COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

June 1, 2022
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/2022/. Suggested edits for the summary are welcome and can be sent to Colby at colby@dsconsult.co.

Review Meeting Summaries & Minutes – TMT Members finalized the official meeting minutes from the May 4 and 6 meetings, and the facilitator's summaries from the May 11 and 18 meetings.

Juvenile Transportation – Doug Baus, Corps, reported on spring juvenile collection and transport data. Spring transportation ends on June 20 (as described in the FOP), however this year transport will either end on June 19 or 21, as operations are in "every-other-day" transport mode at this time of year. The Corps proposed ending on June 19, unless otherwise directed by the TMT, as smolt collection is winding down at Lower Granite, Little Goose and Lower Monumental collection projects, with 2022 values below the 10-year average, and above the 2021 average (details on TMT website). Doug noted that collection and transport are a function of proportion of powerhouse versus spill; when there is more spill, there is less collecting and transporting of juveniles.

There was some discussion on whether to end transport on June 19 or 21. Several TMT members noted interest in keeping the highest number of sub-yearling migrant fish in the river, as data show better survival for those fish in river. There was no objection to ending on June 19. The Corps will end transport on June 19.

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

- **Hungry Horse**: midnight elevation was 3,538.3 feet; the project has been releasing 6,500 cfs, and was back up today to 7,800 cfs to start controlling refill. Given the amount of snowpack still in the system, Reclamation might increase releases again tomorrow.
- **Grand Coulee**: the project has been on slow refill while waiting for the freshet to start. Midnight elevation was 1,254.6 feet, with inflows averaging 160 kcfs, and releases of 143,000 cfs. Full refill is projected for early to mid-July.

For flow augmentation, Joel noted that yesterday, Reclamation began releasing the powerhead from Palisades out of Milner at 1,000 cfs, and will increase to 2,000 cfs tomorrow; with the intent to finish by mid- June. The Boise and Payette are still filling, and there may be unexpected bonus water on the horizon; new prospects should be confirmed next week.

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

- **Libby**: midnight elevation was 2,372 feet, with average inflows of 29.6 kcfs, and outflows of 24 kcfs;
- **Albeni Falls**: midnight elevation was 2,059.6 feet, with average inflows of 66.4 kcfs, and outflows of 59.9 kcfs;
- **Dworshak**: midnight elevation was 1,580.6 feet, with average inflows of 20.4 kcfs, and outflows of 7.6 kcfs;

- **Lower Granite**: average outflows of 135.8 kcfs;
- **McNary**: average outflows of 313.9 kcfs; and
- **Bonneville**: average outflows of 331.3 kcfs.

Aaron Marshall, Corps, provided an update on minimum operating pool (MOP) adjustments at Lower Snake River projects:

- **Lower Monumental**: operating in a 0.5-foot raised MOP range (537.5-539 feet). This adjustment is needed to maintain the minimum tailwater elevation at Little Goose.
- **Little Goose**: operating in a 1.0-foot raised MOP range (634-635.5 feet); to help maintain minimum tailwater at Lower Granite and provide a minimum of 14 feet of depth over a navigation hazard remaining in the navigation lock entrance in the Little Goose forebay.
- **Lower Granite**: operating in a 1.0-foot raised MOP range (734-735.5 feet). Typically, this range is used when flows are between 80-120 kcfs. Flows recently have been slightly above 120 kcfs, so the project is holding a bit higher to try and meet the minimum of 736 feet at the Lewiston gauge to meet the intent of the navigation mission, and will make adjustments as needed. Once flows start to decrease, the project will continue the target elevation of 736 feet at the Lewiston gauge, and no adjustments will be needed once flows drop below 50 kcfs.
- **John Day**: operating this spring in a high pool range (264.5-266.5 feet) for Caspian tern nesting deterrents at the Blalock Island complex. The high pool operation ends today, and tomorrow the project will draft to reach minimum irrigation pool (MIP) (262.5-264.5 feet) by June 5.

Aaron also noted plans to implement dredging in the confluence area this winter.

Questions & Discussion:

- The differential between the Lower Granite and Lewiston gauges is about 1 foot (lower than expected), and the Corps has been comparing historical data to analyze if this is an ongoing trend or something new this year. Technicians have visited gauge to ensure accurate reporting, and it is calibrating correctly.
- The floating guide wall bracket identified in April in the Little Goose forebay is still extending into the navigation channel by about 1-foot and will continue to be an issue until it can be removed during the next navigation lock outage (winter 2023).
- Aaron was not aware of the extent of dredging effects this winter at the confluence, however, expects it will restore the federal navigation channel to a depth of 14 feet.
- In regard to operations at John Day, Tom Lorz, Umatilla Tribes, questioned why the pool would be lowered on the front end of the 15-day window, given the late runoff and ongoing outmigration. Aaron confirmed that the operation was coordinated with NOAA and USFWS, who concurred with decision to operate the same as last year.
    - Trevor Conder, NOAA, thought having a MIP operation at John Day is beneficial from a fish travel-time perspective, and does not anticipate an elevated risk of predation. He noted that if information indicates otherwise, the operation/decision-making process will be adjusted in future years.
    - Dave Swank, USFWS, noted that even if elevation dropped down to the level of tern nesting, there is a 2-week period before terns start nesting, leaving a built-in buffer.
    - Tom noted that terns are aggressively nesting in new locations throughout the system, which should prompt discussions at the end of the year. He also noted that the Corps has a monitoring program for tern returns to the Blalock area.

- Erick van Dyke, OR, noted that from OR's perspective, important fish passage mitigation actions have been degraded throughout the system. For example, raised pool elevations slow water, and the progress of fish that move through it. He noted that removing mitigation actions negatively impacts efforts aimed at improving fish passage. OR remains hopeful to figure out how to fix these issues that continue to decrease the mitigation actions that are important for fish passage.

Water Quality: Dan Turner, Corps, reported effects of higher flows on the Columbia and Snake rivers. McNary, John Day, The Dalles, and Bonneville dams have gas cap spill operations, and flows are high enough to bring TDG levels near the gas cap of 125% (John Day had a couple days of exceedances). The Corps has been working to manage the spill caps to meet but not exceed the 125% TDG tailwater criteria.

The Dalles is operating at 40% spill, and so far, TDG has remained at or below 125% (yesterday TDG reached 125%). The Corps is closely monitoring The Dalles tailwater TDG, and if it exceeds 125%, they will evaluate the data carefully to determine if a spill cap reduction at The Dalles or John Day would be an appropriate action.

On the Snake River; higher flows are pushing spill to spill caps, and TDG levels are hovering around 125%. Dan noted a major influence in TDG, besides total spill, is tailwater elevation, related to the total flow coming down the river. Flows are expected to remain steady and increase over the next 10 days.

TMT Members suggested considering the number of units running at projects, and changes in barometric pressure as additional factors for TDG. In regards to TDG at The Dalles, Tom suggested looking at John Day first for a trigger.

Fish: Trevor reported a lot of yearling Chinook still in the river, although they're coming off their peak. Sub-yearlings are coming up and increasing at Lower Granite, with 28,000 on May 30; numbers are also increasing at Lower Granite, McNary and slightly at Bonneville.

Coho are in the river, increasing everywhere except Bonneville. Steelhead had bit of a dip at the end of May, and are showing a recent increase. Sockeye are decreasing at Lower Granite, but are migrating well through Bonneville and McNary; upper Columbia sockeye are likely influencing the Columbia River locations.

For adults at Bonneville: spring Chinook are leveling out at 1,500 a day; steelhead are low, and shad and sockeye are just starting to come in. At McNary: low numbers of Chinook and sockeye; jacks are coming through well (higher than last year and the 10-year average). Trevor hoped the cooler period would encourage more passage. At Lower Granite: counts are more variable with higher flows. Fish are getting though the Snake River but are seeing delay, although passage conditions are opening up.

Dave reported that lamprey juvenile counts have come back up. He noted that Lower Granite is only a sample count, and that the other 3 dams are better representative of counts. Adults have been coming in for the last couple weeks, picking up in the last week. 214 have passed Bonneville, 20 at John Day, and 0 at The Dalles; it could be still early in run, or fish are passing at night and are not being recorded in daytime window counts.

Jay noted that all lamprey counts are indices, and not census counts, and that even daytime passage isn't completely tracked. He also noted that while this year is seeing some abundances, the 10-year average for adult returns is still dismally low, and returns for this year are still low, even if higher than recent years.

Power System: Tony Norris, BPA, reported that with increasing river flows, some projects have been able to come up off minimum generation (Ice Harbor, McNary) for some hours on some days, until there is more flow; temperatures are moderate for this time of year.

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

The next scheduled TMT meeting is on June 8 at 9:00 AM.

Columbia River Regional Forum

Technical Management Team
OFFICIAL MINUTES
June 1, 2022
Minutes: Melissa Haskin, 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 of Meeting Minutes and Summaries

The 5/4 and 5/6 meeting minutes and 5/11 and 5/18 summaries were approved with no additional edits.

2. Juvenile Transportation

Doug Baus, Corps, updated the group on juvenile transportation. Baus took the group through data and charts, available on the TMT website. Baus reminded the group that FOP spring transportation ends on June 20. Transport is on an every-other-day schedule, meaning that this year the last transport would occur on June 19, unless the Corps hears a request from TMT members and agencies to extend that to June 21.

Smolt collection is wrapping up for the season at Lower Granite, Little Goose, and Lower Monumental. Baus shared some data with the group:

- At Lower Granite, collection in 2022 was 48% of the 10-year average.
- At Little Goose, collection was 42% of the 10-year average.
- At Lower Monumental, collection was 64% of the 10-year average.
- Overall, collection was 50% of the 10-year average.

For transportation:

- Transportation at Lower Granite was 81% of the 10-year average.
- Transportation at Little Goose was 61% of the 10-year average.
- At Lower Monumental, transportation was 85% of the 10-year average.
- Overall, transport was 75% compared to the 10-year average.

While this year's transportation numbers are averaging improvements of 400-600% over 2021, they are still below the 10-year average.

Charles Morrill, WA, requested that the Corps add an additional column to its charts to display the proportion of spill in 2022 compared to 2021. The Corps will look into this.

Morrill added that there may be interest in extending transportation to June 21, noting he would want to look at the data closer to the end of transport. Specifically, if the peak occurs later in June and does not start tapering off, he would want to extent the transport and collection dates.

Trevor Conder, NOAA, noted that his agency is okay with ending transport on June 19.

Jay Hesse, Nez Perce, noted that data indicate that migrant fall Chinook perform better when left in the water. The Tribe's preference would be to keep the June 19 date, unless there is a large population of yearling migrants being collected at that time. He thinks this scenario is unlikely.

3. Operations Review

3a. Reservoirs – Joel Fenolio, Reclamation; Lisa Wright, Corps

Reclamation projects:

Hungry Horse – Midnight elevation 3,538.3 ft.; currently releasing 6.5 kcfs with plans to increase to 7.8 kcfs today to manage refill. **Grand Coulee** – Midnight elevation 1,254.6 ft. Releases have been averaging about ~143 kcfs and inflows have been averaging ~160 kcfs. The project is slowly refilling and the freshet has not started. Ruth Burris, Portland General Electric asked when Grand Coulee is expected to hit its full elevation for the year. Fenolio replied that it typically occurs in early to mid-July.

Flow Augmentation: Reclamation started releasing Palisades powerhead out of Milner Dam yesterday. The agency started at 1,000 cfs and will increase that to 2,000 cfs today. Flow augmentation should be complete by the middle of the month. Both the Boise and Payette systems are still being filled. This will provide new prospects for flow augmentation as early as next week.

Corps Projects: Libby Dam – Midnight elevation 2,372 ft., yesterday's average inflows 29.6 and outflows 24 kcfs. **Albeni Falls** – Midnight elevation 2,059.6 ft., inflows 66.4 kcfs and outflows 59.9 kcfs. **Dworshak Dam** – Midnight elevation 1,580.6 ft., inflows 20.4 kcfs, and outflows of 7.6 kcfs. **Lower Granite** – Yesterday's average outflows were 135.8 kcfs. **McNary Dam** – Yesterday's average outflows were 313.9 kcfs. **Bonneville Dam** – Yesterday's average outflows were 331.3 kcfs.

MOP Operations: Aaron Marshall, Corps, provided an update on minimum operating pool (MOP) adjustments.

- Lower Monumental is operating in a 0.5-foot raised MOP range (537.5-539 feet) to maintain the minimum tailwater elevation at Little Goose Dam.
- Little Goose is operating in a 1-foot raised MOP range (634-635.5 ft.). The raised MOP is to help maintain the minimum tailwater at Lower Granite and also to provide a minimum of 14-feet of depth over a navigation hazard.
- Lower Granite is operating in a 1-foot raised MOP range (734-735.5 ft.) for inflows ranging from 80-120 kcfs. Flows have been slightly above 120, but the Corps is maintaining at the 80-120 kcfs MOP to meet the minimum elevation of 736 ft. at Lewiston.
    - There seems to be a 1-foot differential between Lower Granite's forebay and the Lewiston gauge. This is a new phenomenon. There was an error in the gauge data on May 9 and the technicians had to recalibrate the gauge. Otherwise, the data seem correct.
    - Marshall shared that there are plans to pursue dredging in the confluence area during winter for the next water year. Marshall's expectation is that dredging will restore the navigation channel and allow for 14 ft. of depth.
- John Day dam is operating at a high pool elevation of 264.5 ft.-266.5 ft. to deter Caspian Tern nesting at the Blalock Islands. That operation ends today and tomorrow the project will begin drafting to the minimum irrigation pool elevation of 262.5 ft. -264.5 ft. This operation can go as late as June 15. Tom Lorz, Umatilla Tribe/CRITFC, wondered with the late runoff and out-migration why the Corps is choosing to draw down now. He noted

there are still sockeye in the system, as well as decreasing numbers of steelhead. Marshall replied that his agency coordinated with USFWS and NOAA. Both agencies concurred that this year's operation should mirror last year's, which had the pool drafted down by June 5. Conder added that from NOAA's perspective this is a low risk from a predation perspective given the declining steelhead in the system and high flows. He added that if the data show otherwise, NOAA would be open to a different operation in future years. Dave Swank, USFWS, added that when flows drop to a level that allows for nesting, there is typically a 2-week delay before nesting occurs. The Corps has a program for monitoring for nests at the project and refuge managers monitor the islands.

- Lorz noted that this year Caspian Terns are nesting in places they are not typically observed at this time of year.
- Erick Van Dyke, OR, closed the conversation with a comment that this action is indicative of a larger pattern of removing important fish passage mitigation actions, which have occurred throughout the system over the past few years. He finds this disappointing and believes that these actions are a tradeoff for fish passage conditions.

3b. Water Quality – Dan Turner, Corps

Dan Turner, Corps, reported on water quality for the Corps. Flows have increased on the Columbia and Snake rivers. Flows will remain steady over the next 10 days. Then, they should increase. TDG levels are near the 125% gas cap as the Corps works to meet but not exceed the gas cap. At John Day, TDG did exceed 125% several times over the past few days. This tends to happen when the gas levels approach the gas cap and the Corps tries to walk the line of meeting but not exceeding the gas cap. The Dalles is spilling at 40% per the FOP. TDG has remained at or below 125%. Several TMT members offer advice to Turner as the Corps works to manage these projects. Conder raised that changing the total number of units running may affect TDG. Turner has not looked into that, but said he will keep it in mind. Lorz suggested that at The Dalles, the stilling basin is shallow and it is hard to send flows over 120 kcfs over that project. Reducing spill may result in more powerhouse spill, thus, he would suggest looking at John Day for adjustments before raising the spill level at The Dalles.

3c. Fish

Adults: Conder reported on fish for NOAA, sharing that yearling Chinook have reached their peak and are now declining in numbers though they are still showing in significant numbers.

At Lower Granite, subyearlings increased on May 30, hitting 28,000. There was a slight increase in passage at Bonneville and McNary.

Coho are showing in increasing numbers. There was a dip in passage the third week in May however they seem to be increasing again.

Sockeye are decreasing at Lower Granite but still showing in high numbers at Bonneville and McNary.

Overall, there are a lot of fish in the system, which is to be expected for May. Spring Chinook are showing at Bonneville Dam at 1,500 fish/day. Steelhead are passing in lower numbers at that project (20-30/day).

The shad season has just begun. When shad start, they tend to ramp up quickly, commented Conder.

As far as juveniles, McNary is showing low numbers of Chinook and decent numbers of jacks: 14,000 at Bonneville, which is twice last year's numbers and more than the 10-year average. Jacks are also showing in numbers higher than both last year and the 10-year average. This is a good sign for next year, commented Conder. Juvenile sockeye are passing in low numbers and have made it as far as Ice Harbor but not Lower Granite. There may be a delay due to the variable flow conditions.

Swank reported on lamprey. Adults have been picking up over the past week but are still early in their run. 214 were observed at Bonneville, 20 at John Day and -1 at The Dalles. Swank noted that lamprey passing The Dalles may not be fully recorded as some pass at night, missing the daytime count windows. Hesse added that the counts are indices, not census counts. He added that lamprey have the ability to use ladders that are not part of the count window, so even the daytime count windows do not catch everything. Hesse also noted that while the numbers this year are good so far, they are still dismally low as is the 10-year average, which does not come close to the mitigation goals set. Nor do they come close to the lowest threshold needed to de-list an ESA species. Typically, Nate from the Corps Walla Walla district reports on lamprey, but he is in a new position with the Corps. Stranz suggested the Corps help TMT locate a new point of contact for lamprey information at The Dalles Dam.

3d. Power – Tony Norris, BPA

Tony showed the graph of BPA Balancing Authority Load and Total VER, Hydro, Fossil/Biomass, Nuclear Generation, and Net Interchange, Near-Real-Time. River flows have increased, allowing some projects (Ice Harbor and McNary) to come off minimum generation. Temperatures are moderate.

Today's Attendees:

Agency	TMT Representative
Army Corps of Engineers	Doug Baus (Chair), Lisa Wright, Julie Ammann
Bonneville Power Administration	Tony Norris, Scott Bettin
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	Bret Nine
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	

Other Attendees (non-TMT members):

Corps – Aaron Marshall, Alexis Mills, Dan Turner, Elizabeth Holdren, Ashlynn Tate, Heather Baxter, Eric Chow, Michelle Yuen
DS Consulting – Emily Stranz (Facilitator), Colby Mills
BPA – Melissa Haskin (Contractor with CorSource Technology Group)
Chelan PUD – Jay Finch
Oregon DEQ – Marilyn Fonseca, David Gruen
Clearing Up – K.C. Mehaffey
FPC – Erin Cooper
Clatskanie PUD – Ian Bledsoe
PPC – Shane Scott