

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

February 8, 2023

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: <http://pweb.crohms.org/tmt/agendas/2023/>. 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 January 25 meeting minutes and facilitator's summary.

Official Water Supply Forecasts – Joel Fenolio, Reclamation, reported the official February water supply forecast for Hungry Horse Dam. The residual February through July forecast is 2,050 kaf, or 98% of average. May through September was 1,750 kaf, or 99% of average. Forecasts ranged from slightly above normal to slightly below normal from January to February, but there is still snowpack in the upper elevations of the Flathead Basin (tracking average to slightly above average).

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

- **The Dalles:** NWRFC April to August volume forecast is 73 maf, or 82% of average;
- **Lower Granite:** April to July volume forecast is 16 maf, or 80% of average;
- **Libby:** Corps February runoff forecast April to August is 5,071 kaf, or 83% of average; and
- **Dworshak:** NWRFC February runoff forecast April to July is 2,117 kaf, or 86% of average.

Chum Operation – Doug reported that Bonneville Dam today at 0700 hours had a total outflow of 133.8 kcfs, with a project tailwater elevation of 12.1 feet.

The NWRFC inflow forecast for the next 10-days ranges from a high of 148 kcfs on February 9, to a low of 127 kcfs on February 17.

The 10-day forecasted period shows below average precipitation throughout most of the entire Columbia River Basin, with some near average conditions in the upper Columbia basin and NW Washington. The 5-day QPF shows a similar story of well below average precipitation; overall dry conditions are expected throughout the basin for the next 10-days. The NWRFC climate forecast for the 8-14-day outlook shows a probability of below average temperatures and some variability with above average precipitation in Washington, Idaho, and NW Montana, with near normal conditions in Oregon.

Tony Norris, BPA, presented collected GPS data (since 2016) that show locations and elevations of redds below Bonneville Dam; these data help inform accurate protection tailwater levels at Bonneville. Monitored areas where redds generally spawn include the Ives channel and pockets, Woodard Creek, the Breaks, Strawberry; McCord Creek and the boat ramp saw some spawners this year.

BPA expects to be able to continue to support the chum tailwater minimum while continuing to draft Grand Coulee for drum gate maintenance; they continue to monitor water supply conditions and will report to TMT if any issues arise in the coming weeks.

Operations Review – Reservoirs: Joel Fenolio, Reclamation, reported on Bureau of Reclamation projects:

- **Hungry Horse:** midnight elevation was 3,523.7 feet, with inflows over the last 5 days averaging 790 cfs. The project is releasing 3,000 cfs to get below 3,520 feet by end of the month to support culvert repair upstream of the dam.
- **Grand Coulee:** midnight elevation was 1,271.2 feet; with inflows averaging 70,000 cfs, and releases of 84,000 cfs on average yesterday. The project is still operating to support chum, and to start drafting for drum gate maintenance.

Lisa Wright, Corps, reported on Corps of Engineers projects:

- **Libby:** midnight elevation was 2,408.3 feet, with average inflows of 2.6 kcfs, and outflows of 4 kcfs;
- **Albeni Falls:** midnight elevation was 2,051.5 feet, with average inflows of 13.3 kcfs, and outflows of 12.9 kcfs;
- **Dworshak:** midnight elevation was 1,518.5 feet, with average inflows of 2.0 kcfs, and outflows of 1.7 kcfs;
- **Lower Granite:** average outflows of 23.7 kcfs;
- **McNary:** average outflows of 106.3 kcfs; and
- **Bonneville:** average outflows of 129.8 kcfs.

Aaron Marshall, Corps, reported that dredging work is ongoing at the Lower Granite pool near the confluence of the Snake and Clearwater rivers, and is progressing as expected. Dredging is expected to finish around mid-February and will be followed by hydro surveys to verify the depth of the navigation channel post-dredging.

At Little Goose, work was completed on the floating guide wall anchor bracket that was previously obstructing access into the navigation lock approach in the forebay. The project is now able to operate within the full operating range of 633-638 feet.

Water Quality: Dan Turner, Corps, reported that downstream of Lower Monumental is seeing TDG exceedances of up to 114% due to the project operating at speed no load and 16 kcfs spill from an outage.

Fish: Trevor Conder, NOAA, provided the TAC run forecast for spring/summer:

<https://www.dfw.state.or.us/fish/oscrp/crm/docs/2023/2023%20Spring-Summer%20Forecasts.pdf>.

He noted that over 300,000 spring Chinook are predicted to enter the Columbia this year, which is above last year's forecast. The prediction for total sockeye is higher than last year, but lower than the actual return; Snake River sockeye are predicted at 2,600. Fall Chinook information will be coming out mid-late February.

Adult counts have been in the single digits, as expected, due to the bypass systems and most ladders being out, and only a few projects currently counting. Ten steelhead were counted at Bonneville on February 6.

Power System: Tony noted that the recent weather systems had a fair amount of wind generation. Warmer temperatures are incoming, moderating power demand.

Questions and Comments from Public: there were no questions or comments from members of the public.

The next scheduled TMT meeting is on February 22, 2023 at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, February 8, 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 Meeting Summaries & Minutes – January 25

- January 25 Summaries and Minutes – approved

2. Official Water Supply Forecast – Joel Fenolio, BOR & Doug Baus, Corps NWD

February

a. Hungry Horse

- February – July
 - 2050 kaf
 - 98% of average
- April – August
 - 1950 kaf
 - 99% of average.
- Snowpack in upper elevation (Flathead basin) is tracking above average.

b. The Dalles

- April – August
 - 73 maf
 - 82% of average

c. Lower Granite

- April – July
 - 16 maf
 - 80% of average

- d. Libby
 - April – August
 - 5071 kaf
 - 83 % of average
 - e. Dworshak
 - April – July
 - 2117 kaf
 - 86% of average
- 3. Chum Operation – Doug Baus, Corps; Joel Fenolio, BOR; Kelsey Swieca, NOAA Fisheries; Tony Norris, BPA**
- a. Bonneville Dam - Hourly Data
(Hour ending 7)
 - Total Project Outflow: 133.8 kcfs
 - Project Tailwater Elevation: 12.1 feet
 - b. Bonneville Dam – Inflow Forecast – *Doug Baus, Corps*
 - High: 148 kcfs (February 9)
 - Low: 127 kcfs (February 17)
 - c. NWRFC Forecasted Precipitation Summary
 - 10 Day Forecast
 - Primarily throughout the whole Columbia basin below average precipitation
 - Some near average conditions in Upper Columbia Basin and Northwestern Washington.
 - 5 Day Forecast
 - Same situation
 - Below average conditions over the next 5-day period.
 - d. NWRFC Climate Forecast – Doug Baus, Corps
 - 8 to 14 Day Outlook -- Temperatures
 - Below average.
 - 8 to 14 Day Outlook -- Precipitation

- Variability
- Below average in Washington, Idaho, and NW Montana
- Near normal in Oregon

Reminder Chum Operation (3.f. on agenda): Maintain an 11.8-foot Bonneville Dam tailwater elevation as a minimum at all hours and will continue the operation through the commencement of spring spill on April 10.

e. Redd Locations (2016-2022), Tony Norris, BPA

Tony shared a GIS tool that shows the locations of the chum redds in the typical Ives Island spawning areas. These data coupled with adjacent water surface elevation data have been critical to set the chum tailwater protection level each year. He noted that the tool is not available outside of BPA but was able to use the view on the WebEx screen to show the more notable points of interest.

- GPS redd data are collected in the typical Ives Island spawning areas area that PSMFC and Washington State crews perform their monitoring.
- It is easy to see from the data that generally chum are spawning in the same places each year.
- At McCord Creek typically the redds spawn along the shoreline – anomalously this year the chum spawned in a shallow area shallow area inside the cove– all of these redds were well covered by water
- At the area referred to as the Breaks – chum spawn in nearly the exact spots each year in a very tight grouping.
- At the area referred to as Strawberry – no redds this year, traditionally busy.
- Ives channel/pocket – Last year the chum avoided these areas potentially due to pinniped predation but this is a typical location.
- Ives upper pocket area – The upwelling is very strong here and we will see fish spawn in an area of upwelling that keeps them wet even with the water surface is perched above the downstream water surface. Fish move into this area under the right conditions.
- Hamilton Boat ramp – This year and one other redds near the boat ramp were marked in deep (~2') of water. There may be a small area they prefer based on the amount of water coming out of the hillside and down the ramp while we were there.

Brian Marotz, MT and Jonathan Ebel, ID asked if there is high-resolution data limnological data for these redd sites.

Norris said no, in the past there were tools in the 2000s to measure the groundwater temperature for the purpose of determining emergence dates. Since those data could not be collected at every spawning location there was no definitive way to measure when chum are fully emerged. So now we just use April 10 as the end of emergence as that

date showed to be typically well past the 1000 TU (temperature units) threshold for emergence.

Chris Magel, NOAA, asked if there is a way to tweak the graphic to collate the years in circle sizes to show changes per year in the main sites.

Norris said that the tool is just a representation of where they are spawning. Conditions each year are very different and there are too many other variables to pin down to provide any correlations. Basic message is that they are keying in on very specific spots. It also shows that the current operation that provides a tailwater range of 11.3 to 13.0 feet during the daytime results in the chum spawning in the same area. The wider daytime tailwater range provides more water over the fish while they are spawning and allows more water to pass the project. This helps avoid setting chum redds above 13 feet which exposes the projects to refill risk in the spring.

Norris shared that expect to support the chum protection tailwater through emergence and notes that they will continue to watch water supply conditions and report back to TMT if we see any issues.

4. Operations Review

a. Reservoirs

Reclamation – Joel Fenolio

- Hungry Horse Dam
 - Midnight elevation: 3523.7 ft.
 - Average Outflows: 3 kcfs (to support culver repair)
 - Average Inflows: 790 cfs
 - Moving ahead with culver repair upstream of the dam.
 - Forest Service is closing down road on west side of the reservoir.
- Grand Coulee Dam
 - Midnight elevation: 1271.2ft.
 - Inflows: 70 kcfs
 - Outflows: 84 kcfs
 - Drafting to support chum and drum gate

Corps – Lisa Wright

- Libby Dam
 - Midnight elevation: 2408.3 ft.
 - Inflows: 2.6 kcfs
 - Outflows: 4 kcfs
- Albeni Falls
 - Midnight elevation: 2051.5 ft.

- Inflows: 13.3 kcfs
 - Outflows: 12.9 kcfs
 - Dworshak Dam
 - Midnight elevation: 1518.5 ft.
 - Inflows: 2 kcfs
 - Outflows: 1.7 kcfs
 - Lower Granite average outflows: 23.7 kcfs
 - McNary average outflows: 106.3 kcfs
 - Bonneville average outflows: 129.8 kcfs
- b. Other Reservoir Updates – Aaron Marshall, Corps
- Lower Granite Dredging
 - Dredging in the confluence of the Snake and Clearwater rivers is ongoing and progressing as planned.
 - Completion expected mid-February.
 - After completion, there will be hydrographic surveys to verify dredge work and depth of navigation channel. At that point, the project will be cleared for operating in the full normal operating range.
 - Little Goose
 - Repairs of the floating guide wall anchor brackets that were previously obstructing into the navigation lock approach have been completed.
 - Little Goose forebay may now be operated in the full normal operating range.
- c. Water Quality – Dan Turner, Corps
- Lower Monumental tailrace is exceeding 110%, at 114% yesterday due to operating at speed no load and 16 kcfs spill due to an outage.
- d. Fish – Trevor Conder, *NOAA Fisheries*

Conder posted the TAC Run in chat:

<https://www.dfw.state.or.us/fish/oscrp/crm/docs/2023/2023%20Spring-Summer%20Forecasts.pdf>

- Not much data with bypass and ladders being out
- All counts are in the single digits
- 10 steelhead on Feb 6

e. TAC Run Forecast

- 300K spring Chinook predicted entering the Columbia
 - Above the prediction from last year.
 - Last year’s observed numbers well exceeded the predictions
- Sockeye prediction higher than last year
 - Prediction is lower than actual return
- Snake River Sockeye
 - Predicting 2600
 - Last year they predicted 200 and the actual number was 2329.
- Odd year may indicate a low year.
- Fall Chinook data will be available mid- to late-February.

f. Power Report – Tony Norris, *BPA*

- Recent weather systems provided significant wind generation.
- Recent warmer temperatures has resulted in moderating power demand

5. Public Comments: None

6. Set agenda for next meeting – February 22, 2023

a. Chum Update

Today’s Attendees:

Agency	TMT Representative(s)
Army Corps of Engineers	Doug Baus (chair), Lisa Wright
Bonneville Power Administration	Tony Norris, Scott Bettin, Ben Hausmann
Bureau of Reclamation	Joel Fenolio
NOAA Fisheries	Trevor Conder, Kelsey Swieca
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/CRITFC	Tom Lorz
Colville Tribe	Kirk Truscott
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	

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Other Attendees (non-TMT members):

Corps – Aaron Marshall, Chris Peery, Scott St. John, David Ries, Jonathan Roberts, Alexis Mills, Dan Turner

NOAA – Chris Magel

DS Consulting – Emily Stranz (Facilitator), Colby Mills

BPA – Andrea Ausmus (note taker, Contractor with CorSource Technology Group)

Energy Keepers – Eve James

Columbia Basin – Mike O’Bryant

Portland General Electric – Ruth Burris

Clearing Up – K. C. Mehaffey

Chelan PUD – Kate von Reis Baron

Puget Sound Energy – John Chandler

Grant PUD – Peter Graf

Snohomish PUD – Jesse Pruess. Mike Shapley

Oregon DEQ – Marilyn Fonseca, David Gruen