

## **COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM**

August 1, 2018

Facilitator's Summary

Facilitator: Emily Stranz; Notes: Charles Wiggins, 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. 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://www.nwd-wc.usace.army.mil/tmt/agendas/2018/>*

### **Dworshak Dam Operations**

Alfredo Rodriguez, Corps, updated TMT on operations at Dworshak Dam. Several supporting materials are posted to the agenda for today's meeting on the TMT website. The current reservoir elevation is about 1,570 feet; inflows are between 1.5-1.8 kcfs and outflow is 13 kcfs. TDG levels are 108.8% in the tailrace and 101% in the hatchery. Water temperature in the Lower Granite tailrace has been around 68 degrees F; water temperature is high as a result of recent spill at Lower Granite. Looking at the Lower Granite forebay temperature string shows water temperatures of 69 degrees F at 15 meters depth. The weather forecast for Lewiston suggests the region will be out of the heat wave today (8/1), with temperatures reducing for the next five days and the possibility of a slight temperature increase on Sunday, August 5.

Alfredo walked the group through a number of modelled temperature comparisons showing expected impact of 12.5 kcfs and 10.5 kcfs Dworshak outflows on temperatures in the Lower Granite tailrace. The model showing an operation to maintain 12.5kcfs outflow for the next week results in water temperatures dropping closer to 66-67 by August 8<sup>th</sup>.

Alfredo reported that at the current elevation, in order to meet the end-of-August elevation target of 1,535 feet, the project would have to discharge an average 9.5 kcfs through August. He also noted that the project is spilling the coldest water possible. After discussion, TMT members agreed to hold 12.5 kcfs outflow at Dworshak through Friday, August 3<sup>rd</sup>, and to drop down to 10.5 kcfs at 0000 hours on Saturday, August 4<sup>th</sup>. The 10.5 kcfs outflow will consist of full powerhouse (9.8 kcfs) and some spill.

- **ACTION: The Corps will hold Dworshak outflow at 12.5 kcfs until midnight Friday, August 3rd, then decrease discharge to 10.5 kcfs at 0000 on Saturday, August 4th.**

Tony Norris, BPA, reported that the cause of the recent outages at Dworshak has been identified as an incorrectly connected sensor on a transformer. The issue has been solved and is not expected to recur.

### **Little Goose Dam Operations**

Doug Baus, Corps, described operations at Little Goose Dam. Currently the project is discharging 34.9 kcfs, with 24.0 kcfs generation and 10.5 kcfs spill. Doug noted that on Friday, July 27, after the TMT call, the Corps sent an email to TMT detailing the operation that they planned to implement. The operation consisted of closing the Little Goose adjustable spillway weir (ASW) and shifting to the Uniform No ASW pattern in the 2018 Fish Passage Plan (Table LGS-10) daily from 4am-4pm through Wednesday, August 1. Between the hours of 4pm-4am, the Corps would re-open the ASW per the spill pattern in FPP (table LGS-8) each day from 4 pm-4 am to provide surface passage. Doug explained that because of a component malfunction, the Corps could not operate the ASW from 4pm Saturday, July 28 through 4pm Tuesday, July 31, and thus the ASW was left in the closed position. The ASW was brought back in service and opened at 1630 hours on July 31<sup>st</sup>.

Today, August 1 at 4:00pm, the interim operation noted above will be complete and the project will return

to normal FPP operations, until, per the FPP criteria, the ASW is closed on or after August 1 when inflows drop below 35 kcfs and are projected to stay below 35 kcfs for 3 days. Once the ASW is closed for the season, the FPP states that it will stay closed. This however, is a rollover from previous years, when a crew was needed to open/close the old TSW. Now the ASW is automated and can be opened and closed from the control room (when functioning) and so if desired, could be opened back up. This would involve coordination through FPOM.

Paul Wagner, NOAA, noted that sockeye continue to pass Lower Granite, however, there was not a significant increase in passage at Little Goose as a result of the ASW closure. It remains uncertain what factors explain the differential between sockeye counts present at Little Goose and Lower Monumental dams, and there are a number of hypothesis that were shared, including: upper Columbia overshoots, re-ascension, fish passing through the locks, shad or other species being counted as sockeye, or a temperature differential in the ladders causing a passage block. Dave Swank, USFWS, offered a perspective that water temperatures in the fish ladders could be causing passage issues for adult Snake River sockeye. He pointed to temperature data and a preliminary assessment which he agreed to provide to Russ Keifer, ID, for review. Russ noted that IDFG specialists have been looking into the sockeye passage situation and available information and have concluded that the fish in question are most likely Upper Columbia overshoots. He pointed to the Ice Harbor window counts of unclipped fish (see July TMT summaries). Additionally, Russ noted that IDFG estimates 282 Snake River sockeye returns based on PIT-tag detections at Bonneville. He noted that this is a rough estimate based on a small number of PIT-tagged fish. Dave and Russ were encouraged to continue this conversation offline. It was suggested that a post season analysis of sockeye passage could be provided at the TMT Year End Review.

### **Operations Review**

**Reservoirs:** Joel Fenolio, BOR, reported on Bureau of Reclamation projects:

- Hungry Horse midnight elevation 3558.3 feet; current discharge is 3 kcfs and will likely be reduced to 2.7 kcfs soon; inflows are projected to be 2.5 kcfs.
- Grand Coulee midnight elevation was 1,282.6 feet; the project expects to be to 1,279.6 feet by the end of August.

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

- Libby midnight elevation was 2,447.9 feet; average inflows were 8.3 kcfs; outflows were 9.0 kcfs.
- Albeni Falls midnight elevation was 2,062.3 feet; yesterday's average inflows were 15.4 kcfs; outflows were 15.9 kcfs.
- Dworshak midnight elevation was 1,570.5 ft.; inflows were 1.4 kcfs; outflows were 12.9 kcfs.
- Lower Granite average outflows were 33.4 kcfs.
- McNary average outflows were 180.3 kcfs.
- Bonneville average outflows were 162.8 kcfs.

**Water Quality:** Dan Turner, Corps, reported on water quality. The Corps is implementing the Summer FOP spill rates. Flows are dropping and thus projects are operating on minimum generation and spilling the rest. All TDG values all are below state standards and all TDG gauges in the network are functioning.

**Fish:** Paul Wagner, NOAA, reported on fish. Regarding adults, he noted that yesterday, was the last day that Chinook adults and jacks were counted as "summer" Chinook and are now counted as "fall" Chinook. At Bonneville Dam, both summer Chinook and sockeye passage is 60% of the 10-year average. Chinook jack passage is 20% of the 10-year average. Steelhead and unclipped steelhead passage is 35%

of the 10-year; and lamprey passage is 158% of the 10-year average. At Lower Granite summer Chinook passage is 42% of the 10-year, jacks are at 12% of the 10 and sockeye passage is 25% of the 10-year average. Paul noted that shad had a very high run this year.

Russ Kiefer, ID, reported that Snake River sockeye have been observed in the basin: the first sockeye was observed on July 27<sup>th</sup> and as of July 29<sup>th</sup>, 5 had been captured.

Paul also reported on juveniles. He noted that this is the end of the season for all juveniles except sub-yearlings, with numbers decreasing at all projects. Due to water temperatures above 70 degrees F, McNary, John Day, and Bonneville have all switched to reduced sampling protocol.

**Power Supply:** Tony Norris, BPA, reported that the week has been hot, with variable winds, so loads have been higher than usual. Transmission has been challenging because of fires in the region, and in California.

**The next TMT meeting is a conference call on August 8, 2018, at 9:00 AM.**

*This summary was prepared by the impartial facilitation team of DS Consulting. Please send questions, comments or revisions to [charles@dsconsult.co](mailto:charles@dsconsult.co)*

**Columbia River Regional Forum**  
**TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES**

**August 1, 2018**

**Minutes: Melissa Haskin, FLUX Resources**

**1. Introduction**

Representatives of NOAA, USFWS, ID, OR, MT, Nez Perce, Colville, Warm Springs, Corps, BPA, Reclamation, and others participated in today's TMT meeting chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. See the last page for the list of TMT members present and other attendees.

**2. Meeting Minutes**

Approval of meeting minutes was postponed until the next in-person TMT meeting August 18.

**3. Dworshak Dam Operations - Alfredo Rodriguez, Corps**

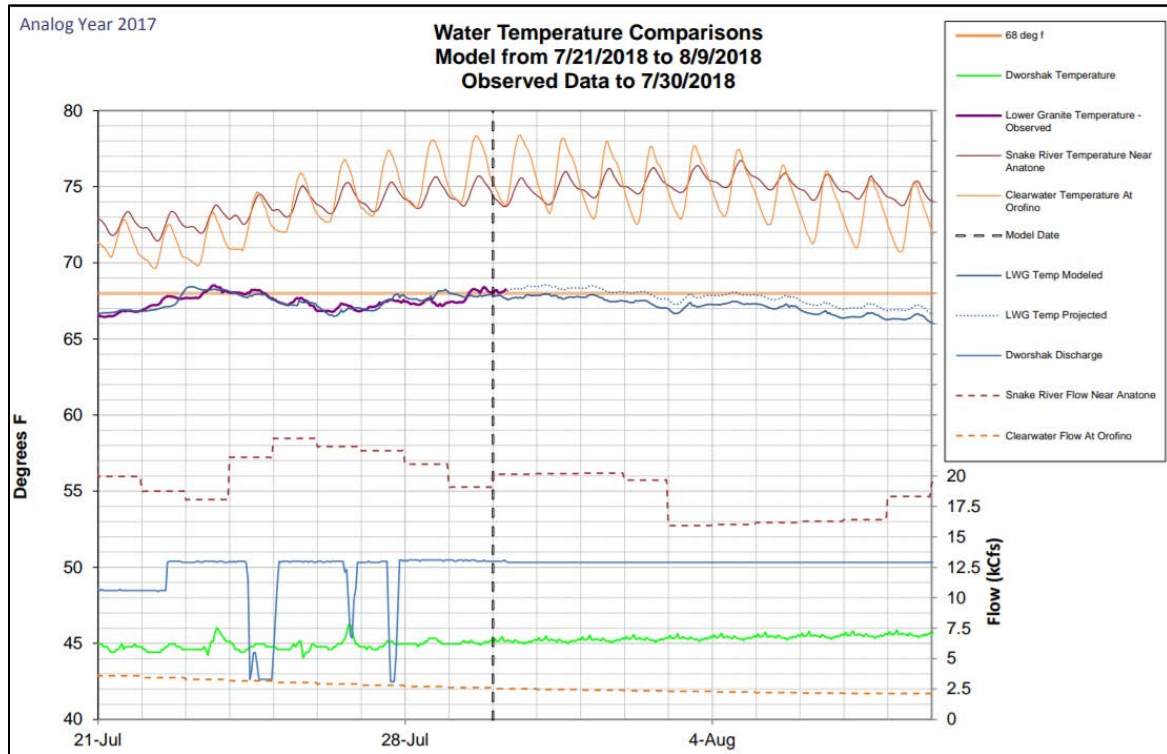
Alfredo Rodriguez, Corps NWW, reported on operations at Dworshak Dam. The forebay is currently at 1,570 ft elevation with outflows of 13 kcfs and inflows of 1.5-1.8 kcfs over the last week. TDG is 108.8% at the tailwater and 100.1% at the downstream hatchery. Temperatures are 68°F in the Lower Granite tailrace, higher than expected, possibly due to spill at Lower Granite.

The current weather forecast for Lewiston indicates today is one of the last days of the heat wave, then temperatures decrease to lower than average temperatures for some time. Temperatures will rise slightly on Sunday.

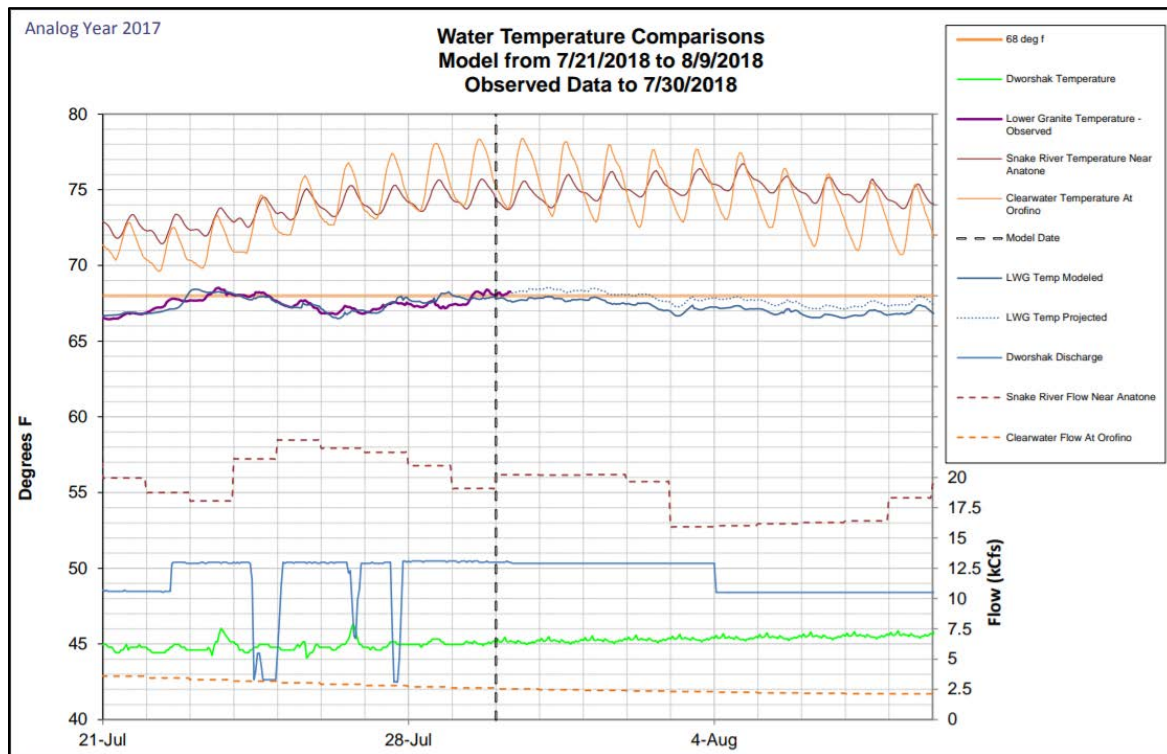
The root of the cause of the outage at Dworshak last week has been resolved by BPA.

Rodriquez showed TMT four graphs illustrating forecasted model results of Lower Granite tailrace temperatures at different Dworshak outflows:

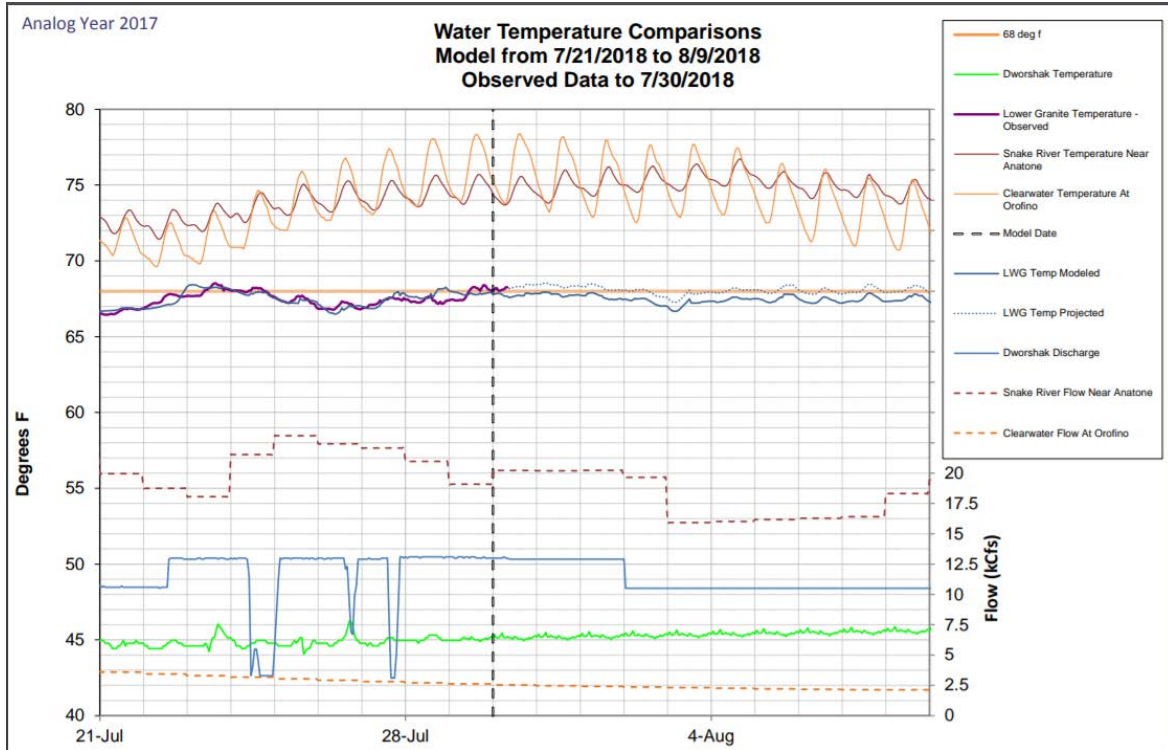
Graph 1 illustrates maintaining outflows of 12.5 kcfs:



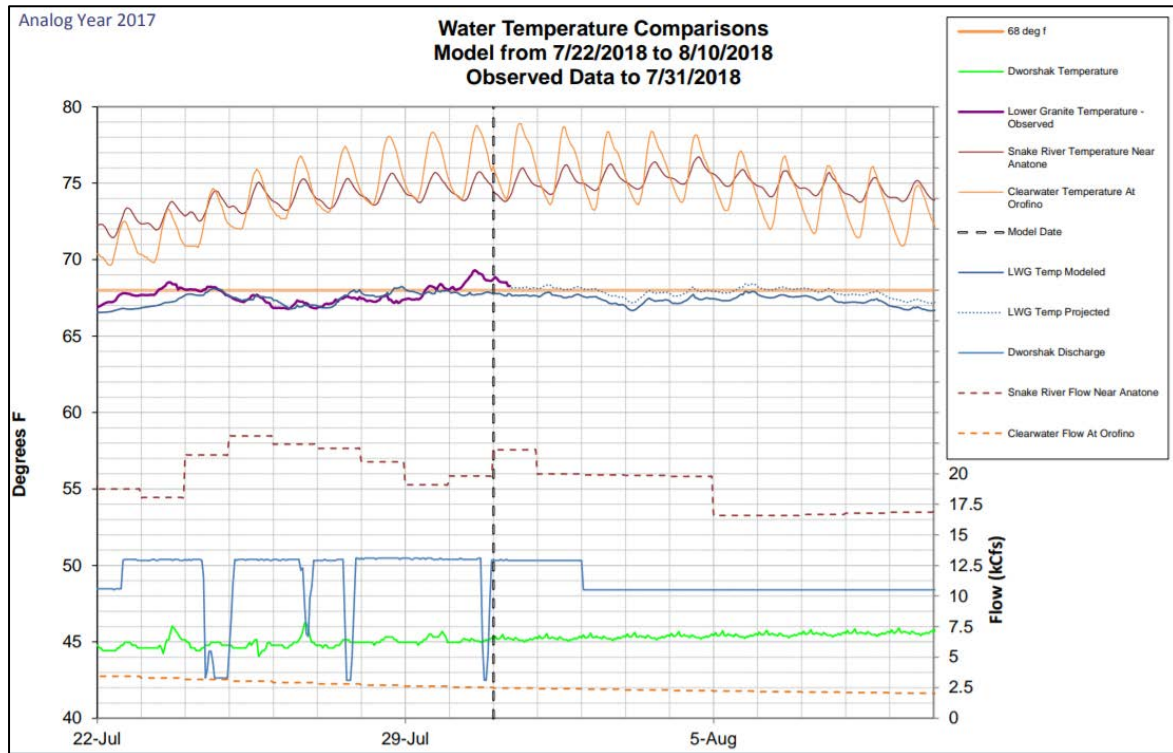
Graph 2 illustrates outflows reduced to 10.5 kcfs Friday at midnight:



Graph 3 illustrates a drop to 10.5 kcfs tonight:



Graph 4 shows outflows dropped to 10.5 kcfs tonight and reflects yesterday's outage:



Responding to a question from last week, Rodriguez reported that Dworshak outflows would need to average 9.5 kcfs during August to reach the end of month target elevation of 1,535 feet.

Paul Wagner asked if Dworshak was releasing the coolest water it can at the deepest depth possible. Rodriguez replied that yes, Dworshak is releasing the coolest water possible.

TMT members discussed a timeline for dropping Dworshak outflows. Tony Norris, BPA, voiced that BPA's preference would be to wait until at least Thursday night to make a change for planning purposes. Russ Kiefer, ID, and Dave Swank, USFWS, both agreed that the best option seems to be keeping current flows until Friday and then adjusting.

Part of this discussion involved the closure date of the Lower Granite Dam RSW, which is forecasted to close on or around August 4-5 when flows drop below 30 kcfs, per criteria in the Fish Passage Plan.

Paul Wagner, NOAA, noted that water temperatures generally decrease as we move into August as the hours of daylight get shorter. He said that historically, Dworshak outflows have been reduced to as little as 8 kcfs. Based on this information and the forecast for below average temperatures in Lewiston, ID, Wagner said his preference was to remain at current outflows of 12.9 kcfs until August 4.

Dave Statler, Nez Perce, agreed with others, saying he would not object to the plan and that it was smart since looking forward it is important to conserve as much Dworshak water as possible. He felt this was a reasonable plan since outages at Dworshak seem to be resolved.

Steve Hall, Corps, reported that powerhouse capacity is currently 9.8 kcfs so a flow of 10.5 would include about 1 kcfs of spill.

Jen Graham, Warm Springs; Tony Norris, BPA; Joel Fenolio, Reclamation; and Sheri Sears, Colville, all were agreeable to the plan.

➔ **ACTION:** The Corps will maintain Dworshak outflows of 12.9 kcfs through Friday (8/3) at midnight, then drop to 10.5 kcfs at 0001 Saturday (8/4).

## **2. Little Goose Dam Operations - Doug Baus, Corps**

Doug Baus, Corps, updated TMT on operations at Little Goose Dam. Following last week's conference call on Friday, July 27, Lisa Wright, Corps, sent the following email to TMT:

*“Following up on today's TMT conference call, the Corps will continue the operation to close the Little Goose adjustable spillway weir (ASW) and shift to the Uniform No ASW pattern in the 2018 Fish Passage Plan Table LGS-10 daily from 4am-4pm through Wednesday, August 1, as recommended by NOAA Fisheries and Idaho. The intent of this*

*operation is to improve Little Goose tailrace hydraulic conditions for endangered adult Snake River sockeye as they migrate upstream. The Corps will re-open the ASW per the spill pattern in FPP Table LGS-8 each day from 4pm-4am to provide surface passage for threatened juvenile Snake River fall Chinook. As discussed, the ASW will be closed for the remainder of the season per FPP criteria on or after August 1 at 0001 hours when flows are below 35 kcfs and forecasted to stay below 35 kcfs for at least three days. This operation will be on the agenda for next week's in-person TMT meeting on Wednesday, August 1."*

Baus updated TMT on how the operation was going thus far. Currently, Little Goose total outflow is 34.9 kcfs, which includes 24 kcfs for generation and 10.5 kcfs spill. As coordinated, the ASW is closed from 4am-4pm daily since last Thursday, July 26, through today, August 1. However, due to an equipment malfunction, the ASW was unable to be reopened as scheduled at 4pm on Saturday, July 28, and remained closed until repairs were made on Tuesday, July 31. As a result, the Corps was unable to implement the coordinated operation to re-open the ASW from 4pm-4am on three days (July 28, 29, and 30).

Russ Kiefer, ID, wondered if there was a correlation between operating the ASW and forebay water temperatures, noting that during the last few days the water was "toasty" on the surface until right around the time the ASW was closed at 4am.

Lisa Wright pulled up forebay temperature data from the last few days. A few ideas were put on the table such as if warm water evacuating from the forebay when the ASW opens at 4pm could be increasing the tailrace temperature overnight. Another idea was that it was just normal daily cooling and warming. Data from the three days that the ASW remained closed continuously due to the equipment malfunction had similar temperature swings throughout the day compared to when the ASW was opened from 4pm-4am, so there didn't seem to be a clear connection between ASW operation and forebay surface temperatures. Members agreed there was not enough data or analysis at the meeting to come to a conclusion.

Dave Swank, USFWS, asked why Fish Passage Plan criteria to close the Little Goose ASW is different from other projects – the Little Goose ASW is closed for the rest of the season on or after August 1 at flows below 35 kcfs, compared to other projects that close their spillway weir at flows below 30 kcfs (no date trigger), then re-open if flows increase above 30 kcfs. Lisa Wright, Corps, clarified that the Little Goose criteria are unique since the project used to need a crew and up to a day of work to change the spillway weir, whereas the other projects can open and close the spillway weirs automatically from the control room. However, the new ASW at Little Goose does not require a crew and can be operated from the control room, so the criteria in the FPP can be updated to reflect that. In the meantime, the ASW operation can be modified in-season via FPOM or TMT adaptive management coordination.

### 3. Adult Sockeye Passage - Paul Wagner, NOAA

Paul Wagner, NOAA, reported on sockeye passage. There is still a baffling differential between counts at Lower Monumental and Little Goose.

Dave Swank, USFWS, presented some hypotheses he had about the differential, noting that based on analyses from his staff that the higher sockeye counts at Ice Harbor are not likely due to Columbia River strays, but could be naturally-produced (unclipped) Snake River sockeye. He reported that no PIT-tagged Columbia River sockeye has ever been detected at Ice Harbor. He is looking at temperature differentials in the fishways and in the exit pools at Lower Monumental and Little Goose as a more likely culprit that blocked fish passage. He says the sample size makes analysis particularly hard. He said if fish have not passed by now they probably are not going to make it.

Erick Van Dyke expressed his concern as well, saying that he understood the Corps decision to implement the operation, however, he also wanted to make sure it was clear that the operation was not supported by the whole group. He pointed out that last week's decision was based on a hypothesis and thus far he had not seen a quantifiable benefit to the fish. He voiced that Swank's data would have been nice to review before the poll at last week's TMT.

TMT members continued to discuss what could be the root cause of the differential: fish going through the locks? Shad being counted as sockeye? More questions were raised than definitive answers. Russ Kiefer, ID, asked to see Swank's data and analysis because it contradicted IDFG's evaluation that indicated there were no conversion problems with adult Snake River sockeye. Swank said he had not completed an official analysis and did not have a paper for Kiefer to review. Kiefer voiced that his experts did not agree with what Swank was presenting.

➔ **ACTION:** Dave Swank, USFWS, will prepare a report and send to Russ Kiefer, ID, for review.

➔ **ACTION:** This topic may be added to the TMT year-end-review.

### 4. Operations Review

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

Hungry Horse: midnight elevation 3,558.34 ft, releasing 3 kcfs and reducing to 2.7 tonight for a week or two. Flat flow in September is projected to be 2.5-2.6 kcfs.

Grand Coulee: midnight elevation 1,282.6 ft, dropping to 1279.6 ft by end of this month.

Libby: midnight elevation 2,447.9, inflow 8.3 kcfs, outflow 9.0 kcfs (bull trout minimum).

Albeni Falls: 2062.3, ft, inflow 15.4 kcfs, outflow 15.9 kcfs.

Dworshak: 1,570.5 ft, inflow 1.4 kcfs, outflow 12.9 kcfs.

Lower Granite: outflow 33.4 kcfs.

McNary: outflow 180.3 kcfs.

Bonneville: outflow 162.8 kcfs.

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

The Corps is spilling in accordance with the Summer FOP. Flows are dropping off and some projects are operating at minimum generation and spilling the rest. TDG is under the gas cap.

***c. Fish – Paul Wagner, NOAA Fisheries***

Adults: Yesterday was the last day that adult Chinook counted at Bonneville Dam are recorded as “summer” Chinook, and they are now being counted as “fall” Chinook.

Bonneville: Chinook adults 61,057, 60% of the 10-year average; Chinook jacks 4,349, 20% of the 10-year average; steelhead 34,907 (15,725 unclipped), 35% of the 10-year average; sockeye 193,473, 60% of the 10-year average; lamprey 37,312

Lower Granite: Chinook adults 69,039, 42% of 10-year average; Chinook jacks 786, or 12% of the 10-year average; sockeye 259, 25% of the 10-year average

Juveniles: Sub-yearling Chinook are decreasing at all projects. All of the lower Columbia River projects are on reduced sampling protocols because of increased water temperatures so the numbers should be taken with a grain of salt.

***d. Power – Tony Norris, BPA***

Load is higher due to increased temperatures. Other than that, nothing notable to report.

**7. Next TMT**

The next TMT meeting is a conference call scheduled for August 8, 2018.

**Today’s Attendees:**

**TMT Members:**

Corps	Doug Baus (Chair), Julie Ammann, Lisa Wright
BPA	Tony Norris, Scott Bettin
Reclamation	Joel Fenolio
NOAA Fisheries	Paul Wagner
US Fish & Wildlife	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Russ Kiefer
Montana	Jim Litchfield
Nez Perce Tribe	Dave Statler

Umatilla Tribe	N/A
Colville Tribe	Sheri Sears
Warm Springs Tribe	Jen Graham
Kootenai Tribe	N/A
Spokane Tribe	N/A

**Other Attendees:**

Corps – Dan Turner, Aaron Marshall, Laura Hamilton, Alfredo Rodriguez, John Heitstuman, Jonathan Roberts, Steve Hall

Yakama Nation Fisheries – Tom Iverson

Northwest Power and Conservation Council (NPCC) – Leslie Bach

DS Consulting – Emily Stranz (Facilitator), Charles Wiggins

FLUX Resources – Melissa Haskin (Notetaker)