to stay in place on 20 properties. She said no funding from the Subcommittee will be used to relocate beavers. Lisa noted that every beaver family can treat as much as 1 mile of stream. This project would therefore result in 20 miles of improved stream habitat across 20 sites.

Lisa indicated that there are several aspects to beaver coexistence management. One aspect is site visits and education, which includes on-site discussions with landowners about the important role of beavers in ecosystems and reasons to maintain beavers in place. She stated that it is also important to protect certain trees by using tree cages. Cages protect important trees and allow beavers to build around them. She stated that flow devices may be needed to retain ponds while preventing flooding. These devices maintain stream flows and allow the beavers to continue to build. Another aspect of beaver coexistence is the use of culvert protection devices. These devices prevent culverts from clogging and allow beavers to continue to build around them.

Lisa concluded by stating that they would like to begin implementation work in 2026 and would begin coexistence work immediately.

Catherine Willard asked for more information on the potential barrier in Indian Creek. Lisa responded that there is a culvert upstream from the confluence of Indian Creek. Catherine inquired about the number of landowners with beaver issues. Ryan said that about 10 landowners per year contact TU about beavers on their properties. Catherine asked whether they use hydraulic modeling to evaluate the potential effects of restoration actions. Ryan said they do not use hydraulic models; however, they do

relative elevation modeling. Lisa added that their enhancement projects are field-fit to keep them "cheap and cheerful."

Chris Fisher asked whether flow is an issue in Brush Creek. He noted that it is a small watershed and wondered how restoration work will improve stream flows there. Lisa responded that BDAs are water storage devices that hold and slowly release flows over time. Thus, they help increase flows during low-flow conditions and can transform an intermittent stream to a perennial stream.

Justin Yeager inquired whether this project is working in concert with other projects in the three streams. Lisa responded that, yes, they are coordinating with other sponsors who are implementing projects in these streams. She said this increases efficiency. Justin asked whether there are any exotic fish species (e.g., Brook Trout) that would benefit from the enhancement actions in these steams. Lisa said there is no monitoring data, but they will discuss and consider the effects of these actions on exotic fish species.

Chris asked whether it would be more beneficial to put all this effort into one stream rather than spreading the effort across three streams. Lisa indicated that they are leveraging the work of others (e.g., Cascade Fisheries) in these streams. Therefore, they are treating large reaches within each stream. Chris asked how long it takes to complete work in a reach. Ryan responded that it takes about two weeks to complete work in a reach. He added that this is just for implementation/construction.

Cody Gillin asked about the success of beaver coexistence. Lisa indicated that in the past, most landowners wanted to remove beavers. Now, most of the landowners are interested in beaver coexistence. Cody inquired about adaptively managing the projects. Ryan noted that the structures are easy to remove if removal is necessary, and they can be easily modified.

Dave Duvall asked about what materials are needed for beaver coexistence. Ryan said it depends on the situation. For example, cages are needed to protect trees. Other materials are needed to protect culverts from clogging and materials are also needed to help manage pond elevations. Ryan noted that all these actions require permits and maintenance.

Kate Terrell asked whether they are requesting funding from other sources for this project. Lisa indicated that they are also seeking funding from the Salmon Recovery Funding Board.

The Subcommittee thanked Lisa and Ryan for the presentation and for responding to the Subcommittee's questions.

III. Lunch Break

IV. Agenda Review

The PRCC Habitat Subcommittee (PRCC HabSC or HabSC) reviewed and approved the March agenda with the addition of the Sugar Channels Reconnection Project: Phase I specification sheet.

V. February Meeting Notes

PRCC HabSC members reviewed and approved the 13 February 2025 meeting notes on 28 February 2025.

VI. Review Action Items

The PRCC HabSC reviewed the following action items from the February meeting:

- Tracy Hillman will contact Justin Yeager to share with Justin the PRCC Habitat Subcommittee discussion on the Floodplain Monitoring Specification Sheet. **Completed.**
- Tracy Hillman will inform Carlos Polivka (USFS) and Keith van den Broek (Hinchinbrook) of the PRCC Habitat Subcommittee decision on the Floodplain Monitoring Specification Sheet**. Completed.**
- Dave Duvall will follow up with Kristen Los and Jim McCullough regarding appraisal opportunities. **Completed.**
- Dave Duvall will reach out to potential appraisers who are Yellow Book certified and willing to review appraisals. **Completed.**

VII. Project Updates

Members of the PRCC HabSC provided the following updates on funded projects:

- **Appraisals** – Dave Duvall reported that there are no new updates on appraisals.
- **ORRI VDS Backwatering Project** – Chris Fisher reported that the Okanagan Nation Alliance (ONA) has completed this project, and they are planning for the next phase of the project.
- **Lower Wenatchee Instream Flow Enhancement Project, Phase II Project** – Kate Terrell reported that the sponsor (Trout Unlimited; TU) met with Smith Excavation to discuss the change order. The change order was needed because of the permitting delay with the Army Corp of Engineers. Items that increased in cost because of the delay included mobilization a second time, 3% Consumer Price Index increase, storing materials, subcontractor costs, equipment costs, and payroll costs. Overall, the delay increased the cost by $450,000 (19.1% increase). The sponsor is currently working on finalizing the change order and plans to have it wrapped up in early March. Currently, Smith Excavation has 80% of the materials on hand (e.g., HDPE pipe, pumps, motors, flow meter, valving, some electrical, etc.).
- **Cascade Orchards Icicle Creek (COIC) Flow Restoration Project** – Kate Terrell reported that the project is expected to be completed by 1 May 2025.
- **Okanagan Lake Dam East Salmon Passage Design Project** – Dave Duvall shared that this project is complete and can be closed once Grant PUD receives the final invoice.
- **Peshastin Creek RM 2.5 Project** – Kate Terrell indicated that Cascade Fisheries (CF) continues to coordinate with the landowner and Chelan Douglas Land Trust on a conservation easement or simple fee acquisition to protect the restored habitat. In addition, they continue to coordinate with the Corps of Engineers to work through Clean Water Act permitting. This included developing a water quality protection and monitoring plan and a habitat function monitoring plan for Ecology. They are responding to the Army Corps of Engineers request for information on the cultural resource survey. The Corps is concerned about a potential burial site, and they need additional information. The sponsor and their design team are also working through comments from the Federal Emergency Management Agency (FEMA) regarding the Conditional Letter of Map Revision (CLOMR) application. This required the collection of additional survey data. The sponsor will continue to work through the permitting process.
- **Bockoven Entiat and Stormy Acquisition Projects** – Kate Terrell reported that the landowner is on pause while they seek a buyer for their home (the Stormy Lodge on 17 acres on river right). The landowner is concerned that a potential buyer may want to purchase either or both

properties for hiking and horseback riding. The landowner does not feel an urgency to sell the property at this time.

- **Canyon Creek Culvert Design and Construction Project** – Kate Terrell indicated that Cascade Fisheries is waiting for comments from the Forest Service on the 30% design. The sponsor intends to select a preferred alternative this month.
- **Eagle Rocks Habitat Enhancement Project** – Kate Terrell said the sponsor (Methow Salmon Recovery Foundation; MSRF) did not do any work over the winter. Work to be completed in spring 2025 includes monitoring and maintenance of plantings, additional repair to the access routes, and incorporating beaver-dam-analog-style posts into the upper bench planting areas.
- **Kedrowski Acquisition Project** – Kate Terrell indicated that the appraisals are proceeding for the Kedrowski and Calvary Church properties.
- **Shuttleworth Creek Diversion Removal Project** – Dave Duvall shared that this project is complete and can be closed once Grant PUD receives the final invoice.
- **Bartsch Acquisition – Lower Twisp River – Reach 2A Project** – Kate Terrell said the sponsor (MSRF) has initiated the purchase process and has scheduled closing with CW Title and Escrow. The sponsor anticipates completing the land acquisition in late March. The purchase will guarantee MSRF access for habitat improvements and is expected to allow additional restoration opportunities.
- **Skyline Screen and Fish Return Project** – Kate Terrell said the sponsor (MSRF) continues to coordinate with the USFWS and a private archaeology contractor. The design team held a meeting with the engineer and Skyline Board of Directors.
- **Penticton Dam Fish Passage Construction** – Chris Fisher said that ONA will begin groundbreaking this month (March) and expects the project to be completed by 30 June. The fishway will begin operation in July.
- **ORRI Okanagan Falls** – Dave Duvall said he has no update on this project.
- **White River Ohme Acquisition** – Kate Terrell shared that there is no update on this project.

Chris Fisher provided an update on the two diversions on Vaseux Creek in Canada. He said one diversion has been screened and the other one was blocked by ONA and the Provincial Government.

VIII. Restoration/Protection Projects

Enloe Dam Sediment Analysis and 30% Design

For the record, Tracy Hillman said the PRCC HabSC received a revised specification sheet from Trout Unlimited on 28 February 2025 titled, “Completed 30% Design of Selected Action Alternatives to Remove Enloe Dam.” The purpose of the project is to (1) analyze and present new sediment data with a sediment suitability memo to the technical advisory committee (TAC) and permitting agencies to finalize selection of a preferred alternative; (2) incorporate feedback from TAC and permitting agencies into final feasibility study and present to TAC and public; and (3) complete 30% design package, planning cost estimate, and basis of design report for the selected alternative.

Last month, the PRCC HabSC approved funding for tasks 1 and 2, while funding for task 3 was not approved without additional information and internal discussions. Following addition coordination work, the PRCC HabSC asked the sponsor to submit a revised specification sheet. The PRCC HabSC received a revised specification sheet from Trout Unlimited on 28 February 2025. The total request for the project

was $874,758. On 3 March 2025, the PRCC HabSC approved funding for the project. Importantly, if federal funding for completing these tasks is released, funds from the PRCC HabSC will be returned to the PRCC HabSC.

Decision: *On 3 March 2025, PRCC Habitat Subcommittee members approved $874,758 for the Completed 30% Design of Selected Action Alternatives to Remove Enloe Dam Project. Funding for this project will come from Fund 602.*

Beaver-Powered Stream Restoration Proposal

Jeremy Cram introduced the Beaver-Powered Stream Restoration proposal from Trout Unlimited. The purpose of the project is to use low-tech process-based restoration actions (e.g., BDAs and PALs) to restore degraded habitat within Brush Creek (Wenatchee Basin) and Tillicum and Indian creeks (Entiat Basin). The restoration actions will address the loss of large wood inputs, loss of stream habitat complexity, loss of beaver pond complexes, and disconnected floodplains in the three streams. The proposed project will also protect existing habitat through beaver coexistence management on 20 sites in Chelan and Douglas counties. Coexistence management includes education and outreach, tree caging, pond levelers, and other exclusion methods. The project is intended to benefit steelhead and possibly spring Chinook Salmon. The sponsor requested $495,176.75 from the PRCC HabSC. After careful review, the PRCC HabSC declined the opportunity to fund this project.

Although the PRCC HabSC sees value in using low-tech process-based restoration techniques to enhance habitat conditions, they questioned the potential benefits within the proposed streams. Brook Trout are known to occur in Brush Creek, and it is unclear whether the enhancement work will provide a greater benefit to Brook Trout than to steelhead and spring Chinook Salmon (Covered Species). Observations in Big Meadow Creek (a tributary to the Chiwawa River) indicate that Brook Trout use beaver ponds extensively there. The PRCC HabSC questioned whether Brook Trout also occur in Indian and Tillicum creeks. Lastly, the PRCC HabSC questioned why management (Project and Program managers) costs were so high, especially when compared to construction crew costs. The PRCC HabSC recommended that the sponsor seek funding through the Salmon Recovery Funding Board process.

Decision: *PRCC Habitat Subcommittee members declined the opportunity to fund the Beaver-Powered Stream Restoration Project.*

Methow River Riparian Stewardship Proposal

Kate Terrell introduced the Methow River Riparian Stewardship proposal from the Methow Salmon Recovery Foundation. The purpose of the study is to establish a dedicated Stewardship Fund for the six M-2 Sugar properties acquired with assistance from the PRCC HSC. Funds would be used for initial costs of establishing two public river access locations that would guide access through the restored Robinson and Stanley properties, support on-going riparian plantings maintenance and protection, and support on-going stewardship responsibilities associated with removal of garbage and debris. The sponsor will invest the stewardship funds in a dedicated account to extend the value of the initial grant funds. The sponsor requested $150,000 from the PRCC HabSC. The PRCC HabSC elected to contribute $150,000 to the project.

The PRCC HabSC recommends that project sponsors include a budget line item for stewardship within specification sheets requesting funding for protection projects.

Decision: *PRCC Habitat Subcommittee members approved $150,000 for the Methow River Riparian Stewardship Project. Funding for this project will come from Fund 602.*

Methow River – Integrated CMZ Update Proposal

Kate Terrell introduced the Methow River – Integrated CMZ Update proposal from the Methow Salmon Recovery Foundation. The purpose of the project is to remap the outdated channel migration zone (CMZ) of the Methow River (RM 0-75). This work will create an integrated picture of risks and process-based restoration opportunities along the Methow River. The sponsor will include updated LiDAR data, river course changes, and advancements in CMZ mapping techniques. The total cost of the project is $299,860. The sponsor requested $74,965 from the PRCC HabSC.

After review, the PRCC HabSC was unable to make a funding decision. They struggled with how this project will inform prioritization and selection of appropriate restoration actions along the Methow River. They do not see how this work will provide information beyond current floodplain mapping. They would like to discuss this project with Brandon Rogers, who was unable to attend the meeting. Therefore, they tabled a decision on this project until the April meeting.

M2@3R Habitat Construction Proposal

Kate Terrell introduced the M2@3R Habitat Construction proposal from the Methow Salmon Recovery Foundation. The purpose of the project is to improve habitat complexity, quantity, and access to thermal refugia between RM 46.25 and 47.25 on the Methow River (between the towns of Twisp and Winthrop). The project will develop a series of restoration steppingstones that link past restoration actions upstream and downstream from the project area. The design includes side channel and floodplain grading, installation of large wood structures, enhancing the connectivity to existing groundwater-fed thermal refuge sites, and restoring degraded riparian habitat. This project is intended to benefit Covered Species, especially spring and summer Chinook Salmon and steelhead. The total cost of the project is $1,337,340. The sponsor requested $673,670 from PRCC HabSC. The PRCC HabSC elected to contribute $673,670 to the project.

Decision: *PRCC Habitat Subcommittee members approved $673,670 for the M2@3R Habitat Construction Project. Funding for this project will come from Fund 602.*

Libby Creek Fish-Passage Barrier Dam Removal Proposal

Kate Terrell introduced the Libby Creek Fish-Passage Barrier Dam Removal proposal from Cascade Fisheries. The purpose of the project is to replace a 45-foot-long diversion dam (0% passable), intake structure, and gravity rotary fish screen on Libby Creek (tributary to the Methow River) with a 120-foot roughened channel, precast intake structure, headgate, and fish screen. This project will provide fish access to 4.8 miles of Libby Creek and access to tributaries. This project is intended to benefit Covered Species, especially steelhead and spring Chinook Salmon. The total cost of the project is $336,553. The sponsor requested $119,520 from the PRCC HabSC. The PRCC HabSC elected to contribute $119,520 to the project.

Decision: *PRCC Habitat Subcommittee members approved $336,553 for the Libby Creek Fish-Passage Barrier Dam Removal Project. Funding for this project will come from Fund 602.*

Sugar Channels Reconnection Project: Phase I Proposal

Kate Terrell introduced the Sugar Channels Reconnection Project: Phase I proposal from the Methow Salmon Recovery Foundation. The purpose of the project is to improve salmonid habitat between RM 41.25 and 42.75 on the Methow River (between the towns of Twisp and Winthrop). The project will include the placement of 43 wood structures, reconnection of 7,700 feet of off-channel habitat, and restoration of 0.5 acres of riparian habitat. This project is intended to benefit Covered Species, especially spring and summer Chinook Salmon and steelhead. The total cost of the project is $1,435,561. The

sponsor requested $342,550 from the PRCC HabSC. The PRCC HabSC elected to contribute $342,550 to the project.

Decision: *PRCC Habitat Subcommittee members approved $342,550 for the Sugar Channels Reconnection Project: Phase I Project. Funding for this project will come from Fund 602.*

IX. Administration and Information Updates

PRCC Habitat Subcommittee Fourth Quarter 2024 Expenditures and Unencumbered Balances – Dave Duvall shared the following financial information with the HabSC:

Habitat Fund	Expenditures through 31 December 2024	Unencumbered Balance
601	$906,096.36	$5,361,625
602	$4,689,229.90	$5,971,915
603	$135,274.74	$2,305,221
Total	***$5,730,601.00***	***$13,638,761***

Grant PUD Contributions to the Habitat Accounts – Dave Duvall reported that in February, Grant PUD made their annual contributions to the different habitat accounts. The deposits were as follows:

Habitat Fund	Funds deposited in February 2024
601	$725,074.13
602	$1,426,226.22
603	$509,479.99
Total	***$2,660,780.34***

Identify Yellow Book Appraisers and Reviewers

Dave Duvall indicated that he reached out to Mark Noble with Noble Ag Land Valuation (Spokane, WA) to see if he could join the PRCC HabSC meeting to discuss appraisal projects. Mark joined the meeting at 1:30 pm. Dave described the structure and function of the PRCC HabSC and summarized the types of acquisitions the PRCC HabSC fund. He also shared with Mark the standard Deed of Right, restrictions, and the PRCC HabSC requirement that the appraiser will not communicate with the Project Sponsor or landowner in any manner, whether it be regarding the project or otherwise, without express permission from, or the presence of, the designated PRCC HabSC liaison. Mark agreed with the requirements and noted that he has over 20 years' experience conducting appraisals (including floodplain properties) in Chelan and Okanogan counties. He indicated that he is Yellow Book certified and would review appraisals. Mark asked about turnaround times and Dave responded that once the appraisal is ordered, the PRCC HabSC would like the appraisal within a month or two. Mark also asked about the level of review required by the PRCC HabSC. Dave responded that reviews could be as detailed as visiting the property and reviewing all aspects of the appraisal, or as simple as reviewing the written documents.

After the discussion with Mark, members present agreed that Mark would be a good addition to the list of appraisers. Pacific Appraisal Associates and Noble Ag Land Valuation would serve as the primary appraisers. American West Ag Appraisals and Agri/Com Appraisals would be used if needed. Members requested that Dave ask Noble Ag Land Valuation, American West Ag Appraisals, and Agri/Com Appraisals for their rates. Dave will provide an update during the April meeting.

Project Tracking Spreadsheets

Dave Duvall reviewed the Monitoring/Assessment Projects spreadsheet with the PRCC HabSC. Dave provided the following table, which shows all the monitoring/assessment projects funded under 602 and 603.

HFA	Project Name	Project Type	Amount Awarded	HabSC Contribution to Date	Year Closed
602-13	Icicle Creek Boulder Field	Assessment/Monitoring/Evaluation	$99,554	$99,460	2013
602-27	Silverside PIT Array	Assessment/Monitoring/Evaluation	$123,639	$108,315	2018
602-30	White River Gage Station	Assessment/Monitoring/Evaluation	$60,000	$18,390	2019
602-35	1890s Side Channel	Assessment/Monitoring/Evaluation	$140,283	$0	Contract Void
602-40	Skaha Dam Fish Passage	Assessment/Monitoring/Evaluation	$29,279	$29,279	2018
602-41	Wenatchee Barrier Diversion	Assessment/Monitoring/Evaluation	$15,000	$15,000	2017
602-47	McIntyre Fish Evaluation	Assessment/Monitoring/Evaluation	$15,000	$5,366	2022
602-55	Enloe Sediment Assessment	Assessment/Monitoring/Evaluation	$228,724	$229,224	2022
602-61	Enloe Sediment Volume	Assessment/Monitoring/Evaluation	$117,739	$85,739	2021
602-68	Wenatchee PIT Barge	Assessment/Monitoring/Evaluation	$82,000	$82,000	2022
603-5	Kitsap LIDAR	Assessment/Monitoring/Evaluation	$124,000	$123,590	2007
603-7	USGS LIDAR	Assessment/Monitoring/Evaluation	$160,000	$60,000	2008
603-22	White River Gage Station	Assessment/Monitoring/Evaluation	$22,000	$14,288	2018
603-26	Okanogan Discharge Monitoring	Assessment/Monitoring/Evaluation	$90,952	$90,952	2015
603-27	Icicle Peshastin Irrigation Analysis	Assessment/Monitoring/Evaluation	$174,847	$166,139	2014
603-28	Icicle Creek PIT Array	Assessment/Monitoring/Evaluation	$167,097	$167,097	2015
603-31	Bonaparte Discharge Monitoring	Assessment/Monitoring/Evaluation	$21,860	$21,850	2018

Dave said that to date, $1,671,974 of the $2,500,000 available has been allocated to projects. Thus, there is $828,026 available for monitoring/assessment projects.

Salmon Recovery Funding Board 2025 Schedule

Tracy Hillman reviewed the Salmon Recovery Funding Board/Tributary Committees proposed schedule for 2025. Important dates are noted below:

1. Pre-Applications Due: 12 March 2025
2. Presentations by Project Sponsors: 25-26 March 2025
3. Completed Draft Applications Due: 18 April 2025
4. Site Visits: 5-8 May 2025
5. Tributary Committees Review Draft Applications: 8 May 2025
6. Final Application Due: 27 May 2025
7. Tributary Committees Review Final Applications: 12 June 2025

Habitat Project Effectiveness Monitoring

Dave Duvall indicated that he would like to discuss the state-of-the-science on habitat effectiveness monitoring. He shared that he has read a few papers on habitat effectiveness monitoring and is wondering whether the PRCC HabSC should be considering a review of the literature and determine whether PRCC HabSC monitoring funds can be used to fill information gaps. Dave asked Tracy Hillman to summarize the state-of-the-science on effectiveness monitoring.

Tracy said that there have been several recent papers published on the effectiveness of different habitat restoration actions. Some studies included intensively monitored watersheds (IMW). In general, the literature indicates that restoration actions that target limiting factors do affect fish at the project and reach scales. Results are equivocal at the population scale (based on IMW results). This is likely because it is difficult to implement enough large-scale actions at the population scale to detect a population-level signal. That said, action types such as floodplain restoration and riparian restoration are lacking robust studies. The work by Hinchinbrook and the U.S. Forest Service is showing that floodplain restoration has a benefit at the project and reach scales, but it is unclear whether there is a population-scale effect. Although we all know that riparian restoration is important and there are many linkages between aspects of healthy riparian zones and habitat complexity, stream flows, water quality, and food subsidies, there remains little information on the effects of riparian restoration on fish populations. This is largely because of the time needed to assess riparian actions on fish populations.

Tracy said action types such as large wood treatments, screening, longitudinal connectivity, streamflow enhancement, and water quality enhancement are well understood. Some of the greatest benefits at the population scale come from restoring longitudinal connectivity. IMWs have demonstrated the benefits from these actions. Nutrient enhancement is a band-aid approach to a more chronic problem. Lateral and vertical connectivity (floodplain restoration) and riparian restoration need more attention; however, we all know they are good things to do and should continue to do them.

Equipment List

Dave Duvall indicated that Grant PUD keeps a list of equipment purchased with 601, 602, and 603 funds. Dave believes the PRCC HabSC has purchased a PIT-tag barge and PIT-tag interrogation equipment. He asked Jeremy Cram whether Jeremy can provide an update on the status of the equipment.

Jeremy indicated that the Barge is still being used to detect PIT tags in the lower Wenatchee River. The PIT-interrogation equipment that was used in Icicle Creek has been replaced with updated equipment. Jeremy said he will provide Dave with a list of PRCC HabSC-funded equipment and identify the status of the equipment.

Signage on Acquisition Properties

Dave Duvall stated that the PRCC HabSC has funded several protection projects. He questioned whether the protected properties should have signs indicating the good work the PRCC HabSC is doing in protecting high-quality habitat. He said he would like to discuss this during the April meeting.

X. Adjourn

Tracy Hillman adjourned the meeting at 4:00 pm.

XI. Next Meeting

The next meeting of the PRCC HabSC will be on 10 April 2025. The PRCC HabSC will join the Upper Columbia Regional Technical Team for presentations from project sponsors on 25-26 March 2025.

Attachment 1

Presentation by Trout Unlimited on the Beaver-Powered Stream Restoration 2025 Proposal

Project	Brush Creek	Tillicum Creek	Indian Creek	Beaver Coexistence 3 years	TOTAL COST
Total cost	$101,492.70	$102,232.90	$96,760.11	$113,957.50	$495,176.75
Benefit	0.25 miles floodplain reconnected & instream habitat improved	0.25 miles floodplain reconnected & instream habitat improved	0.25 miles floodplain reconnected & instream habitat improved	20 sites (11-20 miles* instream habitat maintained /improved)	11.75-20.75 miles floodplain reconnected & instream habitat improved

*Source: Scrafford et al. 2018; Cox and Nelson, 2009; Boyce, 1980; Busher et al. 1983; Busher et al. 1983

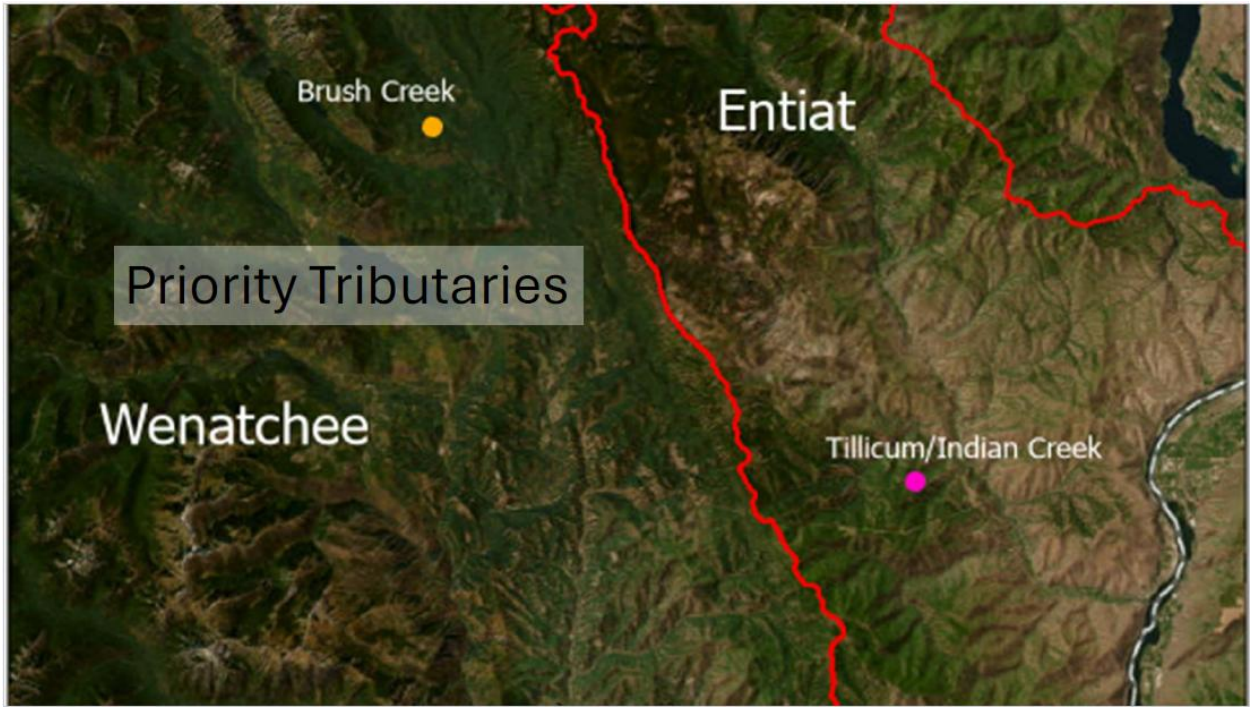
Site Selection

1. **UCSRB Prioritization (Greer Maier/UCSRB):**
   - Prioritization of available habitat data
2. **LTPBR Stream Prioritization (Robes Parrish/Cody Gillin):**
   - Geospatial analysis: max. 2% slope to target smaller substrates
   - <300 ft from roads for equipment access
3. **Site Evaluation (Lisa Foster, Ryan Lefler, CRM):**
   - Upper-Columbia Beaver-Powered Restoration Decision Support System
     - includes BRAT and BIP models
   - UCSRB, USFWS, RCO, WDFW: fish presence, spawning redds, barriers, projects
   - Ability to leverage nearby CRM projects
   - Entiat Thermal Infrared (TIR) - 2023
4. **Field assessment (Lisa Foster & Ryan Lefler):**
   - Assess site conditions, accessibility, potential hazards, and land use.
   - Agency and CRM coordination

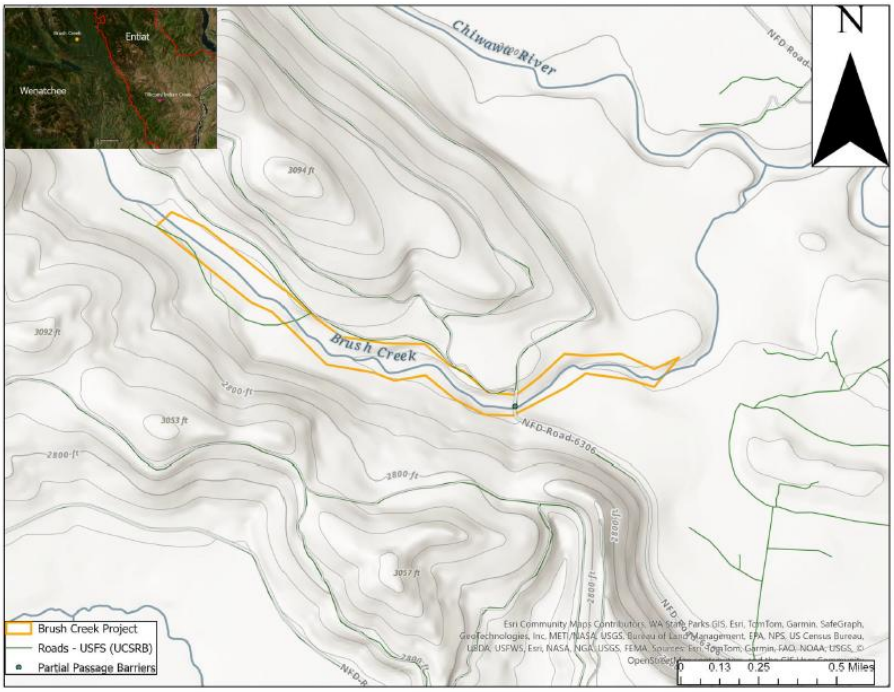
Upper Columbia Salmon Recovery Plan

Priority actions

- Protect and maintain stream and riparian habitats within Category 1 assessment units
- Water Quantity Restoration and Large Woody Debris Restoration Habitat Action Classes
  - Encourage beaver re-population
- Coexistence allows beavers to recolonize priority streams
- Restoration actions make streams more favorable habitat for beaver colonization.


Brush Creek
Entiat
Priority Tributaries
Wenatchee
Tillicum/Indian Creek

Brush Creek


Entiat
Wenatchee
Chiwawa River
N
Brush Creek
NFD-Road-6306
3094 ft
3092 ft
3053 ft
3057 ft
2800-ft
Brush Creek Project
Roads - USFS (UCSRB)
Partial Passage Barriers
0 0.13 0.25 0.5 Miles

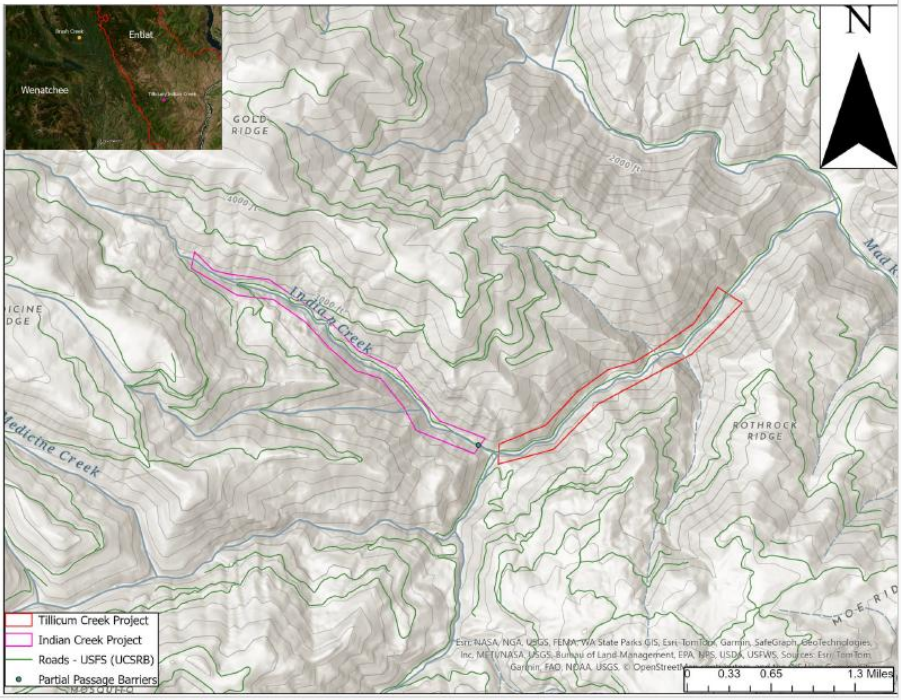
Brush Creek

- Wenatchee River watershed
- Reaches 1 and 2: At Risk for summer base flow
- Reach 1: Unacceptable for temperature

Species present: O. mykiss
Species potential: bull trout, spring chinook

Sources: UCSRB Prioritization Web Map, WDFW SalmonScape, Statewide Washington Integrated Fish Distribution (SWFD) portal Aquatic Habitat Assessment and Restoration Strategy Report for the Upper Wenatchee Pilot Project (Hall et. al, 2019), USFWS fish counts

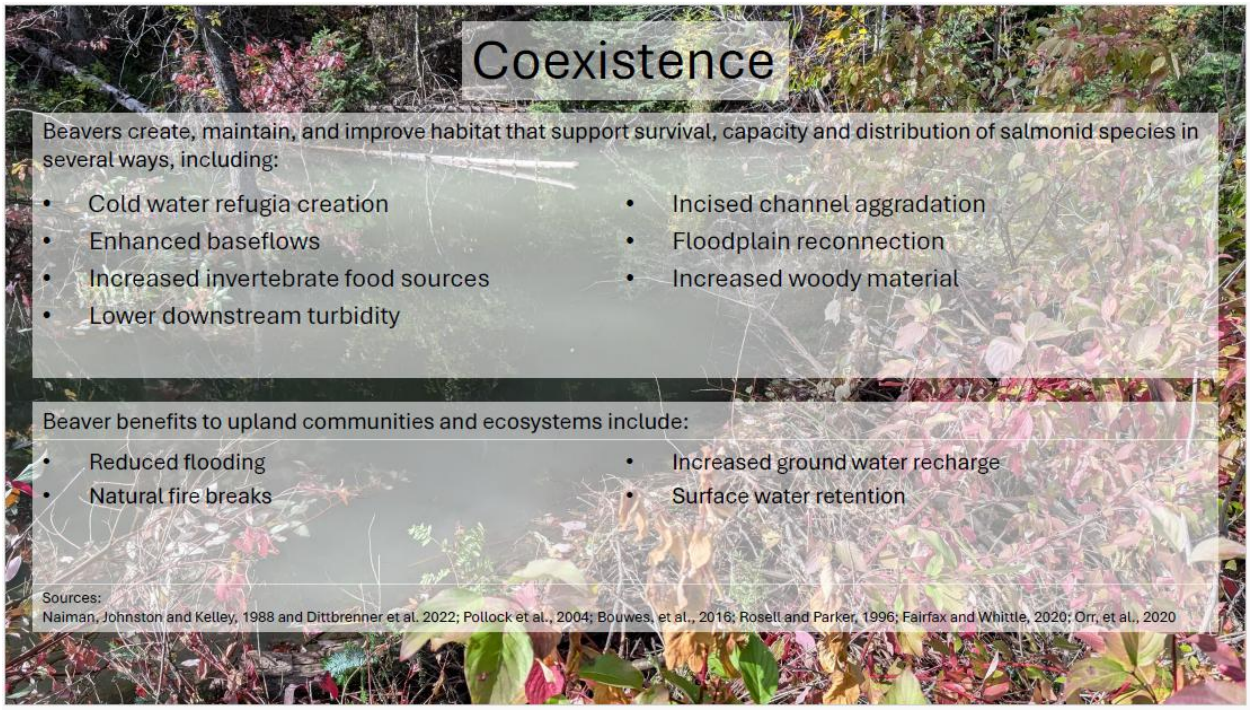
Tillicum Creek & Indian Creek



Tillicum and Indian Creeks

- Entiat River watershed
- Indian Creek
  - 303(d) listing for temperature
  - Unacceptable for off-channel- side-channels
  - At Risk for summer base flow and floodplain connectivity.
  - Species present: O. mykiss
- Tillicum Creek
  - Reaches 1-4: At Risk for large wood cover, At Risk for floodplain connectivity, Unacceptable for off-channel/side-channel habitat, and Unacceptable for pool quantity and quality
  - Species present: O. mykiss, bull trout, spring chinook
- Section 106 cultural consultation complete

Sources: UCSRB Prioritization Web Map, WDFW SalmonScape, Statewide Washington Integrated Fish Distribution (SWFD) portal Aquatic Habitat Assessment and Restoration Strategy Report for the Upper Wenatchee Pilot Project (Hall et. al, 2019), USFWS fish counts



Coexistence

- Beaver coexistence work is supported under the WDFW Beaver Relocation Program (WAC 220-450-230)

- These funds will not be used for beaver relocation.

- Program permittees are required to seek coexistence solutions

- This project will allow beavers to stay in place on 20 properties.

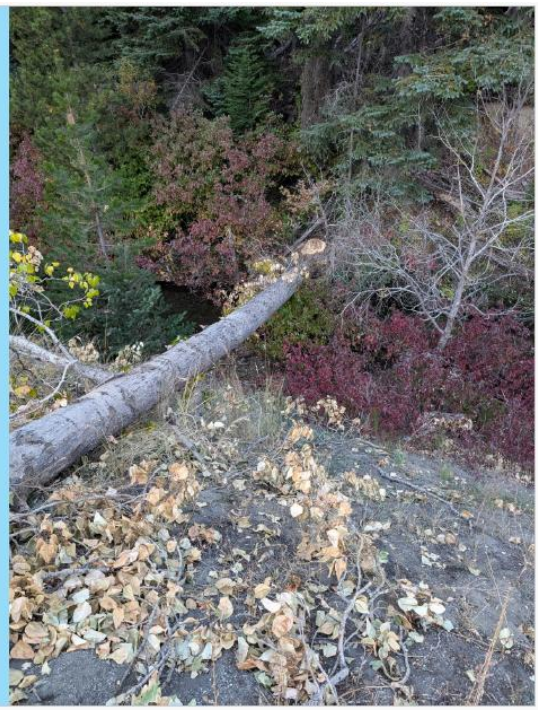
Based on linear beaver colony densities reported in the literature*

- Every beaver family can treat as much as 1 mile of stream with ecosystem benefits (instream habitat)
- This project could result in as many as 20 miles of maintained and improved instream habitat across 20 sites.

*(Scrafford et al. 2018; Cox and Nelson, 2009; Boyce, 1980; Busher et al. 1983; Busher et al. 1983)

Site visits & Education

- On-site discussions about unique issues each landowner faces
- Knowledge of beaver habitat, diet, and habits can inform next steps
- Sharing information about the important role beavers play in ecosystems often leads to increased willingness to maintain beavers in place.

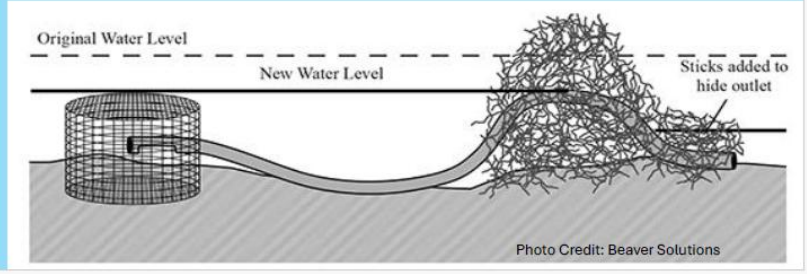


Tree Caging

- Protects important trees or trees of concern
- Beavers can continue to build around caging
- Consortium of beaver practitioners shares best practices
- Require permitting, inspection & maintenance

Flow Devices

- Retains ponds while preventing flooding
- Beavers can continue to build
- Maintains streamflow
- Require permitting, inspection & maintenance



Culvert Protection

- Allows beavers to continue to build
- Protects culvert from clogging
- Beavers cannot bring material in from outside
- Require permitting, inspection & maintenance

Photo Credit: Beaver Institute

Beaver-Powered Stream Restoration

- **Low-Tech Process-Based Restoration (LTPBR)**
  - **Brush Creek**
  - **Tillicum Creek**
  - **Indian Creek**
- **Beaver Coexistence**
  - **Education and Outreach**
  - **Site Visits**
  - **Tree Caging**
  - **Flow Devices**
  - **Culvert Protection**

Photo Credit: Ryan Lefler

Questions?