



## REGIONAL TECHNICAL TEAM MEETING FINAL FEBRUARY MEETING SUMMARY

**Date:** Wednesday, 9 February 2022

**Time:** 9:00 AM to 12:00 PM

**Location:** Webinar

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**Members Present:** Amanda Barg, Joe Lange, John Crandall, Brandon Rogers, Jeremy Cram, Catherine Willard, Steve Fortney, John Arterburn, Carlos Polivka, Steve Hays, Keely Murdoch, Kate Terrell, Tom Kahler, and Tracy Hillman (Chair)

**Others Present:** Tracy Bowerman/UCSRB, Ryan Niemeyer/UCSRB, Sarah Walker/UCSRB, Dave Hecker/UCSRB, Jason Lundgren/CF, Ryan Williams/CCD, Jeff Jorgensen/NOAA, Scott Bailey/CCNRD, Mike Kane/CCNRD Contractor, Bryan Maloney/CCNRD, Kyle Goeke/BPA, Doug Knapp/BPA, John Soden/NSD, Nic Truscott/NSD, Ken Muir/WDFW, Ryan Williams/CCD, Tom Desgroseillier/WDFW, Kirstin Kirkby/CF, Joe Connor/BPA, and Robyn Pepin/Aspect.

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### ***Agenda Items for March Meeting:***

- SRFB project presentations (9-10 March)

Tracy Hillman welcomed everyone to the meeting. RTT members reviewed and approved the draft agenda. The January 2022 meeting summary was approved as drafted. Members reviewed actions items and gave updates.

### ***Action Item Updates:***

- Dave Hecker sent Tracy Hillman the current draft schedule and will also send the final when available.
- Tracy Bowerman sent the barrier data to specific individuals for review. She thanked those who provided updates for the Okanogan and Methow.
- IP summary and update (see RTT/UCSRB updates).
- Ryan Niemeyer evaluated the extent of GGL and REM modeling conducted by the UW class and discussed the results with the RTT.
- Tracy Hillman updated the scoring Excel spreadsheets to incorporate changes made in the updated scoring documents.
- The updated scoring documents are on the UCSRB web site.
- Ryan Niemeyer met with Tracy Bowerman and Tracy Hillman to discuss pool literature and Tracy Hillman met with Tim Beechie to discuss pool criteria.

## UCSRB Updates

### Discussion of RTT Scoring Based on New Prioritization Strategy

Dave Hecker said he was asked by a sponsor that if a project was originally scored in a Tier 1 Assessment Unit (under the old Biological Strategy), but under the new prioritization strategy the AU is now a lower Tier (e.g., Tier 2), would the project be scored in a Tier 1 or a Tier 2 AU? Tracy Hillman responded that last year the RTT established a grace period for these types of projects. The project would be scored according to the older strategy provided it was an established project.

The RTT agreed that any new projects – including new design projects – would be scored using the results from the new prioritization strategy. The RTT also agreed to extend the grace period for previously established projects, to use the previous Assessment Unit scoring. Several RTT members agreed that there could be a list of existing projects to which the grace period would apply. Any new designs should be based on the new prioritization strategy.

Sponsors articulated that it would not be fair to change scoring criteria on existing projects that have been underway for many years. Joe Conner (BPA) emphasized that prioritization is important to BPA and they would like to see projects moving forward with the new prioritization strategy (i.e., sponsors should build projects based on effective actions and treatments identified in the new prioritization strategy).

### 2022 SRFB Grant Round Schedule Update

Dave Hecker showed the final draft of the grant round dates, which is located here: [SRFB and Targeted Investment Schedule 2022 – Upper Columbia Salmon Recovery Board \(ucsrb.org\)](#)

Dave clarified that there are four days set aside in May for project tours, but the hope is that these will take no more than three days (May 9, 10, and 11). There is an extra day set aside in case there are large numbers of projects. A decision will be made in March about whether those project site tours will be virtual or in-person/hybrid.

### Targeted Investments Scoring

Tracy Hillman reminded the group that there is another layer of grants this year—the Targeted Investments, which is focused on projects that will benefit orca recovery (by enhancing orca prey, specifically Chinook). The region will select a single project to advance to the state list, of which one project will be chosen (and potentially a second could be partially funded if there is any funding remaining). The goal of this funding is to benefit a project that falls outside the scope of typical SRFB funding (larger in scope and funding request). The existing RTT scoring system is really focused on spring Chinook, steelhead, and bull trout, and the scoring may not be well suited for a project that benefits summer Chinook (and hatchery fish).

Tracy Hillman noted the RTT has three options for how to proceed with scoring these projects:

- 1) Use our existing scoring criteria with minor changes to account for summer Chinook
- 2) Modify our scoring criteria to include criteria from the state
- 3) Use only the State's scoring criteria

Tracy Hillman recommended using the State's scoring criteria so a project sponsor will have a good idea of how their project will rank across the state. The rest of the RTT generally agreed with the underlying reasoning that using the State's scoring criteria will help decrease the RTT's workload, they will not have to reinvent the wheel, and as a region we want our project to do as well as possible in the State scoring.

**Decision: The RTT approved the recommendation to use the state's scoring criteria to evaluate Targeted Investment projects in the 2022 grant round.**

### **IP Layer and Barrier Prioritization Update**

Tracy Bowerman is in the process of summarizing what underlying data are available in the current IP and associated literature related to habitat quality. This ended up being like a set of nested Russian dolls, with each question opening up another set of questions so it took longer than she had hoped, in part because she has had to get up to speed with it. Tracy Bowerman and Robyn Pepin have simultaneously been working on updating the data underlying the barrier prioritization model. They would like to set up a Barrier Prioritization Subgroup meeting to discuss the model approach. Tracy Bowerman will send out a Doodle poll to schedule a Barrier Subgroup meeting.

#### **Action Items:**

- **Tracy Bowerman will summarize what underlying data are available in the current IP and associated literature related to habitat quality, along with information about the barrier model prior to the Barrier Subgroup meeting.**
- **Tracy Bowerman will send out a doodle poll to schedule a Barrier Subgroup meeting. Members will include all those involved in the subgroup previously, including Casey Baldwin. The current iteration will include Kate, John A., Brandon, Bryan Maloney (CCNRD), and Joe Lange (along with past members), plus Robyn Pepin from Aspect and Kristen Kirkby (CF).**

#### **Other Updates:**

There is an upcoming UCSRB board meeting **Thursday, 24 February from 9 am to 12:15 pm**. The meeting will be held as a webinar/teleconference call. To participate in the GoToMeeting or call in for the teleconference, please see details below.

Join via webinar: <https://global.gotomeeting.com/join/251048853>

Join via teleconference: 1-224-501-3412 access code: 251-048-853#

### **Upper Wenatchee Floodplain Project Design Review**

Scott Bailey from CCNRD and Nic Truscott and John Soden from Natural Systems Design presented on recently completed 30% design of the Upper Wenatchee Floodplain project, located in Reaches 1 and 2 of the Upper Wenatchee Beaver Creek Unit. Changes made between the 15% review and the current 30% design plan were primarily made in response to comments received on the 15% design. The project was originally designed to address habitat needs as described by the Yakama Nation reach assessments and the RTT prioritization process. Those needs included: add LWD, increase cover, increase in-stream complexity and floodplain connectivity, restore natural form and function, and improve pool quantity and quality.

Scott compiled comments in a matrix format with responses to comments, which was provided to the RTT in 2021. Comments related to mainstem structure, floodplain connectivity, and channel design were most germane to the current design process and are discussed below. Over the past year, CCNRD also developed a recreation safety plan for construction, collected seismic refraction data to assess depth to bedrock and bathymetric data to update the hydraulic model, and completed an access feasibility

assessment. Work in 2022 will include wetland delineation, a cultural resources survey, permit applications, and the 60% design package.

Primary changes made from 15% include elimination of some ELJs that were not essential to the primary purpose of the project, which is getting water into the side channel area, modification of some remaining elements, and addition of a ballasted jam and several boulder clusters. The current design added ballast jams on river right and boulder clusters in the plane bed channel upstream of the design site. Access to the site is limited by the size of vehicles that will be able to get into the site. As a result, access issues limit the length of temporary bridge sections the construction team will be able to use and they will use helicopters to bring in large wood and for placement of boulders and some LWD. Because of the effort associated with building the temporary bridge, the team will target construction of a bridge for late in the work window to reduce the footprint (smaller wetted channel width along with shallower and lower velocity flows later in the season) and time spent in river constructing/deconstructing the bridge. Geotechnical assessment was done by Sage Earth Sciences; they mapped out sandstone bedrock that was found 5-8' below the channel bed in most locations. This information was used to inform ELJ designs: pile-drive ELJs typically require 12' depth but the site only had 6-8' available so the team changed the design to use ballast-rock ELJ structures for all of the proposed ELJ's in the design. These ballast jam structures are meant to mimic what would be deposited in a debris slide.

Reconnaissance of the pilot channel resulted in a new center line that was revised to avoid mature trees. Bathymetric surveys resulted in lowering the pilot channel bottom. A lowered finish grade was required to maintain the same side channel activation flow of ~1,500 cfs. The team anticipates some additional fine-tuning during the design process. The placement of the ballast ELJs is designed to help push water toward the side channel and the downstream ELJs provide diverse hydraulics, ideally resulting in sediment sorting and cover for fish use.

Q: Given the angle of the side channel relative to the main channel, did you consider placing a structure on the river left bank to help divert flow into the side channel?

A: We are hoping for some bank migration along the left bank, given the increased velocity along that bank from the deflection off the ELJs. We have not yet looked at sediment deposition trends but could do so. Mostly, we have considered that velocity and shear stress along that modeled flow path at 1-2-year events would be sufficient to keep the channel open but can take a closer look at unsteady models. ETS staff has found that adding structures at the inlet to the side channel can add roughness and decrease velocity leading to sediment deposition at the entrance to the side channel. We want the river to migrate toward the side channel on river left, so the design is meant to leave that side of the river more erosive and encourage deposition on river right.

Q: The channel could change over time and potentially become wider—what is risk of this side channel decreasing flow from the mainstem during low-flow conditions. What is the risk of avulsion?

A: We want the pilot channel to evolve over time but the risk of avulsion is low because the current path of the mainstem channel is the shortest and has a steeper gradient than the floodplain channel.

Q: Is there a risk of the side channel diverting water at low flow and decreasing mainstem flows?

A: It is unlikely the design would split summer low flows because it is not expected to engage until ~1,500 cfs (which is more representative of winter flows, which was the goal). Summer low flows are generally well below 1,000 cfs.

Q: Sediment transport analysis would be good to make sure the relict channel does not fill in with sediment.

A: Some of the sediment mobilized is expected to settle out over time and the side channel will likely evolve, but it is a large surface and groundwater-fed complex, so it is likely to maintain itself over time; although, the side channel thalweg may wander. We will do some sediment transport modeling and bring it back to the team. There is evidence of historic channels and flow paths, so even if there is some deposition, there are lots of options for streamflow to move through various pieces of the network.

Q: I like the idea of adding boulders to add diversity in the plane bed channel. Upstream of this location, the river has scoured down to bedrock. What is the possibility of this project scouring down to bedrock?

A: The boulder clusters will likely scour and settle. Given that the bedrock is 3-10' deep, it is a possibility that some of these structures could scour down to bedrock.

Q: Is there any information about historic lateral migration in the reach? What rates of lateral migration might you get from this project?

A: There has been very little lateral migration in recent history. The river is tucked up against the valley wall on river right with very little movement.

Q: How will boulder clusters affect fish habitat and how do you expect the river to respond?

A: We are placing boulders to create very localized velocity refugia for fish. There will likely be little to no response from the river channel related to the placement of these boulders. Additionally, these boulders add a little bit of structure in this very simple, uniform stretch of river, where there is no place for large wood hang up. We are hoping that the boulders will provide catch points for wood collection. There was a suggestion by RTT to use existing WDFW criteria for microsite selection placement of boulders.

Q: What is the reason for the difference in cost between the two ELJ construction types?

A: Ballast structures are ~50% larger and have more material resulting in higher material costs and also some additional labor costs.

Q: What are the potential effects of this project on summer Chinook spawning in this reach? You should consider location and timing of summer Chinook spawning when carrying out this work.

A: The design team will look into that.

Q: Is there any groundwater upwelling within this reach?

A: We do not know of any specific groundwater upwellings in the mainstem, but there is groundwater moving through the floodplain. We do not think there is FLIR data from this reach. If it were available, it would be ideal to target boulder clusters around upwelling areas. The design team will explore this further.

Q: Has there been any scour analysis with the boulders? Placing single boulders without any kind of footer can result in scour immediately upstream of the boulder, allowing the boulder to move into a scour hole and become filled in.

A: We were limited in the size of boulders by the need to use a helicopter to place them, so there hasn't been a great deal of consideration about boulder scour and fill.

## **RTT Document Review and Approval**

### **REI Metric Table—Pool Frequency Metric**

The RTT has been struggling to find the best metric to describe pools that adequately accounts for variability in stream size. Based on the literature and discussions with experts, there are pretty good

standards for using pool spacing as a metric. Tracy Hillman spoke with Tim Beechie, who suggested using a binary descriptor of pool spacing that was either adequate or unacceptable, with cutoffs based on different research from Beechie and Buffington. These criteria would only apply to unconfined reaches, which would receive a pool spacing score based on gradient and wood loading (high or low wood) and gradient cutoffs. Tracy will draft the criteria and share them with the pool party and then bring the proposed criteria to the RTT for review. Tim Beechie and George Pess both agreed that we do not want to abandon a metric that describes pools. The RTT has been trying to settle on the right pool metric based on reference conditions.

Members asked what percentage of the reaches are confined. Ryan identified that 150/740 reaches were defined as confined based on BCA algorithm (valley area > 3-4 bankfull widths). The pool metric is defined as: Pool Spacing = Channel Widths per Pool, where Channel Width = Bankfull Width.

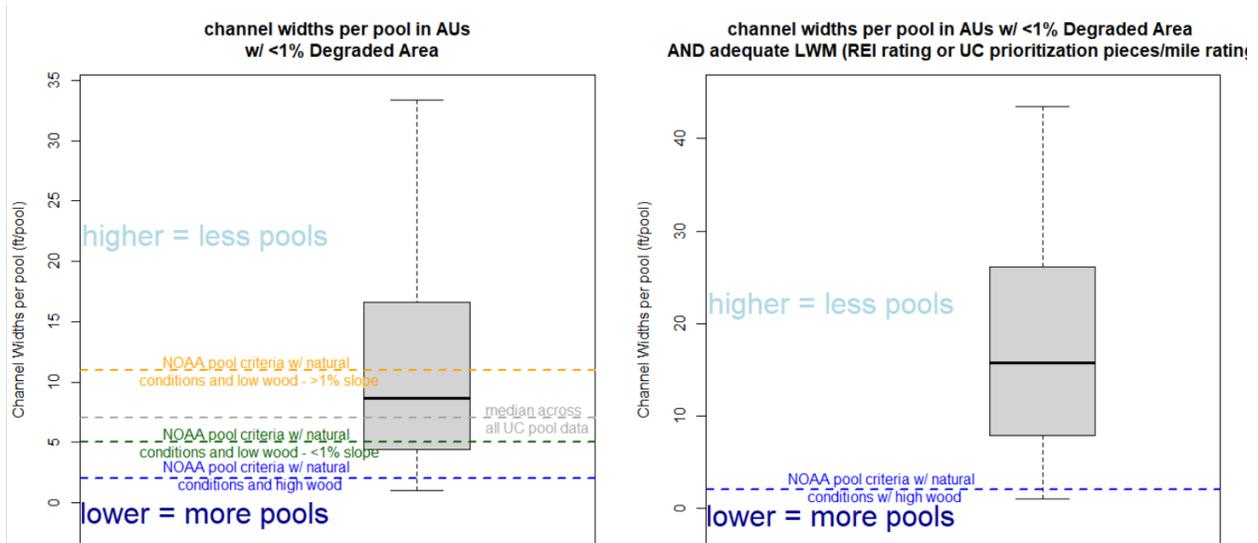
Ryan showed that in UC’s assessment units, most of the reaches would be characterized as having inadequate pool spacing. Below are the two tables Tim Beechie shared with Tracy Hillman and Ryan, and those pool spacing ratings graphed across pools in the Upper Columbia.

**Table 1:** Channel widths from UC habitat prioritization, pool ratings from PFC based on channel widths, and pool spacing calculations.

| Channel Width (feet) | pools / mile (from PFC ratings) | channel widths / mile | channel widths / pool |
|----------------------|---------------------------------|-----------------------|-----------------------|
| 5                    | 184                             | 1056                  | 5.7                   |
| 10                   | 96                              | 528                   | 5.5                   |
| 15                   | 70                              | 352                   | 5.0                   |
| 20                   | 56                              | 264                   | 4.7                   |
| 25                   | 47                              | 211                   | 4.5                   |
| 50                   | 26                              | 106                   | 4.1                   |
| 75                   | 23                              | 70                    | 3.1                   |
| 100                  | 18                              | 53                    | 2.9                   |

**Table 2:** Pool spacing criteria based on slope and wood levels (Tim Beechie, personal communication).

| Slope: | Channel widths/pool |           |
|--------|---------------------|-----------|
|        | Low wood            | High wood |
| <1%    | 5.0                 | 2.0       |
| >1%    | 11.0                | 2.5       |



It was noted that the evaluation of adequate or not should be done among comparable stream types. It might be worth separating out different channel types when making these designations (e.g., step-pool, plane bed, pool/riffle). Additionally, these criteria are tied to measurements of bankfull width—if this is not measured correctly then the metric is inaccurate. Channel gradient is also needed. This is a complex analysis and comparison, with many nuances, which is why the RTT has been grappling with it.

**Action Items:**

- **Tracy Hillman will assemble information and develop criteria to use pool spacing as a metric to evaluate pool quantity and will bring it to the rest of the RTT.**

**UC Stage-0 Mapping**

**Data Coverage and Restoration Suitability**

Ryan shared data from the University of Washington (UW) that was applied to evaluate the suitability of stage-0 restoration locations in the Upper Columbia. In all four of the UC subbasins, the UW group used selection suitability modeling to evaluate where stage-0 restoration would be most effective. Inputs include LANDFIRE vegetation, soil type, valley confinement (unconfined), and slope (flatter = higher score). The group ranked all of the reaches, categorized as low, mid, high, and very high priority. The site suitability data are available if folks want to look into them.

Additionally, the geomorphic grade line (GGL) tool was used to develop relative elevation models for 29 high or very high priority sites. The list of sites in each sub-basin are given in the table below. To generate the geomorphic grade line, the four steps included: (1) approximate the valley centerline, (2) generate the valley cross sections from the centerline, (3) determine equation to apply using a trendline with valley slope along the centerline, and (4) create relative elevation model (REM).

**Table 3:** List of UC sites where GGL tool was applied to generate an REM.

|  |  |
|--|--|
| <p><b>Okanogan:</b></p> <ul style="list-style-type: none"> <li>• Chiliwist Creek (Okanogan)</li> <li>• Depue Creek (Loup Loup)</li> <li>• Sullivan Creek</li> <li>• Loup Loup Creek</li> </ul> | <p><b>Wenatchee:</b></p> <ul style="list-style-type: none"> <li>• Beaver Creek (Wenatchee)</li> <li>• Chikamin Creek (Chiwawa)</li> <li>• Dead Horse Canyon (Wenatchee)</li> <li>• Deer Camp (Clear Cr -&gt; Chiwawa)</li> <li>• Rainy Creek (Little Wenatchee)</li> </ul> |
|--|--|

|   |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>• Snowy Creek (Rainy Cr -&gt; Little Wenatchee)</li> <li>• Marble Creek</li> <li>• Minnow Creek</li> <li>• Natapoc Mountain</li> <li>• South Fork Beaver Creek</li> <li>• Sunitsch Canyon</li> <li>• Spromberg Canyon</li> <li>• Sugarloaf</li> </ul> |
| <b>Methow:</b> <ul style="list-style-type: none"> <li>• Boulder Creek (Chewuch)</li> <li>• Chewuch River</li> <li>• Eight Mile Creek (Chewuch)</li> <li>• Goat Creek</li> <li>• Little Bridge Creek</li> <li>• Twisp River</li> <li>• Thompson Creek</li> </ul> | <b>Entiat:</b> <ul style="list-style-type: none"> <li>• Blue Creek (Mad River)</li> <li>• Cougar Creek (Mad)</li> <li>• Lower Mad River</li> <li>• Mid Mad River</li> <li>• Upper Mad River</li> </ul>   |

Members asked if the group considered whether a reach was transport or depositional in nature? This might be an issue because one of the main points is that stage-0 should occur in deposition reaches not transport reaches. One member suggested that the group might want to use priority assessment units or reaches as a first filter for evaluating where to use the REM data. Ryan confirmed that most of the locations are already in Tier 1 AUs because those were the focus areas for the work.

All of these data are available to the public but they are too large to store online. Ryan asked the group how they should be made available. The RTT agreed that UCSRB staff should make a shapefile showing the location of each of the 29 sites on a webmap. Anyone interested in the raw data can see where data are available that they can then request. There is a lot more that could be done with this information. One useful addition would be to overlay land ownership, because that is an important feasibility consideration.

**Action Item:**

- ***Ryan Niemeyer will make a webmap and post it on UCSRB’s website showing where the REM data are available for sites designated as suitable for stage-0 restoration approaches.***

**Prioritization Next Steps**

**Recap of Feedback Received on UC Prioritization Process**

The UC Biological Strategy and Prioritization Strategy was recently reviewed by an independent science panel (the Tributary Technical Team), which reviewed biological strategies and approaches from various regions within the Columbia River basin. The general feedback from the group was that the UC and Grande Ronde are the best prioritization approaches the TTT has seen. The review panel appreciated the transparent structure that relies on empirical data and less on Delphi data/expert opinion. There was high praise for the process and the reviewers went so far as to suggest that other regions should use the UC’s approach as a template. The feedback is not yet publicly available but will be soon.

Some comments/feedback from reviewers include that the UC strategy lacks an outreach plan and there was uncertainty in how feasibility is addressed. Additionally, the plan lacked an adaptive management component and a RME strategy that would inform the adaptive management component. They also mentioned that it would be useful to have life cycle or habitat models used in tandem with the existing strategy to evaluate potential changes in carrying capacity or survival associated with the prioritized

restoration actions. One major benefit of the UC prioritization tool is that it is easy to incorporate new and updated data into the tool.

### **Prioritization Case Study**

John Crandall described using the prioritization tool as a sponsor, when asking how prioritization indicates how to move forward with restoration for bull trout. He tried to link the USFWS bull trout recovery plan with prioritization data and found it challenging. He took a deep dive inside the data nested in the spreadsheet and encourages others to do the same to see if the data inputs make sense and evaluate where and why the prioritization ended up with the results it did. Additionally, there are a lot of restoration actions that have been completed but are not included in the prioritization. Many of the reach assessments that prioritization is based on have been acted upon over the past decade and/or are out of date. The tool is only as good as the data that goes into it, and we all recognize we need to update the data, especially reach assessments that are 10-years old or older. In addition, the RTT recognizes that bull trout are the weakest component of the prioritization tool because data are lacking for bull trout. It would be good to get feedback from sponsors on the tool as they try to use it. The RTT will continue to update the data as best they can.

John Crandall said a useful outreach tool would be a two-page document that briefly describes the prioritization tool and process. The document would distill the information so that it is more accessible and makes clear how the process occurred and the decisions that went into it. Tracy Hillman noted that Greer Maier or the UCSRB prepared something like this in the past. It may be on the UCSRB website.

#### **Action Items:**

- ***Tracy Bowerman will look for the two-page prioritization summary document and if it does not exist, will work on making one.***
- ***UCSRB staff will reach out to the Prioritization Work Group to discuss next steps for filling in missing prioritization data and developing a robust plan for incorporating data from completed restoration work into the prioritization data.***

Tracy Hillman adjourned the meeting at 12:10 pm. The next RTT meeting will be sponsor presentations to the RTT scheduled for 9-10 March 2022.