

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

January 10, 2024

Facilitator's Summary

Facilitation Team: Emily Stranz & Colby Mills, DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions, and actions, as well as point out future actions or issues that may need further discussion at upcoming meetings; it is not intended to be the "record" of the meeting. Official minutes can be found on the TMT website: <https://pweb.crohms.org/tmt/agendas/2024/> Suggested edits for the summary are welcome and can be sent to Colby at colby@dsconsult.co.

Review Meeting Summaries & Minutes – TMT Members approved the official meeting minutes and facilitator's summary from the December 20 TMT meeting. Official minutes and facilitator's summary from the TMT Year End Review will be reviewed at the next TMT Meeting.

Official Water Supply Forecasts – Joel Fenolio, Reclamation reported the official January water supply forecast for Hungry Horse Dam. Residual forecast for the project was 1,670 kaf, or 75% of average, with a bleak outlook for snowpack currently. April to August was 73% of average (sets minimum flows), and May to September was 72% of average (sets flood control). Generally, things are looking well below average although better than last year, with an end of April target of 3,535 feet; the project will pass inflow between now and April.

Doug Baus, Corps, reported official January water supply forecasts for Corps of Engineers projects:

- **The Dalles:** NWRFC April to August volume forecast is 69 maf, or 77% of average;
- **Lower Granite:** NWRFC April to August volume forecast is 17 maf, or 82% of average;
- **Libby:** Corps January runoff forecast April to August is 5,440 kaf, or 89% of average; and
- **Dworshak:** NWRFC April to July is 1,881 kaf, or 76% of average.

Chum Operations – Doug Baus, Corps, updated the TMT on the current chum operation (posted to the TMT website). The Bonneville Dam tailwater elevation at 0700 hours this morning was 11.7 feet, with a total outflow of 106.9 kcfs. The chum incubation phase is planned to continue through April 9 at midnight. April 10 at hour 0001 will signify the end of the chum operation and the start of spring spill, unless otherwise coordinated at TMT.

RFC inflow forecasts at Bonneville Dam over the next 10 days show a low today of 98 kcfs, peaking on January 16 around 120 kcfs. Doug highlighted the current active weather front, with significant precipitation on day 1 of up to an inch in the Cascades, with forecasted snow levels dropping. The trend of significant precipitation and cool temperatures is forecast throughout the 10-day, however, is not basin-wide. The 10-day QPF shows robust precipitation in Oregon and Southern Idaho, with the Upper Columbia Basin well below average. The 5-day QPF is similar, with well above average precipitation in southern portion of the Columbia Basin, and well below average in the north.

Climate forecasts for the next 6-10 days show a probability of below average temperatures and above average precipitation. The 8-14-day outlook shows a similar pattern for temperatures with some variability; near normal in the west and below average in the east. The 30-day outlook shows equal chances of above or below average temperatures in the eastern portion of the basin, with equal chances of above or below average precipitation in the NE basin, and above average in the SW basin. From a water year perspective, water conditions have been primarily below average, with some improvement starting in December. Doug noted that the Corps will continue to monitor conditions for the chum operation, and an additional meeting has been added to the calendar for January 17 to check in on conditions. If it seems that the meeting is not necessary, TMT will be informed ASAP.

Scott Bettin and Tony Norris, BPA, provided an update on redds, reviewing data from site visits on November 30, 2023 and January 4, 2024. Redds were observed at Ives Channel and Pocket on January 4. The highest redd in the Channel was at 11.6 feet and at least one was higher than the water elevation although no eggs were found; redd elevations at the Pocket were deeper and less fish were observed than normal. Tony noted that most fish seemed to come in and spawn early, prior to December's significant precipitation, and mostly at McCord Creek which is seeing more and more fish every year. During the January 4 site visit, no new redds were observed at Woodard Creek, the Breaks, or Strawberry.

With the difference between Corps' and BPA forecasts, BPA will continue monitoring conditions and does not expect a change is currently needed in the current chum operation. In response to a query regarding the difference between BPA's projections and the STP, Tony emphasized that incremental streamflow does not match up with observations in the SPT. Tony also noted that while there is below average snowpack on the north portion of the basin, there is some small incremental rise in the water supply forecast. Additionally, due to the incoming extreme cold weather, wind front throughout the region, and increases forecasted for the Willamette River, it's possible the Bonneville tailwater may rise above the 11.3-12-foot range. A lot of uncertainty remains over the next 5 days and BPA is prepared if emergency conditions arise. Erick Van Dyke, ODFW, emphasized the importance of working to support productivity of listed species in ways that increase and maintain natural spawning areas. Tony added that maintaining a level of caution when considering lowering tailwater protection levels is due to potential impacts to downstream spawning areas, which are not monitored as closely. NOAA and WDFW didn't have anything to add regarding chum and noted that internal coordination will continue.

Operations Review – Joel reported on Bureau of Reclamation projects:

- **Hungry Horse:** midnight elevation was 3,536 feet, with releases of 1,700 cfs; the project is operating to Columbia Falls minimums and has been drafting slightly over the weekend. With the low forecast, the project dropped minimum flows to 3,350 cfs, and 650 cfs on the South Fork. Minimum flows will be updated in February, and March water supply forecasts will set Columbia Falls minimums for the rest of the year. Joel noted the project is tracking about 5 feet higher than last year.
- **Grand Coulee:** Midnight elevation was 1,281.3 feet with inflows and outflows averaging about 69,000 cfs.

Lisa reported on Corps of Engineers projects:

- **Libby:** midnight elevation was 2,420.8 feet, average inflows of 2.2 kcfs, outflows of 4 kcfs;
- **Albeni Falls:** midnight elevation was 2,051.3 feet, average inflows of 11.9 kcfs, outflows of 14.5 kcfs;
- **Dworshak:** midnight elevation was 1,515.8 feet, average inflows of 1.5 kcfs, outflows of 1.7 kcfs;
- **Lower Granite:** average outflows of 23.2 kcfs;
- **McNary:** average outflows of 99.9 kcfs; and,
- **Bonneville:** average outflows of 103.1 kcfs.

Water Quality: Dan Turner, Corps, reported an exceedance of 110% TDG criteria downstream of Lower Granite, due to speed-no-load operations combined with spill needed for a T1B transformer rehab.

Fish: Kelsey Swieca, NOAA, reported daytime video counts are coming in from Bonneville, John Day and Ice Harbor dams (few days lag), with a maximum of 20 steelhead passing Bonneville and about half that at the further upstream projects.

Dave Swank, USFWS, reported that the lamprey run is over for the year; the Corps' final updated corrected counts for LPS passage at Bonneville are still pending.

TMT – January 10, 2024

Power System: Tony reported significantly cold weather ahead, and that best preparations to achieve planned operations are being made. BPA will monitor any issues that could arise from weather challenges over the coming days.

Questions and Comments from Members of the Public – There were no questions or comments from members of the public.

The next scheduled TMT meeting is on January 17, 2024, at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, January 10, 2023
Minutes: Andrea Ausmus, BPA (contractor, CorSource Technology Group)**

Today's TMT meeting was held via conference call and webinar, chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. A list of today's attendees is available at the end of these minutes.

1. Review Summaries and Minutes – December 20

- Charles Morrill, WA, said that what Kelsey Swieca, NOAA, shared in the December 20 meeting was what they had discussed. He said that the notes look good to him.
- The notes will be finalized and posted.

2. Official January Water Supply Forecasts – Joel Fenolio, BOR, and Doug Baus, Corps NWD

Reclamation

- Hungry Horse – January Final Forecast
 - January – July
 - 1670 kaf
 - 75% of average
 - Currently getting good snow, hoping for good recovery.
 - Apr – Aug
 - 1490 kaf
 - 73% of average
 - May – Sep
 - 1270 kaf
 - 72% of average
 - Well below where we are for flood control.
- Minimum Flows Downstream of Hungry Horse
 - Columbia Falls
 - 3350 cfs
 - Hungry Horse
 - 650 cfs
- End of April forecasted forebay elevation at HGH is projected to be 3535 ft. They will be passing inflow based on conditions. Better than last year.

Corps

- The Dalles
 - April to August
 - 69 maf
 - 77% of average
- Lower Granite
 - April to July
 - 17 maf
 - 82% of average
- Libby
 - January Runoff Forecast
 - 5440 kaf
 - 89% average
- Dworshak
 - April to July
 - 1881 kaf
 - 76% of average

3. Chum Operations – *Doug Baus, Corps; Tony Norris, BPA; Joel Fenolio, BOR; Charles Morrill, Washington; and Kelsey Swieca, NOAA Fisheries*

a. Bonneville Dam – Hour ending 0700 – *Baus*

- Total Outflows: 106.9 kcfs
- Tailwater elevation: 11.7 feet
 - Reminder that we are in the Chum Incubation Period and the current plan is to continue through April 9 at midnight.
 - At April 10 at hour 0001, that is the beginning of Spring Spill.

b. NWRFC - Inflow Forecast – *Baus*

- RFC Inflow Forecast (Ten-Day)
 - Low: 98 kcfs (January 10)
 - High: 120 kcfs (January 16)

c. NWRFC 10-Day Meteorological Forecast – *Baus*

There is significant precipitation on Day 1, with a magnitude of an inch of precipitation and dropping snow levels. Through the ten-day period, the precipitation is not basin-wide and the significant precipitation is falling primarily in the Cascades and we are not seeing it in the Upper Columbia at this time.

Day 3, continuing precipitation as well as low snow levels. Sunday, Day 5 there is a chance of things drying up. Through the rest of the 10-day there is continued precipitation.

d. RFC Forecasted Precipitation Summary – *Baus*

- 10-day QPF (Percent of Climatology) -- as it relates to percent of average
 - Well below average precipitation in Oregon and S. Idaho. Well below average precipitation average in Upper Columbia Basin.
- 5-day QPF (Percent of Climatology)
 - Well below average precipitation in southern portion of the Columbia Basin. Well below average precipitation average in Upper Columbia Basin.

e. NWRFC Climate Forecast – *Baus*

- 6 – 10 Day Outlook:
 - Temperature – Below Average
 - Precipitation – Above Average
- 8 – 14 Day Outlook:
 - Temperature – Variability
 - Western Columbia – Near Normal
 - Eastern Columbia – Below Average
 - Precipitation – Above Average
- 30 Day Outlook (December 31):
 - Temperature –
 - Eastern Columbia – Equal Chances
 - S. Western – Above Average
 - Precipitation –
 - Eastern Columbia – Equal Chances
 - S. Western – Above Average

f. Snake River October 1 through January 9, 2024, Monthly Precipitation – *Baus*

- Snake River abv IHR
 - .76 inches
 - 93% of normal
 - Still below average
 - October : 85%
 - November: 77%
- Columbia River Basin abv Arrow Dam
 - 2.07 inches
 - 113% of normal

- October : 73%
 - November: 57%
 - Columbia River Mainstem abv TDA
 - 1.07 inches
 - 107% of normal
 - October : 63%
 - November: 72%
 - Willamette abv Portland
 - 4.87 inches
 - 170% of normal
 - October : 85%
 - November: 73%
 - Across the water year seeing improving conditions, across the water year there has been primarily below average water conditions.
- g. TMT - Coordinated Chum Operation - December 20, 2023, at 1:40pm
- There was another meeting added for next week that is reflected on the website.
- h. Redd Update
- Morrill shared that they are watching conditions. He said that Norris has requested a meeting with Swieca, Morrill on January 17 to assess where they are at that point in time.

Jonathan Ebel, ID, asked for the current operation.

Baus said that we have the two phases, Spawning and Incubation. We wrapped up the Spawning Phase, and now we are in the Incubation Phase. The TMT coordination was for a BON minimum tailwater elevation of 11.3'. This will be maintained for all hours and would continue through April 9 at midnight. Once Spring Spill at BON starts on April 10, Chum Operations end concurrently with the start of Spring Spill unless otherwise coordinated with TMT.

Ebel appreciated the confirmation that the minimum tailwater is 11.3 ft, he said at the last TMT meeting that was up in the air. He thanked Baus for the clarification.

Stranz said that after some follow up between Washington, NOAA, and the Action Agencies there were some edits that are shown in the red line changes to the summary of the operation posted on the agenda.

- i. Redd Elevations – *Bettin & Norris*
- They went on November 30, there were fewer than normal redds in some of the pockets. They went out on January 4 as well. There was upwelling for some of the higher elevation redd deposits. Elevations were below 11.6' and most were in the ~10'.
 - Norris said that since November 30, there was significant precipitation in the first two weeks of December with the abrupt rise in the Willamette and so we had

daytime tailwater elevations up to 13'. There was also a need for several nights of reverse load factoring.

- Norris said that he had expected more fish to move in during the second wave of spawning. Norris noted that Ricky reported that there no new redds in some of the areas.
- Most of the new redds were focused on McCord Creek but there were a few in the Ives Pocket and Channel.
- All redds in Ives Pocket and McCord Cree were deep and were not considered vulnerable to a lower tailwater.
- Most fish after November 30, came into spawn at McCord Creek.
- No new redds at Woodard, the Breaks, or Strawberry.
- Norris noted that there was not as much water upwelling out the upper pocket areas which is unusual which lead Norris to believe that the water table is still depleted from the previous dry conditions across the fall and November.

Swieca added that looking at the Hamilton Creek Gage, since January 4, there has been about 2 additional feet over the Hamilton Creek Gage.

Norris said that he expects things to look very different in that channel because when there is flow out of Hamilton Creek it backs up all the way into the Pocket area, the area along Strawberry and then all the way through that channel area, because there are two or three separate breaks in elevation across that channel that Hamilton Creek will add additional surface elevation in there.

Morrill asked if Norris was able to capture any of those water elevation differences between Hamilton and Ives where he could note those differences.

Norris said no, we could do that, but he thought that it is not as meaningful. He said that they collected some of that data last March but the mouth of Hamilton Creek changes after every significant rain event, so they did not take any data like that.

j. Operations and Willamette Forecast (SLMO3) – *Norris*

- Forecasted rise out of Willamette will reduce what is required out of BON to support the 11.5/11.3' tailwater.
- Might see GCL discharging just enough to meet Vernita Bar minimum.
- Salmon Managers (SM) have been tracking the STP and its representation of a significant draft at GCL, Norris said that this is not something that they are forecasting at BPA. He said that there is a dramatic difference between the forecasts and right not they are not seeing the type of forecast that would indicate that they should be raising alarm bells. Norris also said that the next meeting on January 17 may not be necessary.

Baus asked for clarification as TMT needed the meeting on January 17.

Norris said with the forecast that there may not be a need for the meeting on January 17. He said to leave it on the schedule and then check in on Tuesday and see what conditions exist to decide whether it is necessary. Norris said that they are looking at the 0 – 14 Day Outlook as it relates to stream flows and how much water we will need out of BON to support the chum water elevation, that will indicate the week-to-week variability on the

operation. Norris said that we might see a change in conditions significant enough that it will not be necessary. Norris said that TMT could check in on Tuesday after SM meet and determine if we really need that meeting.

Kirk Truscott, Colville, said that he assumed that there is a departure between BON projections for GCL elevations and discharge out of GCL versus what is in the STP. He said that he assumes that is based up on the local input that is occurring with the wet weather trend in the Cascades in Lower Columbia because it still appears that what occurred in the Upper Columbia is when they have had precipitation it was warm, and they did not get snowpack. Now they are going to go into cold weather but 6 – 7 days with no moisture, so they are still not building in the Upper Columbia.

Norris said that it will not be “no snowpack”, he said it will be below average on the northern part of the basin and it seems that the precipitation in the forecast is below average, but those temperatures are cold. He said we have seen the Water Supply Forecast creep up incrementally, not significantly, but it is worth noting. As it relates to the forecast in the STP, the Corps can not control the streamflow that they get, RFC’s focus is not necessarily on providing a streamflow for the STP that may or may not be necessarily the best answer out there. He said that it is pretty easy to look at the incremental flows downstream GCL and add those up to what is observed presently to see that there is a ~10 – 15 kcfs difference and that is significant. Norris added that there are day to day variations on how much water is needed at BON to support chum tailwater and that is hard to reflect in a Single Trace Model.

Truscott said that he understands he is trying to not get too fidgety, but he is starting to fidget just a bit.

Swieca said that she wanted to make clear that the based on the FPAC schedule that the FM are not scheduled to meet next Tuesday. She asked Norris to notify her sooner than later to let her know if they need to schedule that meeting if there will be a TMT meeting on Wednesday.

Julie Ammann, Corps, said that their modeling for the STP is showing higher elevations for GCL this week than it did for last week. They are showing ~1276 feet for the end of month and last week they were show ~1268 feet. She said that is another piece of data to add.

Morrill added that he shares Truscott’s concerns, though he is not as fidgety as Truscott is, but GCL has maintained 1281 feet over the last 7 days given the precipitation local events. Morrill added that given the trending forecast along the Cascades, Oregon and Washington, there will likely be some pretty heavy run off from the Willamette and that will continue to support the Chum Operation. Morrill said that his optimism is a little higher that will help reduce drafting from GCL. He added that as Norris said we need to watch this and pay attention to what is going on if we need to make adjustment then TMT will need to have that discussion.

Erick Van Dyke, OR, asked Norris if given the cold snap if we are expecting that we are expecting we will be having a tailwater elevation of 13’.

Norris said that we do have some extreme cold weather coming up and that is hitting the entire region, and we also have low stream flows. He said that there are a couple of things:

First, with the Willamette coming up we can only reduce GCL as low the Hansford Reach minimum, because we still need to support the fall chinook incubation flows below Priest Rapids Dam, it is possible that the tailwater at BON might come up above the 11.3' to 12' range to preserve water and GCL.

It is possible that the influence of the Willamette would push the tailwater up above.

We are also expecting very strong east winds and we still have cold weather that also increases the amount of water that we need.

So, there is a lot of uncertainty moving forward across the next five days in particular, and potentially further, where the discharge at BON that we need and the influence of the Willamette and then also the cold weather as we manage the system to maintain reliability in the region.

Norris said that it is also possible that there may be emergency conditions, not necessarily at BPA but bad things can happen when it gets very cold and windy on the system. He said that we prepare to implement our prepared operations, but it is possible you might see a communication at odd hours at some point if we have to make a change to planned operations to maintain power system reliability.

Norris added that in the grand scheme of things, it is possible you will see the tailwater at BON exceed what we have been running over the last several days due to the influence of the Willamette and then with a lot of uncertainty about the East wind, you might see increases in outflow from BON on the back side of the precipitation.

Van Dyke said that was helpful. He said that most of them are in touch with that when it gets cold it makes it difficult to follow a plan. He said that he was just trying to ground himself on what to expect this week and what to expect if we have a meeting this week. He also made a comment, he noted in the conversation earlier about the chum and where they were identifying the redds and the one thing about the natural production of salmon is that they hone to natal spawning areas. He said that what is not usually being included in the sensitivity of the statements being made about where the chum is; where their redds are being counted; is that this idea of homing to the natal spawning area and the productivity of that spawning area. He said that it is not as simple as just saying they can go somewhere else to spawn. Van Dyke said that he hopes that TMT would start to recognize the life history pattern of an adult that is returning to a natal area to spawn and the importance to increase the productivity of those species that are in trouble or are listed in ways that increase or maintain adequate area, not it is okay to decrease it, it is an area that he has tried to emphasize when TMT talks about this in the past that has put a lot of people into a difficult space but one that he would like for them to put into their thinking when they are talking about these operations and their importance.

Norris said that they focused on the Ives area because that is what is identified in the BiOp as the target of the BON spawning and incubation operation but downstream, if we decided to lower the protection tailwater down the road to prioritize Spring Refill, there are areas downstream of the Ives area where chum spawn that would be impacted by a lower tailwater. Norris said that is another good reason to maintain a level of caution when we want to decide to lower the protection tailwater for the Ives Area. There would be an impact downstream that we do not thoroughly monitor as closely over.

4. Operations Review

k. Reservoirs

Reclamation – Joel Fenolio

- Hungry Horse Dam
 - Releasing: ~1700 cfs
 - Midnight elevation: 3536.07 ft.
 - Columbia Falls minimums dropped from 3500 cfs to 3350 cfs.
 - Dropped from the 900 cfs to 650 cfs on the S. Fork.
 - Updating minimum flows in February and then the March WSF will set the what the Columbia Falls Minimums will be the rest of the years.
 - About 5 ft. higher then last year.

Brian Marotz, MT, asked if the 3350 cfs is on the sliding scale between 3500 and 3200.

Fenolio said yes, it came out right in the middle. He said they will update those numbers next month and then March will set in.

- Grand Coulee Dam
 - Midnight elevation: 1281.3 ft.
 - Average Inflows: ~69 kcfs
 - Average Outflows: ~69 kcfs

Corps – Lisa Wright

- Libby Dam
 - Midnight elevation: 2420.8 ft.
 - Inflows: 2.2 kcfs
 - Minimum Outflows: 4 kcfs
- Albeni Falls (at the Hope gage)
 - Midnight elevation: 2051.3 ft.
 - Inflows: 11.9 kcfs
 - Average Outflows: 14.5 kcfs
- Dworshak Dam
 - Midnight elevation: 1515.8 ft.
 - Inflows: 1.5 kcfs
 - Outflows: 1.7 kcfs
- Lower Granite average outflows: 23.2 kcfs
- McNary average outflows: 99.9 kcfs
- Bonneville average outflows: 103.1 kcfs

- l. Water Quality – *Dan Turner, Corps*
 - Exceedance downstream of Lower Granite.
 - Speed No Load (SNL) operation combined with spill that was needed for a T1b transformer rehab that had started.

- m. Fish

Salmon – Swieca, NOAA

- Daytime Video Counts
 - Currently only occurring at Bonneville, John Day, and Ice Harbor.
 - Bonneville
 - 20 steelhead/ day
 - Upstream projects
 - About half as many

Lamprey – Dave Swank, USFWS

- Lamprey run is over.
 - Waiting on final updated, corrected counts from the Corps for lamprey passage at BON.

- n. Power System – *Tony Norris, BPA*

- Significant cold weather.
- Making the best preparations so BPA can achieve the planned operations and hopefully will get through this unscathed.
- Keeping an eye on things that can go wrong before they go wrong so hopefully things will all work out all right, but the next couple days will be a challenge.

5. Public Comments:

6. Set agenda for next meeting – **January 17, 2023**

Today’s Attendees:

Agency	TMT Representative(s)
Army Corps of Engineers	Doug Baus, Julie Ammann, Lisa Wright, Aaron Marshall
Bonneville Power Administration	Tony Bettin, Scott Bettin, Ben Hausmann
Bureau of Reclamation	Joel Fenolio, Chris Runyan
NOAA Fisheries	Kelsey Swieca, Trevor Conder
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Jonathan Ebel
Montana	Brian Marotz
Nez Perce Tribe	Jay Hesse
Umatilla Tribe	Tom Lorz (CRITFC)
Colville Tribe	Kirk Truscott
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	

Other Attendees (non-TMT members):

COE – Dan Turner, Alexis Mills

NOAA – Simon Diansen, Dana Bethea

Colville Tribe – Dennis

Washington Ecology –

Oregon DEQ – David Gruen

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor) (*recording only*)

Clearing Up – K.C. Mehaffey

Chelan PUD – Jay Fintz

Energy Keepers – Eve James