COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM
January 24, 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 – Official meeting minutes and facilitator's summaries from the 2023 Year End Review and from January 10 will be reviewed at the next TMT meeting.

Chum Operation - Doug Baus, Corps, provided an update 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 104 kcfs. The chum incubation phase is planned to continue through April 9 at midnight, with the start of spring spill on April 10, unless otherwise coordinated at TMT.

RFC inflow forecasts over the next 10-days show a low today of 116 kcfs, peaking at 150 kcfs at the end of the 10-day period. A trend of persistent precipitation is forecast across the entire 10-day period in the Columbia Basin, mostly in the Cascades, with higher levels in the western portion of the basin. Cool temperatures with a snow level ranging between 2,000-5,000 feet will begin the 10-day, with a warming trend and higher snow elevations before temperatures cool back down. The 10-day QPF shows above average precipitation in the western and southern parts of the Columbia River Basin and below average in the upper Columbia, Idaho and western Montana. The 5-day QPF shows a similar trend. Climate forecasts for the next 6-10 days show a probability of above average precipitation and temperatures. The 8-14-day outlook is similar with some variability for temperatures. Doug highlighted that the RFC water supply forecast for The Dalles, April to August is 71 maf, or 79% of average.

Tony Norris, BPA, reported that the Willamette River is forecasted to remain elevated, resulting in lower flows needed from Bonneville Dam to maintain the chum incubation operation; as a result, some flow has been preserved at Grand Coulee Dam. Due to local and upstream inflows, operations may shift back and forth between operating to the chum minimum and Hanford Reach minimum for this next period.

Jonathan Ebel, ID, asked if the NWRFC forecasts are being driven by low elevation snow melt and Tony noted that he could not speak to the assumptions used in NWRFC's forecast specifically. In response to a query from Erick Van Dyke, OR, he clarified that when the Willamette is running high the backwater effect reduces the flow required out of Bonneville to maintain a specific Bonneville Dam tailwater elevation. When there is enough water elsewhere in the system (including natural stream flows) to meet the chum minimum Grand Coulee will be operated to meet the Hanford Reach minimum which could result in a higher Bonneville Dam tailwater. The lowest Action Agencies can reduce discharge is to meet the Hanford Reach minimum flow.

NOAA and WDFW didn't have anything new to add; there have been no chum over Bonneville since the new year and there are no new observation data from the Ives Pearce area.

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 February 7, 2024, at 9:00 AM.

Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, January 24, 2024
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 6 (YER), January 10**
    - Charles Morrill, WA, and Jay Hesse, Nez Perce, would like more time to read through the Year End Review (YER) summary and minutes.
    - January 10 documents were still not available as of this meeting.

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

    a. Bonneville Dam - Hourly Data (Hour 7)
        - Tailwater elevation: 11.7 ft
        - Outflows: 104 kcfs

    b. NWRFC – Inflow Forecast – *Doug Baus, Corps*
        - Low: 116 kcfs (January 24)
        - High: ~150 kcfs (February 4)

    c. NWRFC 10-Day Meteorological Forecast – *Baus*
        - Throughout the 10-Day period persistent precipitation throughout entire basin.
            - Primarily focused on the Cascade Range.
        - Coupled with precipitation:
            - It starts off cool.
            - Then there is a warming trend.
            - It then begins to cool off at the end of the 10-day period.
        - Day 1 Snow Levels: ~5000 – 2000 feet elevation
        - Day 2 Snow Levels: ~5000 – 2000 feet elevation
        - Day 3 Snow Levels: ~8000 feet elevation (Western Oregon)
        - Day 4 – 7 snow levels remain higher.
        - Day 8 snow levels begin to come back down.

d. RFC Forecasted Precipitation Summary – *Baus*

- 10-day QPF (Percent of Climatology) -- as it relates to percent of average
  - In excess of 100% in the western and southern Columbia River Basin
  - Upper Columbia areas are well below average.
- 5-day QPF (Percent of Climatology)
  - Similar pattern as 10-day OPF
  - Below average in the Upper Columbia, as well as Idaho and NW Montana.

e. NWRFC Climate Forecast – *Baus*

- 6 – 10 Day Outlook:
  - Temperature – above average
  - Precipitation – above average
- 8 – 14 Day Outlook:
  - Temperature – above (some variability)
    - Western Columbian Basin – equal chances of above and below average
    - Warming as you move East.
  - Precipitation – above average

f. Water Supply Forecast above The Dalles – *Baus*

- April through Aug
  - 79% of avg
  - 71 maf

g. TMT - Coordinated Chum Operation - December 20, 2023, at 1:40pm – *Baus*

- The Corps is continuing the current Chum Incubation Operation.
  - Bonneville tailwater minimum of 11.3' on all hours.
  - Continue to implement through the remainder of the operation which will end on April 10, 2024, with the start of Spring Spill.
  - Unless coordinated otherwise at TMT.

h. 10-Day Inflow Forecast for Willamette River – at Salem (SLMO3) – *Norris*

- Willamette River is forecasted to stay elevated.
- Hourly Bonneville Dam data show that 100 kcfs was all that was needed to track to the bottom of the tailwater elevation for the Chum Incubation Operation.
- Have been able to put a little water into GCL.

i. 10-Day Inflow Forecast for Lower Granite Dam – *Norris*

- The inflow to Lower Granite will depend on the direction of the atmospheric river and where it hits the basin.
- This will help to contribute to reducing the augmentation required for the chum operation.
    - NWRFC's forecast for Lower Granite could be what is driving NWRFC's BON forecast higher during that period.
    - Norris said that he would expect Priest Rapids to track close to its minimum during that period and Chum would probably be exceeded due to higher Willamette and other streamflows downstream of Grand Coulee.
    - The control for releases from Grand Coulee will likely go back and forth between augmenting for the chum operation control or the minimum at Hanford Reach.

Jonathan Ebel, ID, asked if this was driven by some kind of melt of some of the low elevation snow as well as the precipitation coming in.

Norris cannot speak to the NWRFC forecast, but it seems likely since this precipitation event is going to be warmer than the last couple. He said that is their forecast so he cannot speak to their assumptions.

Erick Van Dyke, OR, asked Norris to make sure he understood the terminology Norris used moving back and forth between Snake and Upper Columbia, Mid-C. He asked if that meant that Norris is going to be watching the water that is coming from these two places to identify what is needed to maintain the tailwater at BON.

Norris said when the Willamette is running high, it has a backwater effect at BON, so it requires less flow at BON to achieve the same tailwater elevation. When we have increase flow out of the Snake River that reduces the amount of augmentation volume that you would need from GCL to support whatever required flow is needed at BON to support the minimum tailwater at BON. However, when the Snake rises and we reduce discharge from GCL to support the Hanford Reach minimum flow, Chum can be exceeded due to natural stream flows that we do not control from the Snake and any incremental between GCL and BON.

Van Dyke said that he is just trying to put into context the statement that Norris made to make sure that he gets what Norris was saying.

Norris said when they run to Vernita Bar, it means that there is enough water elsewhere in the system to meet the Chum minimum and we do not necessarily have control over it. Norris said that he would assume that the higher flows that RFC forecasted for BON would include additional runoff from the Snake and any other incrementals between GCL and BON. He said the lowest we can reduce discharge is to meet the Hanford Reach minimum flow. Then natural stream flows will take over between that and whatever the Willamette's influence is on the tailwater.

Van Dyke said that was great, that flexibility has been built into this to deal with things like that. He asked what the chance was that Norris' forecast was showing a likelihood of it being above 13' at BON for their tailwater.

Norris said he is not sure, it is all in the wind, as far as how high the Snake River will get and how high the Willamette will get. He added that right now we are in the incubation period so as long as we are not going below the 11.3 tailwater minimum chum are protected.

j. Chum Salmon Spawning Ground Survey

- No new updates.

Kelsey Swieca, NOAA, said that there are no new updates from NMFS. She added that she appreciated the perspectives that Norris offered about what we might expect over the next couple of weeks.

3. **Public Comments:** None
4. **Set agenda for next meeting – February 7, 2024**
   a. Chum Operations
   b. Water Supply Forecast Update
   c. Operations Review

Today's Attendees:

Agency	TMT Representative(s)
Army Corps of Engineers	Doug Baus
Bonneville Power Administration	Tony Norris, Scott Bettin, Ben Haussmann
Bureau of Reclamation	
NOAA Fisheries	Kelsey Swieca
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	
Idaho	Jonathan Ebel
Montana	Brian Marotz
Nez Perce Tribe	Jay Hesse
Umatilla Tribe	Tom Lorz (CRITFC)
Colville Tribe	
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	

Other Attendees (non-TMT members):

COE – Alexis Mills, Chris Peery
Washington Ecology – Thomas Starkey
Oregon DEQ – David Gruen
DS Consulting – Emily Stranz (Facilitator), Colby Mills
CorSource – Andrea Ausmus (BPA note taker, Contractor)
Energy Keepers - Eve James
NW Power and Conservation Council – Kate Self