

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

July 28, 2014

Facilitator's Summary

Facilitator: Robin Gumpert, DS Consulting; Notes: Tory Hines, DS Consulting

Review of Meeting Minutes

David Wills, USFWS, requested the following changes to the July 9th Facilitator's Summary and Minutes:

- The 10 year average for lamprey passage at Bonneville is at 130% and the lamprey passage at The Dalles is at 160% of the 10 year average.

With the changes above and no suggested changes to the July 16 meeting notes, the group approved the July 9 and 16 Official Meeting Minutes and Facilitator's Summaries.

Libby Operations:

Joel Fenolio, USACE, provided an update for the Libby Dam Scenarios for August and September, showing both observed and forecasted inflows, outflows and elevations. Joel highlighted that while this is an above average year for rainfall, June experienced very little rainfall, equivalent to the historic year of 1992, and as a result the water is drying up quickly and the Corps is looking for ways to preserve water through September. They are trying to meet the flow objectives from the Montana SOR while also meeting BiOp required elevation targets. The current planned operation will be to drop outflows from the current 11kcfcs down to 10kcfcs on July 31, followed by a further drop to 9kcfcs by the end of August, which is the bull trout minimum. Joel also reported that Libby's peak elevation is at 2,451.3ft and is expected to decrease to 2449.3ft by the end of August. Jim Litchfield, MT, responded that given the conditions, Montana did not see a lot of options and therefore were ok with the plan Joel described. Joel relayed the goal of the operation is to hit the target elevation of 2,449ft by the end of September (per the NMFS FCRPS BiOp) and they are currently trying to get the project down in elevation while ensuring a steady and declining flow. Achieving 2449 feet by either August 31 or during the month of September would satisfy the intent of this coordinated operation. Subsequently, should Libby dam be above 2449 feet on September 30 after achieving 2449 feet in August or September there would not be an expectation to coordinate outflows in the month of October associated with the additional volume of water that was above 2449 feet on September 30. Conversely, Joel also pointed out that if there is rainfall prior to the end of September and Libby had not achieved 2449 in August nor September, the Corps will keep the discharge constant rather than chasing the influx of rain and spread any excess volume above 2449ft on September 30 in to October. Tony Norris, BPA, mentioned that there are minimum required flows of 9kcfcs for August and 6kcfcs for September which need to be achieved. Joel concluded that they are fine dropping the flows sooner, but for now they are watching the operation to see how long they are able to hold at 9kcfcs until dropping to 6kcfcs for September.

- **Action:** Based on the revised forecast the AA's will implement the following updated operation in order to achieve the request identified in SOR 2014-1:

1) July 28 through 31 continue maintaining 11 kcfcs outflows, August 1 through August 5

reduce to 10 kcfs outflows, August 6 through 31 reduce to 9 kcfs outflows, based on the current forecast this will result in a August 31 elevation of 2449.35 feet.

2) September 1 through 30 maintain 9 kcfs outflows, if forebay elevation is below 2449 feet prior to September 30 then the AA's will reduce outflows to 6 kcfs (bull trout minimums) for the remainder of September. If the forebay elevation is above 2449 September 30 the AA's would not increase September outflows ("double peak") in order to achieve 2449 feet on September 30. Should Libby Dam be above 2449 feet on September 30 the AA's would make best efforts to discharge this equivalent volume of water above 2449 feet during the month of October.

3) If Libby Dam is above 2449 feet on September 30 after achieving 2449 feet in August or September there would not be an expectation to coordinate outflows in the month of October associated with the additional volume of water that was above 2449 feet on September 30.

Treaty Fishing SOR 2014-C8 & SOR 2014-C9

Kyle Dittmer, CRITFC, shared the operation request for the summer fishing operation under SOR 2014-C8; the request is to hold the three lower Columbia River pools at a 1.5ft variation from Monday, July 21, 2014 through Friday July 25, 2014. Kyle reported there were 195 nets in the Zone 6 pools, as follows: 75 (38%) at Bonneville, 42 (22%) at The Dalles, and 78 (40%) at John Day. Doug Baus, Corps, stated that the Corps implemented SOR 2014-C8 at 1.5ft variation and SOR 2014-C9 is currently being implemented from Monday July 28, 2014 through Thursday July 31, 2014.

Dworshak Operations

John Heitstuman and Jeremy Giovando, Corps-NWW, provided an update on water temperatures for the Dworshak Operations. They noted that over the next few days the goal is to cut discharge in order to save water and meet temperature requirements at Lower Granite. The operation will drop to 10kcfs tomorrow and hold there until adjustments are needed for temperature management, depending on the weather forecast. The trend appearing in the model is consistent with the operation to gradually reduce flows. Charles Morrill, WA, extended appreciation to John and Jeremy that the operation is doing well as they continue to closely monitor rising temperatures. Dave Statler, Nez Perce, inquired over the lowest acceptable temperature for the hatchery at Dworshak. Jeremy stated (and Dave Wills, USFWS confirmed) the hatcheries prefer not go below 43 degrees as this will effect Steelhead growth. As of July 31, the Corps will implement the operation to reduce flows to 10 kcfs. TMT will revisit this operation during a call next week, 8/6. The salmon managers requested that updated information (conditions, forecasts, models) be shared ahead of time.

- **Action:** The Corps will post any information relevant to next week's discussion on the 8/6 TMT agenda.

Trevor Conder, NOAA, also reported that NOAA and other salmon managers are looking closely at adult fall back issues below Lower Granite, and are working through FPOM to do this investigation. Any relevant information from that query will be shared at a future TMT meeting.

Dave Statler, Nez Perce, inquired about temperature data at the adult fish ladder as well as the trap. There are no real time feeds from these locations, but data that is uploaded is shared when available at the weekly FPOM discussions that are happening around the fish ladder issue.

Operations Review

Reservoirs: Lisa Wright, USACE, reported on Corps projects:

- Libby midnight elevation was 2,453 ft, with 10.3 kcfs inflow and 11kcfs outflow.
- Dworshak midnight elevation was 1,575.5ft, with 1.6kcfs inflow and 13.3kcfs outflow.
- Lower Granite average outflow was at 36.6kcfs.
- McNary average outflow was at 194.4 kcfs.
- Bonneville average inflow was 192.1kcfs.

Lisa reported that due to low flows at Little Goose, the project switched to the constant 7-11 kcfs spill operation last weekend. The project's RSW will be removed on 8/4. Doug Baus, Corps, added that for navigational safety purposes, the Corps is continuing to stay at MOP+1 at Little Goose through the end of August.

Mary Mellema, BOR, reported on Reclamation projects:

- Hungry Horse midnight elevation was 3,559.05ft with 3.4 kcfs outflows, dropping to 3kcfs outflows next week.
- Grand Coulee midnight elevation was 1,288.4ft with a slow draft through the end of August to reach 1,279.7ft.

Fish: Trevor Conder, NOAA, reported on fish. He noted the juvenile sub-yearlings are declining and Sockeye are all the way through the Columbia, with some adults passing through the Snake. He also mentioned Steelhead are picking up and currently there is a lull between the summer and fall Chinook. David Wills, USFWS, stated the adult lamprey count is good, Bonneville has over 25,000, 130% above the 10 year average, but as you go upriver the numbers decrease. Dave Statler, Nez Perce, explained that the lamprey numbers between John Day and McNary continue to show a poor conversion rate. Charles Morrill, WA, also noted the Bonneville forebay temperatures are around 70 degrees Fahrenheit and this could result in steelhead passage delays.

Water Quality: Bill Proctor, USACE, said all was going well in the system.

Power System: Nothing to report.

The next TMT meeting will be a conference call on August 6th at 9:00am.
Agenda items include: Dworshak Operations Update and (tentative) information sharing about sockeye adult fall back

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

July 30, 2014

Minutes: Pat Vivian

1. Introduction

Doug Baus, COE, chaired this TMT meeting facilitated by Robin Gumpert, DS Consulting. Representatives of the COE, BPA, Montana, USFWS, Washington, NOAA, Idaho, BOR, Oregon, CRITFC, and others participated. This summary is an official record of the proceedings, not a verbatim transcript.

2. Meeting Minutes – July 9 and July 16

David Wills, USFWS, revised the lamprey 10-year averages he had reported on July 9 for Bonneville and The Dalles. The correct percentages for lamprey passage are 130% of the 10-year average at Bonneville and 160% of the 10-year average at The Dalles. With these changes, the minutes and notes will be considered final.

3. Libby Operations

Joel Fenolio, COE, reported that recent changes in the water supply forecast will affect the Libby summer operation TMT coordinated last March. Montana submitted SOR 2014-DMT#1 requesting gradually declining flows through summer to maintain a stable river environment. To meet that request, the COE proposed to target 2452-2454' elevation by August 31 and release 9-10 kcfs until the BiOp elevation of 2449' is reached in September. There was a caveat: If Libby inflows turned out to be less than anticipated and the forebay elevation dropped below 2449' before September 30, releases would go to 6 kcfs bulltrout minimums in September.

Joel walked TMT through data linked to today's agenda. Based on ESP traces from 53 prior years, the June 30 Libby inflow projection of 7 maf for August-September was revised down to 6.6 maf on July 29. The initial estimate of releases needed to attain elevation 2452-2454' by August 31, as planned for the SOR, dropped from 13 kcfs on June 30 to 9 kcfs yesterday, which is the bull trout minimum flow for August. Anticipated September flows to meet the SOR have dropped from 9 to 6.5 kcfs. Fifty of the 53 ESP traces indicate the reservoir will drop below elevation 2449' by end August. This means Libby residual volume could be 400-500 kaf less than forecast in June due to lack of precipitation. The current projection is for 480 kaf residual volume, which is equivalent to 1992. It's a much drier forecast than anticipated.

Currently Libby is releasing 11 kcfs. The COE proposed to drop releases to 10 kcfs tomorrow night, then to 9 kcfs on August 6 and 6 kcfs on September 6. The reservoir reached peak elevation of 2453.1' (July 23), about a foot below the elevation targeted in the Montana SOR. With inflows dropping off rapidly, the projected end of August elevation is 2449.3'. Assuming there is no rain and releases drop to 6 kcfs on September

6, the reservoir elevation would be approximately 3' below 2449' by end September. Assuming there is some rain, the same operation would take the reservoir to elevation 2450.4' by end August. If the forebay elevation is above 2449' September 30 the AA's would not increase September outflows ("double peak") in order to achieve 2449' on September 30. Should Libby Dam be above 2449' on September 30 the AA's would make best efforts to discharge this equivalent volume of water above 2449' during the month of October. If Libby Dam is above 2449' on September 30 after achieving 2449' in August or September there would not be an expectation to coordinate outflows in the month of October associated with the additional volume of water that was above 2449' on September 30. Tony Norris, BPA, noted that bulltrout minimums of 9 kcfs in August and 6 kcfs in September will limit the operation.

Jim Litchfield, Montana, acknowledged the only option at this point, given bull trout minimums, is dropping to 9 kcfs releases as soon as possible although that would have a minimal effect on the outcome. He emphasized the importance of not dewatering aquatic habitat because insects that are a primary food source die within hours if the elevation drops. Even if the area is re-watered, it remains unproductive for a month. Montana's main concern at this point is that, if it does rain, the reservoir elevation not be allowed to fluctuate in pursuit of a specific elevation.

Fenolio clarified that the main operational goal for Libby is to reach the BiOp elevation of 2449' without destabilizing the river environment. There should be no problem with dropping to 9 kcfs outflows sooner than next week, per Montana's request. TMT will follow up on Libby operations in August.

4. Treaty Fishing – SOR 2014-C8 and SOR 2014-C9

Kyle Dittmer, CRITFC, presented these two operational requests. SOR 2014-C8 was implemented July 21-25; SOR 2014-C9 covers July 28-31 and is currently being implemented. Both SORs make the typical request of 1.5' flow bands in the three lower Columbia River pools to minimize fluctuations for treaty fishers. A CRITFC-sponsored net flight on July 29 found 195 nets with 88 on the Oregon side of the river and 107 on the Washington side. Of these, 75 (38%) were in the Bonneville pool, 42 (22%) in The Dalles pool, and 78 (40%) in the John Day pool.

5. Dworshak Operations

John Heitstuman and Jeremy Giovando, COE Walla Walla, reported. Due to forecasted cloud cover, there's a potential to cut Dworshak discharges to 10 kcfs and still meet the Lower Granite tailwater temperature criteria. The current Dworshak tailwater temperature is around 45.5 degrees F. In response to an inquiry from Dave Statler, Nez Perce Tribe, Giovando said the most unpredictable factor in managing water temperatures is Hells Canyon operations, although some of the reprieve at Lower Granite can be attributed to reductions in warm water releases from Hells Canyon.

The COE plans to reduce Dworshak releases to 10 kcfs and monitor the situation closely. Charles Morrill, Washington, thanked the COE for its careful attention to Dworshak operations and requested that any model runs of Lower Granite tailwater temperatures done between now and the next TMT meeting be posted online for FPAC and TMT to review before they meet next. Although tailwater temperatures at Lower Granite are relatively cool, he reported that forebay temperatures are warmer than last year. David Wills, USFWS, said the hatchery needs temperatures in the Lower Granite tailrace not to go below 43 degrees F because it limits steelhead growth.

Morrill and Trevor Conder, NOAA, expressed concern about temperature impacts on adult sockeye at Lower Granite, where fallback has been a problem. At Lower Granite, 31.7% of the sockeye numbers are re-counts, while fallback is a very low percentage of counts at Little Goose. Russ Kiefer said Idaho has been examining the fallback issue closely and questions the accuracy of these reported data. He and Conder agreed to collaborate on a memo that describes the situation, per FPAC's discussion yesterday.

Statler requested that Lower Granite ladder temperature data be posted online. Lisa Wright, COE, said she will look into this, and Conder said he will bring it up at FPOM. TMT will revisit Dworshak operations at its next meeting August 6.

6. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3559' with releases of 3.4 kcfs. Inflows are declining and the BOR anticipates dropping releases to 3 kcfs next week. Grand Coulee is at elevation 1288.4', drafting slowly toward an end of August target of 1279.7'.

Dworshak is at elevation 1575.5' with inflows of 1.6 kcfs and releases of 13.3 kcfs. Libby is at elevation 2453' with inflows of 10.3 kcfs and releases of 11 kcfs.

Lower Granite daily average outflows are 36.6 kcfs. McNary daily average outflows are 194.4 kcfs. Bonneville daily average outflows are 192.1 kcfs.

The Little Goose operation switched from 30% spill to the 7- 11 kcfs constant spill last weekend identified in the Fish Operations Plan in response to the low flows of summer. Flows are currently 36 kcfs, and the threshold for spillway removal is 35 kcfs for 3 days, so the spillway removal is scheduled for August 4. As coordinated at last week's TMT meeting, Baus reported that the COE is currently operating Little Goose at MOP+1' to provide safe navigation. This operation is expected to continue through end August.

e. Fish. Trevor Conder, NOAA, reported. Subyearling passage is declining steadily as water temperatures rise. Sockeye passage is nearly done except in the Snake, while steelhead passage is picking up.

Wills reported that adult lamprey counts at Bonneville look good; more than 25,000 passed the window yesterday, 130% of the 10 year average. The lamprey flume is

working although there are some problems with air entrainment and valves. Statler noted that adult lamprey conversion between Bonneville and The Dalles is very poor based on day counts, and the count of 4831 lamprey passing John Day yet only 542 passing McNary is problematic. Charles Morrill reported that Bonneville temperatures are exceeding 70 degrees F which could result in delayed steelhead passage.

c. Water Quality. Bill Proctor, COE, reported that FOP spill operations are going well and there are no spill restrictions. TDG levels at Lower Monumental rose in mid-July. TDG levels are around 111-112% below Chief Joseph Dam.

d. Power System. There was nothing to report today.

7. Next TMT Meeting

The next meeting will be a conference call on August 6 to discuss adult sockeye fallback at Lower Granite.

<i>Name</i>	<i>Affiliation</i>
Tony Norris	BPA
Jim Litchfield	Montana
Lisa Wright	COE
David Wills	USFWS
Charles Morrill	Washington
Trevor Conder	NOAA
Julie Doumbia	BPA
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Karl Kanbergs	COE
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Russ Kiefer	Idaho
Mary Mellema	BOR
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Doug Baus	COE
Kyle Dittmer	CRITFC
Joel Fenolio	COE Seattle
Kristian Mickelson	COE Seattle
Heather Dohan	Puget
John Heitstuman	COE Walla Walla
Jeremy Giovando	COE Walla Walla
Greg Hoffman	Libby Dam
Dave Statler	Nez Perce
Shane Scott	PPC
Scott Bettin	BPA