COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM
October 27, 2021
Facilitator's Summary
Facilitator: Doug Baus (Corps); Notes: 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/2021/. Suggested edits for the summary are welcome and can be sent to Colby at colby@dsconsult.co.

Chum Operation
Doug Baus, Corps, reminded the group that this unscheduled meeting was to continue the conversation on chum and consider updated forecasts and survey data to inform and confirm a start date of operations. Based on water supply conditions, Action Agencies preferred a start date of November 2 or 3, while Salmon Managers requested a start date of November 1.

Doug confirmed that chum spawning operation parameters include project outflow at all hours to provide a tailwater elevation range of 11.3 – 13 feet. Average outflow at Bonneville Dam for the month of October has been 92 kcfs, with an associated project tailwater elevation average of 8.8 feet. Current forecasts show continued precipitation, and the RFC inflow forecast for the next 10-days is between 82 kcfs and 125 kcfs. At Lower Granite, the inflow forecast is between 17 kcfs and 20 kcfs, and the Willamette as measured at Salem has forecasted discharge between 10 kcfs and 15 kcfs. The most recent gauge height elevation at Hamilton Creek was 22.568 feet on October 27.

RFC weather forecasts for the next 10-days show lots of precipitation in the Portland area and west of the Cascades. Dry weather on day 4 is expected to be followed by more precipitation for the remainder of the 10-day period in Oregon and Washington. Climate forecasts for the 6–10-day outlook show a probability of above average temperatures in the SW Columbia Basin, near normal in the central Columbia basin and below average in the east basin and northwestern Montana. There is a probability of above average precipitation west of the Cascades and near normal east of the Cascades. The 8-14-day outlook shows a probability of above average temperatures and precipitation. Finally, the 30-day outlook shows an equal chance of above or below average temperatures in the northern Columbia basin, a probability of above average temperatures in the southern basin, and a probability of above average precipitation throughout the whole Columbia basin.

Kirk Truscott, Colville Tribes, requested clarification on the chum operating tailwater range, and expressed continued concerns on elevations at Grand Coulee and risk to refill. Tony Norris, BPA, noted that the intent is to minimize the water management impact of the operation while working within a complex set of variables. In regard to a question on how the water management impact of chum operations could affect Lake Roosevelt's elevation, Tony noted that the single trace stream flow showed that the project could potentially be drafting as low as 1,268 feet by the end of December to support chum spawning operation. Chris Runyan, Reclamation, reported that flow augmentation out of Grand Coulee does have a potential to impact spring refill objectives, although at this point longer-term forecasts look good; however, he noted that things can change quickly. Drum gate maintenance at the project will occur in 2022 if the February water supply forecast shows an FRM elevation of 1,265 feet or less on April 30, which would bring the elevation down to 1,255 feet for the work. Otherwise, maintenance would be delayed until next year when it would be a forced year.

→ **ACTION**: Kirk and Tony will follow up offline to share information on the chum operations and Grand Coulee considerations.

→ **ACTION:** Tony will confirm how the trace data are distributed and how TMT members can access results.

Tony reported that recent precipitation occurred further north than forecasted, and that stream flows came in lower than expected due to dry soil conditions. The lack of water contributions from the Snake and Willamette rivers increases the amount of water needed from Grand Coulee to support chum operations. Action Agencies noted that water supply forecasts are still early, and many variables can change; at this point they do not expect chum operations to risk Grand Coulee refill. Charles Morrill, WA, reiterated that conditions suggest that chum operations would not put Grand Coulee more at risk than any other year. Claire McGrath, NOAA, acknowledged the uncertainties, noting that operation parameters are not set in stone and can be adjusted and adaptively managed depending on real time conditions.

Claire reported that as of yesterday there were 8 chum counted over Bonneville, which is a good number for this time of year. Chum are expected in the Ives/Pierce area next week at the latest, and NOAA supports an operation start date range between November 1-4. After the meeting, Charles later confirmed via email to the TMT that chum are clearly present below Bonneville, and that WA believes the decision to operate at a tailwater elevation of 11.3 - 13 feet on November 1 will benefit chum spawning in the Ives/Pierce complex sooner rather than later.

Doug summarized that the chum operation (as posted on the TMT website) will begin on November 1 at 0600 hours, operating to a 11.3-13 tailwater elevation at all hours. The remaining steps are the same as last year's operation.

→ **ACTION**: The AAs will coordinate to start chum spawning operations on November 1 at 0600 hours.

The next scheduled TMT meeting is a conference call on November 3, 2021, at 9:00 AM.

Columbia River Regional Forum

Technical Management Team
DRAFT OFFICIAL MINUTES
October 27, 2021
Minutes: Melissa Haskin, BPA (contractor, FLUX Resources)

Today's TMT web meeting was convened to discuss the start date for chum operations and chaired and facilitated by Doug Baus, Corps. See the end of these minutes for a list of attendees.

1. Chum Operation - Doug Baus, Corps; Joel Fenolio, Reclamation; Claire McGrath, NOAA; and Tony Norris, BPA

The decision to set a start date for the chum spawning operation was deferred at last week's scheduled TMT. Today, the group met to review current information and select a start date for the operation, which calls for a Bonneville Dam tailwater elevation of 11.3-13 ft. during all hours.

Baus began by recapping where the discussion left off last week: The Action Agencies felt it would be prudent to start the operation on November 2 or November 3. FPAC had requested to start the operation on November 1. Both groups had agreed to delay the official decision until this week to allow for additional survey and forecast information to come in.

Baus took the TMT through current forecasts and project data. Bonneville Dam total outflow has been averaging 92 kcfs for the month. The tailwater has averaged 8.8 ft. The 10-day inflow forecast is 82-125 kcfs. At Lower Granite, inflows are expected to be between 17 kcfs and 20 kcfs over the next 10 days. The Willamette River at Salem discharge is expected to be 10-15 kcfs over the next 10 days. The gage at Hamilton Creek is at 22.56 ft and rising.

The RFC climate forecast shows a probability of above average precipitation over the next 10 days in both Oregon and Washington, which is good news for chum. Temperatures in the southwest Columbia Basin will likely be above average while the central region of the basin will be near normal and the eastern area of the region will likely be below average. West of the Cascades is likely to be near normal. The 8 to 14-day forecast shows a probability of above average temperatures and precipitation across the region. The 30-day outlook shows an equal chance of above or below average temperatures in the northern Columbia basin, above average temperatures in the southern basin, and above average precipitation throughout the entire Columbia basin.

Doug reminded TMT that the Bonneville Dam tailwater operating range for the chum operation is 11.3 ft. to 13 ft. all hours. Tony Norris, BPA, reminded the TMT that when conditions are dry and the region is trying to limit the water impact, BPA tends to run close to the bottom of the allowed range to conserve water. Norris added that there are many factors the Action Agencies cannot control that affect or temporarily impact the tailwater, such as a barge passing or the navigation lock opening and closing. This is why the lower bound of the operation is set at 11.3 ft., as opposed to 11.5 ft. The 0.2-ft buffer allows for BPA to target 11.5 ft. If the lower bound was 11.5 ft., then the agency would have to target a higher elevation so as not to go below that minimum. Norris also discussed the top of the range: 13 ft. It is important that the tailwater not

operate too high because doing so could cause chum to spawn at a higher elevation, thus requiring a higher protection level and obligating higher augmentation through emergence in early spring. Allowing water to go over 13 ft. can become a water management risk. Setting the tailwater between 11.3 ft. and 13 ft. helps to hedge against both dry or wet conditions throughout the winter and spring. Tony noted that last year, the protection level was set at 11.8 ft. This was a small adjustment made to protect the majority of redds.

Grand Coulee is currently at 1,283 ft.

Kirk Truscott of the Colville Tribes had questions and concerns regarding the chum operation, specifically the tailwater elevation requirements impacts to Lake Roosevelt. Truscott wondered what the impact to refill at Coulee would be for spring 2022 if BPA were to draft Grand Coulee below flood control for power production. There are guidelines to how much power flexibility BPA has at Grand Coulee.

November and December are historically the wettest months of the year, and forecasts show that chum will need a minimum flow of 120-125 kcfs. This would mean that Grand Coulee could draft as low as 1,268 ft. by the end of December for the chum operation since there is not much snow in the system. The most recent forecast shows the project dipping below 1,283 ft. prior to mid-November. However, Norris cautioned this is just a forecast and it could change heading into the season. The forecast is based off a single trace. Norris will coordinate with Truscott offline. Additionally, Truscott did not receive the STP. Norris will look into how the Colvilles usually get the trace, and circle back with Truscott about that as well. Charles Morrill, WA, noted that the fish managers can also connect with Truscott.

Claire McGrath, NOAA, reminded the TMT that the chum operation is not tied to a hard, set-in-stone end date of April 10. Typically, as the operation progresses, the team looks at how the water supply forecast has manifested during winter and how that will impact Grand Coulee. In some years, the fish managers recommend decreasing chum protection levels when they believe most chum have emerged. The operation is revisited throughout winter and early spring. Sometimes unexpected precipitation can assist the operation, noted McGrath.

Chris Runyan, Reclamation, added that the long-term forecast looks good at Grand Coulee, but that things can change quickly. As a reminder, this is not a forced year for drum gate maintenance at Grand Coulee. The flood risk management elevation to trigger maintenance this year is no higher than 1,265 ft. If it is triggered, the reservoir would be drafted to 1,255 ft for the work. If work is not done in 2022, then the following year would be a forced year, regardless of water conditions.

At last week's TMT, there was some uncertainty about how incoming precipitation would affect the region, particularly how much of that precipitation would turn into streamflow since soil conditions are very dry. Streamflow came in below the forecasts, which called for Lower Granite to see 20-25 kcfs of flow. Observed flows hit a high of about 17-18 kcfs. The Willamette River was expected to be around 30 kcfs but came in at about 15 kcfs. The lower part of the basin will continue to be dry over the next week and the Willamette is expected to drop below its historical median. The Cascades saw 3-6 inches of precipitation. Runyan noted that at any other time of the

year, he would have expected that to turn into more streamflow than it did. He is hopeful the precipitation will freeze in the soil.

McGrath provided an update on chum, noting that as of October 21, no chum had been observed in the Ives area, which is typical for this time of year. They tend to show up rather quickly in the first week of November, she added. Given the precipitation and increasing stage at Hamilton Creek, conditions are favorable for their arrival, she noted. NOAA would support a start date of any time between November 1 and November 4, she said. There has been strong FPAC support for a November 1 date. Yesterday 8 chum were counted passing Bonneville Dam, which is a good number for this time of year and indicates that they are in the lower river and likely to show up at Ives within the next week.

Following today's discussion, the Corps will implement the chum operation starting at 0600 on November 1. The operation is summarized on the TMT website and calls for operating the Bonneville tailwater in the range of 11.3 ft. to 13 ft. all hours during spawning.

Today's Attendees:

Agency	TMT Representative
Army Corps of Engineers	Doug Baus (Chair), Lisa Wright, Julie Ammann
Bonneville Power Administration	Tony Norris, Scott Bettin
Bureau of Reclamation	Chris Runyan
NOAA Fisheries	Claire McGrath
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Jonathan Ebel
Montana	Brian Marotz
Nez Perce Tribe	Absent
Umatilla Tribe/CRITFC	Tom Lorz
Colville Tribe	Kirk Truscott
Warm Springs Tribe	Jen Graham
Kootenai Tribe	Absent
Spokane Tribe	Absent

Other Attendees (non-TMT members):

Corps – Alexis Mills, Aaron Marshall, Dan Turner, Chris Peery, Scott St. John
BPA – Melissa Haskin (CONTR, FLUX Resources, Notetaker)
DS Consulting – Colby Mills
Columbia Basin Bulletin – Mike O'Bryant
Snohomish PUD – Mike Shapley
Clearing Up – K.C. Mehaffey