

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

July 26, 2023

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/2023/>. 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 official meeting minutes and facilitator's summaries for the July 12 meeting. Minutes and summaries from July 14 and 19 will be reviewed at the next TMT meeting.

Dworshak Operations – Willow Walker, Corps, provided an update on current operations and forecast modeling for Dworshak Dam. The project is currently releasing full powerhouse (no spill), about 9.9 kcfs, with a pool elevation of 1,575.2 feet (roughly 25 feet below full) and continues to draft approximately 1 foot/day.

The Snake River at Anatone is around 73-74 degrees F and flows from Hells Canyon have been dropping off (typical for this time of year), which is good for temperatures overall as those flows can be warm. The Snake at Orofino has been around 75 degrees F, and the Clearwater at Lewiston has been 54-51 degrees F. The Lower Granite tailwater has been around 67.5-68 F.

Stratification remains at the 20-meter mark in the Lower Granite forebay, although it is starting to move closer to the 67-degree F range. In the event of another heat wave, Willow noted that Dworshak would need to spill to make sure stratification does not go lower than the 20-meter mark. RFC projected inflows to the Dworshak reservoir are below average and have touched on historic minimums.

Regional temperatures are forecasted to reach over 100 degrees F in the upper Snake River region, which could require more flow augmentation water. Temperatures in the lower Snake region are forecast to rise towards the end of next week. Lewiston could reach 97-100 degrees F at the end of next week, although these numbers have been fluctuating (yesterday they were closer to 103-104 degrees F). The Corps is watching the situation closely to see if temperatures remain manageable or if extreme heat will require spill.

Today's modeling results show that Dworshak is expected to hold the Lower Granite tailwater in the 67-degree F range (close to 68 degrees F) for a few days. If there is a projected heat wave at the end of next week, Dworshak will spill at the end of this week to target keeping Lower Granite forebay temperatures closer to 67.7-68 degrees F leading into a cool down period August 2-3 and the return of Dworshak to full powerhouse. Willow noted that this plan does not consider any forthcoming SORs, which would see outflow reducing further to help extend water to the end of August.

Alternative operations (posted to the TMT website) to analyze potential effects of allowing the Lower Granite tailwater temperature up to 69.5 degrees in the first 2 weeks of August have been updated to include another scenario (#5) that raises temperature criteria to 69 degrees F from August 6-14, which is the basis for FPAC's draft SOR 2023-5. Projections would take flow augmentation water to August 31 +2 days and could potentially not even use the whole 9-day period. Willow noted that these dates are approximate (1-3 days room for error), and the long-term projections do not take into account any significant impacts that could occur in extreme conditions such as wildfire or unexpected outages. She

also noted that there is less historical data to reference when targeting higher temperatures above 68 degrees F, and so less accuracy in the models (0.5-degree range of accuracy, rather than 0.25-degree range). The tightness of operations and models does change depending on target temperature.

Jonathan Ebel, IDFG, asked, as there is always a possibility of some type of outage, if the Corps is set up to quickly obtain emergency waivers (from IDEQ) to ensure they can maintain cooler temperatures? Dan Turner, Corps, responded that they did get TDG waivers during the Dworshak unit update 4-5 years ago, but the coordination took weeks and was not an emergency time-sensitive situation. Jonathan noted the desire to maintain water and cool things down in case the powerhouse is limited, and he will reach out to IDEQ for clarification/confirmation. This is a protocol to consider in the future.

It was noted that delaying flow augmentation from Dworshak would only produce a small decrease in overall flow in the Snake River and would not make a big impact.

DRAFT SOR 2023-5

Jonathan presented a draft version of SOR 2023-5 (posted to the TMT website), that would request a temporary change to Lower Granite Dam tailrace water temperature criteria to provide Dworshak summer flow augmentation through August 31, increasing flexibility to react to extended heat waves while drafting to the reservoir threshold of 1,535 feet. Specifically, the SOR would relax the temperature criteria from 68 degrees F to 69 degrees F, with the intent not to exceed 69.5 degrees F, between August 6-14. Jonathan noted that the operation need not include the entire target date range if not necessary, and that the SOR targets a period and result that FPAC Salmon Managers generally support.

Kelsey Swieca, NOAA, noted that the Agency is interested in analyzing more up-to-date forecasts before polling on the SOR. They would prefer to hold polling until the August 2 TMT meeting to allow for updated temperature forecasts and modeling from the Dworshak team. Willow confirmed that next Wednesday is the last day to change operations to allow water to reach Lower Granite in time to adjust temperature targets for the stated SOR timeframe. Action Agencies requested a finalized SOR be submitted to the TMT prior to FPAC on Tuesday if at all possible, and that any adjustments can be made during the TMT meeting if needed.

The Corps noted that Action Agencies are supportive of the intent of the SOR, and that the Corps and BPA are tracking forecasts and monitoring the situation closely.

Regarding the 10-day forecast, Jonathan asked if it is prudent to make a decision prior to next week's TMT meeting? Willow noted that the added scenario #5 does account for spilling for the potential August 3-4 heatwave. If the TMT recommends that the project does not spill for the potential early August heat wave, the Dworshak team would need to know by this Friday, July 28.

The Corps noted appreciation in the efforts from Salmon Managers to look for opportunities to be most efficient with Dworshak outflows. The final SOR will be presented and polled on at the next TMT meeting.

Adult Sockeye Conversion – Jonathan reported a bleak outlook for adult sockeye this season. Passage at Bonneville has declined significantly over the last week to between 4,400-4,500; it appears fish are not converting well this year, despite moderate conditions to start the summer. Reports have not changed much over the last week, except Bonneville and Ice Harbor to Lower Granite have increased, indicating where fish are in the system. Higher travel times are likely temperature related. 2023 conversion rates reflect similarly to the 2021 season, Bonneville to McNary YTD conversion rate is .53, which could result in losing about 40-50% of fish between the projects. Ice Harbor to Granite conversions are also similar to 2021. Conversion rates are much lower than expected based on temperatures in June, which Jonathan

attributed possibly to the later arrival of Snake River sockeye than years past. 737 fish are estimated YTD over Lower Granite. Conditions were okay above the project in the early part of the run (includes most natural origin fish) and temperatures in the Salmon River above the middle fork did get hot but have since dropped back into the 67–69-degree F range.

In response to a query about areas that may have groundwater influence, Jonathan noted there are some cold-water refuges between Bonneville and McNary in the Columbia River, but these are much more limited in the Snake River. Once fish are through the hydro system there are more cooler places for fish to seek thermal refuge.

Regarding Snake River fallbacks, the fallback percentage for Snake River fish at Ice Harbor is around 20%, Jonathan thought this could be due to temperatures in the forebay, and 7% at Lower Granite. Jonathan noted that using PIT-tags to look at fallbacks at Ice Harbor will result in better data from Snake River fish than Columbia River fish.

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

- **Hungry Horse:** midnight elevation was 3,552 feet, with continued releases of 2,000 cfs, and inflows averaging 850 cfs over the last 5 days. Joel noted that releases will likely change to meet the Columbia Falls minimums within the next couple of weeks, which is earlier than recently expected as conditions appear to be dryer than projected.
- **Grand Coulee:** midnight elevation was 1,284.5 feet, with releases averaging 109,000 cfs over the last 5 days; inflows are around 105,000 cfs. The project is drafting and on track to get down to 1,277 feet by the end of August.

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

- **Libby:** midnight elevation was 2,451.6 feet, average inflows of 8.95 kcfs, and outflows of 8.5 kcfs;
- **Albeni Falls:** midnight elevation was 2,062.2 feet, average inflows of 7.6 kcfs, and outflows of 8.1 kcfs;
- **Dworshak:** midnight elevation was 1,575.9 feet, average inflows of 1 kcfs, and outflows of 9.9 kcfs;
- **Lower Granite:** average outflows of 30.3 kcfs;
- **McNary:** average outflows of 143.8 kcfs; and,
- **Bonneville:** average outflows of 141.8 kcfs.

Water Quality: Dan reported that TDG levels are below state Water Quality Standards (WQS). He noted that the gauge at the Lower Monumental tailrace stopped reporting last night, and field technicians are working to fix it hopefully by later today.

Fish: Kelsey reported 400-500 Chinook adults passing Bonneville each day (about 76,000 YTD), less than 1,000 steelhead/day and a few hundred sockeye. She noted that sockeye YTD numbers at Bonneville are around the 10-year average, and roughly 50% of last year. Lower Granite is seeing 50 Chinook and steelhead passing each day, with between 25-100 sockeye over the past 10 days. Regarding juveniles, sub-yearlings remain the dominant salmonid moving through the system, which is typical for this time of year.

Power System: Tony Norris, BPA, reported that temperatures have moderated and so has energy use.

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 2, 2023, at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
OFFICIAL MINUTES
Wednesday, July 26, 2023
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 – July 12 (July 14 and July 19 pending)

- July 12 – Approved

2. Dworshak Operations – Willow Walker, Corps-NWW

a. Current Hourly Data -- Wednesday July 26, 2023

- Dworshak (DWR) Releases: 9.9 kcfs (powerhouse capacity)
- No additional spill
- Midnight Elevation: 1575.52'
- ~25 feet below full pool
- Drafting: 1 foot/day

b. Snake and Clearwater Rivers Temperature Data

- Natural temperatures (°F):
 - Anatone: 73/74°F
 - Flows from Hells Canyon have been dropping off. Typical for this time of year as they go through their water. This is good news for temperatures overall because water from Hells Canyon temperatures can be hot. So, this helps by the time it reaches Lower Granite.
 - Orofino: 75°F
 - Combined at Lewiston: 54-51°F
- Lower Granite (LWG) tailwater: 67.5-68°F

c. LWG Forebay Temperature Strings

- Still have the stratification around the 20 meter-mark but it is starting to move further down and get closer to 67°F. This is why if there is another heatwave

DWR would have to spill some water to make sure that stratification in the Lower Granite forebay does not go any lower than that 20 meter-mark.

d. RFC Projected DWR Inflow Forecast

- Projected through the rest of the summer is touching the minimums.
- Low summer inflows.

e. Regional Weather Forecast

- Seeing over 100°F (areas in red) in the Upper Snake Region, which indicates more extreme heat waves that could require more flow augmentation water.
- The Lower Snake is still okay through the weekend. Moving toward the end of next week we start to see some areas of red appearing.

f. Lewiston Temperatures

- Mid – End of next week temperatures ranging from 97° - 100°F.
- Fluctuating, yesterday temperatures were closer to 103° and 104°F.
- With that DWR would plan to spill water to cool things down. They will watch this before they decide. They will wait to see if it continues to trend down or if it goes back to the extreme temperatures.

g. Water Temperature Comparisons – July 26, 2023

- Model results in the Lower Granite tailrace 67°- 68°F; continuing for a few days.
- If the heat wave happens at the end of next week, then they would spill some Dworshak water during the end of this week to target that heatwave to keep things closer to the 67.5° - 68°F mark.
- As DWR gets into early August and things cool back down they plan to reduce to full powerhouse. However, this does not include any SOR operation; if that SOR does get approved and implemented they would see DWR outflow reducing even further. This would help extend DWR water to the end of August.

h. Alternatives Requested – July 26

	Alternative Operations	End of DWR Flow Aug.	Notes
1	Default operation with a mild remainder of summer	~August 31 st	With no Dworshak releases needed higher than powerhouse discharge, water could last remainder of season. August 3rd heatwave is expected to deviate from this alternative.
2	Default operation with a hot remainder of summer	~August 28 th	Additional water from Dworshak needed to combat intense and extended heatwaves could cause a ~3 day shortage in our ability to maintain 68° at the end of August
3	LWG tailwater temperature criteria raised to 69.5° from August 1 st to August 15 th	~August 31 st + 7 Days	Based on current conditions, this operation could provide an excess of ~7 days beyond August 31 st
4	LWG tailwater temperature criteria raised to 69.5° for ~6 days in the first two weeks of August	~August 31 st	Based on current conditions, this operation could meet the August 31 st target
5	(SOR) LWG tailwater temperature criteria raised to 69° from August 6 th through 14 th (9 Days)	~August 31 st to August 31 st + 2 Days	Based on draft SOR 2023-5 criteria

1. Dates are all approximate and could slide sooner or later by 1-3 days based on actual conditions that develop
 2. Alternatives do not consider other significant impacts that could occur in the extreme conditions, i.e. wildfires that disable a transmission line, unexpected unit outages, etc.

- Same alternatives that TMT looked at last week with the exception of #5.
- Operation #1: Only change from last week – with the potential August 3 heatwave that would put DWR into the realm of this not being a possibility anymore. This is where they see moving into the **hot** remainder and having a 2 – 3-day shortage of water a more likely scenario.
- Operation #3: Still looks like it would give seven days past August 31; beyond their target.
- Operation #5: As the draft SOR came in they looked at having the LWG tailrace criteria being 69° from August 6 – 14. The current projection is that would make DWR flow augmentation water last to August 31 with potentially two extra days, depending on how hot that time range actually ends up being. They could potentially adjust not using the whole nine-day period if that was the case.
- Walker reiterated the boundaries:
 - All dates are approximate. This is a long-term projection which is within a 1-to-3-day threshold of sliding one way or the other.
 - This does not consider other unexpected impacts such as transmission line outages that stop their ability to put water through the powerhouse, or similar unit outages.
 - When targeting higher temperatures above 68°F, there are less historical data to calibrate the model so the results are less accurate. There are only data from 2021. And so, they start to have about a half a degree range on that accuracy (rather than with purely model results at the 68°F where they are closer to a quarter of a degree accuracy). This is with perfect weather foresight – which is almost never possible. Tightness of the operations and model results does vary based on the temperature they are targeting.

Ebel said that Walker mentioned the possibility of transmission outage or some type of outage that eliminates the powerhouse or some type of turbines. He asked in the event of that happening is the Corps set up to quickly obtain temporary emergency TDG waivers from IDEQ so that we can maintain some cooler water coming out of DWR.

Dan Turner, Corps, said they got TDG waivers during the DWR unit update a few years ago. He said it was a planned thing and there was coordination, and the process took weeks to do that. He said that is all the information he has, he has not ever participated in trying to do anything in an emergency, very quickly like that, in a matter of days.

Ebel said he will think about that in case something bad happens. He said we would like to maintain water out of DWR to cool things down in the event the powerhouse is limited. He said that he will reach out to IDEQ and check on that process again. He checked in with the fire that was near one of the transmission lines a couple of years ago and it seemed like IDEQ would be willing to move quickly in a situation like this. Ebel said that he will confirm it and think about it for in the future to have a protocol in place.

Kirk Truscott, Colville, said that the proposal is to delay the flow augmentation from DWR. He asked how that it would affect the overall flow on the Snake River for the seven days. He asked if it would be such a substantial amount that you would expect to see a substantial decrease in flow on the Snake.

Walker said that they would notice a small decrease, but overall DWR makes up such a small proportion of the Snake River flow that we are not talking about any extreme minimums downstream.

Truscott asked if it would be even less small in the mainstream Columbia downstream.

Walker said absolutely.

i. SYSTEM OPERATIONAL REQUEST: #2023-5 – Jonathan Ebel, FPAC Chair

- At FPAC they discussed an SOR to address some of the upcoming potential water shortage based on Walker's projections.

Goal: Alter or relax the temperature criteria in the LWG tailrace to provide flexibility to the Corps in terms of their operations to be able to target more effectively that draft threshold or draft limit of 1535' at the end of August.

- Discussion at FPAC about the dates; where they are able to increase that temperature of the LWG tailrace while minimizing its impacts on migrating adults, particularly sockeye.
 - August 6 – 14
 - Does not have to be entire period.
 - Targeted the period that they were pretty confident that sockeye arriving at Lower Granite the window had shut for them to migrate to the Stanley Basin (small proportion that would be impacted) and minimizing the impact on fall Chinook and steelhead and avoid affecting collection of broodstock at LWG.

- There is support at FPAC. This is a draft SOR because NMFS wanted to discuss it in more detail and get a more close-range forecast before making a polling decision on this and the Fish Managers respected that.
- Discuss the SOR today and get a broader view from TMT today.

Stranz opened the floor for any additional comments from FPAC and then for comments from TMT.

Ebel asked given that this was submitted as a draft what do we do with it. He said that he would like some discussion from NMFS and the Corps as to its ability to be implemented, or some of the flexibilities it might provide. He asked if the SOR needs to be more clear. He said that those are some of the comments that he is looking for in terms of comments from the Federal Agencies. He said that the State and Tribal Agencies have worked on it already.

Kelsey Swieca, NOAA, thanked Ebel for the coordination, NMFS appreciates the flexibility. She said they are interested in seeing a closer forecast before deciding. Walker indicated in some communications with her yesterday that this decision needs to be made by next Wednesday to give DWR operators their forwarding notice before potential implementation. Swieca said that it would be NOAA's preference to hold polling on this until next Wednesday. TMT can hear a more finalized update from Walker on that day and then NOAA would be ready to poll on it at that time. She said thank you for the flexibility allowing them that little extra time to have a better look at the forecast.

Stranz asked for clarity, next Wednesday NOAA would hope to see another model run from Walker with the updated forecast information incorporated and then a polling.

Swieca said that would be the preference.

Walker said that it is possible. She said that Wednesday is the latest day they could start changing operations to give the water enough time to adjust the temperature criteria down at LWG in the timeframe specified. From her perspective it would be possible to have this approved Wednesday morning and she could adjust operation by Wednesday evening. She said that Baus had a thought; usually the finalized version comes the day before for all the approvals. She said that he is more familiar with the process, she asked if Baus had any thoughts.

Baus said he would echo what Walker said. Generally speaking, as far as process goes the Corps tries to get SORs posted prior to FPAC so that they can do all the coordination. So that FPAC can have the finalized SOR information and then come to TMT on Wednesday all prepared and be on the same page. He said that he thinks that all of us recognize that does not always happen. He said that he would still like to set a tentative goal to have some type of an SOR so that we can keep the Action Agencies tracking on what we are doing. He asked if Ebel and Tom Lorz would be able to do this. He said he thinks, as Walker has alluded to, we are all supportive of the intent of this. The forecasts will change, the Corps of Engineers and BPA are tracking that and Baus would like TMT to know that they are watching this issue. They are doing their best to be flexible. They just ask for some type of finalized SOR on Tuesday so they can post it. On Wednesday if TMT needs to make any fine tweaks to that SOR, even if it is finalized, Baus thinks that

we will be able to do that on Wednesday. Once done with the polling process on Wednesday, if we have to make any adjustments to that Baus thinks that can be done.

Ebel said that it makes sense. Ebel said that his concern over waiting until next Wednesday is that on the 10-day forecast that Walker showed, as well as the projection of operations, does include going above full powerhouse to address the expected heatwave around August 3 – 4. He said this is outside of the current SOR. He asked Walker if it would be prudent to shift these dates with that current forecast in hand or is it prudent to decide before next Wednesday because of the current forecast.

Walker said that it is up to how conservative you want to be in the alternative projected dates and how far that would go. That does include spilling for this August 3 heatwave and assuming that DWR would come down after that. If we wanted to say here is a heatwave that is happening near this period that it seems that there are not that many sockeyes that are going to be viable and we would rather have that water available (because it is so close to the threshold). She said that they could do that too, but if that was the case, if TMT did not want to spill for this potential August 3 heatwave, she would need to know that by Friday.

Ebel said that he is not sure what his fellow fish managers think about that. He said that it popped up and the data was in front of him, so he was thinking about it. He said that it sounds like, he thinks, that others may not be as conservative as he might be in terms of water issues. He said that it is generally a theme.

Stranz asked if there are any other concerns or conversation that TMT would like to have on the draft SOR.

Baus said he would like to thank to Lorz and Jonathan for putting this together. He said that he thinks that it is a great opportunity to find efficiencies where we can. Where we have unique water years where we have historical low inflows into DWR. He said thanks to Ebel and Lorz and the Salmon Managers for putting this together, taking times, and coming up with opportunities to be efficient with outflows.

- Finalize SOR by next Tuesday and post on the TMT website.
- Walker and team will provide updated forecasts and modeling.
- Next Wednesday morning TMT will discuss and poll on the final SOR. If implemented, Walker can start implementing and adjusting next Wednesday afternoon if needed.
- If August 3 heatwave scenario does materialize the Corps will increase DWR releases on Friday evening as it is outside the timeframe of the SOR.

3. Adult Sockeye Conversion – Jonathan Ebel, ID

a. Adult Snake River Sockeye Passage

- Not a pretty picture
- Sockeye Abundance Estimate (July 18, 2023)

- Bonneville (BON): 4400 > 4500
 - Significantly declined.
- Lower Granite (LWG): 737
 - Conditions were okay above LWG for quite a bit of the early part of the run, which includes most of the natural origin fish.
 - Temperatures in the Salmon River above the Middle Fork, only place they are able to get temperature data, did get hot but it has dropped back into the 67° - 69°F range with the recent cold front that moved through. Anatone is hot too.
- Conversion Rates
 - Not converting well this year. Head Scratcher.
 - Have not changed much over the last week.
 - Except for:
 - BON > LWG: increased
 - IHR > LWG: increased
 - Shows where fish are in the system.
 - Conversion Context
 - 2021: Bad situation across the Snake Basin for water availability and temperatures and “people-killing” heatwaves.
 - 2022: Good year
 - YTD Bonneville to McNary:

2022 BON > MCN:	.85
2023 BON > MCN:	.53

More similar to 2021 in terms of conversion rate. Should see the conversion rate increase from Bonneville to McNary but Ebel is not sure that it will increase by much at this point.

Looking at losing about 50% of the fish between Bonneville and McNary Dams.
 - YTD Ice Harbor to Lower Granite:

Should see this continue to pick up because of the number of fish that are in this reach.

2022 IHR > LWG:	.97
2021 IHR > LWG:	.6

Conversion this year similar to 2021.

- Put in perspective, conversion rates are a lot lower this year than what Ebel would have expected based on the June temperatures. He said he would attribute this partly to the later arrival of Snake River sockeye than years past. Ebel said that he thinks that this is really impacting them.
- Travel Times
 - Getting longer in terms of fish actually making it. Temperature related.

Brian Marotz, MT, asked if there are any known thermal refuges like deep holes or reaches that have ground water influence in that area.

Ebel said it is very limited. He said there are some cooler water refuges in the Columbia between BON and MCN. Drano Lake and some of the tributary mouths. In the Snake it is much more limited. There is a small area around Lyons Ferry and maybe there is some groundwater outflow at the Tucannon but it is very limited in the Snake. Ebel said that he does not necessarily know where the fish would be holding up. He said that TMT has had this discussion multiple times in the past. There is not a lot of places for sockeye to hide and often they don't hide they move on through. Ebel said they have tried to track it in the past, but the abundance is so low that they do not like to tag them, or they cannot get their hands on them to tag them. Once they make it through the hydro system there is more places for them to hide, particularly after them get into the Salmon River.

Swieca said that yesterday they briefly discussed fall back at IHR for sockeye. She said that when she was looking at the DART tool yesterday it was looking like the majority of the fish that falling back were Snake River fish. She said that she knows that Ebel mentioned that he was going to look into that. She asked if that was what his people are seeing as well, if they are mostly Snake River fallbacks.

Ebel said that their sockeye folks put out an update and he did not reach out to them to see exactly how they, they may have used the DART tool to get the fallback for sockeye, but it is around about 20% at IHR. 7% at LWG. They are having a lot of fallbacks at IHR and Ebel said he would guess that it probably has to do with the temperature of the forebay. He also added that he is not up to speed on the amount of tagging that goes on in the Upper Columbia. He said that he knows generally that there are more PIT tags in Upper Columbia Sockeye. So, if you are using PIT tags to look at fallback at IHR you are going to have better data from the Snake River fish than the Columbia River fish that might be falling back over that project. And they need to reascend.

Ebel said that if TMT wants the sad tale of sockeye, he can provide the update next week.

4. Operations Review

a. Reservoirs

Reclamation – Joel Fenolio

- Hungry Horse Dam
 - Midnight elevation: 3552 ft.

- Average Outflows: 2 kcfs
- Average Inflows: 850 cfs

- Columbia Falls getting close to where they will have to bring up releases to meet minimums, probably in the next couple of weeks. A little earlier than they were projecting over the last couple weeks. Things are drier out there than projected.

- Grand Coulee Dam
 - Midnight elevation: 1284.5 ft.
 - Average Inflows: 105 kcfs
 - Average Outflows: 109 kcfs

 - Drafting and on track to get to 1277' by the end of August.

Corps – Lisa Wright

- Libby Dam
 - Midnight elevation: 2451.6 ft.
 - Inflows: 8.95 kcfs
 - Outflows: 8.5 kcfs

- Albeni Falls
 - Midnight elevation: 2062.2 ft. (Hope gauge)
 - Inflows: 7.6 kcfs
 - Outflows: 8.1 kcfs

- Dworshak Dam
 - Midnight elevation: 1575.9 ft.
 - Inflows: 1 kcfs
 - Outflows: 9.9 kcfs

- Lower Granite average outflows: 30.3 kcfs
- McNary average outflows: 143.8 kcfs
- Bonneville average outflows: 141.8 kcfs

b. Water Quality – *Dan Turner, Corps*

- TDG is less than the State Water Quality standards.

- LMN tailwater gauge stop reporting data last night, field techs are out to check on that and hopefully it will be replaced today.

c. Fish

Salmon – Kelsey Swieca, NOAA

- Adults
 - Bonneville
 - Chinook
 - Daily Passage: 400 – 500
 - YTD Total: 76000
 - Steelhead
 - Daily Passage: >1000
 - Sockeye
 - Few hundred passing per day.
 - Bonneville numbers are rapidly winding down.
 - 2023 YTD sockeye totals are roughly at the ten-year average and 50% of 2022 YTD.
 - Lower Granite
 - Chinook
 - Daily Passage: 50
 - Steelhead
 - Daily Passage: 50
 - Sockeye
 - Daily Passage: 25 – 100
- Juveniles
 - Subyearlings are main salmonids in the system as is typical for this time of year.

d. Power System – *Tony Norris, BPA*

- Temperatures and energy use have moderated.

5. Public Comments: None

6. Set agenda for next meeting – August 2, 2023

- a. SOR polling
- b. Adult Sockeye Conversion Update

Today’s Attendees:

Agency	TMT Representative(s)
Army Corps of Engineers	Doug Baus (chair), Lisa Wright
Bonneville Power Administration	Tony Norris, Scott Bettin
Bureau of Reclamation	Joel Fenolio
NOAA Fisheries	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	
Colville Tribe	Kirk Truscott
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	

Other Attendees (non-TMT members):

COE – Dan Turner, Willow Walker, Aaron Marshall, Chris Peery

DS Consulting – Emily Stranz (Facilitator), Colby Mills

CorSource – Andrea Ausmus (BPA note taker, Contractor)

Avista – Jared ?

Clearing Up – K.C. Mehaffey

Oregon DEQ – David Gruen

Chelan PUD – Jay Fintz

Columbia Basin Bulletin – Mike O’Bryant

Douglas PUD – Andrew Gingerich