

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 7, 2021

DRAFT Facilitator's Summary

Facilitator: Emily Stranz; Notes: Colby Mills

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. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members. Official minutes can be found on the TMT website: <http://pweb.crohms.org/tmt/agendas/2021/>.

Review Meeting Summaries & Minutes

TMT members requested more time to review the March 17 facilitator's summary and official minutes, it will be reviewed at the next meeting. Dave Swank, USFWS, noted that his comment in the John Day Pool Operation section of the summary should include "complete" before "smolt", and he requested his comment be added to the minutes.

Official Water Supply Forecasts

Joel Fenolio, BOR, reported on the official April water supply forecast for Hungry Horse Dam. March saw a significant drop in precipitation, and the residual forecast dropped from 107% of average to 95% for April to July volume. April to August and May to September also decreased to about 96% of average. The FRM elevation was updated to 3,540 feet and doesn't impact the current operation. Joel noted that it is too soon to determine if the extra drawdown for selective withdrawal inspection might affect refill, however, he will keep the TMT updated as the season progresses.

Doug Baus, Corps, reported official April water supply forecasts for Corps projects:

- **The Dalles:** NWRFC April to August volume forecast is 79 maf, or 90% of average;
- **Lower Granite:** NWRFC April to July volume forecast is 15 maf, or 75 % of average;
- **Libby:** Corps NWS April runoff forecast is 5,549 kaf, or 94% of average; and,
- **Dworshak:** Corps NWW April runoff forecast is 2,716 kaf, or 111% of average.

Juvenile Transportation

Chris Peery, Corps, reported on juvenile sampling at Lower Granite for the start of transport. Sampling began at the project on March 1; there is no sampling at McNary this year. Numbers at Lower Granite are lower than last year for the early start period (about 1/4 of 2020 numbers for the same period), and index numbers are also following this trend. Conversely, lamprey juvenile numbers moving downstream are significantly higher compared to last March. Chris will provide the latest numbers to be posted on the TMT website.

Claire McGrath, NOAA, confirmed that NOAA's recommendation, which FPAC members did not object to, is to start collection on April 23 and begin transport on April 24. It was noted that about 88% of fish collected last year were transported; the percentages of fish transported were: 16% for yearling Chinook and steelhead; and 20% for sockeye. More details on transport percentages for 2020 can be found on the 2020 YER presentations posted on the TMT website.

MOP Update

Aaron Marshall, Corps, reported that Little Goose Dam began MOP operations on April 3, with an operating range of 633-634.5 feet. The project had difficulty maintaining the minimum tailwater elevation at Lower Granite over the weekend during periods of higher spill, so the operating range at Little Goose was increased to a .5-foot raised MOP elevation on April 5 and then to a 1-foot raised MOP range (634-635.5 feet) on April 6. Aaron noted that last year, Little Goose had a .5-foot raised MOP elevation on April 7 through spring spill season, and on July 14 had to increase to a 1-foot raised MOP to maintain minimum tailwater elevation at Lower Granite. Currently elevation is at 634.5 feet.

Aaron also reminded the group of Lower Granite Dam's new variable MOP operation. April 3 saw inflows at the project slightly above 50 kcfs, so the project started a 2-foot raised MOP range (735-736.5 feet), with a current forebay elevation at 736.09 feet. Current forecast data show inflows remaining above 50 kcfs, so the project is expected to continue the 2-foot raised MOP range but will adjust as needed if the inflow forecast dips below 50 kcfs.

When using forecasts to assess MOP elevation changes, the Corps considers the duration of change in flow and the magnitude of the change. Jay Hesse, Nez Perce, encouraged restraint in fluctuating the reservoir levels if lower flows occurred. The amount that flows would be reduced and the time to raise the pool to 1-foot elevation would depend on conditions at the time. Project operators generally try to operate in the middle of a range to provide a buffer for fluctuations in the forebay elevation. Aaron noted that raising the Lower Granite forebay by 1-foot does not change the project's tailwater elevation, as it is influenced by flow out of the project.

Julie Ammann, Corps, provided response to ideas raised at the previous TMT meeting regarding different alternatives to address shoaling in the Lower Snake River. She reported that the start of the 3-foot raised MOP operation was delayed until April 3 due to a delay in the return to service of the locks at the Dalles Dam. The option of delaying this operation until spring flows rise heading into summer is not a feasible short term solution for this year as the April period is critical to navigation for most Ports, that are already backlogged. Realigning the navigation channel is a rigorous process that could be studied long-term (funding dependent), and navigators are using the latest bathymetric information. Aaron reviewed bathymetric maps showing the shoaling in the Federal navigation channel (survey completed in fall 2020). The maps also show depths with the 3-foot raised MOP elevation.

Jon Roberts, Corps, presented data on Dworshak Dam temperature analysis and 2021 Lower Granite MOP levels (posted to the TMT website). He emphasized that filling with cool water at Lower Granite in June is not expected to produce a temperature impact at Lower Granite, even into the summer months. Jon noted that questions around snowpack runoff will be better addressed closer to mid-June.

Some Fisheries Managers expressed concern that the elevated MOP operations are degrading fish conditions and noted that MOP operations, which have been incrementally raised over the years, were originally designed to improve fish survival and decrease travel times. While the clarifications provided by the Corps were appreciated, the balancing of different interests remained a hot topic of discussion, with some feeling that the operations did not consider impacts on out-migrating juveniles in the system. Erick Van Dyke, OR, expressed a continued concern with the process and what Oregon views as additional degradation of fish protections.

Jay suggested considering shifting back to a 1ft operating range in the Lower Granite pool, noting that the 1.5-foot operating range was negotiated as part of the Flexible Spill Agreement. Tony Norris, BPA, responded that the 1.5-foot operating range is needed in order to operate given the spill operations. Claire suggested more discussion and consideration of the suggested operating range. Jay requested urgency in deliberations. Jonathan Ebel, ID, added that MOP operations need to be looked at system-wide, rather than a project-by-project basis.

→ **ACTION:** TMT members will coordinate offline around potential options to lessen the impact of the MOP+3 operations on fish; they will follow up at the April 14th TMT meeting.

Spill Priority List

Charles Morrill, WA, reported a request from FPAC to move Lower Monumental and Little Goose dams down on the Spill Priority List (SPL) to above Bonneville. The request is to provide benefits and reduce impacts to fish. Dan Turner, Corps, confirmed that the Corps can accommodate the request, and he will

distribute communication reflecting the changes. The requested change will be applied to all levels, and the example spill tables will not reflect changes seen in-season.

Operations Review

Reservoirs: Joel reported on Bureau of Reclamation projects:

- **Hungry Horse:** midnight elevation was 3,524.6 feet, and the project is releasing 4,000 cfs. Releases will increase tomorrow morning to 4,500 cfs as a result of higher inflows from the first snow melt-off at lower elevations. The project is trying to hold below 3,526 feet for selective withdrawal maintenance, which was extended out to April 23, partly due to a late start from Covid-19 restrictions.
- **Grand Coulee:** Currently the project is at 1,270 feet, operating to minimums downstream and also targeting 1,270 feet for April 10. The project may draft below 1,270 feet (up to 1-foot) to maintain flows and will operate to try and reach FRM targets (or slightly below) by the end of the month.

A request for flow increases from Grand Coulee (April 13-20) was made on behalf of the Colville Tribes, to support their upcoming hatchery releases on April 14-19. Salmon Managers set an FPAC call for 3pm tomorrow (April 8) to discuss the request and any impacts. FPAC will circle back to the TMT by Friday if an additional TMT meeting is needed to coordinate.

Doug reported that the Corps plans to end the chum operation on April 10 with the start of spring spill at Bonneville Dam, as previously coordinated at TMT. The Corps recognized Washington's interest in keeping flows flat and steady below Bonneville and noted that forecasts show sufficient water to maintain elevation.

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

- **Libby:** midnight elevation was 2,401.2 feet, with average inflows of 4.3 kcfs, and outflows of 4 kcfs;
- **Albeni Falls:** midnight elevation was 2,052.3 feet, with average inflows of 23.1 kcfs, and outflows of 12.0 kcfs;
- **Dworshak:** midnight elevation was 1,505.7 feet, with average inflows of 8.8 kcfs, and outflows of 6.9 kcfs;
- **Lower Granite:** average outflows of 60.1 kcfs;
- **McNary:** average outflows of 127.3 kcfs; and
- **Bonneville:** average outflows of 149.1 kcfs.

Jon provided an update on Dworshak, noting that this information will also be distributed from the district office later this week. The project is currently discharging about 6.9 kcfs, and will increase close to 8 kcfs to support hatchery releases occurring April 12-14. The water supply forecast for the project is drying up, so water will be conserved to manage refill in the end of April. After the hatchery releases the project will slowly step down through April 20, potentially to 3 kcfs or minimum discharge. Additionally, unit testing on April 19 and 20 may result in some flow fluctuation. Updates will be provided at TMT.

Aaron reported on the John Day high pool operation, intended to inundate Caspian turn nesting habitat at the Blalock Islands complex. The operation begins April 10 and continues through June 1, with an operating range at the John Day forebay of 264.5-266.5 feet. Currently the forebay is at 264.9 feet, and the Corps anticipates a smooth transition to the high pool operation. The project will transition to minimum irrigation pool in early June.

Water Quality: Dan reported that spring spill for juvenile fish passage in the lower Snake River began last Saturday, resulting in 8 hours of performance standard spill and 16 hours targeting gas cap spill operations. As spill levels have not yet been reached, projects are at min gen spill the rest for 16 hours, and Dan noted that TDG levels in the tailwaters are well below 125%. The CCIW gauge is showing an uptick, and is likely a result of TDG from the fish ladder. Planned spill for juvenile fish passage on the lower Columbia River projects will begin on Saturday.

Fish: Claire reported that there are early detections of juveniles at Lower Granite, and smolt monitoring sites are all sampling; numbers are slowly starting to rise. Yearling Chinook and steelhead numbers are low at Rock Island and Bonneville, and it was noted that observed unclipped sockeye in the Snake are being counted as Kokanee. Lamprey numbers are high at Lower Granite, exceeding past year averages.

Adults are seeing small passage increases. Bonneville spring Chinook are at 247 YTD; steelhead at 1,124 YTD, and 465 unclipped steelhead. Lower Granite passage numbers for total and wild steelhead may reflect some fish that overwintered in the hydrosystem.

Power System: Tony reported mild spring temperatures; with a bit of wind from passing fronts.

Questions or comments from members of the public: TMT Members could not yet provide a response to a question from Ruth Burris, PGE, about the end of month elevation at Grand Coulee Dam. New elevation targets are expected by the end of this week or early next week.

The next scheduled TMT meeting is a conference call on April 14, 2021 at 9:00 AM.

This summary is respectfully submitted by the DS Consulting Facilitation Team. Suggested edits are welcome and can be sent to Colby at colby@dsconsult.co.

Columbia River Regional Forum
Technical Management Team
DRAFT OFFICIAL MINUTES
Wednesday April 7, 2021
Minutes: Melissa Haskin, BPA (contractor, FLUX Resources)

Today's TMT meeting was held via conference call and webinar, chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. See the end of these minutes for a list of attendees.

1. Review of 3/17 Meeting Summary and Minutes

Dave Swank, USFWS, requested that the word “complete” be added before “smolt and avian data,” in his comment regarding the John Day Pool Operation in the 3/17 summary, and to add this sentence to the official minutes. The Corps also corrected the word “modeling” to “analysis” regarding Jon Roberts work on the effects of raising MOP (page 4, paragraph 1 of the official minutes). The Corps notified the TMT of a change it made to the draft prior to today's meeting. The agency added clarifying language regarding MOP, specifically that navigators have the bathymetric information and are using the deepest areas to navigate. Approval of the 3/17 summary and minutes will be deferred until the next scheduled meeting to allow for additional time for review.

2. Water Supply Forecast

Baus and Joel Fenolio, Reclamation, updated the TMT on the official April water supply forecasts issued on April 5 (the 3rd workday of the month). As Fenolio had predicted at the last meeting, the forecast has dropped off.

The forecasts are as follows:

- Hungry Horse: April-July: 1,780 kaf (95% of average). April-August and May-September dropped from 106-107% of average to 96% of average. This sets the FRM elevation at 3,540 ft. It is too soon to tell if the drawdown for selective withdrawal maintenance will affect refill.
- The Dalles Dam: April-August, 79 maf (90% of average)
- Lower Granite: April-July, 15 maf (75%)
- Libby Dam: April-August: 5,549 kaf (94%)
- Dworshak Dam: April-July: 2,716 kaf (111% of average)

3. Juvenile Transportation

Claire McGrath, NOAA, and Chris Peery, Corps, updated the TMT on juvenile fish transport. Last year, collection began on April 23 and transport on April 24. The expectation is that something similar will occur this year, said Peery. NOAA's recommendation, which McGrath presented to FPAC without objection, is to start transport on April 24 and collection on April 23, in line with last year's start.

Overall, ~88% of fish collected at the bypass facilities were transported last year. McGrath noted that transportation was low last year: 16% of Chinook and steelhead, and 20% of sockeye were transported. This is approximately half of the long-term average transport for those species.

Additional details on last year's transportation can be found in the 2020 YER presentation given by Steve Smith, NOAA.¹

Sampling began at Lower Granite on March 1 this year. There will be no March sampling at McNary. March numbers this year are lower than what was observed last year. Peery presented graphs and charts illustrating this. They are available on the TMT website.

4. 2021 MOP Operations

Aaron Marshall, Corps, reviewed MOP operations on the Lower Snake, which began on April 3. As of April 6, the Corps raised the Little Goose Dam forebay range by one foot (1-foot raised MOP) to 634-635.5 feet for the purpose of maintaining the minimum tailwater elevation at Lower Granite for navigation safety. That operation will remain in effect until further notice. The problem was first observed last weekend during periods of high spill. The Corps first tried to address the situation by implementing a 0.5-foot raised MOP at Little Goose before moving to the current 1-foot raised MOP. Marshall shared that last year Little Goose operated in a 0.5-foot raised MOP range from April 7 through July 14, then operated in a 1-foot raised MOP range from July 15 through August 31.

Lower Granite is currently operating in a 2-foot raised MOP when flows are in the 50-79 kcfs range. NWRFC is forecasting a decrease in Lower Granite flows within the next week. During 2021, the Corps will operate Lower Granite in a 3-foot raised MOP range when flows are < 50 kcfs. The current forebay elevation at Lower Granite is 736.09.

Marshall shared bathymetric survey maps of the Snake River near Lewiston to illustrate shoaling impacts in the federal navigation channel at the 3-foot raised MOP elevation (736.0 feet). The maps are available on the TMT website. Vessels are currently using the deepest parts of the navigation channel. The surveys are completed in September of each year so the survey Marshall showed today is from September 2020.

Jon Roberts, Corps, presented additional analyses on the impacts to water temperatures in various Lower Granite MOP scenarios. Based on 2008-2020 water temperature data for June, the average and range (10th percentile and 90th percentile) on June 23rd are:

- Snake River at Anatone: Range 58-68°F, average 62°F
- Clearwater River at Spalding: Range 51-59°F, average 55°F

According to his analysis, raising the forebay at Lower Granite requires roughly:

- 8,100 ac-ft from 733.0-734.0 ft
- 8,300 ac-ft from 734.0-735.0 ft
- 8,300 ac-ft from 735.0-736.0 ft

¹ http://pweb.crohms.org/tmt/agendas/2020/1202_Smith_Smolt_Survival_and_Transportation_2020_Steve_Smith.pdf

- 8,500 ac-ft from 736.0-737.0 ft
- 8,600 ac-ft from 737.0-738.0 ft

Thus, changing from a 2-ft raised MOP (735.0-736.5 ft) to a 3-ft raised MOP (736.0-737.5 ft) requires storing approximately 8,400 ac-ft during June 20-22 when incoming temperatures are in the range of 58-68°F on the Snake River and 51-59°F on the Clearwater River. In other words, moving from a 2-foot raised MOP to a 3-foot raised MOP over 1 day would require a 4.5 kcfs reduction in flow. If over 2 days, it would be 2 kcfs, and over 4 days, it would be 1 kcfs. Roberts noted that filling with cool water in June is not expected to produce a temperature impact at Lower Granite.

TMT members expressed concerns regarding the operation and posed questions to the Corps and BPA, including:

1. Jay Hesse, Nez Perce, asked what flow reduction would be necessary to raise the Lower Granite pool to meet the target elevation. Marshall replied that several factors influence this including the duration of change and the magnitude.
2. Hesse encouraged the Corps to resist fluctuating the pool over the course of 1-2 days, for fish protection.
3. Several folks requested additional information and changes to the Corps' bathymetric survey maps. Hesse asked for survey results showing data with Lower Granite at 2-foot raised MOP. Charles Morrill, WA, requested color changes to the existing maps to increase ease of reading. Morrill added that he would like to see the maps indicate the change over time and how the encroachment has increased in the federal navigation channel over time. Julie Ammann, Corps, questioned if this type of additional information was appropriate for TMT since this is not a decision point. Ammann shared that the Corps had provided enough information for TMT to understand the navigation issue. The facilitator suggested that members review existing information and bring any remaining questions and concerns to next week's TMT.
4. Salmon managers raised concern that MOP has increased over time at Lower Granite. Jonathan Ebel, ID, shared that it's important to look at the broad picture, that MOP has increased to MOP+3, rather than the incremental change from MOP+2 to MOP+3 being discussed today. Changes add up, especially throughout the system, he noted.
5. Hesse noted that MOP was intended to improve fish survival by decreasing travel time. He requested that the Action Agencies consider operating Lower Granite within the bottom 1-ft range instead of the 1.5-ft range to reduce the impact to fish. This request had not been discussed among the fish managers or action agencies prior to today's meeting.
 - a. Scott Bettin, BPA, noted that the agency cannot go below the minimum set for navigational safety.
 - b. Norris added that BPA operates within the MOP range as a hard constraint and it is very difficult to maintain within a 1-ft range because there needs to be a buffer on either side to account for uncertainty. In addition to the constraints mentioned above, there would be some economic impacts to BPA.
 - c. Bettin asked if BPA agreed to a smaller operating band, if there would be additional flexibility downstream. Hesse said no.

- d. McGrath noted that she would like additional time to consider this request since this is the first she has heard of it. She would like the opportunity to ask questions and research.
 - e. Several members agreed that this discussion should move offline since it may need to go up the management chain at the Action Agencies. Ammann commented that considering it had not been discussed prior to TMT, the Corps would need more time to respond. She mentioned that an SOR may be the best way for Hesse to move forward.
 - f. Hesse stressed the need for urgency in decision making since there are a significant number of juveniles moving through the system currently. He noted that there will be an impact to juveniles from raising the Lower Granite pool to MOP+3. Bettin asked for more specifics. Hesse said he did not have more but that it would probably translate to longer travel times, likely in the hour-range not day-range. Van Dyke noted that it was unfair of BPA to ask for specifics of impacts to fish without providing the same data regarding what the marketing impact to BPA would be.
6. Erick Van Dyke, OR, commented that the decision process did not seem collaborative, which once again points to a bigger process issue. This action would reduce fish protection, he said, adding that efforts to talk about flexibility in a new way have missed the mark.
 7. Tom Lorz, Umatilla Tribe/CRITFC, asked if dredging could be done sooner than 2023. Ammann will investigate but thinks that the required environmental review process would make that unlikely.

Ammann added the following points:

- Realigning the navigation channel is not a short-term process but rather a rigorous long-term alternative that requires studies. The Corps is working to find funding to support the studies.
- April is critical for navigation. The Corps looked for opportunities to delay the start of the variable MOP operation. This year the navigation lock outage at The Dalles was extended until March 31, later than typical. The Corps delayed starting the variable MOP operation until it was needed for navigation, after the navigation locks returned to service. This year variable MOP began April 3. The lock outages generally cause a backlog in barge traffic so shipping picks up in April and variable MOP was needed to provide navigation.
- Per the Corps' experts, the minimum operating range that will still allow for navigation is a 3-foot raised MOP.
- If everything remains on-schedule and funding is secured, dredging will occur in 2023.

5. Spill Priority List

Morrill reported on a request from the fish managers to move Lower Monumental and Little Goose down in the spill priority list order to above Bonneville to reduce impacts to fish in the system. No objections were raised regarding this request and the Corps will make the change. The Corps will post the updated spill priority list to the website following this meeting.

6. Operations Review

6a. Reservoirs – Joel Fenolio, Reclamation; Lisa Wright, Corps

Hungry Horse – Midnight elevation 3,524.6 ft, releasing 4 kcfs due to snowmelt at low elevations. Releases will be increased to ~4.5 kcfs tomorrow. The projecting is aiming to maintain below 3,526 ft for selective withdrawal maintenance, which has been extended to April 23 due to a late start from COVID restrictions.

Grand Coulee – Midnight elevation 1,270 ft and targeting an April 10 elevation of 1,270 ft. To maintain flows, Reclamation may be forced to draft up to a foot below 1,270 ft. Sheri Sears, Colville Tribes, sent a request for increased flows to accommodate hatchery releases April 14-19 to Norris. Targeting a flow at Chief Joseph Dam would impact Coulee's elevation. Sears originally asked for 85 kcfs. Norris noted that flow above what was needed to meet Vernita Bar, ~½ foot per day, would need to be drafted to meet 80 kcfs.

BPA could commit to a weekly range. Ebel requested a daily range saying that drafting Coulee may not benefit fish at a range that broad. Norris replied that BPA would not be able to commit to any flat flow ranges or specific daily flow ranges for those two projects in particular. Diminishing flexibility would have a severe impact to BPA.

Van Dyke wondered if BPA had considered additional augmentation options such as augmenting with water from Canada. Norris answered that the flow out of Canada is managed by the treaty and does not offer any flexibility. Van Dyke clarified that he was referring to the 1 maf of flow augmentation.

Norris noted that the current flow request would simply adjust the shape of the water released from Coulee between now and refill.

Ebel expressed that his preference would be to save flows for May, especially if within-day load shaping were to occur at the range BPA mentioned. He requested additional time to consider the request. Likewise, McGrath had questions about the Colville request and noted she was not ready to weight in either.

FPAC will meet to consider the request and then report back to TMT.

Libby Dam – Midnight elevation 2,401.2 ft, yesterday's average inflows 4.3 and outflows 4 kcfs.

Albeni Falls – Midnight elevation 2,052.3 ft., inflows 23.1 kcfs and outflows 12 kcfs.

Dworshak Dam – Midnight elevation 1,505.7 ft., yesterday's average inflows 8.8 kcfs and outflows were 6.9 kcfs, increasing to ~8 kcfs to support hatchery releases April 12-14. After the releases, the project will slowly step down through April 20 to somewhere between 3 kcfs and minimums, depending on the forecast. The natural flow on the Clearwater is expected to pick up around April 16.

Lower Granite – Yesterday's average outflows were 60.1 kcfs.

McNary Dam – Yesterday's average outflows were 127.3 kcfs.

Bonneville Dam – Yesterday's average outflows were 149.1 kcfs.

Marshall reported on the John Day Dam high pool operation. The new high pool operation aims to deter Caspian tern nesting at Blalock Islands on the Columbia River near the Umatilla National Wildlife Refuge by raising the minimum forebay elevation to 264.5 feet. The normal maximum elevation of 266.5 feet remains in effect. The operation begins April 10 and continues through June 1. The current forebay elevation is 264.9 feet, and the Corps anticipates a smooth transition to the high pool operation.

6b. Water Quality – Dan Turner, Corps

TDG across the system is below the 125% threshold. Spring spill for juvenile passage began on the lower Snake last Saturday. This year’s operation calls for 8 hours of performance standard spill and 16 hours of gas cap spill. Due to low flows, projects are mostly on minimum generation and spilling the rest. Spill on the Lower Columbia River projects will begin Saturday.

6c. Fish – Claire McGrath, NOAA

All 4 traps are operating and reporting low numbers of Chinook yearlings, steelhead, and lamprey. Hatchery releases on the Snake may be causing some of the increased numbers. Additionally, passage at Lower Monumental is unusually high, likely due to a release from the Lyons Ferry hatchery above the project.

Lamprey juveniles are showing up in large numbers. Additionally, a high number of kokanee salmon (5,000 YTD) are showing up at Lower Granite. This is likely due to spill at Dworshak Dam.

Adult passage is beginning to pick up. Bonneville spring Chinook are at 247 YTD and passing at between 4 and 43 per day; steelhead are at 1,124 YTD, and 465 unclipped that are likely fish that overwintered in the hydro system. Numbers of spring fish are likely low right now.

6d. Power – Tony Norris, BPA

It is spring so temperatures are mild. Incoming fronts are bringing some wind.

7. Questions from the public

Ruth Burris, Portland General Electric, asked for the end of March elevation for Grand Coulee. That number is still being finalized and will likely be released at the end of this week or early next week.

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	Claire McGrath
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Jonathan Ebel

Agency	TMT Representative
Montana	Brian Marotz
Nez Perce Tribe	Jay Hesse
Umatilla Tribe/CRITFC	Tom Lorz
Colville Tribe	Absent
Warm Springs Tribe	Jen Graham
Kootenai Tribe	Absent
Spokane Tribe	Absent

Other Attendees (non-TMT members):

Corps – Aaron Marshall, Jon Roberts, Dan Turner, Alexis Mills, Willow Walker, Chris Peery, David Bogema

DS Consulting – Emily Stranz (Facilitator), Colby Mills

BPA – Melissa Haskin (CONTR, FLUX Resources, Notetaker)

Clearing Up – K.C. Mehaffey

Columbia Basin Bulletin – Mike O’Bryant

Portland General Electric – Ruth Burris