

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

November 16, 2022

Facilitator's Summary

Facilitation Team: Emily Stranz & Colby Mills, DS Consulting

Review Meeting Summaries & Minutes – TMT Members approved the official minutes and facilitator's summary from October 19, and will review the minutes and summary from November 2 at the next TMT meeting.

Chum Operation – Doug Baus, Corps, reported on the October 19 TMT coordinated chum operation which started on November 1 at 0600 hours. Currently, the operation is in step 2, which operates Bonneville Dam outflow to provide a tailwater elevation in the range of 11.3-13.0 feet. The complete operational steps are posted to the TMT website.

At 0700 hours this morning, Bonneville Dam's project outflow was 141.6 kcfs, with a tailwater elevation of 11.5 feet. NWRFC forecasted inflows range from 138 kcfs on November 17 to 125 kcfs on November 23. The 10-day meteorological forecast period shows a high-pressure system on days 1-5, resulting in little precipitation and cold temperatures, while days 6-10 show incoming precipitation and rising freezing level elevations. The climate forecast for the 6-10-day outlook shows temperatures generally above average to near normal (above average west of the Cascades, near normal east of the Cascades), and a probability of above average precipitation. The 8-14-day outlook shows a probability of above average temperatures and precipitation for the entire of the Columbia River Basin.

Trevor Conder, NOAA, reported that chum have been passing Bonneville in single digits until yesterday with 23; YTD passage is 171.

Zero Generation

Ben Hausmann, BPA, reported that the trigger (implemented in relation to date and migrating adult steelhead abundance) for Snake River zero generation operations has not been met yet. The criteria, as identified in Water Management Plan (WMP), are posted to the TMT website for review. Jonathan Ebel, IDFG, reviewed the table describing the Few Migrating Adult Criterion Trigger (SOR 2005-22). As of November 14, total steelhead since July 1 is 70,841, and total unclipped steelhead is 17,532, which results in a "few" criteria of less than 35 total steelhead and less than 10 wild as a rolling 3-day average (2 criteria, both categories must be met for operations to be implemented and as environmental conditions allow).

TMT Members clarified the communication pathway for confirming that the criteria have been met. NOAA and other regional fish managers are monitoring the daily counts, it was expected that BPA will also keep an eye on the count data. Trevor/NOAA is point-of-contact to communicate with BPA and FPAC when they have verified that criteria have been met.

2022 Preliminary Survival Estimates

Trevor reviewed NOAA's 2022 preliminary survival estimates that were released a couple weeks ago, noting that this is not final, and that numbers can and do change (memo and NOAA's presentation are posted to the TMT website). This estimate includes trawl, detections from pile dikes and detections from mini-jacks upstream in the ladder. The final report will be released in early 2023, and will include avian estuary detections, and possibly inland avian detections. Final reports often have very little changes between the drafts, however this one specifically could have a 3-4% change, Trevor noted, possibly due to the impact of avian detections on the final estimate.

NOAA's presentation on 2022 preliminary survival estimates included: flow and temperature, Snake River spill volume and percentage, TDG, travel time, detection efficiency, survival (Chinook, steelhead, sockeye), and transport.

Takeaways include:

- Survival in 2022 was generally average, with some highs and lows.
- Estimates include trawl, detections from pile dikes and the adult ladder, and will later incorporate bird colony PIT detections.
- Low detection rates in the JBS and reduced tagging leads to lower precision survival estimates.
- Cooler than average water temperatures combined with late runoff likely are affecting smolt survival and transport.
- The region should place a high priority on increasing detection capabilities to improve the accuracy of these estimates.

Trevor clarified that the Northwest Fisheries Science Center is looking to determine if variability reduces precision of the estimates, and if there are potential assumption violations (uncertainty whether avian predators captured fish above or below the dam). Although there seem to be 2 separate migration seasons, there has not been any comparison between the two that Trevor knew of; he will confirm.

In response to concerns around detection efficiency and lack of precision, Trevor noted that continuing to look at active tags and avian colony predation rates are potential next steps, as well as continuing to work on gaining insight and detection efficiency at McNary. Working to gain detection capability below Bonneville remains a priority. The 2022 spill volume percentage was 59.5%, which was above the long-term average, but lower than in 2020 and 2021.

TMT Members appreciated the detailed and visual presentation, noting that these kinds of memos are very informative and helpful in analyzing operational performance. Jay Hesse, Nez Perce Tribe, noted the Tribe's perspective that true gains in adult returns from recent spill operations come from reduced powerhouse encounters and accelerated travel times to the ocean, that would have been achieved from other operations. Jonathan also noted that when looking at reach or system level survival, even modeling doesn't predict a sizeable change in juvenile survival from this change in operations (not one that would be measurable under the levels of current precision), and that generally average juvenile survival rates are what was predicted in the CRSO EIS modeling.

Questions or Comments from Members of the Public: there were no questions or comments from members of the public.

The next scheduled TMT meeting is on December 14 at 9:00 AM.

**Columbia River Regional Forum
Technical Management Team
DRAFT OFFICIAL MINUTES
Wednesday, November 16, 2022**

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 Meeting Summaries & Minutes – 10/19 and 11/2

- October 19: summaries and minutes were approved.
- November 2: Jonathan Ebel, ID, asked for more time to look at the meeting notes.

2. Chum Operation – Doug Baus, Corps; Joel Fenolio, BOR; Kelsey Swieca, NOAA Fisheries; Tony Norris, BPA

Reminder: Next TMT meeting is in mid-December. At that time, the discussion will be around when to transition from spawning operations to incubation operations.

a. Bonneville Dam - Hourly Data (hour ending 7)

- Outflow: 141.6 kcfs
- Tailwater elevation: 11.5 feet

b. Bonneville Dam – Inflow Forecast – Doug Baus, Corps

- Inflow High: 138 kcfs (November 17)
- Inflow Low: 125 kcfs (November 23)

c. NWRFC 10-Day Weather Forecast – Doug Baus, Corps

- Days 1 – 5: High-pressure system resulting in little precipitation and cold temperatures.
- Day 6: Starting to see precipitation and rising freezing level.
- Days 6 – 10: More precipitation and warming.

d. NWRFC Climate Forecast – Doug Baus, Corps

- 6 – 10 Day Outlooks: Temperatures are above average (west of Cascades) to near normal (east of Cascade).
- 8 - 14 Day Outlooks: Probability for temperature and precipitation are both above average.

- e. Bonneville Dam Adult Salmon Counts – Trevor Conder, NOAA Fisheries
 - Chum to date pass Bonneville: 171
 - Up to November 14 only single digits of chum.
 - November 15: 23 chum (small uptick)
 - f. October 19, 2022, TMT Coordinated Chum Operation
 - Baus shared that the Coordinated Chum Operation is on Step 2.
- 3. Zero Generation – Trevor Conder, NOAA Fisheries; and Doug Baus, Corps-NWD; Jonathan Ebel, FPAC Chair**
- a. Criteria
 - Baus asked for clarification from NOAA on the communication pathway once the criteria are achieved.
 - Conder shared that this was discussed at FPAC on November 16, and unless there is a substantial change in counts, the criteria should be followed.
 - Ebel added that in SOR 2005-22 the Fish Managers defined the Few Criteria (Table 12). The table refers to the number of adult steelhead going upstream minus the number going down the ladder, since July 1.
 - b. Adult Salmon Counts
 - As of Monday (November 14)
 - Total steelhead (includes known hatchery origin, clipped, and unclipped steelhead): 70,841
 - Unclipped: 17,532
 - Two criteria for “few, if any”:
 - Unclipped steelhead < 10
 - Total Steelhead < 35
 - Both categories must be met as a rolling 3-day average.
 - Norris (BPA) monitors the counts and will notify NOAA. NOAA will share with FPAC and everyone else.

Erick Van Dyke, Oregon, asked for clarification as to what Baus was looking to identify for the communication nexus.

Baus relayed that there is a desire to know when the criteria have been achieved and so can implement the operation. Baus added that the communication was intended to provide more transparency for those in the region.

Van Dyke shared that many people are tracking this closely but there is an interest to have a finer scale of understanding of when BPA can implement the operation. He added that some in the basin still find this operation to be detrimental to fish passage and protection of fish. He thinks that the question is appropriate but would like to know more about the nexus and that it is more than just the “federal family” needing information and being on the same page in meeting the criteria.

Baus added that his understanding is that NOAA Fisheries and BPA will be in communication once the criteria are achieved. That information will then be shared with FPAC. The Action Agencies will then provide the opportunity to implement the operation and then report back to TMT.

Conder added that he is not able to monitor daily counts but Norris is and Norris will then be able to notify him when it occurs. Conder will then make sure that FPAC Chair and TMT Chair are aware of the decision or understanding as quickly as possible.

Jay Hesse, Nez Perce, countered that monitoring is a routine exercise of the Fish Managers and is discussed in the regular FPAC meetings. When they are approaching those numbers they are all on point and they start daily tracking. He wants to be clear that they are not relying on BPA to signal and instigate when the triggers are met.

Stranz asked whether there should be a formal shift for the FPAC chair or NOAA should be the one to contact BPA when the criteria is met.

Ebel shared that from Idaho’s standpoint he does not have a problem with any of these things. As FPAC Chair he feels that it is a restriction on BPA and they should be looking at it. The way they have done it in the past is fine. A communication that goes from NOAA to BPA with a CC for the Fish Managers.

Conder said that as soon as there is they are made aware (whether from their own or others recognition) of the criteria being met they will check to confirm and then send out notification as soon as they are able. They may not be within an hour of the trigger but he will be the communication point for the information.

4. 2022 Preliminary Survival Estimates - *Trevor Conder, NOAA Fisheries*

a. Memo

- NOAA Science Center annually produces the preliminary survival estimate. It is not the final and the numbers can and do change. The preliminary report comes out in the fall of the same flow year as the estimates. This estimate includes the trawl, detections from pile dikes and mini jacks detected upstream in the ladder. The final report will come out after the new year and will include avian estuary detections and possibly inland avian detections (as long as it improves the estimate). The final typically does not change but this year may have a 3-4% change eluding to the avian detections may have more of an impact on the final estimate.

b. Presentation

- The flows and temperatures have implications to survival and transport rates.
- This year was interesting, April was much lower than average for temperatures and flows.
- Temperatures remains low over the entire season. However, the flow was moderate in May and then picked up in June to very high including some recorded highs.
- Results in a later fish migration and given the start of transport and can have implications to survival.
- Early April there was average spill volume. Unusual because with the Flex Spill Operation there should be above average. Did pick up as expected and was high towards the end of June.
- TDG increased over the season and got up to the 125 TDG range by June. It also approached 130 TDG during the 200 kcfs flow events.
- Travel time was result of the flow conditions, unusually long travel times during the early part of the season.
- Added detection sites at Lower Granite and Bonneville Dam provided for better detection estimates.
- Diversion from the powerhouse (which is good for the fish) does not help the detection efficiency estimates.
- In general, the survival estimates are average to slightly above average. The survivals were average and the operations did not seem to affect the survivability.
- Lower Granite to McNary was lower but it suffered from poor precision and was not significantly different.
- Columbia River sockeye as a novel approach, but it was not significant, indicative of the low precision issue and highly variable.
- Transported at a higher percent due to the Flex Spill and TDG cap.

Tom Lorz, Umatilla/CRITFC, asked why there was a question of whether the inland detection may not improve the detections.

Conder said that sometimes with more detections there is a chance for increased variability. If there is a lot of variability it can reduce the precision of the estimate. He agrees that it is not likely. There could also be assumption violations with the zone that it would be assumed on whether it was upstream or downstream.

Lorz also asked about whether there is a plan or a way to separate the two spring “seasons” into two different data sets.

Conder does not believe that they have. He would not assume that the numbers were bad because the numbers were low and there was less predation. It was slow but he believes that it is a good question to ask.

Lorz said that there have been some emails and memos eluding to the fact that there was more predation and that it might explain the low early numbers. He would be interested in the comparison if it becomes available.

Morrill asked if Conder could elaborate about the detection efficiency of McNary to Bonneville as it relates to last year.

Conder responded that if there is work continued on the problem then there would be a way to improve the numbers. Conder said he would start by looking at the avian colonies as they may be a significant factor and the predation rates may explain some of the numbers.

Morrill asked what the overall season average of spill percentage in 2022 versus 2020 and 2021.

Conder mean spill to discharge was 46.6 kcfs, which was well above the 36 kcfs of the long-term mean. The spill percentage was 59.5% above the long-term average (39.3%) but it is lower than what was seen in 2020 and 2021 when 65% was maintained for the entire season. When the gas cap is reached, it drives down the percentage.

Van Dyke said that he hears Conder make a recommendation for a McNary change for detection or passage. He asked for clarity on where NOAA is on promoting the need for change below Bonneville.

Conder said that NOAA is in complete agreement that detection below Bonneville is a priority and his understanding is that they are evaluating the pile dike detectors, PD6 and PD7. His understanding was that PD6 had a very high rate detecting yearling chinook. They are evaluating options for the towed array. They are looking at options for below Bonneville to help with these issues as well.

Hesse commented that he finds the memos helpful and informative in evaluating the performance of operations year to year. He wants to remind everyone that while NOAA provided the in-river reach survival estimates, the true gains in adult returns from the high spill operations come from the reduced powerhouse encounters and the accelerated travel times to the ocean from other operations. He wanted to remind everyone that the demographic boost comes later in the life cycle.

Ebel also added that reach and system level survival models do not predict a sizeable change in juvenile survival (especially with the precision of the current models). The predictions were that it was generally average. If there is a need for more information, it can be found in the appendices of the CRSO EIS.

5. Public Comments:

None

6. Set agenda for next meeting - December 14, 2022

- a. Chum Operations (including shift from spawning to incubation operation).

Today's Attendees:

Agency	TMT Representative(s)
Army Corps of Engineers	Doug Baus (chair), Lisa Wright
Bonneville Power Administration	
Bureau of Reclamation	
NOAA Fisheries	Trevor Condor
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	Kirk Truscott
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	Brent Nichols

Other Attendees (non-TMT members):

Corps – Dan Turner, Ashlynn Tate, Alexis Mills, Scott St. John

BPA – Ben Haussmann

NOAA – Chris Magel

DS Consulting – Emily Stranz (Facilitator), Colby Mills

Clearing Up – KC Mehaffey

Douglas PUD – Andrew Gingerich

Columbia Basin Bulletin – Mike O'Bryant

Energy Keepers – Eve James

Portland General Electric – Ruth Burris