



REGIONAL TECHNICAL TEAM MEETING FINAL APRIL MEETING SUMMARY

Date: Wednesday, 12 April 2023

Time: 9:00 AM to 12:00 PM

Location: Webinar/In-person

Members Present: Catherine Willard, Shelby Fowler, John Crandall, Joe Lange, Kate Terrell, Tom Kahler, Amanda Barg, and Tracy Hillman (Chair)

Others Present: Tracy Bowerman/UCSRB, Sarah Walker/UCSRB, Dave Hecker/UCSRB, Amanda Ward/UCSRB, Jason Lundgren/CF, Phillip Klenke/CF, Steve Kolk/BOR, Jenni Novak/WDFW, Daniel Didricksen/WDFW, Kristen Kirkby/CF, Joe Connor/BPA, Nick Legg/W2R, Brian Fisher/MSRF, and Chris Johnson/MSRF

Upcoming meetings and potential topics:

- May 8-10 RTT meeting: in-person SRFB project site tours
- June 7 SRFB project scoring

Tracy Hillman welcomed everyone to the RTT meeting. RTT members reviewed and approved the April draft agenda and March meeting notes as edited. This meeting was not recorded due to technical issues.

Action Item Updates:

- Tracy Hillman pulled up the wording the RTT previously used to define the time limit on projects received under the previous biological strategy. This was the wording from 2020: “The RTT agreed there should be a grace period and agreed on a 1-year grace period on restoration and protection projects. Projects that come into the SRFB 2021 round can fall within either the old priorities or the new priorities. The RTT will consider projects beyond the grace period on a case-by-case basis (e.g., design projects underway).” RTT members present agreed to keep this wording.
- Tracy H. shared the Columbia Basin tributary report (compiled by Casey Baldwin) with the RTT right after the February meeting.
- Compiling additional data about Columbia River tributaries has been assigned to the MaDMC, which will meet in May or June to discuss how to fill these data gaps and then bring suggestions for next steps back to the RTT.
- Tracy H. shared a paper by Kurylyk et al. (2014) that he referenced during the February meeting that described the effects of placing wood structures in streams to increase the area of cold-water plumes. This could be useful for sponsors to reference in applications.

RTT and UCSRB Updates

SRFB Grant Round Update

Dave Hecker thanked sponsors and RTT members for participating in the pre-proposal presentations and scoring. Dave sent around a more detailed scoring spreadsheet that provided a little more information about the specific questions on which projects were evaluated. That included a description of how the RTT opted to assign reach ranks based on expert opinion for those reaches that were unranked due to a lack of data. Moving forward, UCSRB will track scores that were assigned to unranked reaches based on expert opinion and those will remain the same until such time as the score is replaced with data in the prioritization tool.

Upcoming Dates: Completed Draft SRFB applications are due next Friday, 21 April. RTT members can anticipate having those available for review by 26 April. Field tours will take place 8-10 May. Monday, 8 May will be reserved for site visits in the Methow, Tuesday will be Lower Wenatchee and Entiat, and Wednesday site visits will take place in the upper Wenatchee.

Action items:

- **RTT members will let Dave know ASAP whether they plan to carpool to the Methow on Monday, so he knows how many seats he should make available.**
- **Tom Kahler will check to see if the Douglas PUD Suburban is available as a second carpool vehicle.**

Updated on IP and Barrier Prioritization Tool

Tracy Bowerman updated the group on progress the Barrier subgroup made during an IP-specific discussion on 28 February and a Barrier subgroup meeting that took place on 23 March. The subgroup opted to separate out Intrinsic Potential for presumed resident *O. mykiss* that in many cases would extend IP upstream of modeled steelhead IP. This will essentially move what we were calling “marginal” IP from the steelhead model to the *O. mykiss* model as well as add a few streams that were too small to meet the steelhead criteria but which have known *O. mykiss* distribution. Tracy B. is currently working on this and should have a draft out for review by the end of the week. In summary, there will be two separate data layers for *O. mykiss*: an anadromous layer (called the steelhead layer) and a resident layer (the *O. mykiss* layer). The updates to the model also include the tributaries that feed directly into the Columbia River, such as Colockum and Stemilt creeks.

At the 23 March meeting, the barrier subgroup reviewed the latest version of the tool and the feedback was generally positive. The group agreed that having all the data related to specific barriers in one place is very helpful. The tool can be used in a flexible manner, which allows it to support decision making or answer specific questions. John Arterburn demonstrated that perhaps a simpler model would produce more intuitive results. For example, if we just use three basic metrics: barrier severity, miles of upstream habitat gain, and stream order (as a proxy for stream size/area), the tool produces substantially different results than when all metrics are included. We viewed this process of eliminating metrics that did not significantly improve results similar to a stepwise selection procedure used in statistical modeling as a way to achieve a more parsimonious model: start with all possible datasets and eliminate those that are not substantially contributing to the results. The tool is out for review. Please contact Tracy B. if you want her to send it to you.

Robyn Pepin with Aspect and Tracy B. are currently updating the tool based on some additional feedback and will re-run the stream miles once the changes to the IP are made. However, this will not change the results substantially. The group asked us to include some additional variables.

Sarah Walker asked whether changes to IP would impact project scoring. Tracy B. replied that this might be a discussion for the PWG. Tracy H. replied that the changes to IP shouldn't affect the prioritization scores unless the changes in IP are large. Additionally, he noted that opening up resident habitat could provide access for anadromous fish and it also provides other biological benefits, including restoring natural stream processes such as sediment and wood transport.

Upcoming Prioritization Work Group Meeting

Tracy B. announced that there will be a Prioritization Work Group Meeting on Tuesday, 25 April from 1:00-3:00 pm PST. The primary focus of this meeting will be on laying the groundwork for the Floodplain Assessment, in which we will use remote sensing data to generate floodplain-related metrics for prioritization. As a reminder, these metrics are: off-channel habitat and refugia, floodplain connectivity, channel migration, and vertical channel stability. There are 131 reaches in Tier 1 AUs still missing floodplain data, and of those, 44 are missing ONLY floodplain data. These are the metrics in prioritization that are the most lacking. The goal of the meeting is to come to a decision regarding HOW the RTT wants to define the floodplain so that we can move forward with running the analysis. There has been some discussion previously about what the most appropriate way is to delineate the floodplain, whether that's to use something like a 10-year return interval or something like a valley confinement algorithm that would cover a much larger area of the valley and perhaps represent something like a more historic floodplain. Anyone interested in participating in this discussion is welcome to join that PWG meeting.

John Crandall asked: 1) how were the floodplains developed for the riparian analysis? and 2) is there an established methodology for doing this kind of work? Tracy B. responded that the floodplains were delineated based on an approach that Morgan Bond with NOAA came up with, and merged with some additional analysis Steve Fortney did for CHaMP. She couldn't remember the exact details used to define the floodplain but will be sure to give an overview during the meeting. Yes, there are some approaches used for this sort of floodplain delineation but there is no "gold standard" method. Morgan's methods have been used widely in Washington and another approach is the valley confinement algorithm. We plan to review these approaches during the meeting. Tracy B. asked whether it would be helpful for UCSRB to pull together some examples for PWG members to mull over before the meeting and John said it would. John suggested that the Big Valley Reach would be a good example (located in the Methow-Fawn AU).

Action item:

- **Ryan N. will compile some specific examples of floodplain delineation by different methods in several locations before the meeting to give participants the opportunity to review output.**

Grande Ronde sediment study

Nick Legg provided some sediment research from the Grande Ronde watershed. Gravel is limited in systems and was lost when streams degraded. Supply of gravel is highly variable among sites and streams. Nick showed an approach for calculating the volume of 'lost sediment' for a given degree of incision to estimate the refill potential and timeframe for a given site. The timescales for refilling gravel can be highly variable, ranging from 5 years to 500 years. The surprising finding was just how long some of these timescales were. In incised streams where we lost all of that sediment, how do we replace it? Sediment is a scarce resource in a lot of systems. Nick presented a framework for how we think about this when we are considering restoration projects.

Nick described applications of the SIAM (sediment impact assessment model) tool, which works with HEC-RAS models (included with the distribution of these notes). He applied this in the Grande Ronde and it was a cost-effective approach because it can cover large areas at once. He used it to calculate the sediment budget and size of sediment available: both the amount of sediment moving through a reach and potential sediment inputs. He presented the output in a visual diagram of sediment supply for a stretch of river and tributaries and associated sediment supplies, including sediment size. The tool can also be used to estimate the percent of sediment contribution for each reach/stream, and to diagram where there are depositional or transport reaches. The tool can also estimate average transit times from headwaters to mouth. For example, if you ran the tool to estimate gravel transit time, it demonstrates that response times are slow because movement of sediment is slow. You can also slice the data to show which tributaries are the main sediment producers/exporters.

The model can be practically applied to run different management scenarios (such as the effects of roads on reduced gravel supplies and associated downstream impacts) or to inform various approaches for restoration in a given system. For example, it could be used to evaluate the amount of incision relative to the rate of transport to help practitioners decide an overall restoration approach (whether a more passive vs. a more active approach would be appropriate). In places where sediment delivery is limiting, we can also consider how we reinvigorate sediment supplies from sources, such as through forest management, or after fires.

Take-homes points:

- Gravel is a scarce resource.
- Sediment sources and transport matter in restoration planning and design.
- The approach described provides a cost-effective tool in developing process-based restoration strategies combining a mix of active and passive approaches.

Questions: Tracy H. commented he was surprised that the Idaho batholith didn't produce more sediment. Is that because the model was mostly looking at gravel? Response: Granite is tricky because it breaks down, so erosion may produce more smaller-sized sediment. Nick used the term gravel to refer to a range of sediment sizes including gravel and cobble.

Tom Kahler asked when evaluating the time scale of sediment delivery, did you account for stochastic driven processes that are punctuated by catastrophic events? Response: catastrophic processes are important for contemporary rates of sediment transport and are different from long-term erosion rates, possibly because contemporary rates don't always capture long-term landslides and fire processes.

John Crandall asked whether gravel has always been a scarce resource, or has that shifted from the historical condition? What's the context for defining it as a scarce resource? Response: The point of gravel scarcity is general and it might not apply to a given reach. But in general, the supply and production of coarse sediment is pretty slow, so when you lose it from gravel mining or incision, that tends to represent decades of what is coming in from the supply. The delivery of sediment has been changed in anthropogenic times, but in general, gravel/cobble supply is slow regardless of recent impacts. So relative to management time scales, gravel delivery was slow even historically.

Joe Lange commented it was great to see Nick refer to Lane's balance. Nick remarked that restoration often focuses on making reaches more depositional, and that's commonly accounted for, but we often overlook sediment recruitment. You can make a reach more depositional but if you don't have gravel coming in, you won't get the desired deposition.

Upper Columbia Fish Screens

Jenni Novak and Danny Didricksen presented information on the following fish screening projects that WDFW is working to replace or update with BPA funding:

1. Methow MVID Project: This project will replace a sluiceway that has no slope and a 4-foot-perched fish bypass. The proposed design is to replace the fish bypass pipe with new and install a new sluice pipe adjacent to that alignment. The current system will be updated such that the pipe alignment will be the same but the slope will change and the sluice pipe will be beveled down so it is no longer perched. Question: do you know how many fish are entrained into the system at this site? Response: it's difficult to say because after shutdown when DFW goes in there, there is knee-deep silt, so it's hard to get an accurate count. There are several juvenile Coho and Chinook entrained. Discussion: These projects are difficult to evaluate for biological benefit because we often do not know how many fish are entrained and lost in the system. Locations like this also provide prime habitat for larval lamprey, so lamprey also get entrained after shutdown. Danny mentioned that larval lamprey have been found entrained in this system after shutdown.
2. Twisp Power: This is a relatively small project that will entail a redesign.
3. Skyline Project on the Chewuch River: WDFW is partnering with MSRF on this project. This diversion feeds the McPherson side channel. The current configuration runs through a culvert, which is impossible to get fish out of. The initial proposal is to move the screen up to just below the point of diversion and build a new, separate fish bypass that feeds McPherson side channel.
4. Maltais on Frazer Creek: This site has been an issue since the fires and subsequent flooding but WDFW is waiting to let the stream stabilize.
5. Buttermilk Creek: The plan is to build a restrictor plate with a low-flow notch to allow access into a plunge pool and provide a way for fish to exit the system. Additionally, the team would build two new plunge pools.
6. Tandy on Peshastin Creek (part of IPID): The plan for this site is to elongate the pipes so they are in the thalweg and do not get buried in sediment, and to put a waterman gate on the pipes to keep the site from backwatering. Question: for Peshastin and Buttermilk creeks, because these are small diversions, has there been any discussion about getting these diversions out of the creek altogether and converting irrigation to wells? There has not been much discussion about this recently but Jenni did approach the Buttermilk users a few years ago. Several irrigators have issues with wells because of reliability and fires. Jenni and Danny agreed to look into that option.

The WDFW team is also working on an assessment of Columbia River diversions between Rock Island and Wells dams. They intend to compare what is documented in Ecology water rights with what they can see on the ground. They are also looking for funding to help people replace pumps and screens on the Columbia.

Lower Methow Design Review

Brian Fisher presented on the Lower Methow Project that has been funded by BPA. The project is at about 60% design. The project site is located at the downstream end of the Methow River, just upstream from the influence of Wells pool. There are two project sites: Site 1 is the lower section; site 2 is the upper.

Joe Lange: On site 1, because there is no plan to put in structures at the inlet, do you have any additional information you can provide to support assurances that the channel will not be cut off by deposition? Do you have concerns with the inlet having deposition and becoming cutoff? Response: one of the shear

stress analyses presented in the materials that were sent out suggested that materials will continue to be entrained until it reaches the lower portion of the site. MSRF is looking at designing the side channels so they maintain themselves but there is always a risk of deposition in side channels. The plan is to locate the primary inlet and provide multiple inlets to allow various ways for water to access the floodplain to help offset these risks. MSRF shares the concern and they are working with the design team to mitigate the likelihood of deposition cutting off the side channel.

Question for RTT from Chris Johnson: Is there sufficient biological benefit to moving the seven wells that are on the floodplain in site 1. These are likely surface continuity wells because of their proximity to Wells pool. Tracy H. stated that if the wells are pumping water from a shallow aquifer, which is connected closely with surface water, then pumping could reduce groundwater-surface water interactions and potentially lead to dewatering within the side channels. This would depend on the size of the cone of depression, which is related to the rate and volume of water withdrawal and transmissivity. If pumping from these wells increases the likelihood that the side channels dewater during low stream flows, it would be best to move the wells from the floodplain. Kate suggested that MSRF could also look at consolidating the wells. MSRF replied that the water rights folks at Aspect thought that argument could be made, but they are looking into it further. It will be useful to look further into the dueling issues of Wells pool and cone of depression. Tracy H. stated that moving those wells could help provide better groundwater-surface water connectivity and cold-water refugia during summer and warm-water refugia during winter. If the side channel is connected with groundwater year-round, it should provide significant biological benefit for native fish that would use these side channels, especially given that this is a warm-water reach and there is substantial non-native fish use in this reach (e.g., small mouth).

A copy of the presentation will be distributed to the RTT along with meeting notes. Supporting design documentation was emailed to the RTT prior to the meeting.

Discussion: Grandfathering in Biological Strategy/Reach Ranks

After last year's SRFB project scoring, Tracy H. heard from sponsors that it was unfair that reaches that lacked data received a score of 0. So, during this year's pre-proposal scoring, the RTT chose to override some of the scores based on expert opinion that included careful consideration of factors such as stream and valley confinement, stream and valley gradient, location in the watershed, and others. The scores that were assigned during pre-project review represent interim scores that will stay with that reach until data are available for scoring the reaches using the prioritization tool. UCSRB will track scores generated using expert opinion. To help make sure the process is as transparent as possible, Tracy H. will work with UCSRB staff to identify language describing this process.

Tracy Hillman adjourned the meeting at 11:58 am. The next RTT meeting will be in-person site tours for SRFB projects, 8-10 May.