

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

March 17, 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 approved the March 3 facilitator's summary. Jonathan Ebel, ID, and Julie Ammann, Corps, will work together to revise language in section 1 of the meeting minutes; once revised the minutes will be reviewed at the next TMT meeting.

### **Official Water Supply Forecasts**

Joel Fenolio, BOR, reported on the official March water supply forecast for Hungry Horse Dam. After a robust February, forecasts jumped from 99% of average to 105% of average for March thru July residual. April to August is also around 106% of average, and the May to September forecast is 107% of average. Forecasts, however, are expected to drop off heading into what is expected to be a drier April.

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

- **The Dalles:** NWRFC April to August volume forecast is 82 maf, or 94% of average;
- **Lower Granite:** NWRFC April to July volume forecast is 17 maf, or 87 % of average;
- **Libby:** Corps NWS runoff forecast for April to August is 5,980 kaf, or 102% of average; and,
- **Dworshak:** Corps NWW runoff forecast for April to July is 2,855 kaf, or 117% of average.

### **Chum Operation**

Doug reported the continuation of the chum incubation operation, which sets Bonneville Dam with a minimum tailwater elevation of 11.8 feet. The operation will end on April 10 with the start of spring spill.

### **Spill Priority List**

Dan Turner, Corps, reminded the group of the Spill Priority List that will take effect at the beginning of spill season. He noted that Lower Granite is at the top of level 1, which differs from previous years where Bonneville was at the top. If desired, changes to the priority can be requested at a future TMT meeting.

### **John Day Dam Operation**

Aaron Marshall, Corps, reported on operations for John Day Dam and a new high pool operation aimed at deterring Caspian Tern nesting on Blalock Island. The action is posted to the TMT website and would set the John Day minimum forebay elevation at 264.5 feet from April 10 – June 1 (266.5 feet max elevation remaining in effect). The planned operation reflects pre-coordination with NOAA and USFWS.

The current elevation range of 262.5 feet to 266.5 feet will provide transition to the high pool operation due to the 2-foot overlap. The operation is scheduled to begin on April 10, provided enough water is in the system, which looks likely. Aaron noted that the full operating range is 257-268 feet, which may be used throughout the year if needed for flood risk management.

Additionally, monitoring data will come in throughout the season and will be shared through SRWG, FPOM, and the pre-coordination team. Adaptive management is not expected in-season due to uncertainty regarding the timing of the run, instead, the operation will be assessed after the implementation season to inform future years.

Claire McGrath, NOAA, confirmed the plan and provided modeling results on the expected biological impact. Claire reported that modeling results during the spring period of April 10-June 1 for out-migrating smolts, show survival for Chinook, sockeye, and steelhead in the John Day pool increasing by 1%, 2%, and 5% respectively, due to decreased Tern predation. This operation, combined with increases in spill, is expected to have overall positive effects on out-migrating salmon. Researchers will monitor avian predation using PIT-tag recovery. Dave Swank, USFWS, added that complete smolt and avian data will not be available until after the season, and typically there is a two-week minimum period between when habitat becomes available and the Terns start nesting and laying eggs.

In-season monitoring results will be reviewed and coordinated with USFWS, NOAA, and Corps representatives (Dave Swank, Claire McGrath, and Aaron Marshall); updates will be reported at TMT. In response to concerns from Fisheries Managers on the pre-coordination group selection, Aaron clarified that other Co-Managers may contact him to participate, and that the initial small team was convened as directed in the Biological Opinions for quick pre-coordination.

→ **ACTION: Contact Aaron Marshall if interested in participating in the Blalock Island Caspian Tern in-season monitoring coordination meetings.**

Erick Van Dyke, Oregon, clarified that the flex spill constraints are the mechanism used to determine acceptable TDG levels (this was affirmed by the Corps). He also noted appreciation for transparency around decision making at this stage, however, expressed continued concern with the closed group dynamic and a perceived lack of transparency in operational tradeoff and tradeoff evaluation. Doug noted that the Blalock Island operation coordination has been taking place at SRWG for the last couple of years. Claire and Aaron assured the TMT that updates will be brought back to TMT (likely in Ops Review), and Claire invited TMT members to reach out to her for additional operational clarifications.

## **2021 MOP Operations**

Aaron provided an overview of MOP operations at Lower Snake River projects, and the 2021 Lower Granite variable MOP operation from April 3 – August 14, which will entail a 2-foot raised MOP when flows are between 50-79 kcfs, and a 3-foot raised MOP when flows are less than 50 kcfs. A presentation of this information is posted on the TMT website. Jarod Norton, Corps, clarified the navigational issues that prompted this year's MOP operations at Lower Granite, which is due to continued shoaling and is hindering the Corps' ability to maintain the required 14-foot depth in the federal navigation channel. The Corps is working on securing funding for dredging to alleviate the shoaling issues; if received, the soonest dredging would take place is Fall 2023. The Corps plans to prepare the necessary environmental documents ahead of that to allow for implementation as soon as funds are made available. Additionally, the Corps is working on a 2–3-year study to determine a long-term fix. The plan under the Programmatic Sediment Management Plan (PSMP) is to use the 3-foot raised MOP as a temporary fix until dredging occurs. Jarod noted that the Corps is pursuing competitive emergency funds as well.

Fisheries Managers expressed concern on the impacts on juveniles, water temperature, and unforeseen impacts of operating at MOP +3 as part of variable MOP. Jay Hesse, Nez Perce, noted there will be a significant number of juvenile fish actively migrating through the system during April when a MOP+3 operation would be in place due to low flows. On behalf of NOAA, Claire requested that if there is a foreseen problem for fish, action should be taken proactively to minimize fish impacts. Erick said that from Oregon's perspective this operation emphasizes the disconnect of the bigger picture of how things interact in the system. He expressed concern with how uncertainties in the modeling aggravate biological components and fish protection measures thus are degraded. Fisheries Managers requested that the Corps consider alternative solutions, including shifting the navigation channel to a deeper section of the river, implementing a high flow draw down to flush out sediment, and considering ways to offset the operations' impact on fish. Julie acknowledged the frustration and committed

to following up internally to explore any potential alternatives for ensuring navigation while limiting impacts to other resources. She noted that during the NEPA process, the Corps was unable to proactively act due to limitation on the investments that could be made on Snake River projects. Regarding temperature concerns, Jon Roberts, Corps, reported on temperature analysis which indicates no temperature impact if raised MOP is implemented early in the season when inflows are cold, spring runoff. Unlike implementing raised MOP in the summer, when inflows are warm, implementing a 3-foot raised MOP in the spring will store cold water and is not expected to have an impact on the initial temperature conditions. Raising MOP does not significantly increase the surface area of the pool in the channelized reaches of the Lower Snake, however, the impact of increased surface area near the confluence was uncertain.

- **ACTION**: Julie will connect with the Walla Walla District and others internally to determine if there are alternative temporary fixes for meeting the navigation mission; she will report back any findings to TMT.
- **ACTION**: The Corps will report back to TMT if there are other areas in the system that will require dredging in the near future.

Navigational charts with elevation maps can be accessed at the following sites:

- **Lower Granite Bathymetric Survey Data from Fall 2020:**  
[https://ehydro.blob.core.windows.net/ehydro-surveys-pdf/CENWW/WW\\_05\\_LLA\\_20200927\\_CS\\_CLEARWATER.PDF](https://ehydro.blob.core.windows.net/ehydro-surveys-pdf/CENWW/WW_05_LLA_20200927_CS_CLEARWATER.PDF)
- **USACE Bathymetric Survey Data:**  
<https://www.arcgis.com/apps/opsdashboard/index.html#/4b8f2ba307684cf597617bfb6d2f85d>

## Operations Review

*Reservoirs:* Joel reported on Bureau of Reclamation projects:

- **Hungry Horse:** the project ramped down to 2,500 cfs over the weekend to the Columbia Falls minimum, putting discharge at 2,000 cfs today. The project is still drafting to 3,520 feet by the end of the month for selective withdrawal system maintenance. Current elevation is 3,525.8 feet, and Joel noted a 3-4 foot difference for end of April FRM target with current forecast and conditions.
- **Grand Coulee:** midnight elevation was 1,272.5 feet, with releases averaging 65,000 cfs and inflows of 58,000 cfs; operating to 1,270 feet by the end of the month.

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

- **Libby:** midnight elevation was 2,402 feet, with average inflows of 2.8 kcfs, and outflows of 4 kcfs;
- **Albeni Falls:** midnight elevation was 2,051.4 feet, with average inflows of 17.6 kcfs, and outflows of 15 kcfs;
- **Dworshak:** midnight elevation was 1,506.8 feet, with average inflows of 4.5 kcfs, and outflows of 10.9 kcfs;
- **Lower Granite:** average outflows of 41.1 kcfs;
- **McNary:** average outflows of 120.0 kcfs; and
- **Bonneville:** average outflows of 131.6 kcfs.

Jon noted that Dworshak has been slowly decreasing outflow in response to dry weather, and that the project is looking at a potential adjustment for next week to drop outflow further to mitigate the dry forecasts and meet flood control requirements for the end of April.

*Water Quality:* Dan Turner, Corps, reported that TDGs are low, with higher TDG at Lower Monumental due to spill for adult steelhead, although he noted these are not viewed as exceedances since it is due to spill for fish. In a change from previous years, forebay TDG monitors will not be installed until June 1 as there is not a State TDG requirement in the forebays for spring spill; some will be installed as part of a special study to track TDG in the system. The Camas/Washougal gauge will not be installed this year, due to lack of requirements to monitor at that point in the river. The Corps will continue to use TDG data to help make spill cap predictions, and that spill analysis is based heavily on current system observations at the tailwater gauges.

*Fish:* Claire reported all 4 traps are operating for juvenile monitoring, with low numbers of Chinook yearlings, steelhead and lamprey. The Bonneville bypass is operational with increasing numbers of Chinook sub-yearlings, steelhead and lamprey. John Day is operating for condition-monitoring only. For adults, there are slowly increasing numbers of steelhead in the system, as things are just getting started for the season. Dave noted a fair number of lamprey juveniles detected in the first few days of monitoring. Another note of interest was some high numbers of Kokanee being counted at Lower Granite, likely due to Dworshak spill; whether or not to count them as sockeye is still being considered.

*Power System:* Tony Norris, BPA, reported that there is not much water in system, and the high-pressure systems have not produced much wind generation.

**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 a tentative conference call on March 24, 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](mailto:colby@dsconsult.co).*

**Columbia River Regional Forum**  
**Technical Management Team**  
**DRAFT OFFICIAL MINUTES**  
**Wednesday March 17, 2021**

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 3/3 Meeting Summary and Minutes**

Jonathan Ebel, ID, had one edit regarding phrasing in the official minutes and will work with Julie Ammann, Corps, offline to address it. Approval of the minutes will be deferred until the next scheduled meeting. The facilitator summary was approved with no additional edits.

**2. Official March Water Supply Forecasts – Joel Fenolio, Reclamation, and Doug Baus, Corps-NWD**

The official March water supply forecast was issued on March 3 (the 3rd workday of the month), as follows:

- Hungry Horse:
  - March-July 2,070 kaf (105% of average, up from 99% last month)
  - April-August 2,055 kaf (106% of average)
  - May-September 1,805 kaf (107%); this sets minimum flows to 3,500 cfs at Columbia Falls and 900 cfs at Hungry Horse. The forecast may drop off going into April.
- The Dalles Dam: April-August 82 maf (94% of average)
- Lower Granite Dam: April-July 17 maf (87%)
- Libby Dam: April-August: 5,980 kaf (102%)
- Dworshak Dam: April-July: 2,855 kaf (117% of average)

**3. Chum Operation – Doug Baus, Corps**

The Corps continues to implement the chum incubation operation as coordinated on December 29, 2020, which calls for a minimum tailwater of 11.8 ft. all hours at Bonneville Dam. The operation will continue through April 9, as has been done in the past.

**4. Spill Priority List**

Dan Turner, Corps, showed TMT the draft spill priority list for the 2021 spring spill season, attached to today's agenda. The lists (one for March 23–April 2 and one for spring spill April 3–June 21) define project priority order for lack of load spill for management of TDG system-wide. This year Lower Granite is at the top of level 1, which differs from previous years where Bonneville was at the top.

Emily Stranz, DS Consulting, asked TMT members if they had any questions, comments, or concerns. Changes to the project order can be made at any time prior to or during the spill season.

Erick Van Dyke, OR, noted that he did not remember this would be on the agenda and since this topic was not discussed at FPAC, it may be hard for salmon managers to comment. Claire McGrath, NOAA, noted that the fish managers may request a TMT meeting prior to the next scheduled TMT meeting on April 7 if there is a request to change the order before then.

**5. 2021 John Day Dam Operation - Aaron Marshall, Corps**

Aaron Marshall, Corps, reported on the new operation at John Day Dam that is included in the Proposed Action. Per the ROD, section 6.3.1.1.3:

“From April 10 to June 1 (or as feasible based on river flows), the John Day reservoir elevation will be held between 264.5 feet and 266.5 feet to deter Caspian terns from nesting in the Blalock Islands Complex. The Action Agencies intend to begin increasing the forebay elevation prior to initiation of nesting by Caspian terns to avoid take of tern eggs; operations may begin earlier than April 10 (when the reservoir is typically operated between 262.0 to 266.5 feet). The operation may be adaptively managed due to changing run timing; however, the intent of the operation is to begin returning to reservoir elevations of 262.5-264.5 feet on June 1, but no later than June 15, which generally captures 95% of the annual juvenile steelhead migration. The results of this action will be monitored and communicated with the Services. During the operation, safety-related restrictions will continue, including but not limited to maintaining ramp rates for minimizing project erosion and maintaining power grid reliability.”

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.

Marshall shared the following planned operations and dates for the 2021 season:

Period	Elevation (feet NGVD29)		Operation
	Minimum	Maximum	
1 Sep to 15 Nov	262.5	266.5	Irrigation Season Full Range
16 Nov to 14 Mar	262.0	266.5	Winter Full Range
15 Mar to 9 Apr	262.5	266.5	Irrigation Season Full Range
10 Apr to 1 Jun	264.5	266.5	Blalock Islands High Pool
2 Jun to 14 Jun	262.5	266.5	Transition to MIP
15 Jun to 31 Aug	262.5	264.5	Minimum Irrigation Pool (MIP)

Note: the full operating range (257-268 feet) may be used throughout the year if needed for FRM

The Action Agencies intend to begin increasing the reservoir elevation prior to nesting to provide a smooth transition into the high pool operation. The John Day forebay will return to MIP by 15 June and continue operating within the 2-foot MIP range through 31 August.

The Corps and BPA met with representatives from NOAA and USFWS to pre-coordinate this year's operation, as called for in the NOAA and USFWS Biological Opinions. The group included Marshall, McGrath, Dave Swank (USFWS), and Steve Kahl (USFWS). Several TMT members, including Tom Lorz, Umatilla, and Van Dyke, expressed disappointment and concern about being left out of this pre-coordination. Marshall noted that since the Corps is required to communicate monitoring with USFWS and NOAA, that is why they were included. Pre-coordination moved quickly, he said, and no one was intentionally left out. Anyone who wants to be included in the small group discussions can reach out to Marshall.

Throughout the season, monitoring data will be shared with SRWG and FPOM, as described in the Proposed Action. Charles Morrill, WA, is concerned this will not be often enough since FPOM meets monthly and SRWG meets either monthly or every other month, depending on circumstances. Marshall added that there will be in-season updates during TMT, specifically during the operations review portion of the meetings. McGrath added that if the issue is not on the agenda, she will add it. She also encourages individual communication with NOAA outside of TMT.

OR said that the operation lacks transparency regarding how tradeoffs have been evaluated. McGrath responded that the reduction in predation is expected to increase survival from April 10-June 1 for out-migrating smolts at John Day by 1% for Chinook, 2% for sockeye, and 5% for steelhead. Overall, the increase in spill is expected to decrease overall travel time and more than offset the slight reduction in travel time from the higher John Day pool, thus the operation should result in a net benefit to listed species.

Dave Swank, USFWS, added that complete smolt and avian data will not be available until after the season and typically there is a two-week minimum between when habitat becomes available and terns start nesting and laying eggs.

## **6. 2021 MOP Operations - Aaron Marshall, Corps-NWD, and Jarod Norton, Corps-NWD**

Marshall reviewed MOP operations at the lower Snake projects, including the variable MOP operation planned for April 3-August 14 at Lower Granite. Due to sedimentation issues and the requirement to maintain 14-ft depth in the federal navigation channel, the minimum forebay elevation at Lower Granite will be raised by 3 feet when flows are less than 50 kcfs; 2 feet when flows are 50-79 kcfs, and; 1 foot when flows are 80-119 kcfs. The raised MOP is due to shoaling that is obstructing the federal requirement for the navigation channel. To address the issue, the Corps is seeking funding for dredging, which could occur as early as 2023.

Trevor Conder, NOAA, commented that MOP has gradually degraded over the years. He expressed concern for how high MOP will be during dredging. If dredging occurs, he would like to see a benefit, like that the pool could be dredged to a point that MOP could return to baseline. The goal would be to get the channel to a depth of 15 feet, which is one foot deeper than the minimum depth requirement in the federal navigation channel.

Fish managers expressed concern for the fish that will be traveling in the system. Tom Iverson, Yakama Nation Fisheries, noted that the BiOp and EIS assumed a MOP much lower than what the Corps is presenting. He noted the operation will have negative impacts on fish and asked what mitigation steps the Corps plans to take. Baus noted that the operation is within what the Corps consulted on. There is always a caveat for navigation safety in MOP operations, he noted. The Corps makes best efforts to operate in MOP but there are situations, such as when navigation safety is impacted, that it cannot.

McGrath brought up the Port of Clarkston's requests for a raised MOP last year.<sup>1</sup> The Port's requests were not supported at both meetings. McGrath noted that during those requests there was modeling available regarding impacts to water temperature and water quality monitoring from raising the Lower Granite pool. She noted it would be nice if the same modeling could be done for this year's operation. Jon Roberts, Corps, said that he was able to do some analysis over the past few days, including a 2 ft raised MOP, 2.5 ft, 3 ft, and 3.5 ft raised MOP. Based on the current Lower Granite inflow forecast, the pool will be filled with cool water since it will be filling in late June. This is different from the Port's requests last year, which were during a heat wave in August. This year's filling for the 3-foot raised MOP is expected to occur earlier in the season, which means the pool will fill with cool water, as opposed to warmer water in August as contemplated in 2020. Filling with cool water in June should not result in temperature impacts at Lower Granite.

Jay Hesse, Nez Perce Tribe, asked if this dredging will fix things for the Port of Clarkston. Jarod Norton, Corps, responded that the Corps is not responsible for areas outside of the federal navigation channel, including the Ports. In the past, the Port has hired its own contractors to dredge their areas concurrent with the Corps.

Van Dyke requested a copy of the survey information used to make these decisions to understand where the shoaling is occurring (only at the port or other areas of the navigation channel). He also recommended the Corps or workgroup look at earlier sediment studies (mid-2000s) to get a better idea of how things have changed. Marshall provided website links to the Corps' bathymetric survey data:

- Lower Granite bathymetric survey data from fall 2020:  
[https://ehydro.blob.core.windows.net/ehydro-surveys-pdf/CENWW/WW\\_05\\_LLA\\_20200927\\_CS\\_CLEARWATER.PDF](https://ehydro.blob.core.windows.net/ehydro-surveys-pdf/CENWW/WW_05_LLA_20200927_CS_CLEARWATER.PDF)
- USACE bathymetric survey data:  
<https://www.arcgis.com/apps/opsdashboard/index.html#/4b8f2ba307684cf597617bf1b6d2f85d>

Fish managers suggested that the Corps consider alternative solutions such as a drawdown or moving the navigation buoys to shift traffic. Navigators have the bathymetric information and are using the deepest areas to navigate. A deep drawdown to move sediment would impact other parts of the Corps mission. However, the Corps can look into these options, as well as others. They will take comments from today's meeting to the district and continue discussions.

Van Dyke expressed that the operation is one-sided, focusing only on water management while ignoring the rest of the impacts. He feels that today's conversation emphasizes a larger point – that there is a problem with how modeling uses information. He is concerned by statements like “this was built into the model,” which does not provide sufficient information. Biological components were supposed to be built into the BiOp and EIS and each operation, he said, noting that fish protection measures have been degraded throughout the adaptive management process.

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<sup>1</sup> See the TMT notes from August 12, 2020 and August 19, 2020.

Ammann shared that she hears the frustration and that the Corps is trying to be proactive and move funding around to complete environmental assessments to support dredging as soon as they are able to. The Corps has budget processes it must follow and must meet its missions. One of those is that navigation is a congressionally authorized requirement. The modeling analysis used for CRSO EIS did not include this specific variable MOP operation; however, the model was looking more at a long-term solution. The Corps' goal is to operate at MOP in the lower end of the normal operating range while meeting authorized purposes. The Corps is working towards this goal but must follow their business process.

Morrill has concerns with ending MOP in mid-August and the impacts to listed subyearling Chinook that are migrating downstream. Hesse directed TMT members to his comments in the 2021 Water Management Plan, reminding the group that the Nez Perce Tribe has concerns for ending MOP in mid-August. He thinks the discussion is headed the wrong way.

## **7. Operations Review**

### ***7a. Reservoirs – Joel Fenolio, Reclamation; Lisa Wright, Corps***

**Hungry Horse** – Ramped down to 2.5 kcfs over the weekend. Currently operating at Columbia Falls minimums (~2 kcfs) due to a dry forecast. The project is currently at 3,525.8 ft. elevation and targeting 3,525 ft. by the end of the month for selective withdrawal maintenance.

**Grand Coulee** – Currently at 1,272.5 ft. Inflows 5.8 kcfs and outflows of 6.5 kcfs. The end-of-month target is 1,270 ft.

**Libby Dam** – Midnight elevation 2,402 ft., yesterday's average inflows 2.8 and outflows 4 kcfs.

**Albeni Falls** – Midnight elevation 2,051.4 ft., inflows 17.6 kcfs and outflows 15 kcfs.

**Dworshak Dam** – Midnight elevation 1,506.8 ft., yesterday's average inflows 4.5 kcfs and outflows were 10.9 kcfs.

**Lower Granite** – Yesterday's average outflows were 41.1 kcfs.

**McNary Dam** – Yesterday's average outflows were 120 kcfs.

**Bonneville Dam** – Yesterday's average outflows were 131.6 kcfs.

Lorz asked about Dworshak Dam releases and asked if the Corps is taking precautions in case dry conditions persist. Roberts replied that the Corps has been decreasing outflow each week based on the forecast. Looking at the current data, the Corps may drop outflow down further, however the decision will not be made until tomorrow.

### ***7b. Water Quality – Dan Turner, Corps***

TDG across the system is low with higher TDG at Lower Monumental due to surface spill for adult steelhead. A change from previous years is that the Corps will not install forebay monitors until June since they are not included in the spring water quality standards. Also, the Camas/Washougal monitor will not be installed since it is no longer used. SYSTDG will continue to use all information.

**7c. Fish – Claire McGrath, NOAA**

All 4 traps are operating and reporting low numbers of Chinook yearlings, steelhead, and lamprey. The Bonneville bypass is operational. Adults are increasing slowly as the season kicks off. Lamprey juveniles are known to move early in spring. Last year, none were observed at this time at Lower Granite, however, this year 1,300 have been observed so far. Additionally, a high number of kokanee are showing up at Lower Granite. This is likely due to spill at Dworshak Dam.

**7d. Power – Tony Norris, BPA**

There is not a lot of water in system and low wind generation.

**Today’s Attendees:**

<b>Agency</b>	<b>TMT Representative</b>
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, Claire McGrath
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	Sheri Sears
Warm Springs Tribe	Jen Graham
Kootenai Tribe	Absent
Spokane Tribe	Brent Nichols

**Other Attendees (non-TMT members):**

Corps – Aaron Marshall, Jarod Norton, Jon Roberts, Dan Turner, Alexis Mills, Willow Walker, Denise Griffith

DS Consulting – Emily Stranz (Facilitator), Colby Mills

BPA – Melissa Haskin (Notetaker)

Yakama Nation Fisheries – Tom Iverson

Clearing Up – K.C. Mehaffey

Columbia Basin Bulletin – Mike O’Bryant

Portland General Electric – Ruth Burriss