

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM  
March 13, 2019  
DRAFT Facilitator's Summary  
Facilitator: Emily Stranz; 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. 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.nwdwc.usace.army.mil/tmt/agendas/2019/>.*

### **Review Meeting Minutes & Facilitator's Summary**

TMT Members requested more time to provide edits; approval on minutes and summaries for February 27, March 6, and 2018 YER meetings will be requested at the next face to face meeting on April 3rd.

### **KTOI Burbot Hatchery**

Sue Ireland, Kootenai Tribe, began with an update on last week's operations request for emergency flows from Libby Dam to assist water needs at the Kootenai Tribe of Idaho Hatchery downstream of Libby Dam. Due to frigid temperatures and low water levels, surface water intake pumps froze over and could not bring water into the facility. Along with warmer temperatures and rain, the emergency flow operation was very successful in breaking up the ice and allowed staff enough time to plan next steps and ensure firm backup options are in place. Operations are now ramping down and Libby is expected to be back to minimum flows on Friday. Sue offered thanks on behalf of the Kootenai Tribe to the TMT for their support of the operation, specifically to Scott Bettin BPA, Logan Osgood-Zimmerman, Corps, and Greg Hoffman, Corps for their help in coordinating.

### **Chum Operation**

Doug Baus, Corps, provided current and forecast data for chum operations. In terms of monthly precipitation, it's been very dry, below 50% precipitation for March, throughout the Columbia River Basin. Seasonal precipitation shows the southern portion of the Columbia basin and into the east at 90-110% of normal, but only 70-90% of seasonal precipitation in the northern portion. Temperatures have been around 6 degrees below average.

Looking ahead, low precipitation is forecast. The RFC 10-day QPF is 25% of normal throughout the entire basin, with the exception of central Oregon, which could have a strong weather event at 150-175% of normal. The 5-day QPF is also very dry, at 25% of normal.

The 6-10 day climate forecast shows a probability of above average temperatures and above average precipitation in the western portion of the Columbia Basin, with normal precipitation in the central basin and a probability of below average precipitation in the eastern basin and northwestern Montana. The 8-14 forecast shows a probability of normal to above normal temperatures and above average precipitation. The 3-4 week outlook shows a probability above average temperatures and below average precipitation, while the 30-day outlook predicts a probability of below average temperatures and an equal chance of above or below average precipitation.

### *Grand Coulee Operations*

Joel Fenolio, BOR, reported on operations at Grand Coulee Dam. Releases and inflows have decreased over the last week, but the project is still drafting about .5 feet per day. The project continues to maintain a minimum tailwater elevation for chum, in the hopes of seeing warmer temperatures impact snow melt and increase inflows. With the April 10 elevation still forecast at significantly lower than 1,283.3 feet (only reaching 1,272 feet by April 30), Joel noted that Reclamation is concerned about maintaining spring

flows. Paul Wagner, NOAA, confirmed the shared concern of not being where they want to be in regard to CGL elevations, but also emphasized the recommendation of Salmon Managers to continue to operate for chum minimum elevations and check in again next week. Paul noted that Salmon Managers acknowledge and accept the risks to spring flows, however, it is a risk that they are willing to take at this point, as the tradeoff would be dewatering chum and most likely killing them.

### *Bonneville Dam Operations*

Doug Baus continued with operations data at Bonneville Dam. At 0800 hours, the project had a total outflow of 127 kcfs, with a tailwater elevation of 11.5 feet. Inflows are forecast at the 122-125 kcfs level over the next 10 days.

→ ACTION: Per Dave's request, Tony Norris, BPA, will distribute an update on TU accumulation to Salmon Managers via Paul on a weekly basis every Friday.

### **Spill Priority List**

Dan Turner, Corps, presented the spill priority list (SPL) for TMT coordination. He noted that the upper projects typically start on March 23, beginning with Lower Granite; non-fish passage projects are lower on the SPL. The draft SPL incorporates the expected change to the WA State water quality standard in the forebay (expected to be in place by 3/31/19). If Washington does not change their standard, the SPL will need to be revised. A slight difference this year is that level 1 in fish passage projects is now at 120% TDG in the tailwater, part of fish passage spill, and at 110% TDG in the tailwater at non-fish passage projects. He clarified that level 1 consists of each project spilling to the applicable criteria or gas cap. Julie Ammann, Corps, noted that the anticipated Washington waiver is for spring period only, and that this list will look different in June (once we shift to summer spill) if there is still high runoff into summer spill and a need for involuntary / lack market spill.

Russ Kiefer, ID, commented that although it's not critical this year, he would consider moving Bonneville to the top of the level 1 list in the future, as there may be more juveniles downstream of BON that time of year. Charles Morrill, WA, expressed possible concerns with additional TDG over redds below Bonneville due to inadequate depth compensation. No changes were suggested and there was consensus from Salmon Managers on submitting the SPL as-is for this year.

### **Operations Review**

#### *Reservoirs*

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

- **Grand Coulee:** Midnight elevation was 1,262.3 feet, they are releasing 60,000 cfs and operating to maintain chum.
- **Hungry Horse:** Operating to the Columbia Falls minimum; midnight elevation was 3,523 feet, the project is releasing about 3,000 cfs, and continues drafting about ¼ foot every day.

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

- **Libby:** midnight elevation was 2,406.8 feet, with average outflows of 6.5kcfs and is ramping down to minimums;
- **Albeni Falls:** midnight elevation was 2,051.6 feet, with average outflows of 10 kcfs;
- **Dworshak:** midnight elevation was 1,524.1 feet, with average outflows of 1.7 kcfs;
- **Lower Granite:** average outflows were 23.4 kcfs (yesterday's average outflows were 34.9 kcfs);
- **McNary:** average outflows were 90 kcfs; and,
- **Bonneville:** average outflows were 125 kcfs.

*Water Quality:* Dan Turner, Corps, reported that tailwater gauges are all around 100% saturation, and not spilling much. The forebay gauges will come online within the next week or two, and Cascade Island gauge should be coming back online in the same time frame.

*Fish:* Paul reported that juvenile sampling has started in the Snake River. He reported on juvenile Chinook: So far a total of 11 fish have been counted at Imnaha, and there isn't much action yet in the tributaries. Lower Monumental Dam had a total of 30 fish. That is expected to change with the next sample, because Lyon's Ferry released a few hundred thousand fish due to problems at the hatchery. Bonneville Dam started sampling in early March and has collected a total of 90 fish. Erick van Dyke, OR, informed the group that the Grande Ronde trap isn't up yet, as they haven't been able to get to the site due to severe weather conditions. Paul noted that same story for steelhead, that a couple fish were observed at Bonneville.

Adults observed at Bonneville include 1 spring Chinook, 4 coho, and 288 steelhead; these are below average counts for this time of year. 132 steelhead have been recorded at John Day; 182 at Ice Harbor, and 92 at Lower Granite.

*Power System:* Tony Norris, BPA, reported on the cold temperatures and low wind in the last 7-day period. He noted, however, that temperatures and winds are starting to rise, with more moderate temperatures in the coming week ahead.

**The next TMT meeting is a call on March 20, 2019 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 OFFICIAL MINUTES**  
**March 13, 2019**  
**Minutes: Melissa Haskin, FLUX Resources**

**1. Introduction**

Representatives of Corps, NOAA, USFWS, BPA, Umatilla Tribe, Colville Tribe, Bureau of Reclamation, Kootenai Tribe, Nez Perce Tribe, WA, ID, OR, MT, and others participated in today's TMT meeting chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. See the end of these minutes for a list of attendees.

**2. Meeting Minutes and Summaries**

Approval of the meeting minutes and summary for 2/27 were delayed again. Joel Fenolio, Reclamation, has additional edits to incorporate before finalization. They will be added to the agenda for the next in-person meeting on April 3, 2019.

**3. Libby Update**

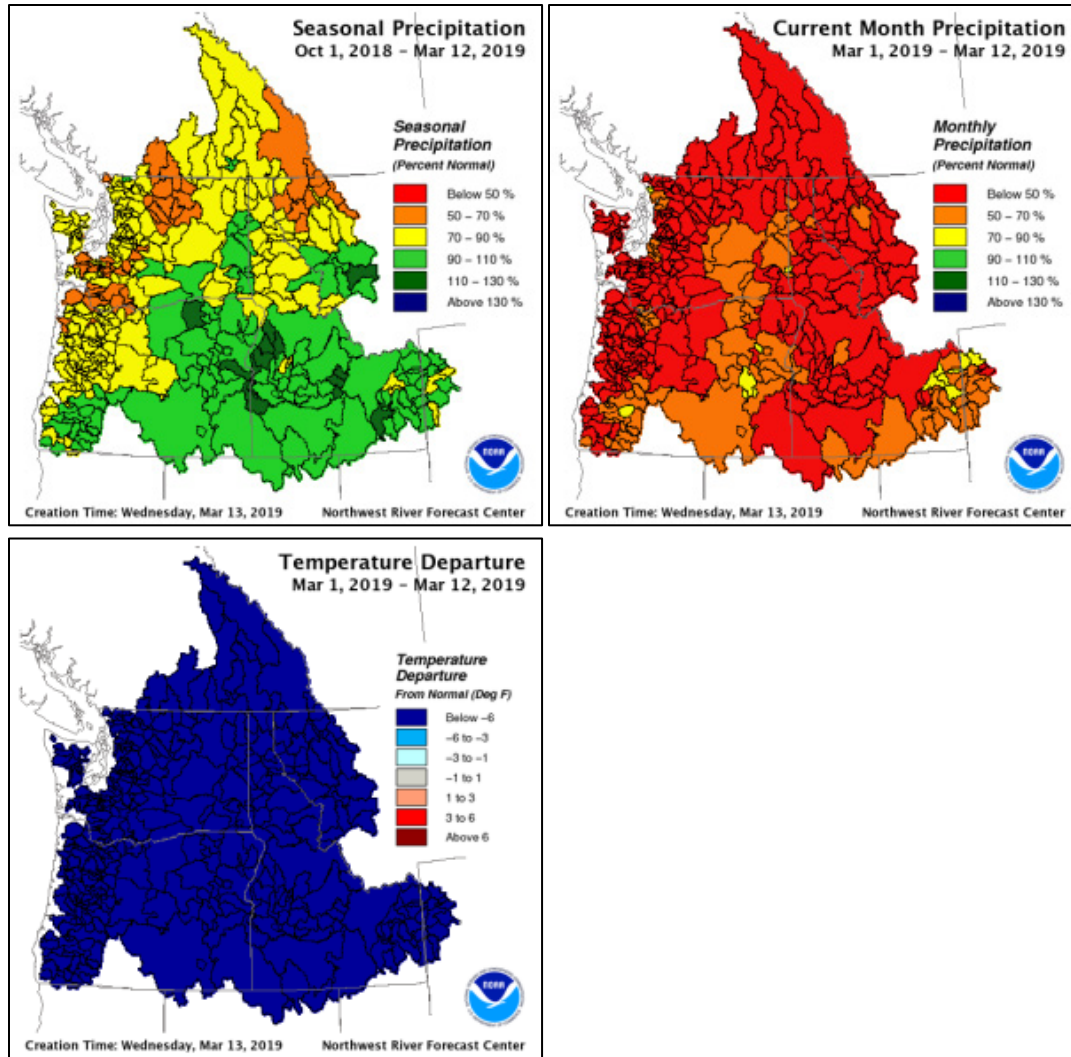
At last week's meeting, TMT was notified about an emergency at the KTOI Hatchery downstream of Libby Dam that required a temporary increase in Libby outflows. Due to ongoing extraordinarily cold temperatures and low flows, the hatchery intake pipe was frozen and unable to supply the hatchery with water during a critical incubation period for burbot. The Corps implemented an emergency operation to increase Libby Dam outflow to 10 kcfs from March 5 through March 10 to keep the intake pipe in the water and prevent it from freezing over. The Corps began ramping down Libby outflows on March 11 and should be back to the minimum of 4 kcfs by Friday, March 15.

Sue Ireland, Kootenai Tribe, reported to TMT today that conditions are much better and the hatchery is operating normally. The operation was effective in maintaining flow to the hatchery. With weather forecasted to be in the 40s this weekend, the hatchery should be fine and not need any additional support.

**4. Chum Operation - Doug Baus, Corps**

***4a. Current Month Summary Graphics***

Current month summary graphics from the NWRFC show that March precipitation and temperatures have been well below average so far. Temperatures throughout the basin have been about 6 degrees Fahrenheit below average. Precipitation in the southern and eastern portions of the Columbia Basin has been 90-110% of normal, while the northern portion is 70-90% of normal. This is a pattern that has been persistent in the region.



#### ***4b. Forecast Precipitation Summary***

The 5 and 10-day precipitation forecasts call for dry conditions – about 25% of normal throughout the entire basin, with the exception of Central Oregon which may get a precipitation event.

#### ***4c. Climate Forecast***

The NWRFC climate forecast shows a probability of above average temperatures 6-10 days out. Precipitation is more of a mixed bag with the western region of the basin likely seeing above average precipitation, while the eastern portion will likely experience below average precipitation.

The 8-10 day forecast shows a probability of normal to above normal temperatures and above average precipitation. Three to four weeks out we see above average temperatures and

below average precipitation. The 30-day forecast shows below average temperatures and an equal chance of below or above average precipitation.

#### ***4d. Grand Coulee Operations Data***

Joel Fenolio, Reclamation, reported on operations at Grand Coulee Dam. Outflows and inflows have continued to decrease over the last week. The dam is drafting about half a foot a day. This will likely continue for the foreseeable future. Reclamation is continuing to operate to maintain the chum operation, which requires a Bonneville Dam tailwater minimum of 11.3 ft.

Paul Wagner, NOAA, said that his position – as well as FPAC’s – is to maintain chum for the next week, then re-assess. He noted there is some risk to spring flows but the risk is worth it for the moment considering all of the low elevation snow still in the region that isn’t accounted for in the forecasts and that Snake River flows may be increasing soon as temperatures warm.

Joel Fenolio, Reclamation, took the same position as he has in weeks past, saying, “We keep hoping for average conditions. We’ll see how it goes. There’s going to be a point given snowpack that we may not have the flows coming out of Coulee we have hoped for.”

#### ***4e. Grand Coulee Flood Risk Management Requirements***

Lisa Wright, Corps, showed the final March flood risk management (FRM) requirements available on the TMT website. The Grand Coulee April 10 FRM elevation is 1,283.3 ft and the April 30 elevation is 1,272 ft. The forecast indicates Grand Coulee elevation will be well below those numbers.

#### ***4g. Lower Granite Monthly Water Supply Forecast***

The NWRFC ESP Lower Granite monthly water supply volume forecast with 5-days QPF indicates runoff will be below average in March, April, and May, but trending closer to average. Doug Baus, Corps, echoed Joel’s concern that Grand Coulee Dam is drafting significantly below the April 10 elevation to support the chum operation. While seasonal precipitation in the Snake River Basin has been near average, the most significant volume of water in the lower Columbia River for spring flows comes from the Upper Columbia Basin which continues to be below average. Additionally, the 5 and 10-day precipitation forecast continues to show below average (less than 25%) precipitation throughout the Columbia Basin.

Joel mentioned that the STP is showing Grand Coulee at elevation 1,248 ft on April 10, which is well below 1283.3. If streamflows come in lower, the elevation will be even lower and could be problematic for the ferry across Lake Roosevelt. It will also potentially mean there will not be much water going into spring.

Paul Wagner said there is the option to just operate to maintain Vernita Bar, or even to cut that and just focus on refill. At the moment, the data seem to show Snake River flows increasing. However, the data next week could show a different story. Since every single day is important for the development and emergence of the chum, Wagner is siding on maintaining the chum at least for this week and then revisiting. He noted that he recognizes that we are not where we want to be with Grand Coulee elevation and that the FRM elevation of 1,283 feet on April 10 is not an option at this point.

Sheri Sears, Colville Tribe, mentioned there seems to be quite a bit of low elevation snow, which may help with inflows into Coulee and in the lower Columbia River, especially with forecasted temperatures in the mid- to high 50s this coming week.

Charles Morrill, WA, echoed Sheri, saying that anecdotally he has observed a lot of low elevation snow in his travels which may melt and provide increased runoff.

Dave Swank, USFWS, said it seems like it is a tradeoff between two bad options. No one likes to see Grand Coulee get this low. Choosing to de-water chum is almost certain to wipe out a cohort of chum and fall Chinook below Bonneville Dam. However, that choice also has impacts on juvenile survival this spring. His position right now is to use the water available now in Grand Coulee to prevent almost certain loss of chum and fall Chinook below Bonneville. It is a gamble, he said but it seems like salmon managers are united in wanting to take that risk.

Russ Kiefer, ID, wondered if anyone has a good estimate of when Vernita Bar fall Chinook are estimated to emerge from the redds.

Tony Norris, BPA, said water temperatures are still really cold for chum incubating below Bonneville. Temperature units are currently accruing at approximately 2-4 degrees Celsius per day. The chum are still on track to emerge by April 10 or so. The estimate for emergence of Vernita Bar fall Chinook is May 11.

#### ***4h. Bonneville Dam Hourly Data***

At 0800 this morning, Bonneville Dam outflows were 127 kcfs and the tailwater elevation was 11.5 ft.

#### ***4i. Bonneville Dam Inflow Forecast***

The Bonneville inflow forecast over the next 10 days is for 122-125 kcfs.

#### ***Discussion***

Based on the current conditions and forecasts, the salmon managers recommended continuing to operate to maintain the Bonneville Dam minimum tailwater elevation of 11.3 ft for

incubating chum, then revisit at next week's TMT. Dave Swank asked if it would be possible to get updates on chum temperature units (TU) data. Tony said he will send it to Paul on Fridays.

## 5. Spill Priority List - Dan Turner, Corps NWD

The Spring 2019 Spill Priority List is available on the TMT website and defines the order of projects if necessary to spill for lack of load or lack of market. Typically, starting March 23, spill is allocated to projects starting at Lower Granite and working downstream for the benefit of juvenile migration, with levels of incrementally higher spill and TDG. Non-fish passage projects are at the bottom of each level. The first level is for spill to State TDG standards (aka "gas cap"), which is 110% until modified standards for fish passage go into effect on April 1. This year, fish passage projects in Level 1 in the spring (April 1-June 21) will have the new Washington criteria that is in the process of being modified to align with Oregon's standard of 120% in project tailraces. In the summer, the state standards will be the same as in previous years – 120% in the tailrace and 115% in the next downstream forebay.

Russ noted that at this time of year, more juveniles would benefit from spill at Bonneville Dam than at McNary and John Day. He said perhaps Bonneville should be moved to the top of the lower Columbia River projects for March. However, there isn't much chance of lack of load spill this year due to the low flows so it will likely be a non-issue.

Charles Morrill, WA, said he would be concerned about TDG impacts on the chum and fall Chinook redds that are in relatively shallow water below Bonneville Dam.

Salmon managers may discuss this more offline. Dan said that feedback can be brought back to the Corps at any time. For now, salmon managers say the priority order is fine.

Scott Bettin asked if the footnote in the Spill Priority List mentions the different WA standard that will be in effect this spring. This would be good information if the document is pulled in the future for information, he noted.

## 6. Operations Update:

### 6a. Reservoirs – Chris Runyan, Reclamation, and Lisa Wright, Corps

**Hungry Horse:** Inflows 600 cfs; outflows 3,000 cfs; midnight elevation 3,522.3 ft. Operating to Columbia Falls minimums of 3,480 cfs. Snowpack below average at 91%. Drafting 1/4 ft per day.

**Grand Coulee:** Midnight elevation 1,262.3 ft. Outflows 60 kcfs and inflows 40 kcfs.

**Libby:** Midnight elevation 2,406.8, outflows 6.5 kcfs and ramping down from the increase for the KTOI hatchery emergency.

**Albeni Falls:** Midnight elevation 2,051.6 ft, outflows 10 kcfs.

**Dworshak:** Midnight elevation 1,524.1 ft, outflows 1.7 kcfs.

**Lower Granite:** Outflows 34.9 kcfs.

**McNary:** Outflows 90 kcfs.

**Bonneville:** Outflows 125 kcfs.

**6b. Water Quality – Dan Turner, Corps**

Tailwater gauges are all around 100% TDG. Projects are not spilling much anywhere right now. Forebay gauges should be online in next week or two.

**6c. Fish – Paul Wagner, NOAA**

Juvenile fish sampling has started at Bonneville, Lower Monumental, and some of the tributary traps. There is not a lot of action in the tributaries yet. The Grand Ronde trap is not operating because the road isn't passable yet. Lower Monumental has sampled a total of 30 yearling Chinook but there have only been two sample days so far. Juvenile numbers are expected to drastically increase over the next few days as the Lyon's Ferry hatchery had to release several thousand fish due to disease problems at the hatchery. Bonneville began sampling on March 1 and has reported about 7 to 30 yearling Chinook per day, as well as a few steelhead and coho.

Regarding adults, 182 steelhead have been counted so far this year at Ice Harbor. These are likely summer steelhead that overwintered in the river.

**6d. Power – Tony Norris, BPA**

There is not much wind. When temperatures are moderate, loads drop accordingly. Moderate temps and lower loads are expected in the coming weeks.

**7. Next TMT.** The next TMT meeting is a conference call scheduled for March 20 at 9 a.m.

**Today's Attendees:**

**TMT Members:**

<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, Eve James
Bureau of Reclamation	Joel Fenolio, Chris Runyan
NOAA Fisheries	Paul Wagner, Claire McGrath
US Fish & Wildlife Service	Dave Swank
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	Russ Kiefer
Montana	N/A
Nez Perce Tribe	Jay Hesse

<b>Agency</b>	<b>TMT Representative</b>
Umatilla Tribe	Tom Lorz
Colville Tribe	Sheri Sears
Warm Springs Tribe	N/A
Kootenai Tribe	Sue Ireland
Spokane Tribe	N/A

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

Corps – Dan Turner, Steve Hall, Aaron Marshall, Alexis Mills, Alfredo Rodriguez, Eric Chow, Laura Hamilton, Amit Karki, Heather Baxter, Catherine Dudgeon

Reclamation – Brian Stevens

DS Consulting – Emily Stranz (Facilitator), Colby Mills

FLUX Resources – Melissa Haskin (Note taker)

Columbia Basin Bulletin – Mike O’Bryant

Clearing Up – K.C. Mehaffey

Fish Passage Center – Dave Benner