

Cowlitz Hydroelectric Project
FERC No. 2016
Cowlitz Fisheries Technical Committee
Final Conference Call/GoToMeeting Summary
February 2, 2021 from 9:30 – 2:30

FTC Representative Attendees:

Travis Nelson	TPU
Bryce Glaser	WDFW
Carol Serdar	WA Dept. of Ecology
Scott Anderson	NMFS

Additional Attendees:

James Archibald	NMFS
Rich Turner	NMFS
John Serl	WDFW
Peggy Miller	WDFW
Sam Gibbons	WDFW
Josua Holowatz	WDFW
Thomas Buehrens (presenter)	WDFW
Matt Bleich	TPU
Eric Shoblom	TPU
Phil Sandstrom	TPU
Tim Hoffnagle	TPU
Chris Foster	TPU
Ann Weckback	Lewis County
Debbie Carlson	BPA
Steve Manlow	LCFRB
Steve West	LCFRB
Amelia Johnson (presenter)	LCFRB
Laura Wolfe	LCPUD
Rudy Salakory	Cowlitz Indian Tribe
Bill Sharp	Yakama Indian Nation
Lyn Wiltse	PDSA Consulting / Facilitator

2021 FTC Meeting Dates: Mar. 2, Apr. 6, May 4, June 1, July 6 (tentative), Aug. 3, Sept. 7, Oct. 5, Nov. 2, Dec. 7

Approval of Last Meeting Summary

The January FTC meeting summary was approved with edits and will be posted to the FTC public website.

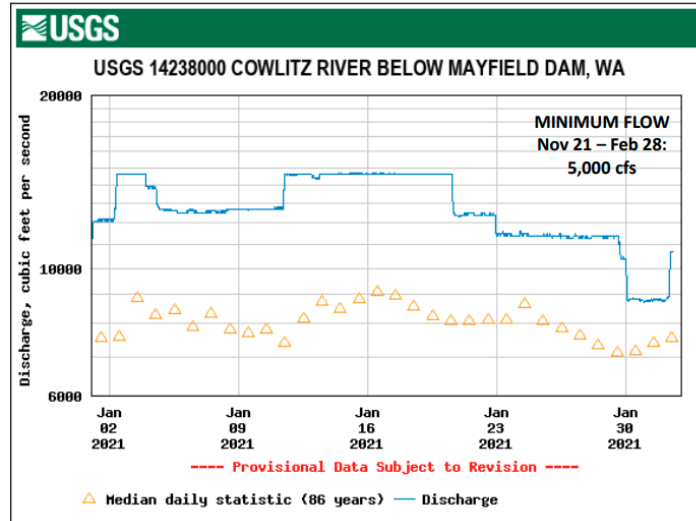
Updates

Hydro Operations:

- Inflows: After a very wet January, inflows at 12.8K cfs were much higher than the historical average of 9.4K cfs. The daily average for February is 8.4K cfs. Over the last 10 days, inflows have been below 7K cfs and are trending lower.
- Lower freezing levels moderated Upper Cowlitz/Cispus inflows. The maximum total inflows to the Cowlitz Project exceeded 35K cfs on January 13. There were four precipitation events, the highest of which was mid-January.

- Storage: At 733', the Riffe Lake elevation is a bit above the historical average of 730'. On January 4 it had risen to 736'. Mayfield reservoir levels have been fluctuating between 420' and 423'.
- Snowpack slightly above average at Paradise and on track for White Pass.
- Mayfield Outflows: The outflow is currently at 10.7K cfs and will likely decrease over weekend. There are no minimum flow or ramp events to report.
- Forecast: Cooler weather is expected with freezing levels below 3K' but expected to rise over the weekend.

Outflow



*No minimum flow or ramp exceedances
2/1/2021: 10,700 cfs.*

Link to the USGS real-time Cowlitz River hydrograph:

https://waterdata.usgs.gov/wa/nwis/uv/?site_no=14238000&PARAMeter_cd=00060,00065

Water Quality/Monitoring: Carol gave a brief report on the Barrier Dam construction project. Ecology has provided comments to the draft Water Quality Protection Plan (WQPP) and Construction Stormwater General Permit (CSWGP) for the activities at the Barrier Dam. She is pleased with the assignment of Tacoma Power's Donna Ebi as the construction inspector. She is impressed with Donna's attention to detail. Carol noted the initial phase of this work will be to fill the scour hole through an approach from the left bank. The CSWGP is currently under review and has not yet been issued. Section 402 relates to the National Pollutant Discharge Elimination System (NPDES) permit. The in-water work is covered by the WQPP, requiring BMPs and monitoring for pH and turbidity. The CSWGP requires monitoring of upland discharges and BMPs. The contractor will be onsite February 8 for the mobilization of equipment and begin setting up BMPs, to fill the scour hole repair before beginning construction repairs of the dam. Carol will email Matt Peter about moving forward with the work and the email will suffice for a CSWGP until it is issued. Eric noted that filling the hole above the Barrier Dam will require a crane to be onsite (across from the hatchery). Eric will send Carol a photo when the crane is present. TPU needs to be sure the road will be maintained to prevent failure or turbid discharges.

Fish Facilities: Eric noted this is a slow time of year for adult returns, only a few winter Steelhead (fewer than 40 in the last 7 days). This is pretty typical of early February. The annual ladder inspection at the Cowlitz Salmon Hatchery is coming up on February 9. And the week of February 8, they may see contractor (Quigg Bros., Inc.) at the Barrier Dam with

a 110-ton crane as they fill the depression Carol referred to just upstream (south side of the river). Their work window is until March 15th. They are requiring a 200' safety radius. All egg takes look good for fall programs and juveniles are healthy. The Mayfield juvenile collector was shut down for the season the end of December and will be in bypass mode until April 1. Operations at the Cowlitz Falls Fish Facility concluded October 30 and will start back up on March 15. Tacoma is advertising for temporary positions now.

Trout Hatchery Remodel Project: They are currently advertising for a lead biologist for this project. After this person is hired, Tacoma will work on developing the design criteria and then select a design firm for the project. They are prepping for interviews now.

Downstream Adaptive Management Technical Work Group: Matt reported they have continued to meet since the 2021-2 DD was approved at the last meeting. They are getting study plans together for the next season and will be reviewing the 2020 report.

CRR: Travis explained he has been talking with Steve Manlow about working together on the future of the CRR Program, including preparing to solicit for a grant round. At this point, Tacoma is still doing an internal review of how to improve over the initial grant round and is planning to send information on this out to the FTC during the second or third quarter, and possibly advertising in the fourth quarter. Given that the prior CRR Program Manager has left the company and all the complications due to COVID, Tacoma can't yet commit to specific program information delivery dates as they are still in the midst of developing this year's strategy. Peggy suggested a DD would be called for if a grant round doesn't occur in 2021. Rudy reminded all that there will likely be a three to-four-year period between any announcement of grant funds and parameters and the completion of any substantial projects. He also cautioned against changing the rules "midstream."

The CRR report is out for review with comments due February 4. Bryce offered that a subgroup could share the workload (e.g., updating some of the criteria before the next round).

Action Item: Travis to send out the most recent version of CRR DD for all to review and identify what portions may need to be edited.

FHMP: Next Steps

Presenter: Matt Bleich

Matt reported that the workshops are proceeding according to schedule. He is keeping everyone informed with the meeting notes and materials developed along with way. At this point, they have completed the fall Chinook Workshops and the transition plan is complete. Today is the additional date they were holding as reality check. After an editorial review today, this piece will go out to the FTC for review.

Tomorrow is the first workshop for winter steelhead, and they will take a different approach with the aim of improving efficiency by providing background work that includes marking and other data gaps in adult collection. After completing the steelhead transition plan, they will work on spring Chinook and then coho. They will perform a bio-programming exercise when each section is complete. They will also adjust based on public input.

In summary, the process appears to be working well. Bryce hopes all can review the initial drafts and provide feedback as it is important to get things right.

Monitoring & Evaluation (M&E) Subgroup

Presenter: Phil Sandstrom

February 02, 2021 FTC Meeting

Phil reported this group continues to meet regularly. He is providing notes from these meetings in two formats and is also recording the meetings as an option for those unable to attend. He has sent out the draft agenda for the February meeting. He invited folks to email him or Lyn if they have trouble with the link. More comments, more ears, more thoughts are helpful and most welcome!

Phil once again reminded all that the M&E Subgroup sees themselves as employees of the FTC and they welcome any topics beyond the SAR analysis that the FTC would like them to take a deep dive on and present their findings.

In terms of moving forward the monitoring and evaluation component of the FHMP, Bryce wants it to include *all* the monitoring Tacoma is doing – not just down river. Phil agreed and noted this will be discussed at the February M&E Plan meeting.

Spring Chinook SAR Presentation:

Thomas Buehrens, Senior research scientist with WDFW, does a lot of work on quantitative monitoring. Working with others in the M&E Subgroup, he pulled a data set together and analyzed it to see what factors were related to return rates. The objective of the study is to identify rearing and size at release strategies that maximize returns for the segregated spring Chinook program. This will include:

- Analyzing CWT data to determine survival rates by size, age, and timing of release
- Finding the right balance of release dates and sizes, with equivalent use of resources (time, space, money, etc.).

Analyzing these data should allow for better decision making on rearing and release strategies for Spring Chinook in the Cowlitz River. Considerations:

1. Starting assumption: Larger smolts and more smolts = greater adult return rates.
2. There is a poundage production obligation in the SA.
3. There are facility constraints – how much water and space is there to rear fish in the Cowlitz.
4. There are also brood constraints – need to get enough broodstock to replace the previous generation.
5. Rearing more fish to smaller size and releasing earlier vs. rearing for 1.5 years before release

Research efforts were aimed at coming up with the optimal size at release (or suite of sizes) that will generate the most adult returns and be a sustainable program. Other considerations are age, timing, and release by calendar day of the year.

Thomas worked to identify a process that would be inclusive and yield consensus-based results. CWT data was an attractive option since it includes information about size at release, timing of release, etc. If terminal fisheries harvest sampling is less than 2.5%, it can introduce bias due to low sample size and few CWT recoveries. He, therefore, expanded the escapement recoveries back out to the Cowlitz river mouth. He then eliminated jacks and mini jacks and came up with a common set of definitions to define SAR.

In the name of transparency, the data set is in a reproducible / downloadable repository available to the public through GitHub. https://github.com/tbuehrens/CWT_SAR_Analysis Within the main landing page, there is a “readme” document describing how the repository works, which will guide users interested in the Cowlitz to the .rmd and .pdf files with the

word “Cowlitz” in them located on the repository homepage. These files detail how to reproduce the analysis. There is also a “projects” folder with the Cowlitz results in it.

Model results show a tradeoff between adult return per lbs of smolts released and the ability to make brood. On average, we don't get to Smolt to Adult Ratio (SAR) survivals that allow the population to replace itself using the early release strategies. The strategy most likely to meet SAR is the fall release strategy. Releasing fish as yearlings is the only strategy with high survival and allow the population to replace itself, but it is inefficient in terms of space. We know survival is variable year to year. Releasing some baseline number of smolts as yearlings each year is a strategy that will likely create a self-sustaining population. Releasing the excess early as sub-yearlings and the baseline as yearlings will address space constraints. Thomas was pleased to observe that this strategy is what is already going on – We haven't always released fish at multiple dates per year. Conclusions:

Survival varies by:

Size:

- Bigger is better, but there is a threshold of ~50 grams with more modest benefits above that.

Brood year:

- Big & variable effect on survival
- Therefore, it is necessary to account for year effects when comparing size and timing of release.

Day of year:

- There is clearly a peak that occurs on average from Mid-April through Mid-May, with lower survival earlier in the spring and later in the summer.
- There is considerable uncertainty in the effect of release date other than the spring because we haven't used a crossed experimental design to assess factors affecting survival -- particularly high uncertainty for summer and mid-winter release dates.

We don't currently have enough data to estimate interactions—would need ‘crossed study design.’ Models explain most of the variability in survival (~90%)

Optimal Release Strategies:

There is a tradeoff between adults per pound of smolts and adults per adult.

- Strategies that release small fish return more adults per pound of smolts but have lower productivity.
- Survival too low for ‘replacement’ until winter-spring as juveniles. become yearlings.
- This suggests the current program is ‘close to optimal.’
- Can fine tune exact size of yearling release to optimize size vs. number of yearlings.

Other tradeoffs and final recommendations are “beyond our scope.”

- Tradeoffs in space usage between spring chinook and other species
- Total poundage limit
- If sub-yearlings residualize, determining an acceptable level.

Future work may include comparing SARs with other regional programs, taking into account residualism, and evaluating the effect of different age at return on adult age comp and fecundity.

Phil credited the success of the study to great collaboration between Tacoma and WDFW. Kudos to Josua, John, Tim, Bryce, and Matt. Bryce observed this is one of the areas where

we've gotten criticism in the past about not having clear data sets or having a thoroughly vetted analysis. We now have a reliable data set to inform future decision making.

Thomas thanked all for the opportunity to present and invited folks to email with questions or feedback on the study at Thomas.Bureans@dfw.wa.gov. His presentation is available with additional detail, on the TPU website as well as on the internal FTC website.

2021 FTC Work Plan

Presenter: Travis Nelson

Travis reminded all that the intent of the work plan is to get projects on our radar so we can plan accordingly. He reminded everyone that this is an initial draft, and he welcomes feedback on the three tables. This plan will be treated as a living document and can be combined with the FTC protocols. He asked for feedback on the three tables in the plan. He looks forward to integrating feedback and proposing an updated version for approval in the coming weeks. Discussion highlights:

Table 1: Put all monthly updates in a single table.

Table 2: FHMP will shift to October. Include annual review of protocols. Add the year to 10-year reports (LWD); add Gravel, FERC report. Note which are FERC filing reviews and when FTC is to respond.

There were no comments on Table 3.

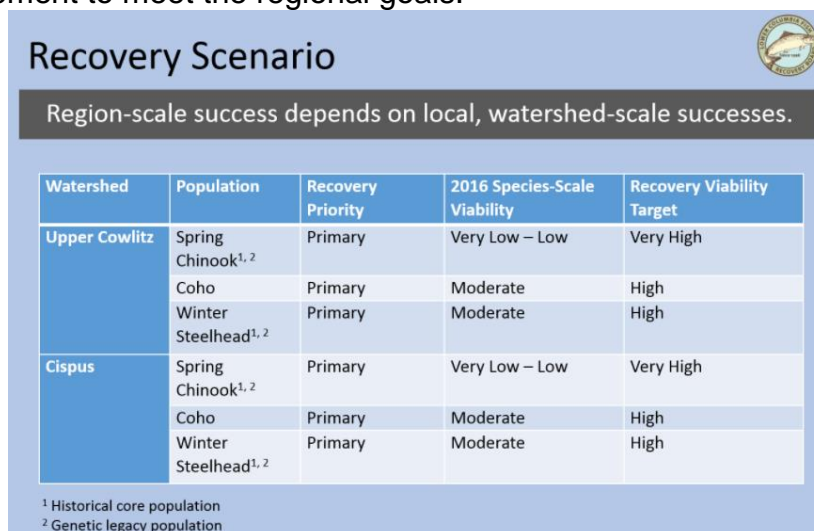
Action Items

- Travis: Integrate comments into a new draft plan and send out for review and possible approval at the February meeting and conduct internal Add protocols to this.
- All: Send comments on the Work Plan to Travis by February 19.

LCFRB Presentation

Presenter: Amelia Johnson

Amelia Johnson provided an overview of the Upper Cowlitz/Cispus strategy. The LCFRB has regional species goals for the Upper Cowlitz and Cispus. They are focused on how the Upper Cowlitz and Cispus connect with what is needed on the Lower Columbia. There is room for improvement to meet the regional goals.



Recovery Scenario

Region-scale success depends on local, watershed-scale successes.

Watershed	Population	Recovery Priority	2016 Species-Scale Viability	Recovery Viability Target
Upper Cowlitz	Spring Chinook ^{1, 2}	Primary	Very Low – Low	Very High
	Coho	Primary	Moderate	High
	Winter Steelhead ^{1, 2}	Primary	Moderate	High
Cispus	Spring Chinook ^{1, 2}	Primary	Very Low – Low	Very High
	Coho	Primary	Moderate	High
	Winter Steelhead ^{1, 2}	Primary	Moderate	High

¹ Historical core population
² Genetic legacy population

The vision for the LCFRB Habitat Strategy is to develop a habitat restoration and protection strategy to support short- (ESA delisting) and long- (healthy and harvestable) term ESA-listed salmon and Steelhead recovery needs in a way that works for fish and for people.

The LCFRB met monthly with a diverse group of stakeholders, including FTC members, from the spring of 2018 to December 2019. They identified landscape units. Within these units, they created a hierarchy of actions including opportunities for planning and collaboration up front and watershed processes and habitat benefits down the road. Actions also include providing habitat features where there are no watershed processes. Tacoma and WDFW provided data that helped work group members to identify what was happening historically in the rivers and where there are areas for improvement – now and in the future. All of the data are on LCFRB website along with the strategy itself.

Identified habitat action types include (in this order) protection, strategic actions, connect and restore, and enhance and create. She showed a table of Landscape Unit Ecological Indicators for Hillslopes, Cowlitz River Valley Bottom, and Cispus River Valley Bottom. She also showed maps that detail the optimal areas for various types of actions. She ended her presentation reminding all that habitat actions represent a range of options based on watershed conditions and fish needs. Implementing projects based on these requires partnering with willing landowners.

Discussion:

- Amelia reiterated Rudy's earlier point that there will be a lag in time between funding work and seeing the work carried out on the ground.
- Peggy suggested looking to the LCFRB website and reviewing the Executive Summary. She also noted that, in one of the appendices, there is a very helpful table that has a \$ column noting the relative expense of each project.
- Steve M noted the whole intent of this project is to provide the technical foundation for CRR fund and others as well.
- The LCFRB has opened up their grant round and are currently working with sponsors on pre-proposals. Proposals are due in February, with sponsor presentations in March, and TAC scoring in July. The LCFRB will then submit their recommended list to the SRF Board to make their decision, and the round will wrap up by fall. They are allocated \$3.6 million per year for each grant round.
- He also reported the LCFRB is in the process of revising their regional strategy. This will inform which funds they should rely on to get habitat projects on the ground.
- SRFB applications are due February 24 for the Lower Columbia.

All of the resources are on the LCFRB website:

<https://www.lcfrb.gen.wa.us/salmon-recovery-funding-board>

The link to the UCC habitat strategy also is in the FTC agenda and on the mytpu.org/CRR website. This presentation will also be posted on Tacoma's website as a pdf.

Travis thanked the LCFRB for the presentation and their work toward salmon recovery in the region.

Satellite Rearing

Presenter: Matt Bleich

Matt reminded all they closed out the end of the calendar year with a draft Satellite Rearing Plan which was released for public review. Tacoma received comments from various

members of the angling community as well as the LCFRB, LCPUD, WDFW, and Energy NW. These comments will be shared in their entirety with the FTC.

Discussion:

- Peggy suggested looking back to what Northwest Fisheries Enhancement (NWFE) submitted in the prior CRR grant round to get a better understanding of Chris Vandenberg's remarks.
- Bryce reported when WDFW reviewed the plan, they were struck by the difference between where we are in terms of recovery compared with when the satellite rearing facilities were envisioned 20 years ago. If we implement these, it is important to be sure we are doing what is best for the fish and that it is a good use of money and resources. He cited good discussions on this within M&E subgroup and in Transition Planning Workshops. We need to better understand where we are in terms of recovery. It feels like we are in a good place with coho – improving ocean conditions will aid recovery. In addition to water sources, and logistics, WDFW would like Tacoma to work with the FTC to do species population-level status evaluations. Based on those results, it may be prudent to consider what other concepts might get us to the desired end point. He suggested one option could be doing a short-term pilot study with a portable satellite rearing pond before investing in many of them. Other suggestions: Chum reintroduction in the lower river, using Mayfield net pens to create more space, and investing some of the funds into a trust that can be growing interest. These ideas were all captured in WDFW's comment letter to Tacoma.
- John Serl noted (in the Chat) that back in the late 1990's, WDFW and HARZA were able to acclimate 75,000 steelhead smolts in the stilling basin of Energy NW's Packwood Hydro Project. They used six net pens and there was room for at least a few more. He confirmed that the stilling basin is the pond that leads to a concrete flume at the bottom of the hill by their powerhouse.
- Steve W reported that LCFRB had commented on the style and substance of the report which they found difficult to follow. He further stated that Article 5 is short, and is not very prescriptive, specific to the satellite rearing ponds. They would like the report to tie to salmon recovery and what the subbasin plan says (not just recovery). They also wanted to look at opportunities for rearing facilities to address all VSP parameters (abundance, productivity, diversity, and spatial structure).
- Laura explained the LCPUD felt like the report should be more detailed. For the Table 2 recommended attributes, there is a need to come up with a ranking system based on importance.

Next steps: Matt had been planning to do a feasibility study on the top strategies listed in the report. Instead, he will now take time to review all the comments received in more detail and bring specific recommendations back to this group regarding next steps and how to incorporate comments and identify next steps.

Jamie Herrera Beutler Letter to FERC

Just prior to this meeting, Travis sent out this letter dated January 15 along with the January 29 article from the Centralia Chronicle. The letter asks FERC to clarify requirements in the Cowlitz River Project license pertaining to satellite rearing facilities, Hatchery production requirements, and improving survival rates of hatchery fish.

This request fits well with WDFW's sentiment to assess population-level status and perhaps do something different than was originally envisioned. Bryce reminded all that we have some issue papers on these topics. It may be helpful to go back and review these for

applicability to today. It is important to assess where are we now and to make the right choices about moving forward. Matt will draft an initial response and describe the background and the current status of where we are with survival rates, hatchery production, the FHMP and the research Thomas reported on today.

Discussion:

- The SA says the CRR funds are to be used for recovery. We don't want to see the whole fund go to production. The focus is on habitat restoration.
- The FTC reviewed this in 2016 and identified CRR could be used for hatchery production if there was a recovery linkage. The CRR Implementation Strategy strikes that balance.
- AHA modeling exercise did a review of the overall cap for the basin as being 840,000 pounds. There is currently not room in the hatchery for reaching that limit.

Travis has been talking with FERC about this. With approval of abandonment of volitional passage, the FERC order notes that hatchery production could be increased.

Four objectives:

- Rebuild the Salmon Hatchery.
- Expand the Trout Hatchery.
- Construct three satellite rearing facilities.
- Upstream volitional passage construction (now these funds have shifted to CRR fund with main focus being habitat with an opportunity to increase hatchery production if there is a connection to recovery).

All agreed there is a need to review the license requirements. Tacoma will not walk away from any obligations. The FHMP has been a big lift for everyone and this is an opportunity for the FTC to resolve some key outstanding issues so we can all move forward in a meaningful and collaborative way. Travis thanked everyone in advance for the work ahead.

By the end of the meeting Travis had emailed out relevant background documents, including issue papers from May of 2016. This topic will be on the March FTC agenda.

Gravel Augmentation

Presenter: Travis Nelson

Travis thanked Carol and Peggy for working with him and Melora on revising the draft long-term DD 2021-1 since the last meeting.

Key components are accountability, annual reporting, if additional gravel is put in the river, how it should be identified and shared with the FTC before Tacoma takes credit for it, and milestones to prepare a plan to develop a new site for gravel augmentation.

After a brief discussion and review of the edited DD, it was approved by consensus, and there was great rejoicing.

Action Item

- Travis: Send out the approved DD to all.
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Potential Topics for March 2 FTC Meeting

- Updates incl. Hydro Ops, Water Quality, Fish Facilities, Satellite Rearing Update, Downstream Adaptive Mgt. TGW
- Response to Letter to FERC

- TPU Flow Planning Presentation (?)
 - 2021 FTC Work Plan
 - FHMP Transition Plans
 - M&E Subgroup (Spring Chinook Handling Protocol?)
 - Gravel Augmentation
 - Preview April FTC Meeting topics
-

Meeting Evaluation

- Singing and dancing
- Tech difficulties
- Very informative presentations!
- Learned a lot about where the FTC has come from and the background on the CR
Appreciated the use of the chat function.
- Approved Gravel Augmentation DD
- Lots of collaboration FHMP, ME, Gravel, LSFRB, etc.
- Nice that we got out early without having to cut any discussions short.
- Quotable Quote: "I have just three things to teach: simplicity, patience, compassion. These three are your greatest treasures." - Lao Tzu

Parking Lot

- Presentation by Tacoma's Power Management Group
- Review Steelhead Recycling Program