

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 6, 2022

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/2022/>. Suggested edits for the summary are welcome and can be sent to Colby at colby@dsconsult.co.

Review Meeting Summaries & Minutes - TMT Members requested more time to review the March 16 meeting minutes and facilitator's summary, the documents will be finalized at the next TMT meeting.

Official Water Supply Forecasts - Joel Fenolio, Reclamation, reported the official April official water supply forecast for Hungry Horse Dam. April through July is 1,950 kaf, or 98% of average; April through August is 2,000 kaf, or 99% of average; May through September is 1,600 kaf, or 91% of average; and May through July is 1,500 kaf, or 90% of average. Minimum flows for the rest of the year are 900 cfs at Hungry Horse and 3,500 cfs at Columbia Falls.

Doug Baus, Corps, reported official April water supply forecasts for Corps of Engineers projects:

- **The Dalles:** NWRFC April to August volume forecast is 86 maf, or 96% of average;
- **Lower Granite:** NWRFC April to July volume forecast is 14 maf, or 72% of average;
- **Libby:** Corps NWS April runoff forecast is 6,992 kaf, or 115% of average; and
- **Dworshak:** Corps NWS April runoff forecast is 2,367 kaf, or 96% of average.

Chum Operation - Doug Baus, Corps, reported on the chum operation. Bonneville tailwater elevation for April 6 at 0700 hours was 15.5 feet, with a total outflow of 188 kcfs. As coordinated through TMT, the chum incubation phase will be implemented (with Bonneville operating to a minimum tailwater elevation of 13 feet all hours) through April 9, until the beginning of spring spill on April 10, at 0001 hours, unless otherwise coordinated at TMT. After the chum operation closes out, Bonneville will resume normal tailwater operations (with no chum tailwater restriction).

Operations Review - Reservoirs: Joel Fenolio, Reclamation, reported on Bureau of Reclamation projects:

- **Hungry Horse:** midnight elevation was 3,533 feet, releasing 6.5 kcfs, and currently spilling about 500 cfs. The project is working to get down to 3,532-3,530 feet by the end of the month to minimize any spring spill going into May and June.
- **Grand Coulee:** the project has been in the 5-foot operating range (1,250-1,255 feet) for drum gate maintenance and the operation will continue through first week of May.

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

- **Libby:** midnight elevation was 2,366.3 feet, with average inflows of 6.5 kcfs, and outflows of 4 kcfs;
- **Albeni Falls:** midnight elevation was 2,052.2 feet, with average inflows of 28.4 kcfs, and outflows of 28.8 kcfs;
- **Dworshak:** midnight elevation was 1,531.9 feet, with average inflows of 9.5 kcfs, and outflows of 7 kcfs;
- **Lower Granite:** average outflows of 45.1 kcfs;
- **McNary:** average outflows of 169.7 kcfs; and,
- **Bonneville:** average outflows of 175.6 kcfs.

Aaron Marshall, Corps, reported that lower Snake River projects began operating within MOP on Sunday, April 3, with a 1.5-ft operating range as a hard constraint (1-foot range soft constraint). Lower Granite is operating according to the variable MOP operation (same as last year), ranging from MOP to 3-foot raised MOP, depending on inflows. Currently, inflows are below 50 kcfs, so Lower Granite is transitioning to a 3-foot raised MOP by

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midnight tonight, with a minimum forebay elevation of 736 feet. When MOP operations began on Sunday, inflows had been above 50 kcfs and the project was operating at a 2-foot raised MOP.

There has been difficulty maintaining the minimum tailwater elevation at Little Goose, and so there will likely be an adjustment at Lower Monumental to raise that MOP elevation by 0.5-foot to help maintain the Little Goose tailwater. At John Day, the high pool operation for Caspian Tern nesting deterrence begins on April 10, with an operating range from 264.5-266.5 feet; this operation will continue through June 1.

Water Quality: Dan Turner, Corps, reported TDG values below the state standards, with the beginning of planned spring spill for juvenile fish passage on the Snake River (125% criteria). Due to low flows, lower Snake River projects are operating at minimum generation, spill the rest. Spring spill operations start on April 10 in the lower Columbia River. Dan noted TDG values at the CCIW gauge (Bonneville Dam tailrace) exceeding 110%, this is due to the location of the gauge (it picks up TDG from fish ladders and attraction flow).

Charles Morrill, WA, questioned why TDG levels at The Dalles, John Day, and Bonneville are registering at 106% with no spill. Dan noted that higher values can appear with changes in barometric pressure and water warming as it flows downstream. He did not see this as irregular but will look into the issue and report back to the TMT.

- **ACTION:** Dan will investigate the 106% TDG values and report back to the TMT. *[Facilitator's Note: following the meeting Dan reported that in the past, early April TDG values of 105% is very common. Warming river temperature and algal activity are most likely the cause. Low atmospheric pressure earlier this week appears to have caused a ~2% bump in TDG.]*

Tom Lorz, CRITFC, asked if the spillbay 3 outage at Lower Monumental was producing higher or similar gas production as expected. Dan hasn't noticed anything out of the ordinary yet and noted that it looks like gas production is staying within historic range. Tom also asked why there is a spillbay out at Little Goose, and Chris Peery, Corps, clarified that there was a power problem with Bay 3 when Spring spill started on April 3. The issue has been resolved and all bays should be operating normally now.

- **ACTION:** Chris will troubleshoot on his end to make sure Tom is receiving FPOM MFR emails.

Fish: Claire McGrath, NOAA, reported that for juveniles, all traps and projects are sampling, and the smolt index is showing reasonably high numbers of yearling Chinook. She noted that low numbers at the Lewiston trap are not reliable as the trap has poor efficiency at low flows, and there is a lag of about a week in reporting of numbers from the Imnaha and Grande Ronde traps. There are increasing numbers of steelhead smolt at the Imnaha trap and at Lower Granite (especially over the past weekend), and at McNary too, with a few observed to-date at Bonneville.

For adults, spring Chinook are arriving at Bonneville in low numbers, and are about as far upriver as McNary, with only a handful observed to-date in the lower Snake River. There are low numbers of steelhead across most projects (10-30 per day), and it is still early in the run. Claire noted that the early steelhead passing in the Snake are largely fish that were in the river last fall and overwintered in the mainstem. The monthly count for March at Lower Granite is 1,242, or 1/3 of the 10-year average; wild steelhead is 282 fish, or 20-30% of the 10-year average. This is in line with low numbers seen last year.

Claire noted that the John Day pool raise operation last year did eliminate Caspian Tern nesting at Blalock Island; many appear to have relocated to other areas. Additionally, contractors have submitted their annual avian predation report to BPA. Claire encouraged other TMT members to review the report.

Power System: Tony reported that with the coming of spring and weather fronts, there are lots of variable energy resources coming up and down on the system. Temperatures have been swinging around with periods of cold and moderate weather; there is lots of variability, but no issues. Spill implementation is going well, with projects on minimum generation and spill the rest, while working around powerhouse outages at Little Goose.

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 a conference call on April 13, 2022, at 9:00 AM.

Columbia River Regional Forum

Technical Management Team

OFFICIAL MINUTES

April 6, 2022

Minutes: Melissa Haskin, BPA (contractor, FLUX Resources)

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 attendees is at the end of these minutes.

1. Official Water Supply Forecasts - Joel Fenolio, Reclamation, and Doug Baus, Corps

Joel Fenolio, Reclamation, reported on the official April water supply forecast for Hungry Horse Dam. Residual runoff forecast for April through July is 1,950 kaf, or 98% of average. The May through September forecast is for 1,600 kaf or 91% of average.

Joel also noted that the forecast for the upper Snake River at Heise above Milner Dam (which sets flow augmentation volumes) came in at 65% of average. This will mean no rental water out of Rainbow or from irrigators. On the Middle Snake, the Boise River is coming in at 61% of average and the Payette is at 62% of average. Some Eastern Oregon forecasts came in at 0.

Jay Hesse, Nez Perce, asked about the Hungry Horse projections and why it dropped 10%. Joel noted that Reclamation reviews quite a few forecasts. When Reclamation predicts its residual forecast, it also incorporates the RFC data for May-September. Additionally, it looks at internal forecasts. All of the Hungry Horse forecasts came in at 1,550-1,700 kaf.

Brian Marotz, MT, asked if this puts Hungry Horse in a better position to run on two turbines through the end of June. Joel said it's too early to tell how the runoff will occur in western Montana.

Doug Baus, Corps, reported official April water supply forecasts for Corps projects.

- **The Dalles**: NWRFC April to August volume forecast is ~86 maf, or 96% of average.
- **Lower Granite**: NWRFC April to July volume forecast is ~14 maf, or 72% of average.
- **Libby**: Corps NWS runoff forecast April to August is 6,992 kaf, or 115% of average.
- **Dworshak**: Corps NWW runoff forecast April to July is 2,367 kaf, or 96% of average.

2. Chum Operation – Doug Baus, Corps

Baus updated the TMT on chum operations coordinated at TMT and available on the TMT website. As coordinated, the chum operation transitioned from spawning to incubation on December 24, at 0001 hours with a Bonneville Dam minimum tailwater elevation of 13 feet all hours. Incubation will continue until the start of spring spill on April 10, unless coordinated otherwise at TMT.

There have been no changes to the operation since the last update.

The Bonneville Dam tailwater elevation at 0700 was 15.5 ft. Outflow was 188 kcfs.

3. Operations Review

3a. Reservoirs – Joel Fenolio, Reclamation; Lisa Wright, Corps

Reclamation projects:

Hungry Horse – Midnight elevation 3,533 ft.; releasing 6.5 kcfs and spilling 500 kcfs. Targeting 3,530-3,532 ft. by the end of the month to minimize any spring spill heading into May and June.

Grand Coulee – Operating between 1,250 and 1,255 ft. for drum gate maintenance. This will continue through the first week of May.

Corps Projects: **Libby Dam** – Midnight elevation 2,366.3 ft., yesterday’s average inflows 6.5 and outflows 4 kcfs. **Albeni Falls** – Midnight elevation 2,052.2 ft., inflows 28.4 kcfs and outflows 28.8 kcfs. **Dworshak Dam** – Midnight elevation 1,531.9 ft., inflows 9.5 kcfs, and outflows of 7 kcfs. **Lower Granite** – Yesterday’s average outflows were 45.1 kcfs. **McNary Dam** – Yesterday’s average outflows were 169.7 kcfs. **Bonneville Dam** – Yesterday’s average outflows were 175.6 kcfs.

Aaron Marshall, Corps, had an additional update to share. Lower Snake projects began operating at MOP Sunday, April 3 with a 1.5-foot hard constraint and a 1-foot soft constraint. At Lower Granite, there is a variable MOP operation as there was last year. Lower Granite inflows are below 50 kcfs so it will be transitioning to a 3-foot raised MOP by midnight tonight. This will raise the minimum forebay elevation to 736 ft. Inflows have been slightly above 50 kcfs, so the forebay was at a 2-foot raised MOP range already. Additionally, consistent with past operations, there has been some difficulty maintaining the minimum tailwater elevation at Little Goose Dam. There will likely be an adjustment at Lower Monumental by 0.5 ft. to help maintain the tailwater at Little Goose. John Day will switch to a high pool operation for Caspian Tern nesting deterrence starting April 10. During the operation, the pool will be managed between 264.5 ft. and 266.5 ft through June 1.

3b. Water Quality – Dan Turner, Corps

Dan Turner, Corps, reported that TDG values were below the 110% water quality standard yesterday. The standard at Snake River projects is 125% TDG. Due to low flows, the projects are at minimum generation and spilling the rest. Spring spill operations will start on the lower Columbia River April 10. The Cascades Island gage below Bonneville is above 110% because it picks up some TDG from the fish ladders and attraction flow. There will be more spill there when spring spill starts. Charles Morrill, WA wondered why The Dalles and John Day are at 106% with no spill. Dan replied it could be due to barometric pressure or warming and is within the range of historical values for this time of year. At Little Goose, spillbay 3 was unable to be opened on April 3 due to an electrical issue. It was fixed yesterday. All bays are now operating.

3c. Fish – Claire McGrath, NOAA

For juveniles, all traps and projects are now sampling and reporting high numbers of yearling Chinook. Low numbers are being observed at Lewiston due to low efficiency at lower flows. There is a lag of up to a week in reporting of numbers from the Imnaha and Grande Ronde traps. Steelhead smolts are increasing at the Imnaha trap, Lower Granite, and McNary with a few also being observed at Bonneville.

For adults, McGrath shared that spring Chinook have arrived at Bonneville in low numbers. Only a handful have been observed in the lower Snake River. About 10-30 steelhead are passing per

day. It is still early in the run. Steelhead counted in March in the Snake are mainly fish that overwintered in the mainstem. March counts at Lower Granite were 1,242, which is about a third of the 10-year average. Wild steelhead counts were 282. The 10-year average for March is close to 1,500 fish. McGrath noted this is not surprising looking at last year’s numbers. Regarding the John Day pool operation, last year it did eliminate Caspian tern nesting at Blalock Island. It does appear that the terns relocated elsewhere. Avian predation reports were recently submitted to BPA and NOAA is looking at the report, which is also available to TMT members. Claire McGrath encouraged others interested to look at the report.

3d. Power – Tony Norris, BPA

Tony noted there is little to report. Spring weather typically bring fronts, which results in big swings in generation from variable energy resources. Temperatures have been variable, as well. So far, spill implementation has gone well and projects are on minimum generation and spill the rest, working around powerhouse outages at Little Goose.

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	Joel Fenolio
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	Jay Hesse
Umatilla Tribe/CRITFC	Tom Lorz
Colville Tribe	Kirk Truscott
Warm Springs Tribe	
Kootenai Tribe	
Spokane Tribe	

Other Attendees (non-TMT members):

NOAA – Kelsey Swieca
 Corps – Alexis Mills, Aaron Marshall, Chris Peery, Scott St. John, Jon Roberts, Willow Walker, Leon Basdekas, Dan Turner
 Yakama Nation Fisheries – Tom Iverson
 Oregon DEQ – Marilyn Fonseca, David Gruen
 DS Consulting – Emily Stranz (Facilitator), Colby Mills
 BPA – Melissa Haskin (CONTR, FLUX Resources, Notetaker)
 FPC – Erin Cooper
 PPC – Shane Scott
 Chelan PUD – Jay Finch
 Douglas PUD – Andrew Garrett
 Snohomish PUD – Bryan Zigler, Mike Shapley