COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM
July 31, 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 facilitator's summary from the July 24 meeting, pending a minor typo edit. Official minutes are pending and will be reviewed at the next TMT.

Dworshak Operations – Willow Walker, Corps, reported on operations at Dworshak Dam (DWR), starting with an update on the Gwen wildfire near the transmission lines just west of the project (detailed update posted to the TMT website). Conditions on July 25 led to brief unit outages and a significant drop in outflows; units and flows were back to normal by 4pm. Temperatures rose approximately 3.5 degrees F during the outage. Willow noted that the short outage prevented a significant increase in water temperatures downstream; no major impacts were observed at the hatcheries and towards Lower Granite (LWG). Quick coordination on behalf of the Corps Walla Walla District and regional Salmon Managers was commended by all.

Following the heat wave prevalent through most of July, river temperatures have fallen back to within the normal range, with nighttime temperatures even dropping below average to help cool things down. DWR is currently releasing 7.5 KCFS (no spill), with a pool elevation of 1,571 feet (1.5 feet higher than last year at this time). Temperatures at Anatone and Orofino are at 72 degrees F and 70 degrees F, respectively; cooler temperatures and cloud cover have helped bring these down. Stratification in the LWG forebay remains good.

Forecasted temperatures show an incoming heat wave with temperatures well above 100 degrees F starting on Friday, followed by a cool down to finish the 10-day forecast. Willow noted this will be hot but expected weather. Lewiston could reach over 110 degrees F on Friday then cool back to the 90s; potential cloud cover could help fend off solar radiation and maintain LWG forebay stratification.

Today's temperature modeling results (posted to the TMT website) reflect the decision made at TMT last week to relax the 68 degrees F criteria in the LWG tailrace to 69 degrees F, with a 0.5-degree buffer, from August 1-9. Incoming cool temperatures, the change tomorrow to RSW-only spill at LWG, and good stratification in the pool has put operations in a good position, allowing for 7.5 kcfs out of DWR to continue for the next few days which will help save more water. Willow noted that if there is sufficient cloud cover in the next few days, there is a chance the LWG tailwater will not rise above 68 degrees F; continuing to run DWR at 7.5 kcfs will provide enough water for LWG Doble testing and another heat event.

Sockeye Update – Jonathan Ebel, ID, provided an update on sockeye (posted to the TMT website), noting that it will be the last one for the season. PIT-tag numbers have not changed much, with the run essentially over at Bonneville (BON). Most fish moving past LWG are Columbia River fish, as observed by trap and transport staff (genetic sampling will likely confirm this).

Preliminary conversion rates for sockeye through the hydrosystem are fairly good relative to the past couple of years, especially from BON to LWG and Ice Harbor (ICH) to LWG. Conversion from McNary (MCN) to an upstream site is .97 (short reach). Jonathan noted that the frequency that PIT-tags were detected at Priest Rapids or upstream increased later in the run as temperatures in the Snake rose. Travel times jumped up from MCN to ICH (likely due to one fish), but overall times between reaches have been consistent.

Operations Review - *Reservoirs*: Chris Runyan, Reclamation, reported on Reclamation projects:

- **Hungry Horse (HH)**: inflows are still below average despite moderating temperatures and some rain; the 3-day average inflow into HH was 1 kcfs, and last week inflows averaged 51% of normal. Temperatures are forecasted to warm up to the mid-90s later in the week then cool back down with potential rain over the weekend. Outflows are 3.9 kcfs with a midnight elevation of 3,555.17 feet. The project is 4.8 feet from full and has drafted 1.5 feet since last week, targeting the end of September 20-foot draft. The project will hit 20 feet with dry conditions, slightly above with precipitation. Stream flows at Columbia Falls yesterday were 6.5 kcfs, Flathead Lake is at full pool.
- **Grand Coulee (GCL)**: yesterday's inflows were 102.8 kcfs, with a weekly average of 87% of normal. Outflows were 86.5 kcfs with a midnight elevation of 1,286 feet (4-feet from full). The project is operating to meet downstream flow objectives while targeting the August 31 draft requirement of 1,277 feet (9 feet of draft remaining).

Aaron Marshall, Corps, reported on Corps of Engineers projects:

- **Libby (LIB)**: midnight elevation was 2,455.4 feet, with inflows of 8.5 kcfs, and outflows of 11 kcfs; LIB is operating to meet the end of September elevation target of 2,449 feet.
- **Albeni Falls (ALB)**: midnight elevation was 2,061.70 feet, with inflows of 10.4 kcfs, and outflows of 13 kcfs.
- **DWR**: midnight elevation was 1,571.03 feet, with outflows of 7.5 kcfs.
- **LWG**: midnight elevation was 733.67 feet, with inflows of 24.7 kcfs, and outflows of 24.3 kcfs. With flows decreasing last week, spill dropped below 15 kcfs so the project implemented the new alternate spill patterns. This had an observable improvement in LWG tailwater elevation and avoided going to a 1-foot raised MOP at Little Goose (LGS). Aaron noted that the 0.5-foot raised MOP is still necessary to stabilize and maintain the LWG tailwater. The Corps will continue to look for opportunities to return LGS to the normal MOP range.
- **MCN**: elevation of 338.7 feet, with outflows of 110 kcfs.
- **BON**: elevation of 74.9 feet, with outflows of 116 kcfs.

Aaron noted that LWG, Lower Monumental (LMN) and ICH are all operating within the normal MOP range, LGS is operating at a 0.5-foot raised MOP range to help maintain the minimum tailwater elevation at LWG.

Water Quality: Dan Turner, Corps, reported some exceedances of the 120% criterion in the MCN tailwater. This was during a period when flows were changing and gates 6 and 9 were moved with a crane, making the spill pattern lag behind the change in spill. Once the gates were in their proper positions, TDG decreased to under the criteria.

Fish: Kelsey reported that sub-yearling passage continues to decline in the lower Snake at LWG and LGS, and in the Columbia at BON.

Adult summer Chinook YTD passage at BON is 65% of the 10-year average; sockeye passage is decreasing with YTD passage at 229% of the 10-year average; total steelhead and wild are at 115% of the 10-year average; shad is at 67% of 10-year average.

At LWG, summer Chinook YTD passage is at 94% of the 10-year average; sockeye at 250% of the 10-year average; and total steelhead at 54% of the 10-year average. Kelsey emphasized that these numbers are relative to the 10-year average, not historical abundance. Finally, at Priest Rapids, sockeye counts have exceeded 690,000.

Power System: Tony Norris, BPA, reported incoming hot weather; BPA expects to meet load and maintain power system reliability.

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 August 7, 2024, at 9:00 AM.

Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, July 31, 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**

   a. Draft Summary July 24

      - July 24 Minutes are pending.
      - July 24 Summary – Approved
        - Charles Morrill's edit was included.

2. **Dworshak (DWR) Temperature Augmentation Update –** *Willow Walker-Corps NWW*

   a. Gwen Wildfire West of Dworshak Project – *Jessika Solleder, Corps NWW*

      - Thursday July 25, 2024 @ 1:24pm
        - Walla Walla was notified that the 500kv line was dropped and Units 2 & 3 became unavailable.
        - At the time DWR was running full powerhouse of **9.8 kcfs**; because of the loss of those Units' flows immediately went down to **2.2 kcfs**.
        - Initiated because of a fire in the region.
      - Current Status
        - Fire is only ~10% contained as of July 30, 2024.
        - Did not have any updates this morning.
        - The Corps Walla Walla District (NWW) is continuing to keep an eye on it.
      - NWW Response
        - After the 500kv line and flows went down to **2.2 kcfs**, NWW started making phone calls letting people in the region using the hatcheries know that there could be a change to water temperatures and if there was still a need to control the temperatures, then TDG could increase, and made sure that hatcheries were able to handle that.
      - Thursday July 25, 2024 @ 3pm
        - Unit 2 had an additional problem.
        - At that point Unit 3 was back but Unit 2 was still not working so the capacity was **7.5 kcfs**.

- Thursday July 25, 2024 @ 4pm
  - DWR and BPA worked quickly to try to get things going again and could then start ramping back up to the original flows of **9.8 kcfs**.
- Thursday July 25, 2024 @ 6pm
  - Everything was back online, and flows were back to where they were originally scheduled.
- One good thing about this being a short outage is that if it were extended the temperatures immediately downstream of DWR, Tech area/Cherry Lane Hatchery, the temperatures could have risen as high as 12°F from where they were prior to the outage. Because it was short, temperatures only rose **+3.5°F**. Temperatures cooled as soon as DWR came back online.
  - Additionally, there were not any big impacts seen further downstream toward Lower Granite Dam (LWG).

Brian Marotz, MT, asked if the Hatchery reported anything. He asked if they saw any impact from the +3.5°F increase.

Jay Hesse, Nez Perce, said that the short answer is that there were no impacts at the hatcheries from the short deviation and water temperatures. Hesse said that hatchery staff at Nez Perce Tribal Hatchery were actually forced to evacuate and so those fish were unsupervised for a significant period of time, days. Backup power was successful in triggering, though they did run out of some gas in the backup generators given the length of it but all systems were maintained. Hesse said that they did not experience any fish mortalities at Nez Perce Tribal Hatchery and Operations at Dworshak and Clearwater did not have issues either. Hesse also wanted to express his appreciation for the quick reach out by the Corps staff, Walker in particular. He said that the notification alarms that they all were getting in that part of the world were going off as he and Walker were talking. He said in some ways her phone calls were beating the evacuate now notifications. Hesse said that he really appreciates that responsiveness and outreach and well done.

Walker said thank you and that NWW appreciated the Nez Perce being willing to work with them so quickly on zero notice.

b. NOAA NWS Climate Data – Lewiston, ID

- Twenty days out of July were above normal temperatures and some of those were record setting.
- Within this last week we have seen temperatures within normal (gold band).
  - Some nighttime temperatures dropped below normal, helped to cool the river temperatures both in the regulated and unregulated portions.

c. Current Hourly Data

- Releasing: 7.5 kcfs
  - Below full Powerhouse capacity
  - Spilling: 0.0 kcfs

- Forebay Elevation: 1571 feet
  - Today we have ~1.5 feet more water than July 31, 2023.

d. Snake and Clearwater Rivers Temperature Data

- Anatone (Snake River):
  - Temperature: 72°F
- Orofino (Clearwater Mainstem):
  - Temperature: ~70°F
- Last week temperatures had peaked at 81°F (before July 24)
  - Because of the cooler temperatures and cloud cover Orofino has been able to cool.

e. Lower Granite Forebay Temperature String

- There is still a clear stratification at the 15/20m mark.
- Cool temperatures have helped to keep the stratification.

f. 10-Day Regional Forecast (July 31 – August 9)

- On Friday, August 2, temperatures are forecasted to be well above 100°F.
- The temperatures will then cool down moving forward.
- These temperatures were seen in the forecast last week so this heatwave is expected.

g. Weather Forecast for Lewiston, ID

- Thursday, August 1, increases to over 105°F.
- Friday, August 2, temperatures will be over 110°F.
- Cooling back down after but still in the 100s and 90s.
- Potential cloud cover in the forecast to keep solar radiation off the top of the pool this can be a benefit to keeping stratification in the LWG forebay.

h. Temperature Model Run Results – Updated July 30 @ 8:30am

Reminder: Last week there was discussion and decision to relax the 68°F Criteria to 69°F (with +0.5° buffer) for the dates of August 1 – 9.

- Temperatures in the model are shown rising above the red line in response to the decision.

- Based on cool temperatures coming in tomorrow, and the change tomorrow to RSW-only spill at LWG, and the good stratification in the LWG pool right now we are set up very well.
  - The original thought was that we would only be able to run DWR at about 8 kcfs to not lose the LWG pool stratification but the latest model shows that we can get away with **7.5 kcfs**, which is what DWR is currently running at and will continue running at for the next few days. This will help us save even more water.
  - If there is sufficient cloud cover, there is a chance that temperatures in LWG tailwater will not rise above 68°F.
  - Want to continue to maintain the stratification in the LWG pool so that we do not completely lose the temperatures in the river moving forward after the August 1 – 9 period.
- The 7.5 kcfs will allow us to save enough water to make it through both Doble testing at LWG and another heat event in August without issue. If the temperatures do not go above 68°F it does not mean that we are not saving the water, it means that we are taking advantage of the RSW-only spill and cooler temperatures moving into period.

3. **Final Sockeye Update –** *Jonathan Ebel, ID*

Adult Passage – updated July 31 at 8:10am

- Abundance Estimates
  - Comparing the PIT tag numbers from the last few week have not changed much.
    - A few PIT tags have passed MCN, IHR, and LWG.
    - Run is over at BON
    - There may be a few Snake River fish passing LWG, but it is very few.
  - Most of the fish moving past LWG are Columbia River fish.
    - When trapping ended last Thursday, the staff also noticed that a high proportion of what genetic sampling will probably tell us are Columbia River fish.
- Reach Conversion Rates
  - Relative to the last two years we had fairly good conversion for Sockeye through from BON to LGR, particularly in the Snake River from IHR to LGR.
    - 2022 was a little better, water was cooler and there was more water in the river during the Sockeye run.
    - 2023 was pretty not good, the Sockeye did okay in the hydro system last year but temperatures about the hydro system were very high.
  - When correcting MCN to IHR conversion for the number of Sockeye detected at or above Priest Rapids:
    - Conversion of MCN to some upstream site of .97
    - High survival but short reach.

        - The number of Priest Rapids increased as temperatures in the Snake rose. There might be a pattern of once they hit 70°F a portion of fish start rejecting the Snake River.
    - Travel Times
        - Travel times jumped up from MCN to IHR.
            - One fish may have had one very long stay in the pool.
    - Requested updates
        - Ebel has not been able to address the list of things that Charles Morrill and Erick Van Dyke requested information on.

4. Operations Review

a. Reservoirs

Reclamation – Chris Runyan

- Hungry Horse Dam
    - 3-day Avg. Inflow: 1.0 kcfs
        - Weekly Average: 51% of average inflow
    - Weather
        - Temperatures moderated
        - 7/30 rain total: 0.7 inches
        - Forecasted to warm to the mid-90s later in the week but then it will cool back down and there is potential precipitation over the weekend.
    - Outflows: 3.9. kcfs
    - Midnight elevation: 3555.17 feet
        - Feet from Full: 4.8 feet
        - Drafted: 1.5 feet
    - Current Operation: Continue to target the 20-foot Draft by the end of September.
        - Projections show between hitting the 20 feet and hitting 18-foot by the end of September
        - Median ESP Trace has HGH about a foot over the 20-foot draft. In this scenario HGH hits the 20-foot by the second week of October.
        - If we stay dry we will hit the 20-foot draft, it we get wet we may come in slightly above. Looking alright and is looking more likely that HGH will hit.
    - Columbia Falls: 6.5 kcfs
    - Flathead Lake: Full Pool

- Grand Coulee Dam
  - Inflow (July 30): 102.8 kcfs
    - Weekly Average: 87% of average inflow
  - Outflows: 86.5 kcfs
  - Midnight elevation: 1286.0 feet
    - Feet from Full: 4 feet
  - Current Operation: Operating to meet downstream flow objectives while also targeting the August 31 Draft Requirement.
    - Draft Requirement: 1277.0 feet
    - Draft to go: 9 feet

Corps – Aaron Marshall

- Libby Dam (Lake Koocanusa)
  - Midnight elevation: 2455.4 feet
  - Avg. Inflows (July 30): 8.5 kcfs
  - Avg. Outflows: 11 kcfs
  - Operations: Operating to meet the end of September elevation target.
    - Elevation Target: 2449 feet
- Albeni Falls (Lake Pend Oreille)
  - Midnight elevation: 2061.97 feet
  - Avg. Inflows: 10.4 kcfs
  - Avg. Outflows: 13 kcfs
  - Operations: Operating within the Summer Range.
    - Summer Range: 2061.75 – 2062.25 feet
- Dworshak Dam
  - Midnight elevation: 1571.03 feet
  - Avg. Outflows: 7.5 kcfs
- Lower Granite Dam
  - Avg. Forebay elevation: 733.67 feet
  - Avg. Inflows: 24.7 kcfs
  - Avg. Outflows: 24.2 kcfs
- Lower Snake MOP Operations
  - Lower Granite, Lower Monumental, and Ice Harbor are all operating within the normal MOP range.
  - Little Goose has a 0.5-foot raised MOP range that it is operating within to help maintain the minimum tailwater elevation at Lower Granite.

  - With flows decreasing on July 26, 2024, at Lower Granite spill dropped below 15 kcfs and the tailwater dropped. The Corps transitioned to the new Alternate Spill Patterns at Lower Granite, which improved the tailwater elevation and the Corps did not have to shift Little Goose to a 1.0-foot raised MOP. The Alternate Spill Patterns had an observable improvement in the Lower Granite tailwater elevation.

- McNary Dam
  - Avg. Forebay elevation: 338.7 feet
  - Avg. Outflows: 110 kcfs
- Bonneville Dam
  - Avg. Forebay elevation: 74.9 feet
  - Avg. Outflows: 116 kcfs

Kelsey Swieca, NOAA, said that yesterday the Salmon Managers (SM) observed an anomalous operation at hour ending 8 at Lower Granite where the generation flow increased but there was not an equivalent increase in the spill. She said that they were curious if the Corps was able to track down why that anomalous operation occurred or if they are able to provide some context so the SM can better understand what was happening during that one hour at Lower Granite yesterday.

Alexis Mills, Corps, said that she knows that there was some speculation because of the fire that resulted in an all Level 3 evacuation at the Project that was related. She said that this operation was actually the pre-testing for Unit 2's annual maintenance. Per FOP, section 4.5, the project prior to annual maintenance of a unit may run that unit briefly, at speed no load to do testing and gather data. She reminded TMT that the annual maintenance will be taking place next week. This was just a result of Unit 2 briefly operating at speed no load.

Jonathan Ebel, ID, said that he is curious about how decisions are made, but spill is going to RSW only tomorrow. He asked why the project did not wait 2 days to make the test run because then it would not be anomalous.

Mills said right, depending on hourly flows but likely not. She said that she does not have an answer on why it was specifically that particular day other than they had to do it before August 5. She said that she can get back to him on that.

Hesse asked Marshall about the Little Goose raised MOP and the Modified flat pattern of spill from Lower Granite. He asked if it sufficiently changed the tailrace elevation that the 0.5-foot raised MOP is no longer needed.

Marshall said no, not yet. He said that they did see the Lower Granite elevation raise and stabilize but they are still seeing a daily average of difference of about -0.7 feet when you compare the Little Goose forebay to the Lower Granite tailwater. He said that it is still prudent to hold the 0.5-foot raised MOP at Little Goose right now. Marshall said as Hesse had noted with Lower Granite going to RSW spill tomorrow they will watch to see how the tailwater elevation responds to that and look for any opportunities to switch back to a regular MOP at Little Goose.

b. Water Quality – *Dan Turner, Corps*

- TDG
  - McNary tailwater had some exceedances of 120% TDG criteria.
  - Period where flows were changing, and spillway Gates 6 & 9 require a crane at this point
  - The spill pattern was lagging behind the change in spill.
  - As soon as the gates were changed to the proper position TDG decreased to under the criteria. No changes were made to the FOP spill rate.

c. Fish

Salmon – Kelsey Swieca, NOAA

- Juveniles
  - Subyearling Chinook passage continues to decline at Lower Granite and Little Goose and at Bonneville.
- Adult Salmon Counts
  - Summer Chinook
    - BON
      - YTD: 60,698 counted
      - 10-year Average: 65%
    - LWG
      - YTD: 9,196 counted
      - 10-year Average: 94%
  - Sockeye
    - BON
      - YTD: ~755,000 counted
      - 10-year Average: 229%
    - LWG
      - YTD: 2,191 counted
      - 10-year Average: 250%
  - Total Steelhead and Wild Steelhead
    - BON
      - 10-year Average: 115%
    - MCN
      - 10-year Average: 54%

- Shad
  - BON
    - 10-year Average: 67%
  - MCN

Note: These numbers are relative to the salmon's ten-year averages not relative to their historical abundances.

- Priest Rapids Dam
  - Sockeye counts have exceeded 690,000.

d. Power System – *Tony Norris, BPA*

- Hot weather is coming up, but BPA expects to be able to meet load and maintain system reliability.

5. Set agenda for next meeting – August 7, 2024

a. Dworshak Update

Today's Attendees:

Agency	TMT Representative(s)
NOAA Fisheries	Kelsey Swieca, Trevor Conder
Oregon	
Washington	Charles Morrill
Kootenai Tribe	
Colville Tribe	
Umatilla Tribe	Tom Lorz (CRITFC)
Yakama Nation	Keely Murdoch, Tom Iverson
Bureau of Reclamation	Chris Runyan
Army Corps of Engineers	Doug Baus (Chair), Lisa Wright, Aaron Marshall
US Fish & Wildlife Service	
Idaho	Jonathan Ebel
Montana	Brian Marotz
Spokane Tribe	
Nez Perce Tribe	Jay Hesse
Warm Springs Tribe	
Confederated Salish and Kootenai Tribes	
BPA	Tony Norris, Ben Hausmann

Other Attendees (non-TMT members):

COE – Alexis Mills, Willow Walker, Jessika Solleder

Oregon DEQ – David Gruen

Washington Ecology – Thomas Starkey

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Clearing Up – K.C. Mehaffey

NPCC – Kate Self

Douglas Co. PUD - Andrew Gingerich