

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemmer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday July 11, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING
Phone Number (877) 336-1274
Access Code 3871669
Security Code 6319

We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnmw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. Review June 20 Meeting Minutes
3. Libby Operations - Doug Baus, COE-NWD and Joel Fenolio, COE-NWS
 - a. [Libby Dam Summer Operations](#)
4. Operation of the Lower Columbia Pools for the Summer 2012 Treaty Fishery - Tom Lorz (CRITFC), Umatilla
 - a. [SOR 2012-C2](#)
5. McNary Dam Juvenile Transportation - Paul Wagner, NOAA Fisheries
6. Dworshak Operations - Steve Hall, COE-NWW

- a. [DWR Regulation - Final Refill](#)
 - b. [Snake and Clearwater River Temperatures](#)
7. Operations Review
- a. Reservoirs
 - b. Fish
 - c. Water Quality
 - d. Power System
8. Other
- a. Set agenda and date for next meeting - **July 18, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:
[Dong Baus](#) at (503) 808-3995

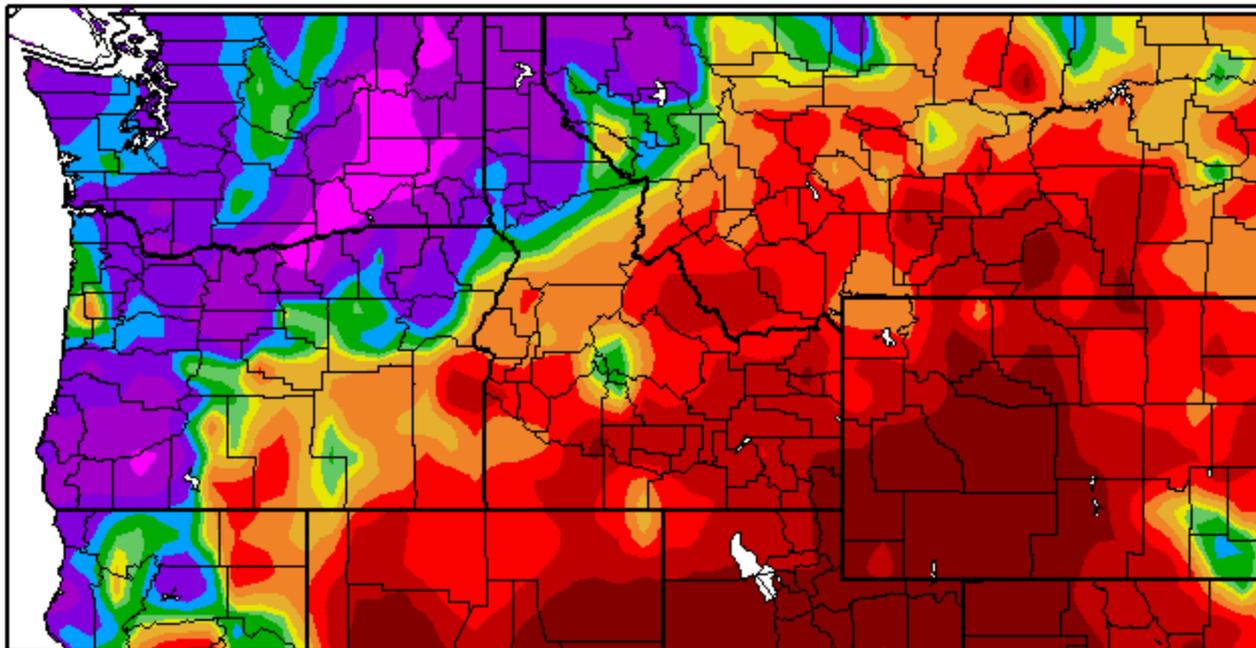
2012 Summer Operations for Libby Dam

Joel Fenolio
Seattle District
July 11, 2012



June Precipitation

Percent of Normal Precipitation (%)
6/1/2012 - 6/30/2012



Generated 7/5/2012 at HPRCC using provisional data.

Regional Climate Centers



Kootenai Basin June Precipitation and Libby Dam Inflow

§ Bonners Ferry precipitation (85 year record):

- ▶ 5.2 inches for June 2012
- ▶ Previous Record 3.96 inches in 1985
- ▶ 120 year event

§ 200 – 400% of average throughout the basin

§ Inflow Volume for June

- ▶ 3463.5 KAF (166% of average)
 - 4th Highest in the last 50 years



Libby Dam Operations

§ Currently surcharged above 2459 ft

- ▶ Deviation request in place to store up to 2461 ft

§ As of July 10th:

- ▶ Elevation 2459.6 ft
- ▶ Releasing 43 kcfs
- ▶ Inflows 45.6 kcfs



Libby Dam Summer Alternatives

Alt 1

§ Target 2449 ft end of August

- ▶ Coordinated with TMT
March 28th KTOI SOR

Alt 2

§ Use inflow triggers to set releases

- ▶ Follow inflow recession to powerhouse
 - Release powerhouse capacity
- ▶ Inflows reach 20 kcfs -> Release 20 kcfs
- ▶ Inflows reach 16 kcfs -> Release 16 kcfs
- ▶ Inflows reach 12 kcfs -> Release 14 kcfs
- ▶ Inflows reach 10 kcfs -> Release 12 kcfs
- ▶ Release 12 kcfs until 31-Aug
- ▶ If release greater than 12 kcfs on 22-Aug then ramp down to 12 kcfs until 31-Aug



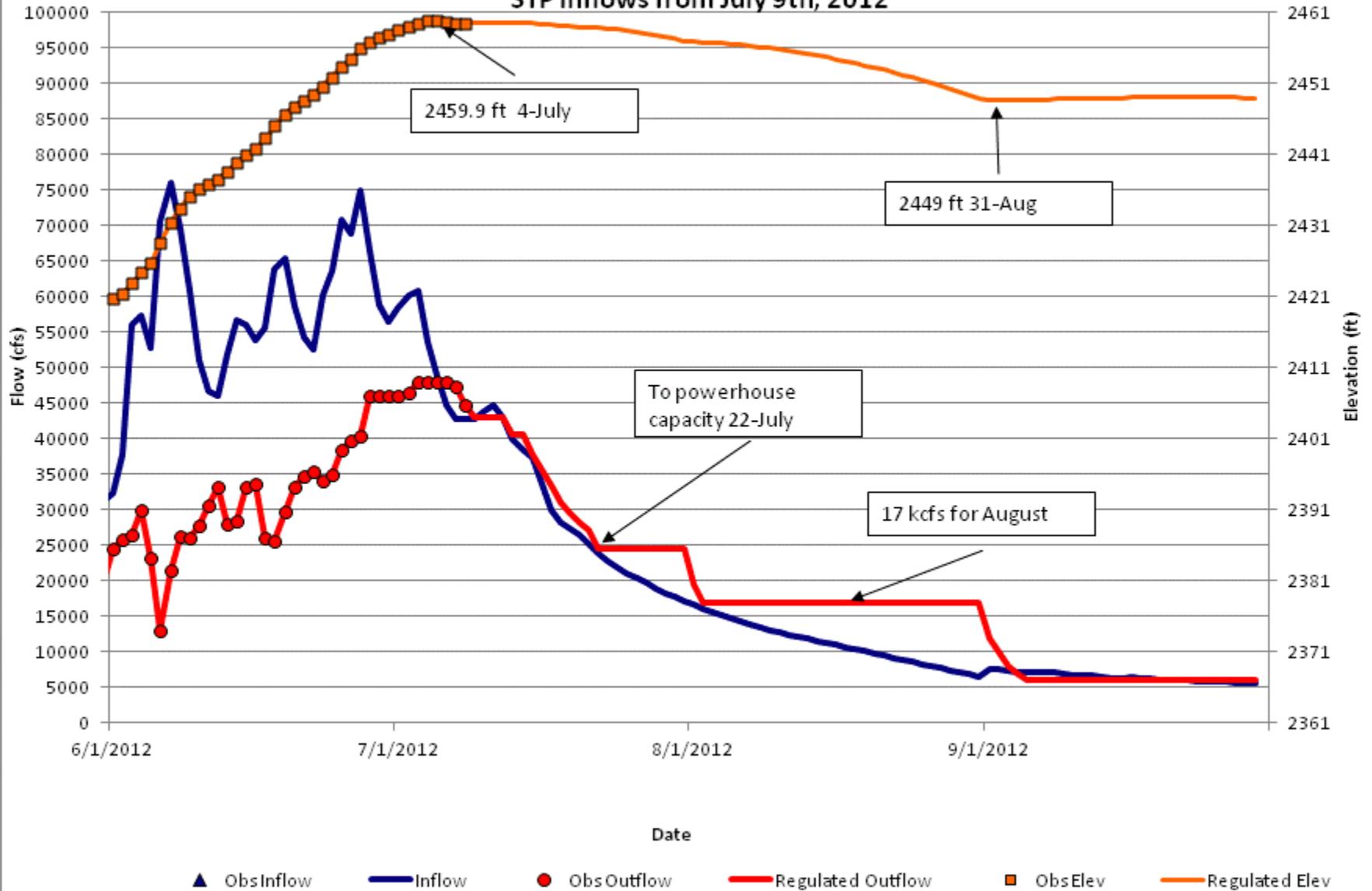
Libby Dam Summer Alt. cont'd

§ Inflow triggers alternative would:

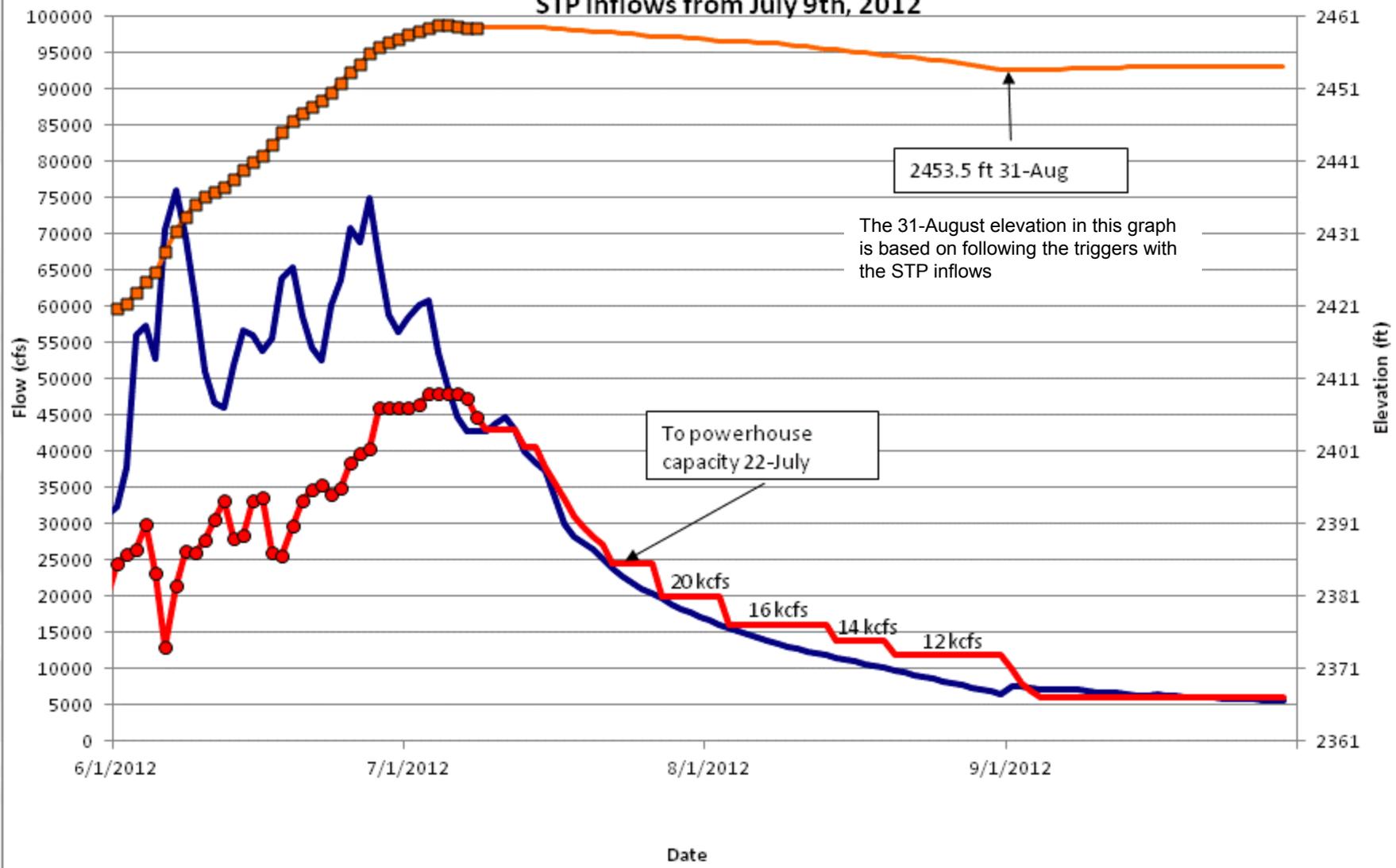
- ▶ Not target an elevation target on 31-Aug
- ▶ Not have Libby Dam release increase if inflows exceed the release
- ▶ Have biological benefits of a gradual ramp down
- ▶ Minimize adverse impacts on the levees
- ▶ Alleviate downstream seepage issues
- ▶ Still allows for 6 kcfs in Sept per the KTOI
SOR



Libby Apr-Sep Ops WY 2012,
 Target Elev. 2449 ft
 STP Inflows from July 9th, 2012



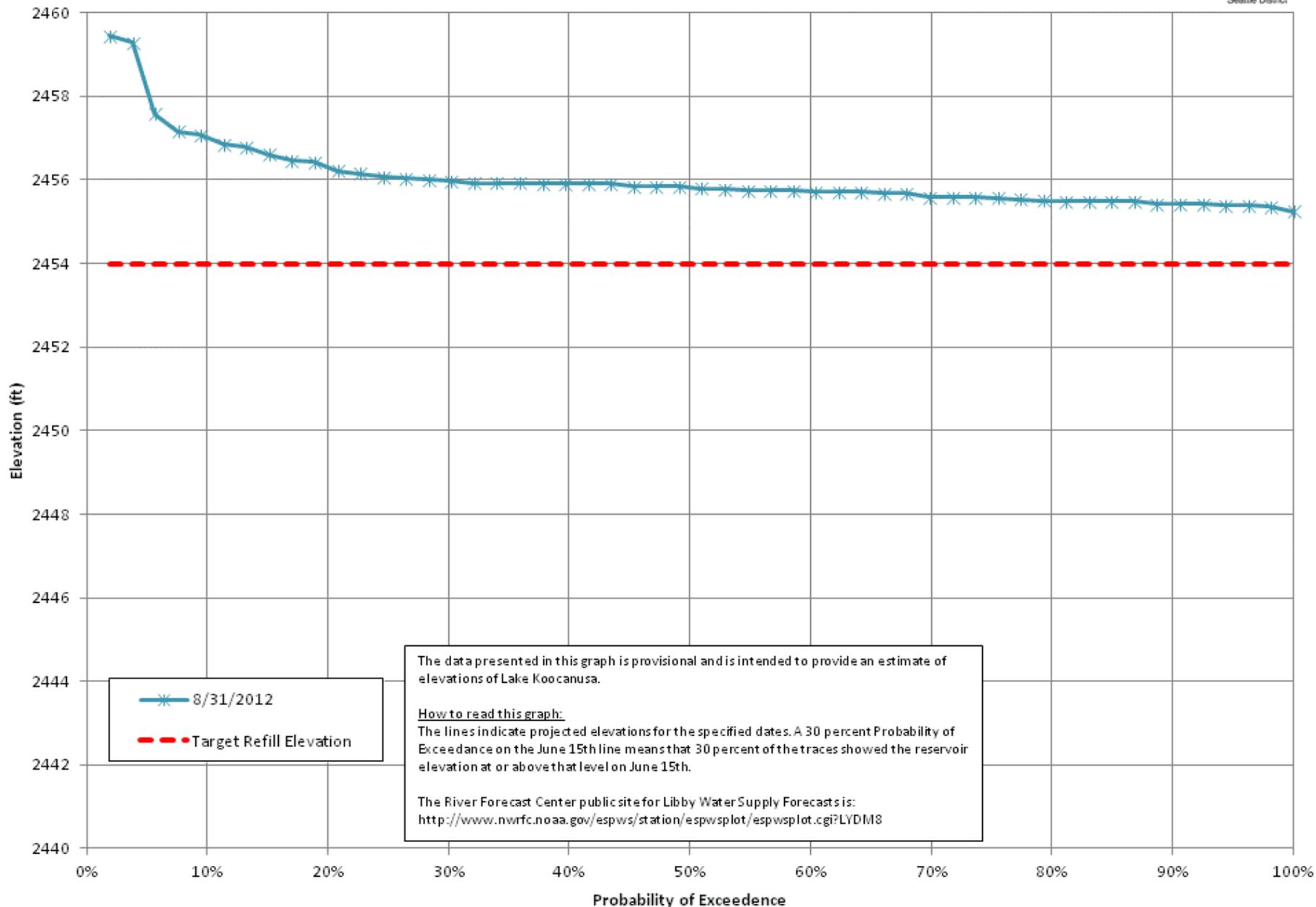
Libby Apr-Sep Ops WY 2012, Inflow Triggers STP Inflows from July 9th, 2012



▲ ObsInflow ■ Inflow ● ObsOutflow ■ Regulated Outflow ■ ObsElev ■ Regulated Elev

Libby Dam Reservoir Elevations - Probability Chart

Corps of Engineers Projections Based on the 53 Ensemble Streamflow Prediction Traces
 Issued by the Northwest River Forecast Center, National Weather Service



—* 8/31/2012
- - - Target Refill Elevation

The data presented in this graph is provisional and is intended to provide an estimate of elevations of Lake Koochanusa.

How to read this graph:
 The lines indicate projected elevations for the specified dates. A 30 percent Probability of Exceedance on the June 15th line means that 30 percent of the traces showed the reservoir elevation at or above that level on June 15th.

The River Forecast Center public site for Libby Water Supply Forecasts is:
<http://www.nwrfc.noaa.gov/espws/station/espwsplot/espwsplot.cgi?LYDM8>

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

July 11, 2012

DRAFT Facilitator's Summary

Facilitator: Donna Silverberg

The following notes are a summary of issues that are intended to 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.

Review June 20 Meeting Minutes

Changes were requested to the Facilitator's Summary notes regarding the Fish report. The COE will revise and update the summary accordingly and then they will be final. With no comments, the Official Meeting Minutes were approved as final.

Libby Operations

Joel Fenolio, COE-NWS, told the group that operations related to the Kootenai Tribe's SOR-2012-01 was now underway and needed additional discussion at TMT. The SOR was requested and agreed upon in March—and part of that agreement at Libby Dam was to target 2449 feet August 31 but to manage through in-season coordination with TMT as forecasts and observed conditions develop. However, record breaking precipitation at Libby has inundated the region, causing pressure and stresses on both people and structures. As a result, the COE has proposed an alternative operating plan that could meet biological needs (to be detailed next week) while also protecting structures. Joel presented the alternative approach via a PowerPoint and asked that TMT members consider this for a discussion and decision at next week's TMT.

Discussion/questions:

There was not disagreement with the ramp down suggested at this time. But there were some questions that TMT would like answered next week:

- It looks as though the stepped approach in alternative 2 indeed has benefits. Is it possible to slightly increase the steps to hit 2449'? Can you add steps of 22 kcfs and 18 kcfs, make all steps equal in duration, and still hit 2449'?
- What are the biological benefits that the COE is trying to achieve? Please clarify these so that no one has to guess.

ACTION: Joel will develop another alternative that considers the input from the group and will get that to TMT by the end of this week. TMT will discuss at its July 18 meeting.

Lower Columbia Pool Operations for Summer Treaty Fishery

Tom Lorz, CRITFC/CTUIR, reviewed SOR 2012-C2, which was implemented July 3-6 and 9-12. He noted that the tribes appreciated the COE's work to hit the targets requested to support treaty fishing. Tom said there may be another request for continuing the fishery in the next week or two.

McNary Juvenile Transport

Paul Wagner, NOAA Fisheries, gave background about survival rates and reminded the group about decisions around transport that related to the old outfall at McNary Dam. He noted that survival rates with the new outfall are looking very promising. As a result, NOAA, in coordination with FPAC, would like to delay juvenile transport at McNary. At this point, NOAA and FPAC would be happy delaying transport until August 1, but they need to check-in with the Colville Tribe and Montana before being certain of this as a requested action.

Next Steps: NOAA will review the most recent biological data at McNary, including looking at lamprey information, which outfall location the data was recorded at, percentage points and error bands. NOAA will coordinate with FPAC and FPOM on this information prior to providing a request to the COE for the delay, as required in the FOP. The issue will be revisited at TMT on July 18.

Dworshak Operations

Steve Hall, Corps Walla Walla District, reported on final refill operations and the transition to temperature operations at Dworshak Dam. He noted that the project touched full on June 30 and began a gradual draft on July 1. On July 9, they began to increase drafts for temperature and flow augmentation. Steve reviewed the COE's proposed course of action to counter high temperatures predicted in the area in the foreseeable future. He clarified that the COE would be monitoring temperatures daily, would cut back sooner on the drafts if the temperatures moderate sooner than later, and, now that the project is in temperature augmentation ops, will stop fluctuations to focus on temperature needs. This plan was met with praise from all TMT members. Steve also pointed to the TMT homepage and noted that real time operations are listed under the Water Quality Data section at a link titled "Temp". Once there, go to Dworshak Summer Operations, if interested.

Operations Review

Reservoirs –

Hungry Horse July 10 midnight elevation of 3559.16 feet with inflows of 6.22 kcfs and outflows of 5.86 kcfs.

Grand Coulee 1289.5 feet with inflows at 248.5 kcfs and outflows 244.1 kcfs kcfs.

Libby at 2459.7', with 46.3 kcfs in and 43 kcfs out.

Albeni Falls at 2062.3' with 48.1 in and out.

Priest Rapids inflows were 301.3 kcfs.

Dworshak at 1597.9', with 5.2 kcfs in and 12.5 kcfs out.

Lower Granite inflows were 50.2 kcfs; and

Bonneville inflows were 330.2 kcfs.

Fish – Paul Wagner, NOAA, reported that sub-yearling Chinook peaked at Lower Granite on June 27 and are now at primetime in the lower river. Adult summer Chinook were still close to the 10-year average. Jacks counts remain low. Sockeye numbers are having a record year. Steelhead are doing fine, but the jacks are low also.

Water quality – Nothing to report—but heads-up that the spill priority list will be on the agenda next week!

Power system – BPA is doing the best to manage the system and TDG. Transmission system emergencies may continue in the Flathead Valley and Tony Norris will keep TMT apprised of this activity if it comes up.

TMT Schedule

July 18 Agenda items include –

- Libby Summer Operations
- McNary Juvenile Transport
- Spill Priority List
- Treaty Fishery Update
- Dworshak Temperature Operations
- Other?

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

July 11, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Donna Silverburg, DS Consulting. Representatives of the Nez Perce Tribe, BPA, COE, Oregon, NOAA, USFWS, Washington, Idaho, BOR, Kootenai Tribe, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review June 20 Meeting Minutes

Russ Kiefer, Idaho, made two clarifications on the fish update section of the facilitator's notes: (1) Four PIT-tagged sockeye from Stanley Basin were detected at Bonneville Dam (not Lower Granite Dam, as the notes say). (2) The count of 6,847 spring chinook at Lower Granite as of April 20, cited by Paul Wagner, is questionable. The notes will be revised and reposted to the TMT page. There were no changes to the official minutes.

3. Libby Operations

The COE received System Operational Request 2012-01 (SOR) Kootenai River Habitat Restoration Project from the Kootenai Tribe of Idaho on March 28, 2012. In order to implement the SOR requesting Libby discharges of 6 kcfs during September and 4 kcfs during October the COE coordinated an operation during the March 28 TMT meeting that would allow for the implementation of the SOR. The operation coordinated during this meeting was targeting a Libby end of August elevation of 2449 feet but the final end of August elevation would be managed through in-season coordination based on forecast and observed conditions. Since this operation was coordinated during the March 28 TMT meeting there has been a significant amount of above average precipitation in Montana and western Idaho. Joel Fenolio, COE, gave TMT a slideshow presentation on the current situation in Libby basin.

In June, observed and forecasted conditions far exceeded expectations. Precipitation was 200-400% of normal throughout Libby basin, and Bonners Ferry set an 85-year record with 5.2 inches of rain in June. This situation pushed Libby inflow volume to its fourth highest in the past 50 years. The COE water supply forecast was anticipating about 7.2 MAF of April-August inflows during June, but this year it will probably be 8.5-9 MAF. Inflow volume for June was 3463.5 KAF, which is 166% of average.

As a result of this deluge, Libby ran out of storage space and Bonners Ferry elevation rose to 1766.6 feet, 2.6 feet above flood stage. The COE has a deviation request, in coordination with Canada, to surcharge the pool, up to 2461 feet elevation, which is a 2-foot surcharge above the normal full pool elevation of 2459 feet. The current elevation of Libby pool is 2459.7 feet.

Fenolio presented TMT with two alternatives for managing such high inflows to Libby Dam and target 2449 feet at Libby by 31-August as TMT discussed in March (Alternative 1), or shift to an operation that ramps down releases more gradually based on inflow triggers rather than an elevation target (Alternative 2). The COE proposed to implement Alternative 2, giving TMT members a week to review the proposal. This operation would involve following the inflow recession until inflows are the same as powerhouse capacity, then following a stepped approach: Release 20 kcfs when inflows are 20 kcfs, 16 kcfs when inflows are 16 kcfs, 14 kcfs when inflows are 12 kcfs, and 12 kcfs when inflows are 10 kcfs. A flow rate of 12 kcfs would begin on approximately August 22 and continue through the end of the month. The difference in flow volumes between the two alternatives is potentially around 200 KAF.

Greg Hoffman, COE Libby Dam, and Fenolio pointed out the gradual ramp down of Alternative 2 with lesser volume provides a more normative wetted perimeter throughout the summer, and incurs a lesser loss of accrued productive varial zone temporally as river is ramped down to 6 kcfs in September. This applies to the wetted perimeter below Libby Dam in Montana, as well as wetted perimeter treated by Kootenai Tribe of Idaho nutrient enhancement program. Alternative 2 would also minimize adverse impacts on the saturated levees below Libby and alleviate downstream seepage into farmland. This alternative still targets an outflow of 6 kcfs in September for the Kootenai SOR.

TMT members have a week to consider this proposal and will be asked for an in-season recommendation at the next TMT meeting July 18. Today's conversation focused on questions. If the reservoir elevation drops below 2449 feet because inflows are less than expected, Paul Wagner, NOAA, asked, would releases at the end of August remain 12 kcfs? Yes, Fenolio said, maintaining 12 kcfs releases through August would offer multiple benefits. The COE expects to spill through about July 22 at Libby and hold powerhouse flows until August 1, dropping outflows to 6 kcfs by August 31. However, targeting 2449 feet by end of August could require releases of 17-20 kcfs, which would result in a massive ramp down at the end of the month. This could have adverse impacts on aquatic resources associated with the wetted perimeter as well as damage the levees below Libby and would have adverse effects on bull trout and other species in the Kootenai River. Under the proposed alternative stepdown approach, the end of August elevation would be 2454-2459 feet.

TMT members expressed interest in seeing a third scenario modeled in which releases drop more gradually during August while still targeting 2449 feet by August 31. Rick Kruger, Oregon, suggested increasing the flow rates at each step of the ramp down in order to achieve both goals. Charles Morrill, Washington, also suggested

adjusting the steps depending on inflows and outflows. Dave Statler, Nez Perce, favored increasing the gradual ramp downs. Tom Lorz, Umatilla, requested an explanation of the biological benefits Alternative 2 would achieve. Russ Kiefer, Idaho, suggested adding a step down at 22 kcfs and 18 kcfs, making all the step downs equal in duration.

Sue Ireland, Kootenai Tribe, said her community has been seriously impacted by the high water levels. She urged TMT to consider the biological and levee impacts of its recommendation. The Kootenai Tribe strongly supports Alternative 2 as it allows for the implementation of the previously coordinated SOR while still managing to achieve a reasonable end of August Libby elevation based on the significant amount of above average precipitation that occurred during the month of June. The high lake elevation has raised the stage from Bonners Ferry downstream throughout the agricultural area, caused by a backwater effect. Hoffman said reducing the delivery of the volume of water above 2449 feet at this time will have biological and ecological benefits.

Baus noted that inflows in the lower Columbia River have been high throughout the summer. From June 20 to today McNary Dam inflows have ranged from a high of 423 kcfs to a current low of 332 kcfs. These high McNary Dam inflows have been well in excess of the 200 kcfs identified in the Water Management Plan. He reported that Montana, while not represented at today's meeting, has expressed support for the step-down methodology proposed by Alternative 2. TMT will revisit Libby operations next week.

4. Operation of the Lower Columbia Pools for Summer 2012 Treaty Fishery

Tom Lorz, CRITFC, presented SOR 2012-C2, linked to this item on today's agenda. The SOR calls for two treaty fisheries:

- 6 am, July 3 – 6 pm, July 6
- 6 am, July 9 – 6 pm, July 11

The SOR calls for Bonneville, John Day and The Dalles pools to be managed within a 1.5-foot band during these fisheries. Lorz will report back to TMT on planning for any further fisheries and will provide catch data when it is available.

5. Juvenile Transportation at McNary Dam

The BiOp and FOP indicate juvenile transportation at McNary will commence between July 15-30, based on in-season adaptive management, Wagner recalled. In past years, NOAA favored an early start for two reasons: (1) Survival at the outfall was low (around 75%, which is worse than the spillway and the turbines) because the outfall was in a poor location. The new location appears to be an improvement. (2) An early start to transportation enhances tracking of PIT-tagged Snake River fish.

However, in light of the high flows and improved outfall location, NOAA recommends delaying transport until July 30 (the latest default start date identified in the FOP) and possibly indefinitely. Statler requested that Pacific lamprey needs be considered in the transport recommendation. NOAA will provide additional biological data to justify its recommendation. The data analysis will be based on PIT tag detections of Snake River fish from June 1-28, 2012, and will address both trucking and barging, Wagner said. Wagner will coordinate with FPOM and FPAC.

Derek Fryer, COE Walla Walla, said more data analysis is needed, particularly of the confidence bounds. The outfall location will be integral to analyzing the data. Fryer said he will investigate the availability of data from performance standards testing to aid in this decision. Russ Kiefer said an evaluation of the outfall relocation would also be helpful in making a decision. TMT will revisit juvenile transportation next week in light of the new information.

6. Dworshak Operations

Steve Hall, COE, gave a slideshow presentation on Dworshak temperature operations, which is linked to this item on the agenda. Dworshak reservoir filled on June 30 and began drafting shortly thereafter, holding 7.5 kcfs releases through July 8 due to high inflows. Beginning July 9, the COE increased discharges for temperature and flow augmentation. The latest modeling analysis shows temperatures approaching 68 degrees F by July 13.

Hall showed TMT two modeled scenarios. This first depicts a constant outflow of powerhouse capacity (9.5 kcfs) beginning July 10. That operation would keep temperatures close to 68 degrees – perhaps too close. The second scenario shows outflows of 13 kcfs. To counteract the warming trend over the past few days, the COE has increased discharges to 13 kcfs per this scenario. To conserve water for later in the summer, the COE plans to reduce Dworshak discharges to 11-12 kcfs when the reservoir temperature approaches 66 degrees.

Russ Kiefer endorsed the COE plan to reduce discharges when temperatures reach 66 degrees, noting that Idaho's analysis led to a similar conclusion. Charles Morrill, Washington, also supported the COE's plan. Hall clarified that Dworshak flows will be reduced 2-3 days before temperatures are projected to reach 66 degrees at Lower Granite tailwater to account for the 3 days of travel time from Dworshak to Lower Granite.

Dave Statler, Nez Perce, commented that it can be advantageous to keep flows stable during hot periods on the Snake River and in Hells Canyon instead of ramping up and down as temperatures change. Even discharges also help to avoid stranding juvenile Pacific lamprey that rear in shallow areas below Dworshak. While there was load following at Dworshak during late winter and early spring, Hall replied, the focus has shifted to managing TDG levels. Now that the Dworshak temperature operation is in effect, flows will stabilize.

Hall referred TMT to a temperature graph on the TMT site, posted under Water Quality Data at the link titled "Temp". This can be a useful tool for TMT members to use in tracking temperatures at Dworshak.

7. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3559.2 feet, passing inflows of 6 kcfs. The reservoir will probably remain a foot or two from full for the next few weeks. Flows will probably remain flat or decline through summer as the reservoir drafts toward a target elevation of 3550 feet. Grand Coulee is at elevation 1289.5 feet. Inflows and discharges continue to be well over 200 kcfs.

Libby is at elevation 2459.7 feet, with inflows of 46.3 kcfs and outflows of 43 kcfs. Albeni Falls is at elevation 2062.3 feet, passing inflows of 48.1 kcfs. Dworshak is at elevation 1597.9 feet, with inflows of 5.2 kcfs and releases of 12.5 kcfs. Priest Rapids inflows are 301.3 kcfs. Lower Granite inflows are 50.2 kcfs. Bonneville inflows are 330.2 kcfs.

b. Fish. Juveniles: Subyearling passage peaked on June 27 at Lower Granite with 30,000 fish, Wagner reported. Daily counts over the past week have subsequently declined to 3500. Little Goose is passing 3-5,000 fish per day, and Lower Monumental is passing 2-5,000 fish per day. Index testing for performance tests ended on July 6 or 8. McNary has passed an estimated 55,000-153,000 fish; John Day, 100,000 fish; and Bonneville, 100,000 fish. Lamprey passage at John Day reached 2,000 on July 3.

Adults: Summer chinook are passing Bonneville at the rate of 13,000 per day, with 53,000 to date, which is close to the 10 year average. Steelhead passage is picking up to 6-800 per day. Summer chinook are passing Bonneville at the rate of 60,000 per day. Sockeye passage has been phenomenal, setting a record of 500,355 fish. Summer chinook are passing Lower Granite at the rate of 10,000 per day, which is in line with the 10 year average. Kiefer reported that Ice Harbor summer chinook counts are 225 fish. There have been 28 Snake River sockeye PIT tag detections at Ice Harbor and 94 Snake River sockeye PIT tag detections at Bonneville.

c. Water Quality. A new proposed spill priority list reflecting the order of spill at projects after performance standard testing has been completed will be posted to the TMT site prior to the next FPAC meeting, Baus noted. The order will be consistent with past spill priority lists and prioritize projects in order sequentially from upstream to downstream (Lower Granite to Bonneville).

d. Power System. BPA has been doing its best to manage TDG in the lower river, Tony Norris reported. Also, BPA has been sending out summary emails on the recent transmission system emergencies in the Flathead Valley, but those should have come to an end. However, this problem could arise again if Libby and Hungry Horse

need to discharge close to full powerhouse during summer, when loads are low. BPA will keep TMT informed via email updates.

6. Next TMT Meeting

The next regular TMT meeting will be July 18. Libby operations, McNary transport, the new spill priority list, and Dworshak temperature operations will be on the agenda.

Name	Affiliation
Dave Statler	Nez Perce
Tony Norris	BPA
Lisa Wright	COE
Rick Kruger	Oregon
Paul Wagner	NOAA
Doug Baus	COE
Emily Plummer	DS Consulting
Russ George	WMC

Phone:

Dave Wills	USFWS
Charles Morrill	Washington
Russ Kiefer	Idaho
John Roache	BOR
Sue Ireland	Kootenai
Joel Fenolio	COE Libby
Greg Hoffman	COE Libby
Shane Scott	PPC
Dean Holecek	COE Walla Walla
Derek Fryer	COE Walla Walla
Margaret Filardo	FPC
Don Tinker	SCL
Barry Espenson	CBB
Richelle Beck	Grant PUD
Tom Lorz	CRITFC/Umatilla



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

729 NE Oregon, Suite 200, Portland, Oregon 97232

Telephone 503 238 0667

Fax 503 235 4228

SYSTEM OPERATIONAL REQUEST: 2012 C-2

TO: Col. Robert A. Tipton COE-NWD
James D. Barton COE-NWD-NP-Water Management
Karl Kanbergs, Douglas Baus COE-NWD-NP-WM-RCC
D. Feil, R. Peters, D. Ponganis COE-NWD-PDD (Fish Management Office)
Paul Cloutier COE-NWD (Tribal Liaison)
Col. John W. Eisenhower COE-Portland District
JR Inglis COE-Portland District (Tribal Liaison)
Lorri Lee USBR- PNW Regional Director
Steven J. Wright BPA Administrator
Steve Oliver, Greg Delwiche BPA-PG-5
Scott Bettin, Tony Norris BPA-Operations Planning-PGPO
Stan Speaks, Keith Hatch BIA, Northwest Regional Office

FROM: Babtist Paul Lumley, *Executive Director*

DATE: June 29, 2012

SUBJECT: **Operation of the Lower Columbia Pools for the Summer 2012 Treaty Fishery**

The Columbia River Inter-Tribal Fish Commission, on behalf of its members, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation, requests the following reservoir operations in "Zone 6" (Bonneville to McNary dams) during the summer 2012 Treaty fishery. This effort supports the 2012 ceremonial, subsistence, and commercial Treaty fishery times as established by the tribes and the Columbia River Compact.

SPECIFICATIONS: Implement the following pool operations as a hard system constraint, as follows:

July 3, 2012, 6 am, Tuesday, through 6 pm, July 6, 2012, Friday.

July 9, 2012, 6 am, Monday, through 6 pm, July 11, 2012, Wednesday.

Bonneville: Operate the pool within a 1.5 foot band during the treaty fishing period.

The Dalles (Celilo): Operate the pool within a 1.5 foot band during the treaty fishing period

John Day: Operate the pool within a 1.5 foot band during the treaty fishing period.

JUSTIFICATION:

The 2012 summer treaty fishing season is of critical importance to CRITFC's member tribes. The escapement of an estimated of **49,000** (Columbia at Bonneville Dam) adult summer Upper Columbia Chinook (below average) and **536,000** sockeye (record high) will create harvest opportunities for tribal fishers who will exercise their treaty rights by participating in this harvest using platform and gillnet fishing methods. This harvest will provide for the cultural, religious, and economic needs of the treaty tribes.

CRITFC has sponsored net flights each week to count the nets in each Zone 6 pool. The survey data will be shared with COE-RCC staff by early afternoon of the flight day. The June 26, 2012 survey showed 401 nets in the Zone 6 pools, as follows: 169 (42%) in Bonneville, 88 (22%) in The Dalles, and 144 (36%) in John Day.

Achieving good river conditions through managed river operations during the treaty fishery have been the basis of past litigation that have been supported by federal courts and are consistent with the trust and fiduciary responsibilities that the federal operators have with respect to CRITFC's member tribes. Good river conditions during the treaty fishery are also consistent with the spirit of the 10-year Memorandum of Agreements signed by tribal and Corps, BPA, and BOR officials.

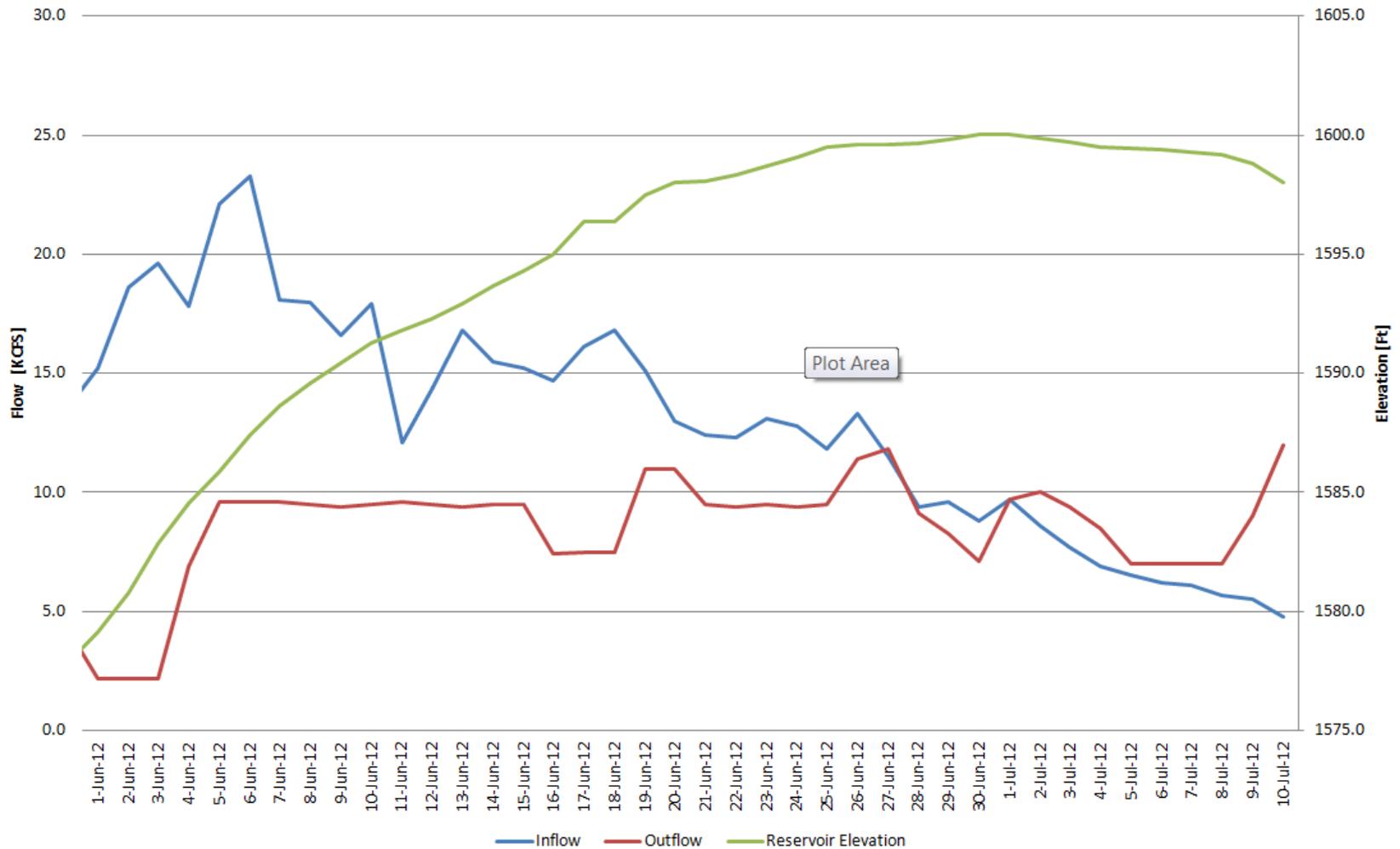
In past meetings with Corps officials, tribal fishers have explained that a pool fluctuation of more than 1.5 foot disrupts tribal fishery operations. Specific problems include: (1) increased local currents that sweep debris into fishing nets, (2) rapid 1-2 hour drops in water level will lead to entanglement of nets or change local currents that affect fishing success, (3) boat access problems, and (4) nets torn from their anchors if pools are raised after nets are set. Nets and gear are costly to replace and may become "ghost nets" that continue to catch fish and may negatively affect fish populations outside of the treaty fishing period.

Any delays or disruptions to tribal fishing operations caused by the excessive pool fluctuations in Zone 6 can negatively impact tribal incomes, food resources and cultural practices. Much of the tribal fishers' annual income and food is generated during the brief treaty fishing season. The fishers have expressed to Corps officials that the loss of fishing opportunity during the extremely limited treaty fishery period cannot be replaced.

If this SOR cannot be accommodated, CRITFC requests a verbal response with an explanation from the federal operators by COB, Friday June 29, 2012. Thank you for considering this request. Please contact Kyle Dittmer or Stuart Ellis should you have any questions at (503) 238-0667.

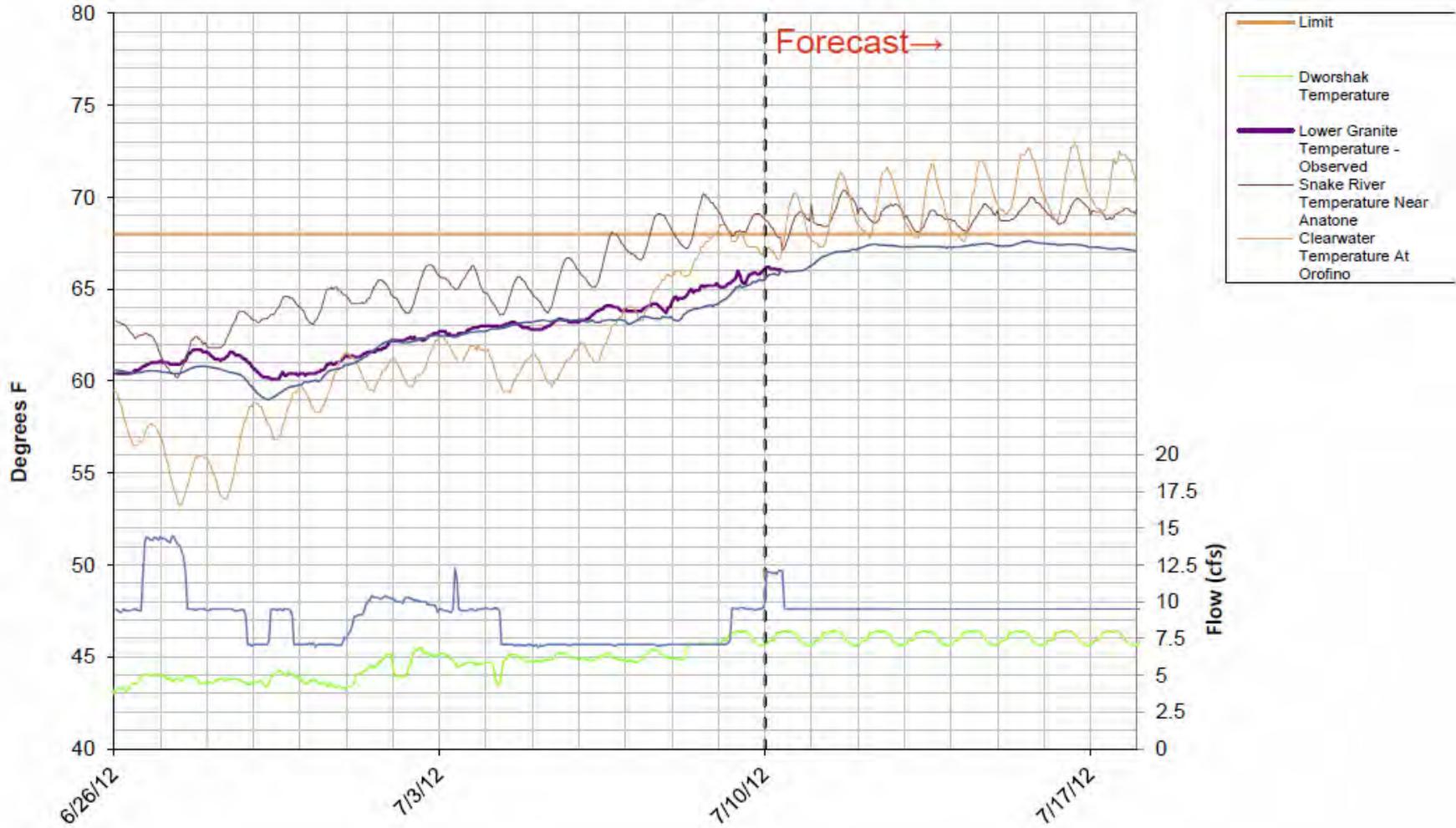
Cc: Tribal staffs and attorneys

DWR Regulation - Final Refill



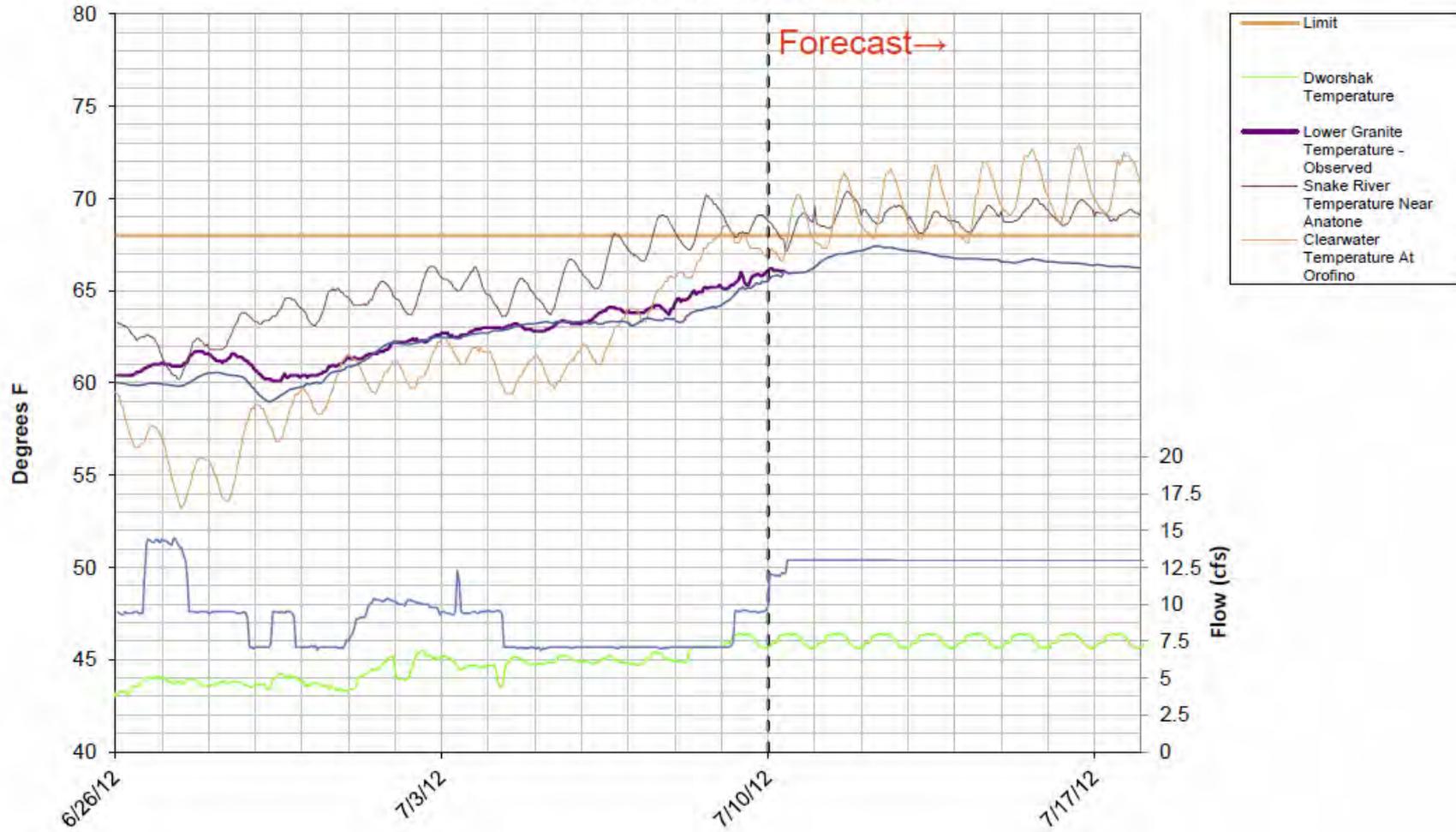
Output from CEQUALUtility Pre-processor
w/ SILW from agrimet spreadsheet
9.5 KCFS beginning on the 10th

Water Temperature Comparisons Model from 6/26/2012 to 7/18/2012 Observed Data to 7/10/2012



Output from CEQUALUtility Pre-processor
w/ SILW from agrimet spreadsheet
13.0 KCFS begining on the 10th

Water Temperature Comparisons Model from 6/26/2012 to 7/18/2012 Observed Data to 7/10/2012



®

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday July 18, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING
Phone Number (877) 336-1274
Access Code 3871669
Security Code 8336

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnmw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. Review July 11 Meeting Minutes
3. Water Supply Forecast Update - Doug Baus, COE-NWD
 - a. [The Dalles](#)
4. Libby Operations - Doug Baus, COE-NWD and Joel Fenolio, COE-NWS
 - a. [Libby Dam Summer Operations](#)
5. McNary Dam Juvenile Transporation - Paul Wagner, NOAA Fisheries
 - a. [SOR](#)

6. Dworshak Operations - *Steve Hall, COE-NWW*
7. Spill Priority List - *Doug Baus, COE-NWD*
 - a. [Summer](#)
8. Operations Review
 - a. Reservoirs
 - b. Fish
 - c. Water Quality
 - i. [June TDG Instances](#)
 - d. Power System
9. Other
 - a. Set agenda and date for next meeting - **July 25, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

2012 Summer Operations for Libby Dam

Joel Fenolio
Seattle District
July 18, 2012



BUILDING STRONG®

Libby Dam Summer Alternatives

Alt 1

- Target 2449 ft end of August
 - ▶ Coordinated with TMT
March 28th KTOI SOR

Alt 2

- Use inflow triggers to set releases
 - ▶ Follow inflow recession to powerhouse
 - Release powerhouse capacity
 - ▶ Inflows reach 20 kcfs -> Release 20 kcfs
 - ▶ Inflows reach 16 kcfs -> Release 16 kcfs
 - ▶ Inflows reach 12 kcfs -> Release 14 kcfs
 - ▶ Inflows reach 10 kcfs -> Release 12 kcfs
 - ▶ Release 12 kcfs until 31-Aug
 - ▶ If release greater than 12 kcfs on 22-Aug then ramp down to 12 kcfs until 31-Aug



Libby Dam Summer Alternatives

Alt 3

- Use inflow triggers to set releases
 - ▶ Follow inflow recession to powerhouse
 - Release powerhouse capacity
 - ▶ Inflows reach 20 kcfs -> Release 22 kcfs
 - ▶ Inflows reach 18 kcfs -> Release 20 kcfs
 - ▶ Inflows reach 15 kcfs -> Release 18 kcfs
 - ▶ Inflows reach 13 kcfs -> Release 16 kcfs
 - ▶ Inflows reach 11 kcfs -> Release 14 kcfs
 - ▶ Inflows reach 9 kcfs -> Release 12 kcfs
 - ▶ Release 12 kcfs until 31-Aug
 - ▶ If release greater than 12 kcfs on 24-Aug then ramp down to 12 kcfs until 31-Aug

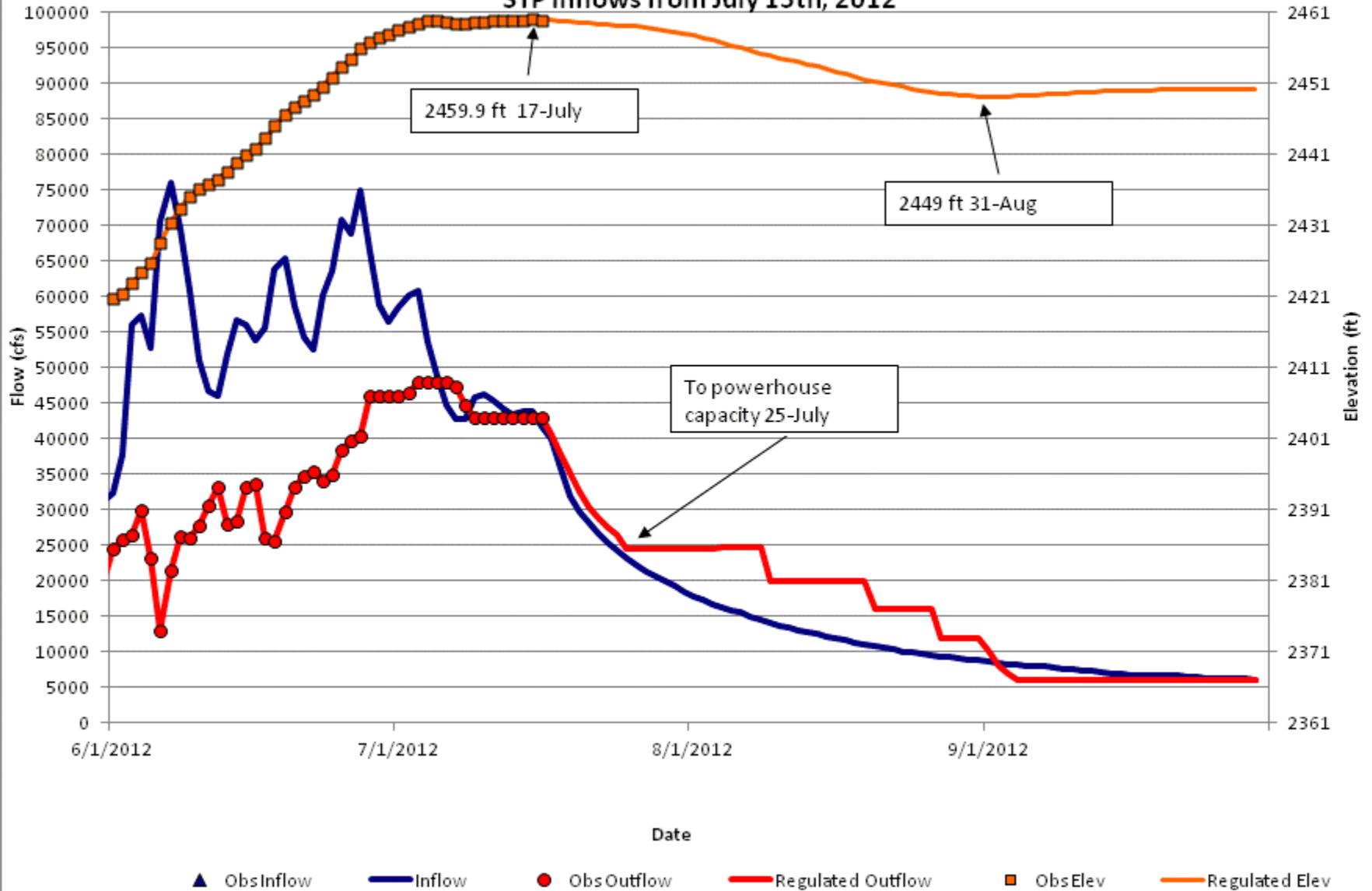


Libby Dam Summer Alt. cont'd

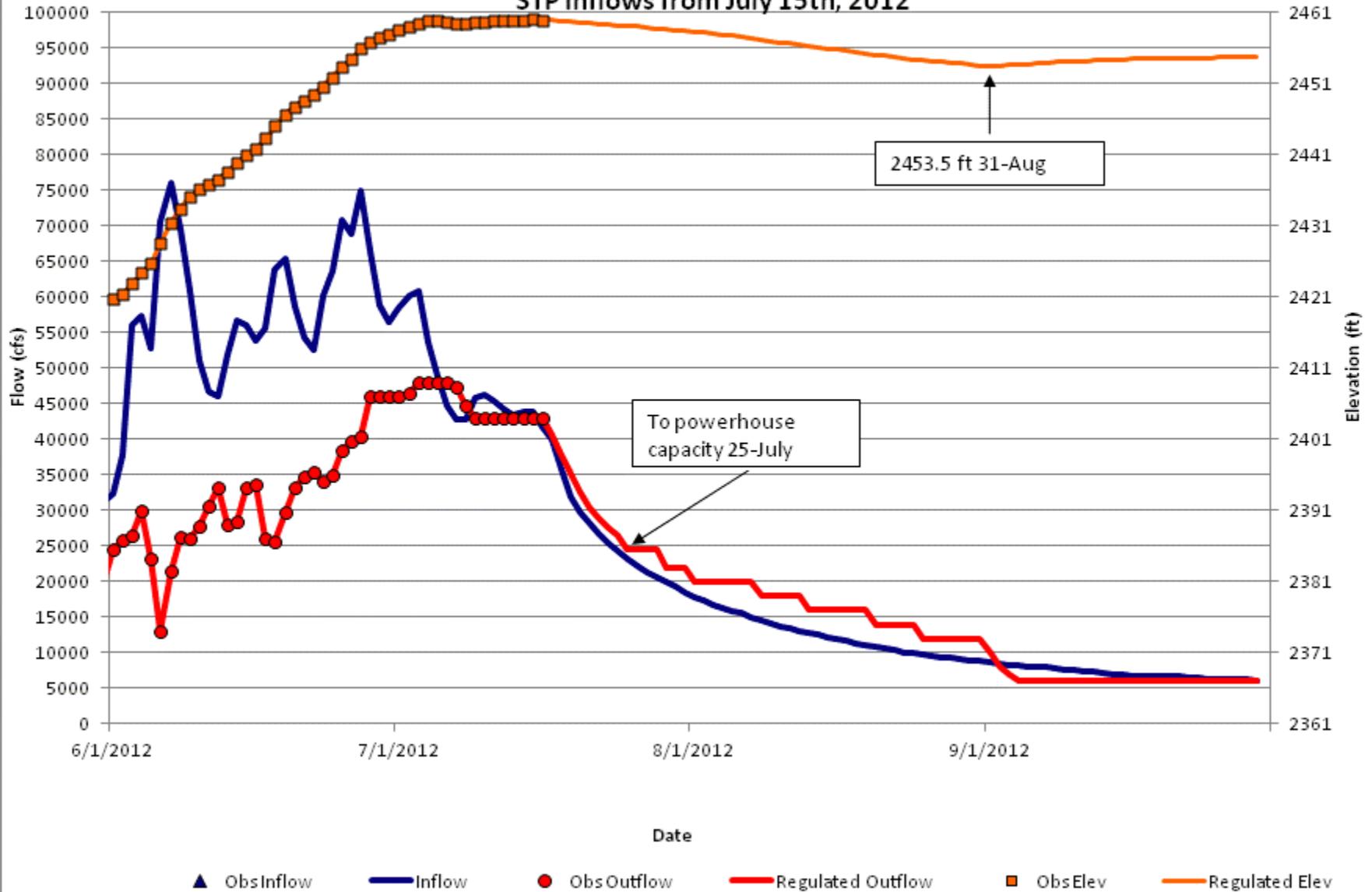
- Inflow triggers alternative would:
 - ▶ Not target an elevation target on 31-Aug
 - ▶ Not have Libby Dam release increase if inflows exceed the release
 - ▶ Have biological benefits. The gradual ramp down with lesser volume provides a more normative wetted perimeter throughout the summer, and incurs a lesser loss of accrued productive varial zone temporally as river is ramped down to 6kcfs in September. Applies to wetted perimeter below Libby Dam in Montana, as well as wetted perimeter treated by KTOI nutrient enhancement program.
 - ▶ Minimize adverse impacts on the levees
 - ▶ Alleviate downstream seepage issues
 - ▶ Still allows for 6 kcfs in Sept per the KTOI SOR



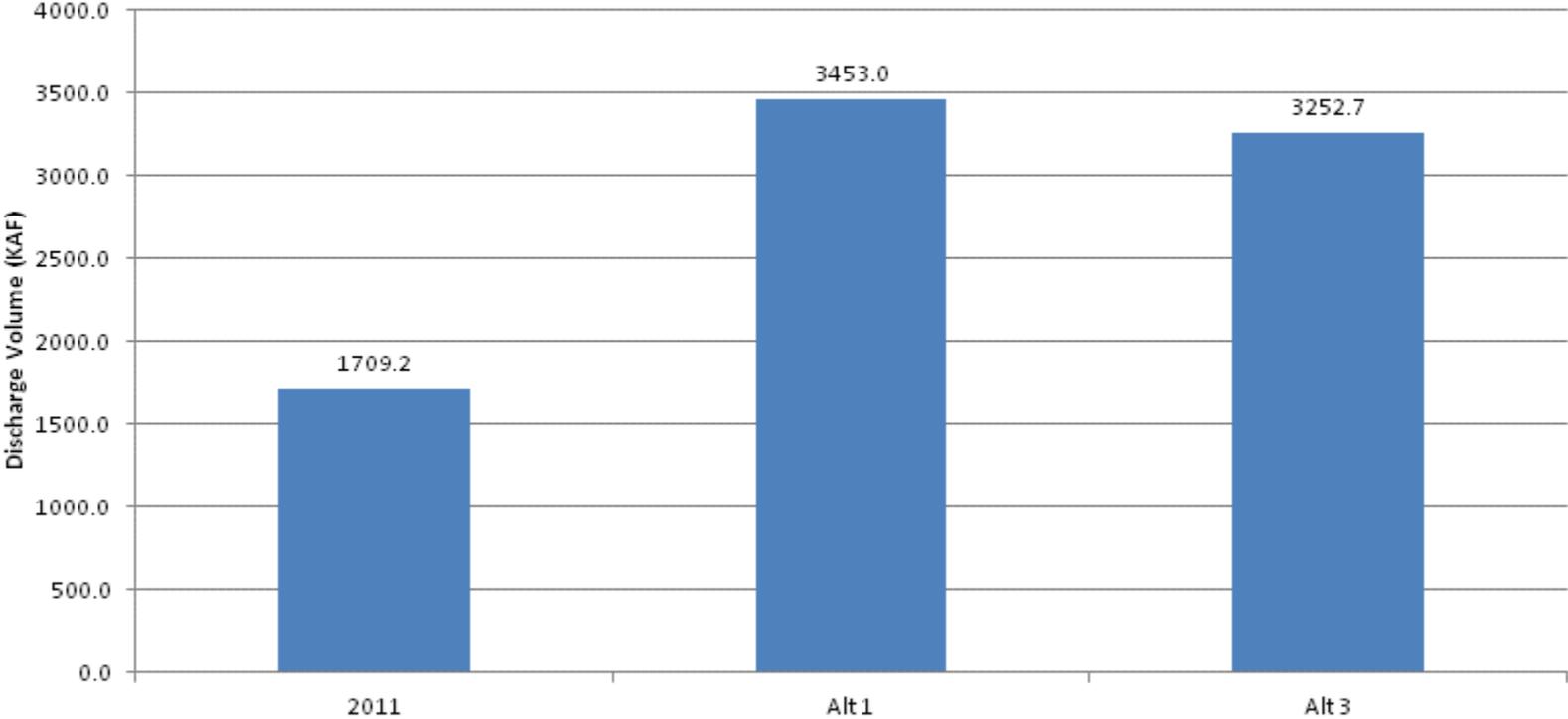
Libby Apr-Sep Ops WY 2012,
 Alt 1. - Target 2449 ft
 STP Inflows from July 15th, 2012



Libby Apr-Sep Ops WY 2012, Alt 3 - Inflow Triggers STP Inflows from July 15th, 2012

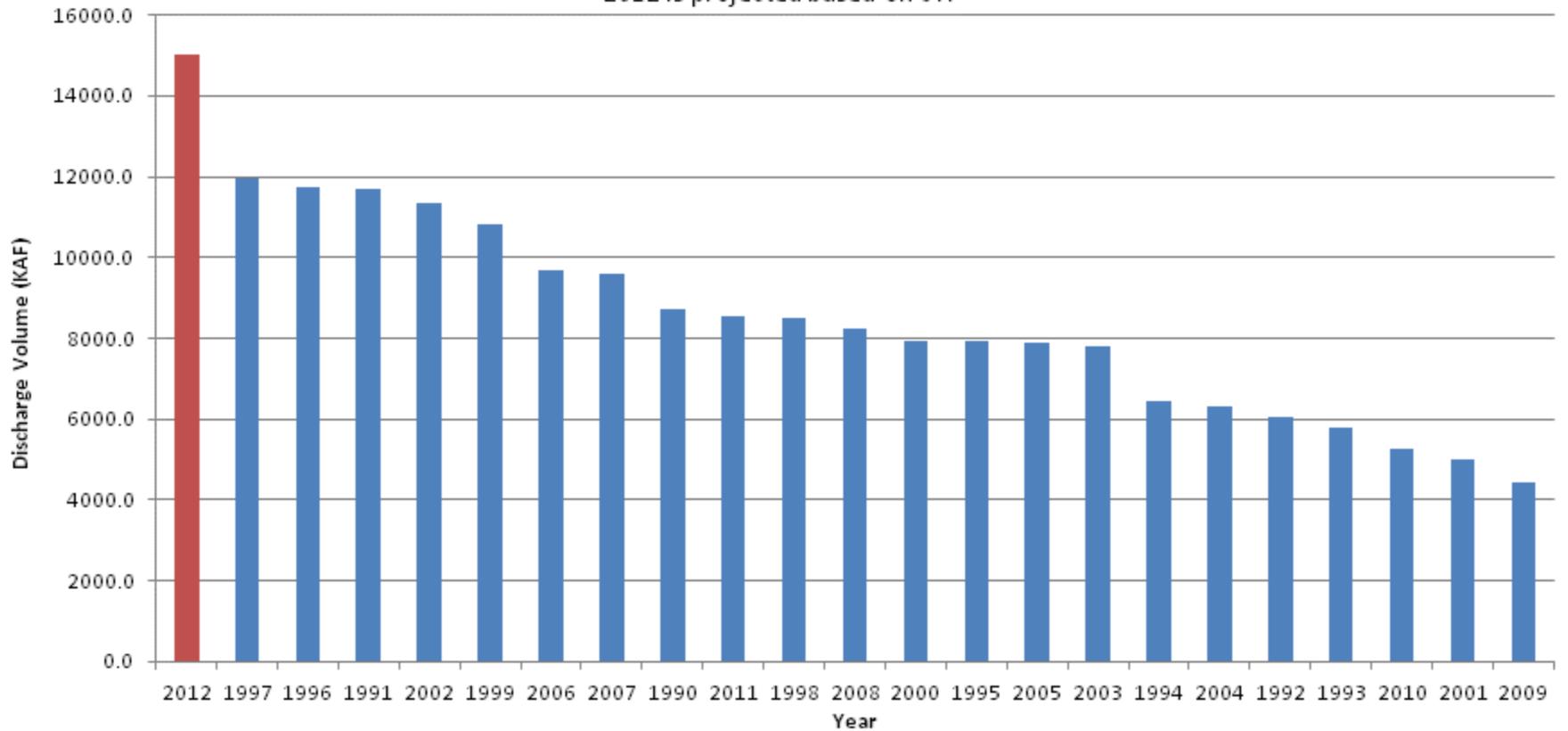


Libby Dam Outflow Discharge July - Aug



Brilliant Dam Discharge Volume for Jun - Aug

2012 is projected based on STP



BUILDING STRONG®

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

July 18, 2012

DRAFT Facilitator's Summary

Facilitator: Donna Silverberg

The following notes are a summary of issues that are intended to 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.

Review July 11 Meeting Minutes

The Official Minutes and Facilitator's Summary from the 7/11 TMT meeting will be finalized at the next face to face meeting on 8/1.

Water Supply Forecasts

Doug Baus, Corps, reported on the June final water supply forecasts and said water supply is above average across the basin, and increasing. The Dalles April-August forecast was 122 MAF (the fifth highest since 1960); Libby April-August was 7.24 MAF (123% of average) and Dworshak April-August was 3.23 MAF (121% of average).

Libby Operations

Joel Fenolio, Corps-NWS, shared updated scenarios for Libby operations based on discussions and recommendations from TMT at the 7/11 meeting. 'Alternative 3' was presented which would use inflow triggers to set releases but take a slightly different stepwise approach than 'Alternative 2' (i.e. lower inflow targets and higher releases) to ramp down to 12 kcfs before the end of August. He shared a slide that highlighted benefits to this operation and said it would meet several objectives including the Kootenai Tribe's SOR for habitat work, good ecosystem conditions for the lake, and minimizing adverse impacts on the levees. In addition, any stored water above 2449' at Libby would be released later in the year and could provide additional lower river benefits, e.g. flow for the chum operation.

Sue Ireland, Kootenai Tribe, offered from the Tribe's perspective that flows in September and October could be higher than the 6 kcfs (September) and 4 kcfs (October) recommended in the SOR, if that would provide ecosystem benefits and give the Corps more flexibility to meet other objectives during this period. She said it would be acceptable to hold September and October flows higher, around 8 kcfs. She urged the region not to force an elevation target this year given the high flows.

Oregon, Washington and USFWS agreed with the concept of targeting flows rather than elevations, so long as the additional water saved with this operation would be used later for lower river chum needs.

Planned Operation/Next Steps: After more discussion, all TMT members present (NOAA, USFWS, Oregon, Montana, Washington, Idaho, CTUIR, Colville Tribe, Kootenai Tribe, BOR, BPA and the Corps) coalesced around Alternative 3 as a conceptual approach to operating Libby during this Summer period. Doug said the Corps will coordinate with the Nez Perce Tribe who

was not present and will follow up with TMT at the 7/25 meeting to present the ‘final alternative’ with updated water conditions and additional flexibility measures discussed today.

The Corps, Kootenai Tribe and others were commended for their willingness to work together to find an operation at Libby for this year that will meet multiple needs.

McNary Juvenile Transportation SOR

Paul Wagner, NOAA, presented SOR 2012-3 on behalf of the salmon managers, requesting that transportation at McNary start on 8/17 when trucking begins, and that no fish should be transported via barge this year. The justifications for this recommendation were that flows are very high this year, well above the target 200 kcfs at McNary; that there had been system configuration improvements at this dam (new juvenile outfall at McNary Dam) and in the lower river (TSWs at John Day Dam, Extension of the spill wall at The Dalles Dam, and installation of the corner collector at Bonneville Dam, etc.) which when combines with this years’ above average flow conditions should improve in-river subyearling survival through the lower Columbia River; and that there are potential risks to the newly installed McNary outfall if there was a problem with the barge with these higher flow conditions.

Consensus/Planned Operation: In addition to the signatories to the SOR, Montana, BPA, BOR and the Corps agreed with the salmon managers’ proposal, and the Corps planned to implement the request as written after checking in with the Nez Perce Tribe who was not represented during today’s meeting nor a signatory to the SOR. The Corps and others will look at performance standard testing results from this year to help inform future decision-making around transportation, and TMT will do a review at their annual TMT Year End Review in December to look at the impacts on juvenile survival of this special transportation operation. The Corps commended the salmon managers on their process coordination on this issue, and also said this appeared to be a ‘no harm’ operation, which was further justification for their decision to implement it.

Dworshak Operations

Steve Hall, Corps-WW, updated TMT on Dworshak operations since their discussion on 7/11. As reported then, the Corps increased discharges at Dworshak up to the TDG standard and successfully kept temperatures at Lower Granite below 68°. Temperatures have cooled since then and are projected not to increase again until next week, so the Corps’ plan forward is to reduce discharges at Dworshak to 9.5 kcfs today, at a temperature of 45°, and monitor conditions closely with a plan to increase discharges as necessary to address temperature increases at Lower Granite – likely a week out per current forecasts. Steve will continue to update TMT as to conditions and operations, and will provide graphs at the 8/1 face to face meeting. In response to a question, Steve said the project can discharge as low as 42-43° water, which they will reserve for later in the summer.

Summer Spill Priority List

Doug Baus, Corps, shared the summer spill priority list which will be initiated on 7/23 after the completion of performance standard testing. The salmon managers reviewed and approved the list as written.

Operations Review

Reservoirs – Lori Postlethwait, Reclamation, reported on projects. Hungry Horse is about a foot from full and releasing 2.5 kcfs; Grand Coulee is a foot from full and holding steady. Lisa Wright, Corps, reported on projects. Libby was at elevation 2459.7 feet, with 37 kcfs inflows and 41.9 kcfs outflows. Albeni Falls was at elevation 2062.4 feet and passing inflows. Dworshak was at elevation 1591 feet with 2.4 kcfs inflows and 12.9 kcfs outflows. Lower Granite inflows were 45.4 kcfs; McNary inflows were 322.5 kcfs; and Bonneville inflows were 339.2 kcfs.

Fish – Paul Wagner, NOAA, reported on fish passage.

Juveniles: Subyearling counts at Lower Granite were 3,000-10,000 per day; about 3,000-9,000 per day at Little Goose, and about 500-2,000 per day at Lower Monumental. In the lower river, counts were 120,000 at McNary, 109,000 at John Day and 60,000 at Bonneville. Paul described this as a good, typical trend. Juvenile lamprey counts were 475,000 for the season, currently about 1,000-3,000 at Bonneville.

Adults: Counts at Bonneville were as follows: Summer Chinook, less than 1,000/day and 75,000 for the season (about 85-90% of the 10-year average); Jacks, 10,000 for the season (very low); sockeye, over 500,000 for the season (a record count); sockeye at Lower Granite, 236 total to date; steelhead, about 1,500/day.

Water quality – Steve Juul, Corps, was introduced as the RCC water quality specialist while Scott English is on a 4-month detail. Steve reported on the June TDG report, noting that there were fewer exceedance instances than in previous months, and that all were due to high flows. ‘N/A’ at Chief Joseph was listed as such because TDG was above 7Q10. All stations are currently working.

Power system – Nothing to Report.

TMT Schedule

July 25 Conference Call Agenda items include –

- Libby Summer Operations
- Dworshak Operations
- Grand Coulee Operations

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

July 18, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of Montana, Oregon, BPA, COE, NOAA, USFWS, Washington, BOR, Idaho, confederated Salish-Kootenai Tribes, Kootenai Tribe of Idaho, Colville Tribe, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review July 11 Meeting Minutes

The facilitator's notes and official minutes were not yet posted, so review was deferred until TMT meets next in person August 1.

3. Water Supply Forecast Update

Baus gave TMT the latest water supply forecasts for key basins in the region:

- The Dalles (April-August) – 122 MAF, 132% of average
- Libby (April-August) – 7.24 MAF, 123% of average
- Dworshak (June final) – 3.236 MAF, 121% of average

4. Libby Operations

The water supply forecast for Libby basin is record-setting and keeps increasing, Joel Fenolio, COE, reported. The final June forecast was the fifth highest for 1960-2012, and the April-August forecast for the basin was also fifth highest (2011 was fourth highest).

In its July 11 meeting, TMT considered two alternatives for managing Libby flows while ramping down to 6 kcfs in September and 4 kcfs in October to accommodate sturgeon habitat restoration. Alternative 1 targets elevation 2449 feet at Libby by end August instead of end September, as previously coordinated at TMT in response to SOR 2012-1 submitted by the Kootenai Tribe for the habitat restoration. Alternative 2 uses inflow triggers to reduce releases to 22, 20, 18, 16, 14 and finally 12 kcfs by end August. Last week TMT requested modeling of a third scenario with a more gradual ramp down and higher likelihood of continuing flows through August, which the COE provided today.

To flesh out the three alternatives, Fenolio gave TMT a slideshow, linked to today's agenda. The difference between the first two alternatives is 200 KAF of added storage for Alternative 2, as modeled in the first two slides.

The next slide models TMT's request for a third scenario. Alternative 3 has lower inflow targets and higher release volumes than Alternative 2, resulting in smaller flow reductions (2 kcfs instead of 4 kcfs) at each step once the operation reaches powerhouse capacity. Like Alternative 2, it would result in an extra 200 KAF of storage at Libby, but Alternative 3 offers a better guarantee that the reservoir will continue to draft through August. Under this scenario Libby would ramp down to 12 kcfs on August 22 regardless of inflow volume.

The next slide lists biological benefits associated with Alternative 3. Brian Marotz, Montana, confirmed this list accurately describes benefits associated with a more gradual ramp down after the spring pulse. There is a documented relationship between flows and total available habitat on the Kootenai River, with total habitat reduced when flows are artificially high. Alternative 3 ties releases closely to inflows, which mimics natural conditions.

Under Alternative 1 targeting 2449 feet elevation by August 31, Libby would operate at powerhouse capacity for the first two weeks of August, then drop to outflows of 20 kcfs and subsequently to 16 and 12 kcfs. The accumulation of another 1.5 inches of rain in the basin over the past weekend diminishes the likelihood of attaining 12 kcfs outflows by August 31 under this scenario, Fenolio said. It's also unlikely that the reservoir would reach elevation 2449 feet by end August due to uncertainty regarding inflow volumes.

The next slide depicts Alternative 3, incorporating a 200 KAF increase in inflows since last week's meeting. (Alternative 2 was not graphed, as there has been no change since it was modeled last week.) Alternative 3 would put Libby reservoir at 2453.5 feet elevation by the end of the month. It attempts to split the difference between an August 31 elevation of 2449 feet (under Alternative 1) and 2455 feet (Alternative 2).

Baus asked when the extra 200 KAF retained by implementing Alternative 2 or 3 would be released. Any storage above 2449 feet elevation would need to be released between mid November and the first three weeks of December, Fenolio replied. That water would be available to augment chum flows in place of water from Grand Coulee.

There was general acknowledgment that targeting a reservoir elevation for Libby doesn't seem realistic this year. Montana would appreciate anything the Action Agencies can do to slow the final transition from 12 kcfs to 6 kcfs releases, Brian Marotz said. Sue Ireland told TMT the Kootenai Tribe would be able to perform its habitat restoration work with flows of 8 kcfs during September and October, not 6 kcfs (September) and 4 kcfs (October) as stated in the SOR TMT discussed on March 28. Flows in October could be the same as in September. However, the work might need to continue for 2 ½ months, not just 2 months as stated in the SOR. The tribe would support an operation similar to Alternative 3 with adjusted flows in September and October. Ireland said it will be especially important this year to manage the Kootenai

River in relation to local needs. She complimented the COE on managing Libby flows to accommodate the habitat work despite current conditions in the basin.

The slideshow compares Libby outflows in summer 2011 vs. the anticipated outflows under Alternatives 1 and 3. Libby Dam outflow discharge July – August in 2011 was 1,709.2 KAF compared to Alternative 1 - 3453.0 KAF and Alternative 3 – 3252.7 KAF. Libby 2012 July – August discharges will be significantly higher than 2011 discharges. Discharges from Brilliant Dam, the final dam before the confluence of the Kootenai and Columbia rivers, are projected to be the highest in 20 years. That includes volume from Kootenai Lake, which is at its highest elevation since 1974.

There was general consensus from TMT members on Alternative 3 that used inflow triggers to set Libby releases rather than targeting a specific end of August elevation. TMT members gave their views of the options for managing flows at Libby:

- **NOAA** – Supports either Alternative 2 or 3.
- **USFWS** – Supports the NOAA recommendation to implement either Alternative 2 or 3. Releasing the stored flows as chum augmentation is preferable over a perfunctory flood control draft in September. Fenolio clarified that releases will be limited to 20 kcfs in November and December.
- **Oregon** – It's essential that the extra flows this operation provides be used for chum augmentation this fall. Alternative 2 or 3 would be acceptable, but prefers Alternative 3.
- **Kootenai Tribe** – Supports Alternative 2 or 3.
- **BPA** – Supports Alternative 2 or 3.
- **BOR** – Supports Alternative 2 or 3.
- **CRITFC/Umatilla** – Supports Alternative 2 or 3.

Further discussion focused on distinctions between Alternative 2 and 3. The COE prefers Alternative 3 because it provides more operational flexibility regarding reservoir elevations, given that there will be 2-3 units out of service during September, Fenolio said. Ideally, the reservoir would be no more than 5 feet from full by end August. Any surcharged flows stored at Libby would need to be drafted out by the end of September.

The focus should be on operational guidelines, not specific modeling scenarios because those will change, Jim Litchfield, Montana, said. There was general consensus that Alternative 3 is the best path forward. Fenolio will update the modeling of this alternative with the latest water supply information for TMT to consider in a conference call next week.

5. McNary Dam Juvenile Transportation

The BiOp says juvenile barge transportation at McNary will be scheduled adaptively between July 15-30, but NOAA recommends suspending barge transport this year in light of the plentiful water supply, Paul Wagner said. The SOR attached to today's agenda requests that barge transport operations at McNary be suspended until truck transport is scheduled to begin August 17, per the FOP. Flows at McNary will easily exceed 200 kcfs this year – current projections are for flows of 330-340 kcfs as compared to 80-150 kcfs, the 2001-02 range on which the initial transport recommendation was based.

Not only flows, but fish passage improvements throughout the basin make barge transport unnecessary this year. New spillway weirs, the Bonneville juvenile bypass, the spill wall at the Dalles, and relocation of the McNary outfall all have improved passage conditions significantly. This year's survival data are the highest yet, an indication that the outfall relocation did no harm.

The COE is in agreement with this SOR and appreciates how well this operation has been coordinated prior to today's meeting, Baus said. Derek Fryer, COE Walla Walla, requested that the positive effects of lower river improvements be documented as a crucial part of the decision process. Survival data from the performance standards testing will be available this fall in time for review at the TMT annual review, but not in time to inform the transport decision.

TMT members gave their views of the transportation SOR:

- **Montana** – Supports the SOR.
- **BPA** – Supports the SOR.
- **Kootenai Tribe** – Supports the SOR.
- **Colville Tribe** – Supports the SOR.
- **Nez Perce** – Not present today; supported the SOR at FPAC although not a signatory. Contacted via phone during the meeting and did not object to the SOR.

6. Dworshak Operations

Steve Hall, COE, reported. Last week's modeling showed temperatures approaching 68 degrees F at Lower Granite tailwater, and the COE increased Dworshak releases to 13 kcfs as reported at last week's TMT meeting. The increase resulted in TDG levels of 109.5% which is just barely under the 110% limit for Dworshak. Temperatures remained under 68 degrees F, with the highest reading being 67.9 degrees on July 15.

In response to a cooling trend that is expected to last until next week, Hall said the COE plans to reduce Dworshak releases to full powerhouse (9.5 kcfs) and maintain a discharge temperature of 45 degrees F to conserve water. Temperatures are

expected to rise again by the middle of next week. Current STP traces show that 13.5 kcfs flows from Dworshak would be available for 3-4 weeks at the most, Hall said. Discharges would need to be around 10-11 kcfs for the remainder of summer. The coldest water available in Dworshak reservoir is around 42-43 degrees F, with one unit operating in overshot mode and the rest in undershot mode. Keeping the small unit in overshot mode will help to conserve water for later this summer.

Russ Kiefer, Idaho, endorsed this plan, and other TMT members agreed that it is a good one. TMT will revisit Dworshak operations in its conference call next week.

7. Spill Priority List

The new list posted to today's agenda is scheduled for implementation after performance testing ends on July 22, Baus said. The proposed order begins with Snake River projects and ends with Bonneville. Level 1 spill priority list follows the same order as previous summer spill priority lists coordinated at TMT. There was consensus among TMT members present that this list is acceptable. The COE will implement it beginning July 23.

8. Operations Review

a. Reservoirs. Hungry Horse is about a foot from full, with 4.5 kcfs outflows over the past week. BOR is targeting outflows of 3.5-4 kcfs through September. Grand Coulee is also a foot from full, with outflows of 230 kcfs.

Libby is at elevation 2459.7 feet, with inflows of 37.7 kcfs and releases of 41.9 kcfs. Albeni Falls is at elevation 2062.4 feet, with inflows of 41.6 kcfs and releases of 38.2 kcfs. Dworshak is at elevation 1591 feet, with inflows of 2.4 kcfs and releases of 12.9 kcfs. McNary inflows are 322.5 kcfs. Lower Granite inflows are 45.4 kcfs. Bonneville inflows are 339.2 kcfs.

b. Fish. Juveniles: Migration conditions are good, Wagner reported. Subyearling passage at Lower Granite is 3,000-10,000 fish per day. Lower Granite is passing 3,000-9,000 fish per day, Lower Monumental 500-2,000 fish per day, McNary 120,000 per day, John Day 109,000 per day, and Bonneville 60,000 per day. These counts are all typical for this time of year. Lamprey passage at John Day is winding down, with a season count of 474,000 to date.

Adults: Summer chinook have been passing Bonneville at the rate of less than a thousand per day, with a season count of 75,000 to date. This is about 90% of the 10 year average and well below last year's observed counts. Jack passage for the season is only 10,000 this year, about 40% of the 10 year average. The season count of 514,000 sockeye at Bonneville makes this an outstanding year for sockeye. Steelhead passage at Bonneville is 1500 fish per day. Sockeye passage at Lower Granite is 236 fish to date, less than the 10 year average of 417 fish. Summer chinook passage at Lower Granite is 109,000 fish to date, which is about 85% of the 10 year average.

c. Water Quality. Baus introduced Steve Juul, who will be filling in for Scott English for the next 4 months. The vast majority of TDG exceedances in June were due to high flows. Flows at Chief Joseph have been above the 7Q10 standard for the past 23 days and are expected to continue at that level for the next 10 days. All water quality monitoring stations are working including Bonneville tailwater, and all data systems are performing well after the CWMS transition.

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

6. Next TMT Meeting

TMT scheduled a conference call for July 25 to review Libby and Dworshak operations. The next regular TMT meeting in person will be August 1.

Name	Affiliation
Jim Litchfield	Montana
Rick Kruger	Oregon
Scott Bettin	BPA
Lisa Wright	COE
Paul Wagner	NOAA
Dave Wills	USFWS
Charles Morrill	Washington
Doug Baus	COE
Robyn MacKay	BPA
Trevor Downen	BPA
Steve Juul	COE
Laura Hamilton	COE
John McCoskery	COE
Dan Feil	COE

Phone:

Lori Postlethwait	BOR
Russ Kiefer	Idaho
Brian Marotz	Montana
Sheri Sears	Colville
Joel Fenolio	COE Seattle
Don Tinker	SCL
Stu Leavitt	Salish-Kootenai
Sue Ireland	Kootenai
Greg Hoffman	COE Seattle
Kevin Shaffer	COE Seattle
Dave Benner	FPC
Russ George	WMC
Ruth Burris	PGE

Barry Espenson
Greg Lawson
Richelle Beck
Steve Hall
Derek Fryer
Margaret Filardo
Tom Lorz

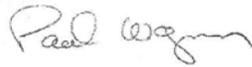
CBB
Thompson Reuters
Grant PUD
COE
COE Walla Walla
FPC
CRITFC/Umatilla

SYSTEM OPERATIONAL REQUEST: #2012-3

The following State, Federal, and Tribal Salmon Managers have participated in the preparation and support this SOR: National Marine Fisheries Service, US Fish and Wildlife Service, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, Idaho Department of Fish and Game, the Colville Tribe, and the Columbia River Inter-Tribal Fish Commission.

TO:

Col. Robert A. Tipton	COE-NWD
James D. Barton	COE-Water Management
Doug Baus	COE-RCC
David Poganis	COE-PDD
Karl Kanbergs	COE-NWD-NP-WM-RCC
Col. Bruce A. Estok	COE-Seattle District
Lorri Lee	USBR-Boise Regional Director
Steven Wright	BPA-Administrator
Tony Norris	BPA-PGPO-5
Scott Bettin	BPA-KEWR-4
Steve Oliver	BPA-PG-5
Lori Bodi	BPA-KE-4



FROM: Paul Wagner, FPAC Chair

DATE: July 17, 2012

SUBJECT: 2012 McNary Dam Transport Operations

OBJECTIVE: Do not initiate barge transport operations at McNary Dam.

SPECIFICATIONS: Do not initiate transport from McNary Dam until truck transport begins, which is scheduled for August 17, 2012.

JUSTIFICATION:

With regard to summer transportation at McNary Dam, the 2012 Fish Operations Plan (FOP) states:

Transportation will be initiated at McNary Dam between July 15–30 per the 2010 Supplemental BiOp (RPA 30, Table 4) and in coordination with NOAA Fisheries and the TMT. Fish will be transported from McNary Dam by barge through August 16, then transported by truck every other day. All fish collected will be transported except those marked for in-river studies. Fish are expected to be transported through September 30. The presence of factors such as excess shad, algae or bryozoans that can clog screens and flumes may result in discontinuing transport operations at McNary Dam before September 30. Detailed criteria for McNary transport are contained in the FPP, Appendix B.

Transportation operations may be adjusted for research purposes, due to conditions at the collection facilities, or as a result of the adaptive management process (to better match juvenile outmigration timing and/or to achieve or maintain performance standards). If new information indicates that modifying (or eliminating) transportation operations at McNary Dam is warranted, adaptive management will be used to make appropriate adjustments through coordination with the FPOM/TMT.

The Salmon Managers signed on to this request recommend modifying transport operations at McNary Dam for the summer of 2012. The recommendation to not initiate transport prior to August 17 is based on the following information:

1. Flow at the McNary project is forecast to be in excess of 200 kcfs until mid-August. Transport benefits were observed in study years during the mid-July to mid-August timeframe when flow was in the range of 80 to 150 kcfs. The most recent data on McNary transport is from the years 2001 and 2002. That data indicated a transport to in-river benefit ranging from 1.2 to 1.5 could occur during the mid-July to mid-August timeframe. Substantial improvements have been made to the McNary project and the projects down river which has likely benefited in-river conditions and reduced the transport benefit observed in those years.
2. A new juvenile outfall has been constructed at the McNary project that should improve survival at this project.
3. Risk to the outfall if there is a problem with a barge operating in the relatively high flow condition at this project this year. Also, interruptions in spill and changes in the spill pattern would be required for the barge to dock at the juvenile facility.
4. Preliminary data indicating high survival of subyearlings released through the McNary outfall this year.

Table 1 displays estimates of survival from detection at McNary Dam to the tailrace at John Day Dam for PIT-tagged subyearling fall Chinook. The fish in these groups were production fish from Lyons Ferry Hatchery that were detected at McNary Dam and returned to the river between the dates of June 1-June 28, over the years 2006-2012.

Table 1. Estimates of survival from detection at McNary Dam to the tailrace at John Day Dam for PIT-tagged subyearling fall Chinook. The fish in the table are from Lyons Ferry Hatchery that were detected at McNary Dam and returned to the river between the dates of June 1-June 28, over the years 2006-2012.

Year	Number of Fish	Survival, S-hat	Standard Error
2006	6,694	0.793	0.065
2007	1,014	1.287	0.350
2008	12,468	0.755	0.043
2009	14,310	0.725	0.039
2010	9,845	0.787	0.054
2011	12,229	0.859	0.114
2012	12,044	0.872	0.080

Notes: 2012 estimate subject to change as more detections occur downstream of McNary, 2007 estimate should be ignored due to small sample size.

The 87.2% survival estimate in 2012 is a substantial improvement over most previous years. The second closest estimate was 2011 which occurred under a high flow condition but prior to the new outfall. The combined positive benefits of high flows and the new outfall will continue through mid-August.

The signatories to this SOR believe that, due to the good in-river conditions and improved juvenile bypass system, transport from McNary should not begin until truck transport is initiated in mid-August this year.

SUMMER SPILL PRIORITY LIST - *DRAFT*

Effective when performance standard testing is complete, currently anticipated to be July 23 (last release at BON on July 22).

If necessary to spill in excess of the FOP summer spill rates due to lack of load, the Action Agencies will incrementally increase spill at projects in the following priority order. The Spill Priority List is intended to manage TDG levels on a system-wide basis while prioritizing extra spill in a manner that provides the most benefit to fish passage.

2012 FOP Summer Spill Rates	
PROJECT	FOP Summer Spill Rate
LWG (no test)	18 kcfs
LGS	30%
LMN	17 kcfs
IHR (no test)	June 21-July 13: 30% vs. 45 kcfs day/TDG cap night July 13-Aug 31: 45 kcfs day/TDG cap night
MCN	50%
JDA	July 1-July 20: 30% vs. 40% July 20-Aug 31: 30%
TDA	40%
BON	June 16-July 20: 85 kcfs day/ 121 kcfs night vs. 95 kcfs July 21-Aug 31: 75 kcfs day/TDG cap night

LEVEL 1 – FISH PASSAGE SPILL CAP			
PRIORITY ORDER	PROJECT	SPILL UP TO (% TDG):	SPILL CAP ESTIMATE (KCFs)
01	LWG	120/115% ^a	41
02	LGS	120/115% ^a	35
03	LMN	120/115% ^a	26
04	IHR	120/115% ^a	94
05	MCN	120/115% ^a	145
06	JDA	120/115% ^a	135
07	TDA	120/115% ^a	126
08	BON	120/115% ^a	121
09	CHJ	110%	15
10	GCL	110%	5
11	DWR	110%	35% of total flow

- a. Fish passage spill cap = 120% TDG in the tailrace *OR* 115% in the forebay of the next downstream project, whichever is less.

LEVEL 2 – LACK OF LOAD SPILL CAP			
PRIORITY ORDER	PROJECT	SPILL UP TO (% TDG):	SPILL CAP ESTIMATE (KCFS)
12	LWG	120%	44
13	LGS	120%	52
14	LMN	120%	72
15	IHR	120%	90
16	MCN	120%	175
17	JDA	120%	140
18	TDA	120%	160
19	BON	120%	100
20	CHJ	115%	60
21	GCL	115%	15
22	CHJ	120%	100
23	GCL	120%	45

LEVEL 3 – LACK OF LOAD SPILL CAP			
PRIORITY ORDER	PROJECT	SPILL UP TO (% TDG):	SPILL CAP ESTIMATE (KCFS)
24	LWG	122%	60
25	LGS	122%	59
26	LMN	122%	75
27	IHR	122%	95
28	MCN	122%	219
29	JDA	122%	178
30	TDA	122%	190
31	BON	122%	133
32	CHJ	122%	160
33	GCL	122%	72

LEVELS 4-7 (125%, 127%, 130%, and 135% TDG, respectively) LACK OF LOAD SPILL CAP: Same project Priority Order as in Level 3.

TDG INSTANCE TYPES

June 1 – June 30, 2012

Instances of when TDG levels exceed state water quality standards are classified into “types” which are shown on Table 1. These types are regionally approved and have been used since 2003. The states have requested information on TDG instances which include:

1. Date and times of exceedance
2. Amount of exceedance in percent saturation
3. Explain reason for exceedance
4. Discuss steps taken to fix the problem.

Because TDG instances are events when state TDG standards are exceeded, it is necessary to describe the current legal arrangement of how the state water quality standards are being implemented by the USACE. The 2012 Fish Operations Plan Court Order requires the Corps to operate according to the 2006 fixed monitoring station (FMS) system, and the 2006 state water quality standards which is referred to as “Roll-Over”. Therefore, the Camas/Washougal FMS, and the Oregon high 12-hour average calculation method are used to manage spill.

During the spill for fish passage season from April through August the Washington Department of Ecology (WDOE) has issued a temporary %TDG Rule Adjustment to their current water quality standards and Oregon Department of Environmental Quality (ODEQ) issued a 5-year %TDG Waiver. The state water quality standards are calculated differently from one another, and also from the 2006 Roll-Over.

USACE is currently tracking and recording the current state water quality standards as follows.

Oregon: http://www.nwd-wc.usace.army.mil/ftppub/water_quality/12hr/or/201104.html

Washington: http://www.nwd-wc.usace.army.mil/ftppub/water_quality/12hr/wa/201104.html

Comparison of OR & WA: http://www.nwd-wc.usace.army.mil/ftppub/water_quality/12hr/201104.html

Table 2 provides the TDG instances according to the Oregon high 12-hour average calculation method that occurred in June 2012 spill for fish passage season.

Table 1

Types of Instance	
Type 1 Condition	TDG levels exceed the TDG standard due to exceeding powerhouse capacity at run-of-river projects resulting in spill above the BiOp fish spill levels. This condition type includes:
	<ul style="list-style-type: none"> • High runoff flows and flood control efforts. • BPA load requirements are lower than actual powerhouse capacity. • Involuntary spill at Mid Columbia River dams resulting in high TDG levels entering the lower Columbia River. • Involuntary spill at Snake River dams resulting in high TDG levels entering the lower Columbia River.
Type 1a Condition	Planned and unplanned outages of hydro power equipment including generation unit, intertie line, or powerhouse outages.
Type 2 Exceedance	TDG exceedances due to the operation or mechanical failure of non-generating equipment. This exceedance type includes:
	<ul style="list-style-type: none"> • Flow deflectors unable to function for TDG abatement with tailwater elevations above 19 - 26 feet at Bonneville Dam. • Spill gates stuck in open position or inadvertently left open. • Increased spill in a bulk spill operation to pass debris. • Communication errors, such as teletype were transmitted but change was not timely made or misinterpretation of intent of teletype by Project operator.
Type 2a Exceedance	Malfunctioning FMS gauge, resulting in fewer TDG or temperature measurements when setting TDG spill caps.
Type 3 Exceedance	TDG exceedances due to uncertainties when using best professional judgment, SYSTDG model and forecasts. This exceedance type includes:
	<ul style="list-style-type: none"> • Uncertainties when using best professional judgment to apply the spill guidance criteria, e.g., travel time, degassing, and spill patterns. • Uncertainties when using the SYSTDG model to predict the effects of various hydro system operations, temperature, degassing, and travel time. • Uncertainties when using forecasts for flows, temperature and wind. • Unanticipated sharp rise in water temperature (a 1.5 degree F. or greater change in a day). • Bulk spill pattern being used which generated more TDG than expected.

Table 2
Types of TDG Instances
June 2012

DATE	Lower	Lower	Little	Little	Lower	Lower	Ice	Ice	Chief	Chief	McNary	McNary	John	John	The	The	Bon	Bon	Camas
	Granite	Granite	Goose	Goose	Monum.	Monum.	Harbor	Harbor	Joseph	Joseph			Day	Day	Dalles	Dalles			
	FB	TW	FB	TW	FB	TW	FB	TW	FB	TW	FB	TW	FB	TW	FB	TW	FB	TW	FB
6/1/2012	---	---	---	---	---	---	3	---	1	---	1	---	---	---	---	---	1	2a	3
6/2/2012	---	---	---	---	---	---	3	---	1	---	1	---	---	---	---	---	1	2a	3
6/3/2012	---	---	---	---	---	---	3	---	---	---	1	---	---	---	---	---	---	2a	3
6/4/2012	---	---	---	---	---	---	3	---	1	---	---	---	---	---	---	---	3	2a	---
6/5/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2a	---
6/6/2012	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	1	---	---	---
6/7/2012	---	---	---	---	1	---	---	---	---	---	1	---	---	---	---	1	1	1	1
6/8/2012	---	1	---	1	1	---	---	---	---	---	1	---	---	---	---	---	1	1	1
6/9/2012	---	1	---	1	1	---	---	---	---	---	1	---	1	---	---	---	---	1	1
6/10/2012	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	1	1
6/11/2012	---	---	---	---	1	---	1	---	---	---	1	---	---	---	---	---	1	1	1
6/12/2012	---	---	1	---	1	---	1	---	---	---	1	1	---	---	---	1	1	1	1
6/13/2012	---	---	1	---	1	---	1	---	---	---	1	1	---	---	---	---	1	1	1
6/14/2012	---	---	---	---	1	---	1	---	---	---	1	1	---	---	---	---	---	1	1
6/15/2012	---	---	---	---	1	---	1	---	---	---	1	1	---	---	---	---	1	1	1
6/16/2012	---	---	1	---	1	---	1	---	---	---	1	---	---	---	---	---	1	1	1
6/17/2012	---	---	1	---	1	---	1	---	---	---	1	1	---	---	---	1	1	1	1
6/18/2012	---	---	---	---	---	---	1	---	---	---	1	---	---	---	---	---	---	1	---
6/19/2012	---	---	---	---	---	---	---	---	---	---	1	---	1	---	---	---	---	1	1
6/20/2012	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	1	1	1
6/21/2012	---	---	1	---	1	---	1	---	---	---	1	1	---	---	---	---	1	1	1
6/22/2012	---	---	1	---	1	---	1	---	---	N/A	1	1	1	---	---	---	1	1	1
6/23/2012	---	---	---	---	---	---	1	---	---	---	1	1	1	---	1	---	1	1	1
6/24/2012	---	---	---	---	---	---	---	---	---	---	1	1	1	1	1	1	1	1	1
6/25/2012	---	---	---	---	---	---	---	---	N/A	N/A	1	1	---	1	1	1	1	1	1
6/26/2012	---	---	---	---	---	---	---	---	N/A	N/A	1	1	---	1	---	---	1	1	1
6/27/2012	---	---	---	---	---	---	---	---	N/A	N/A	1	1	---	1	1	1	1	1	1
6/28/2012	---	---	---	---	---	---	---	---	N/A	N/A	1	1	1	1	1	1	1	1	1
6/29/2012	---	---	---	---	---	---	---	---	N/A	N/A	1	1	1	1	1	1	1	1	1
6/30/2012	---	---	---	---	---	---	---	---	N/A	N/A	1	1	1	1	1	1	1	1	1
Total	0	2	6	2	13	0	15	1	3	0	16	22	6	9	7	10	22	29	26

Grand Total = 189

N/A means that the TDG instances in the project forebay and tailwater are not counted since the project flow exceeded the 7Q10 flows.

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday June 13, 2012 9:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 1984

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

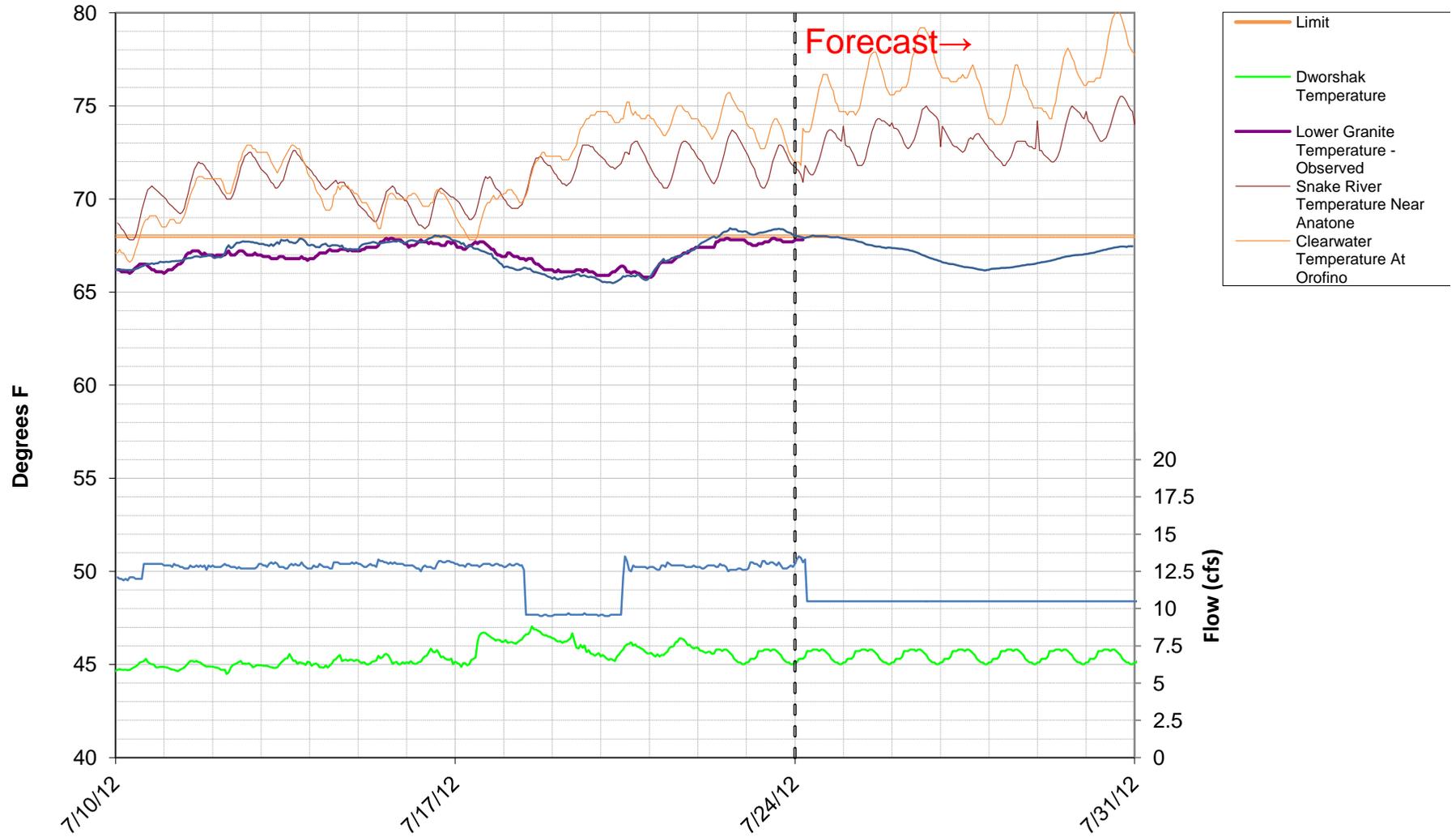
1. Welcome and Introductions
2. Libby Operations - Doug Baus, COE-NWD and Kevin Shaffer, COE-NWS
 - a. [Summer Operations](#)
3. Dworshak Operations - Steve Hall, COE-NWW
 - a. [Snake and Clearwater Temperatures](#)
 - b. [Water Temperature Comparisons](#)
4. Other
 - a. Set agenda and date for next meeting - **August 1, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:

[Doug Baus](#) at (503) 808-3995

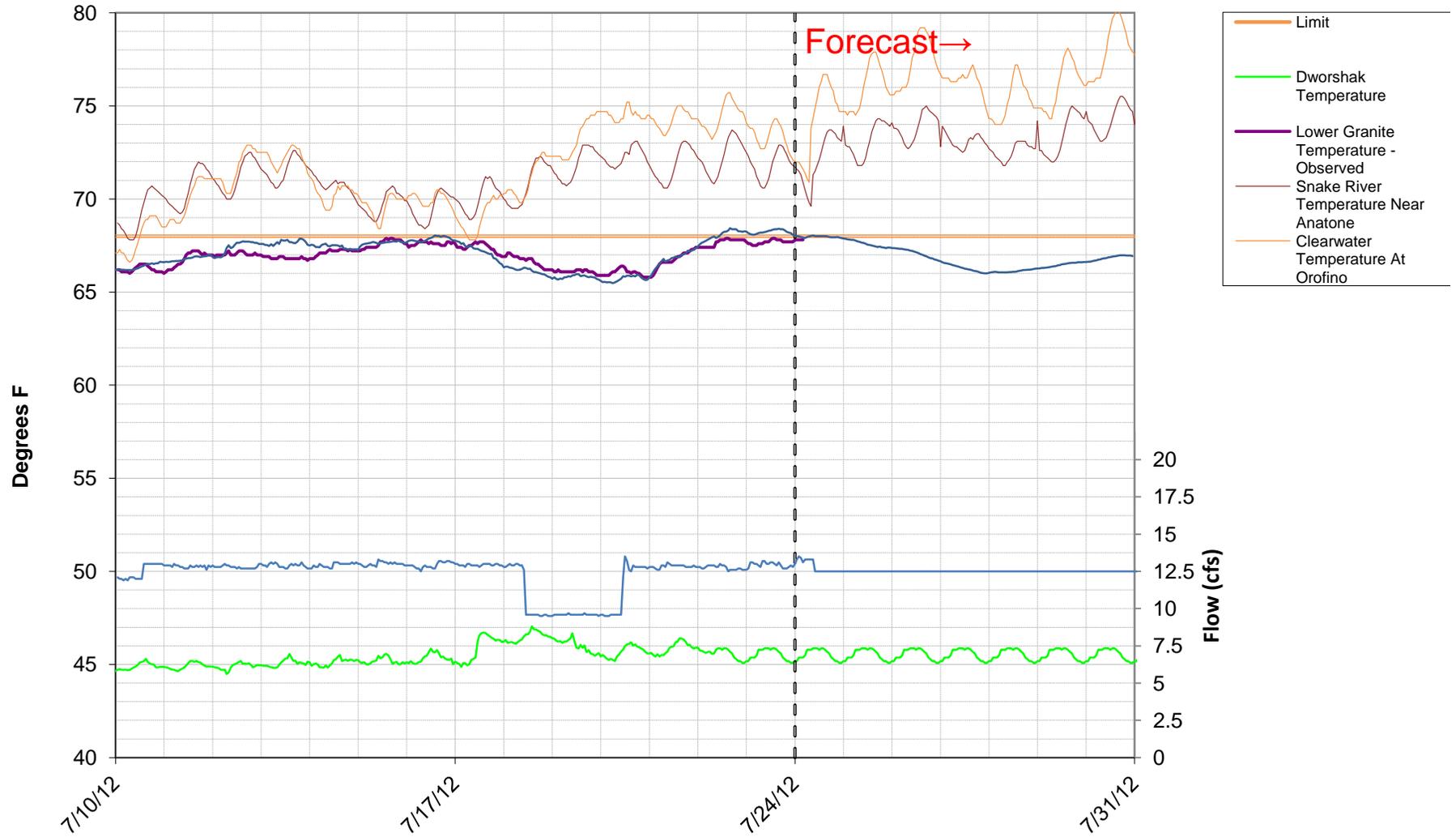
Output from CEQUALUtility Pre-processor
w/ SILW from agrimet spreadsheet
10.5 KCFS begining on the 24th

Water Temperature Comparisons Model from 7/10/2012 to 7/31/2012 Observed Data to 7/24/2012



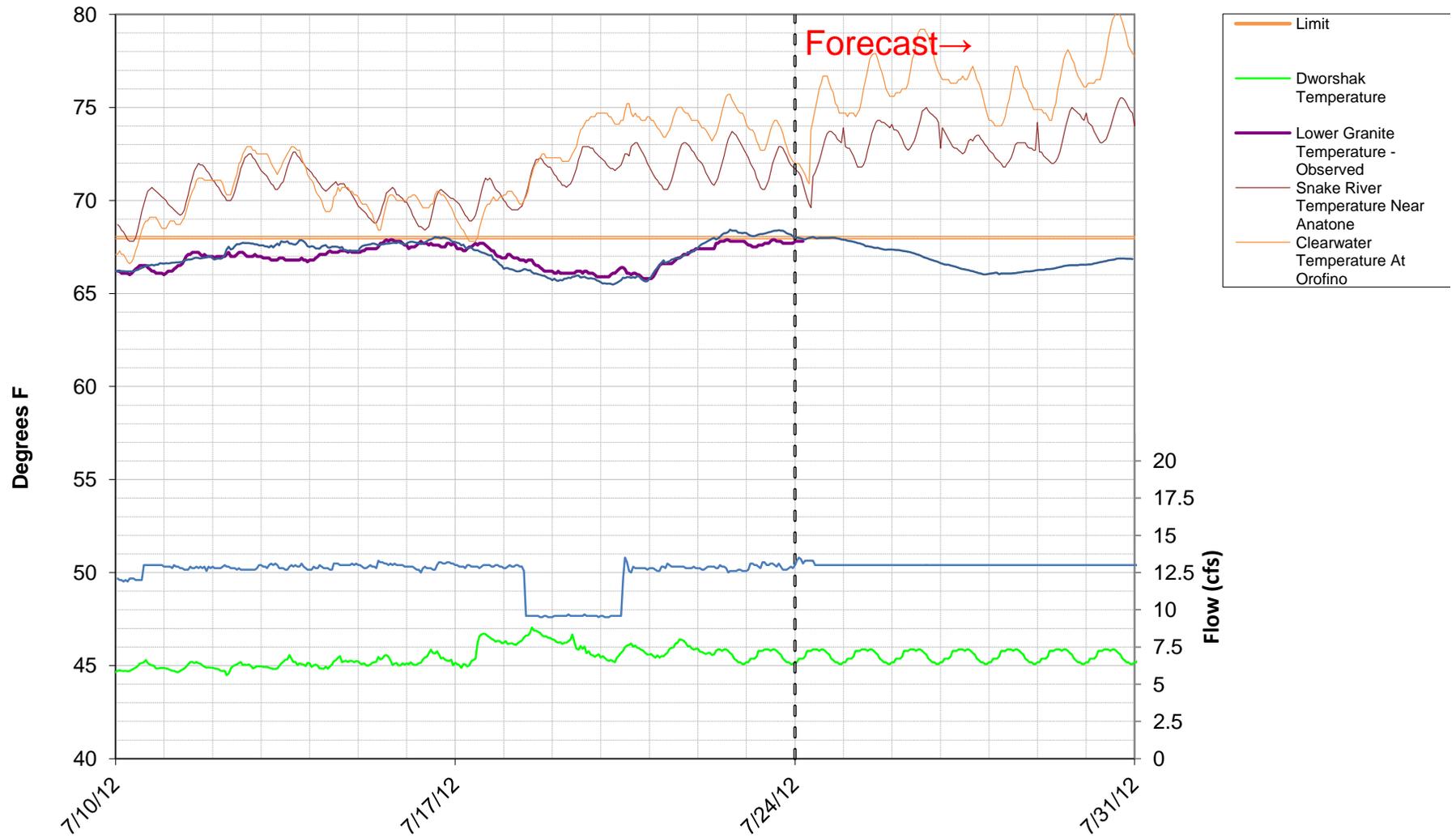
Output from CEQUALUtility Pre-processor
w/ SILW from agrimet spreadsheet
12.5 KCFS begining on the 24th

Water Temperature Comparisons Model from 7/10/2012 to 7/31/2012 Observed Data to 7/24/2012



Output from CEQUALUtility Pre-processor
w/ SILW from agrimet spreadsheet
13 KCFS beginning on the 24th

Water Temperature Comparisons Model from 7/10/2012 to 7/31/2012 Observed Data to 7/24/2012



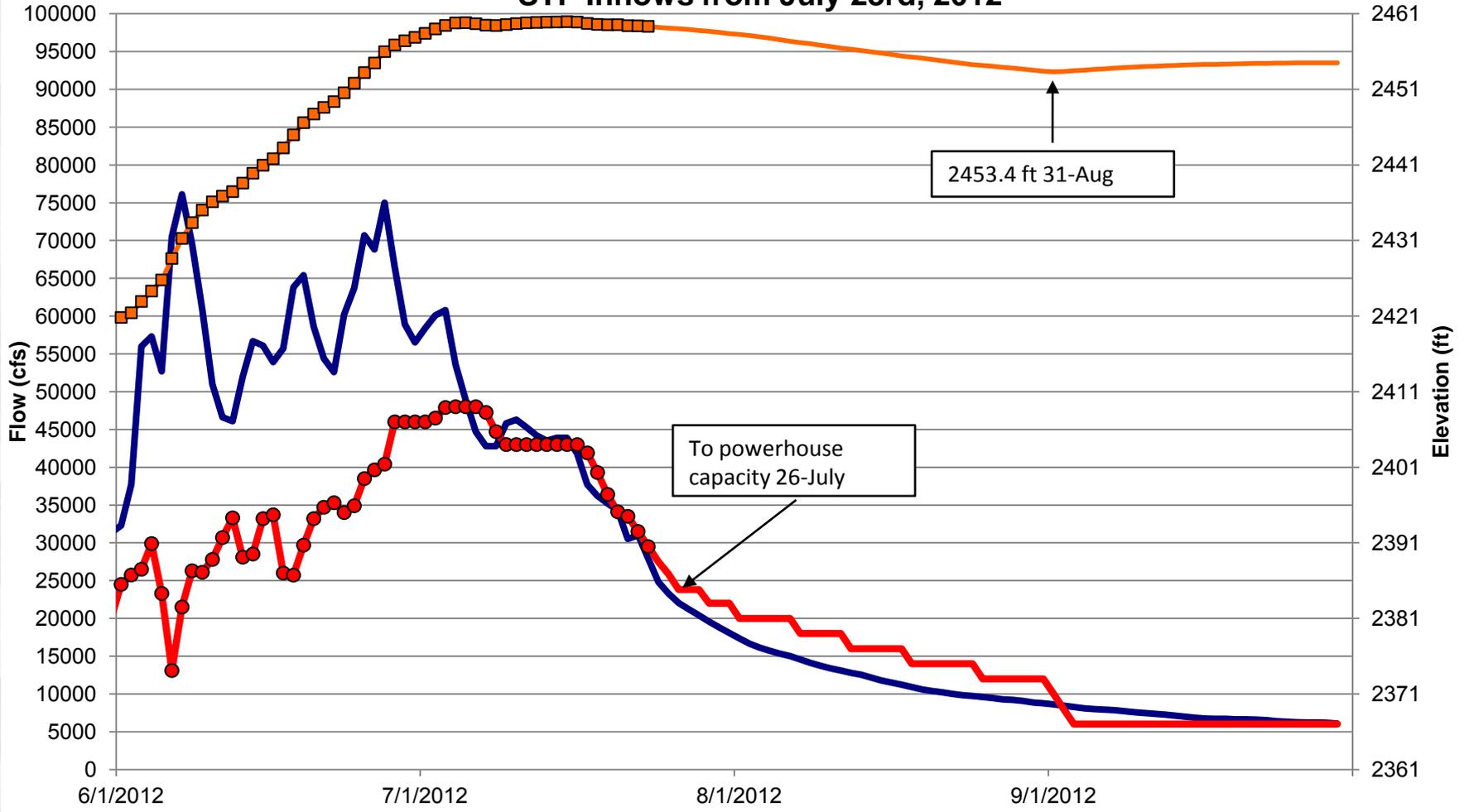
Libby Dam Summer Operation

Alternative 3

- Use inflow triggers to set releases
 - ▶ Follow inflow recession to powerhouse
 - Release powerhouse capacity
 - ▶ Inflows reach 20 kcfs -> Release 22 kcfs
 - ▶ Inflows reach 18 kcfs -> Release 20 kcfs
 - ▶ Inflows reach 15 kcfs -> Release 18 kcfs
 - ▶ Inflows reach 13 kcfs -> Release 16 kcfs
 - ▶ Inflows reach 11 kcfs -> Release 14 kcfs
 - ▶ Inflows reach 9 kcfs -> Release 12 kcfs
 - ▶ Release 12 kcfs until 31-Aug
 - ▶ If release greater than 12 kcfs on 24-Aug then ramp down to 12 kcfs until 31-Aug



Libby Jun-Sep Ops WY 2012, Alt 3 - Inflow Triggers STP Inflows from July 23rd, 2012



▲ Obs Inflow
 — Inflow
 ● Obs Outflow
 — Regulated Outflow
 ■ Obs Elev
 — Regulated Elev

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM
July 25, 2012
DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Lower Granite STP Inflow Forecast/Little Goose Spillway Weir

Doug Baus, Corps, updated TMT on the Lower Granite forecast for today, 10 days out and 15 days out. Snake flows are dropping and we are entering the low flow season on the Snake River. He also shared language from the Fish Operations Plan regarding Lower Snake operations during low flow conditions, as well as navigation safety. In 2010, a MOP adjustment was implemented (MOP+0.5ft) at Little Goose and Ice Harbor dams to provide safe passage conditions for barge traffic into the downstream entrances of the navigation locks at Lower Granite and Lower Monumental, and something similar may need to happen again soon, depending on actual conditions. Doug provided this as a heads up per forecasts as well as recent concerns about navigation safety. Also, the Corps Walla Walla District has suggested that the Little Goose spillway weir closure may be implemented pending satisfaction of flow triggers as defined in the FPP and coordination with FPOM. Paul Wagner, NOAA, raised this to make people aware of the issue and emphasized the need to monitor forecasts closely.

Libby Operations Update

Kevin Shaffer, Corps Seattle District, updated TMT on planned Libby operations per discussions and agreement at the 7/18 TMT meeting. His slides outlined the inflow triggers and 12 kcfs release during the final week of August that will be used to guide operations, and showed a graph of what the operation would look like based on current forecast conditions (subject to change with updated forecasts). Kevin noted that there was very little change from last week as forecasts have remained stable. Spill has decreased at this point and will ramp down to powerhouse capacity tomorrow. In response to a question about September flows, the Corps said it will use flow flexibility offered by the Kootenai Tribe as a tool only if needed, but the current graph shows 6 kcfs flows per the Kootenai SOR for habitat work. Any additional water stored above 2449 feet in August will be released around mid-November through December, recognizing an end of December flood control target elevation. Rick Kruger, Oregon, said TMT will need to watch this closely to ensure timing of the release to support chum. The Corps responded that they would be drafting the reservoir in November and December according to the VARQ flood control procedures and any draft, including any additional water stored above 2449 feet at the end of August, could be expected for release into the Columbia system and Grand Coulee at that time.

Planned Operation: The Corps will proceed with the operating plan outlined today, and Doug Baus will double check with TMT members not present on today's call to complete the coordination.

Dworshak Operations Update

Doug Baus, Corps, shared an update on Dworshak. All efforts have been made to keep temperatures below 68 degrees at Lower Granite. At one point Lower Granite hovered just above 68 degrees, but the 12-hour average remains below 68 degrees. The slight incursion above 68 degrees was caused by unusually high winds mixing warmer water, as well as by higher releases from the Hells Canyon complex due to system load demands. Current operations at Dworshak are 13.3 kcfs outflows, with 3.6 kcfs spill. The increased discharges are in response to an unexpected heat wave and resultant warmer water temperatures. As a response, the project increased discharges and managed outflows up to the 110% TDG standard. The project will decrease discharges at such time that temperatures and flows decrease sufficiently. TMT question: Why does Anatone hourly data go to 0 from time to time? Doug responded that this is likely due to an anomaly – missing or incorrect data. Russ Kiefer, Idaho, noted that he had coordinated with Walla Walla District last week, and because actual conditions were warmer than had been forecasted, the Corps was prompted to increase discharges to 13.3 kcfs.

Planned Operation: The graphs showed three options for moving forward: 10.5 kcfs, 12.5 kcfs or 13 kcfs. Doug said the current plan for the near term is to continue with higher than powerhouse discharges out of Dworshak (approximately 12-13 kcfs without exceeding 110% TDG) to keep temperatures below 68 degrees at Lower Granite. The project also has the ability to switch to undershot mode on unit 1 as needed to provide cooler temperature outflows but will likely be reserved for later in the season. TMT members offered suggestions to make the graphics clearer, and Doug will pass these on to Walla Walla District.

Action: Doug will follow up with Steve Hall and Russ Kiefer after today's call to discuss and clarify the operation. Doug will share an operation update with Russ Kiefer before next Tuesday's FPAC call so he can discuss with the salmon managers. Russ will continue to coordinate directly with Corps Walla Walla on Dworshak operations. Russ will help coordinate adding FPAC members to the District's email distribution list re: Dworshak operations updates.

TMT Meeting Schedule

- Coordination will be important this time of year as conditions and operations are in flux.
- The Corps will continue to keep TMT apprised of changing conditions/operations in a timely manner. TMT conference calls will be convened as needed to have more robust discussion of operations.
- TMT will reserve **August 8** for a Conference Call to provide updates on operations as needed.
- TMT will meet face to face on **August 15**.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

July 25, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of Idaho, Oregon, Montana, Washington, the COE, BPA, USFWS, NOAA and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Lower Granite Inflow Forecast and Little Goose Weir Change

The latest STP inflow forecast for Lower Granite is at 39.7 kcfs as of today, then dropping to 35 kcfs 10 days out, and then to 32.9 kcfs 15 days out (August 8). Baus presented this information in light of three issues regarding low flow operations at Snake River projects that are identified in the FOP – percent spill at Little Goose and navigation safety at Lower Granite and Lower Monumental dams. When flows are less than 32 kcfs in the Snake River, it can be difficult to maintain 30% spill rate at Little Goose Dam. Flows less than 50 kcfs can negatively impact navigation into the downstream entrance to the Lower Granite and Lower Monumental locks.

In the summer of 2010, the 30% spill rate at Little Goose Dam was modified to a constant spill rate of 7-11 kcfs in response to low flows on the Snake. Also in 2010, the COE increased the forebay elevation at Little Goose and Ice Harbor to MOP+0.5' in order to provide safe navigation at the entrance to Lower Granite and Lower Monumental when flows were low. Such adjustments might need to be made again this year, Baus said, noting that these scenarios are based on forecasts of low flows that may or may not materialize. Little Goose might need to go to constant spill rate instead of 30%, and/or Little Goose and Ice Harbor might need to operate above MOP if Snake flows are low in August. There was also a MOP increase at Ice Harbor in 2010. The COE is watching the situation closely and will notify TMT immediately via email if it becomes necessary to adjust MOP operations for the sake of navigation safety.

Paul Wagner, NOAA, alerted TMT that the RFC forecast, as it impacts Little Goose operations, differs slightly from the STP forecast. A difference of 1 kcfs in inflows could be significant. So it's important to keep an eye on the forecasts with regard to deciding when to close the Little Goose spillway weir that is being coordinated at FPOM.

3. Libby Operations

Kevin Shaffer, COE, gave an update on last week's TMT discussion of alternative scenarios for Libby in August. TMT chose Alternative 3 as the preferred operation. That alternative is depicted this week updated with the most recent STP information.

With six inflow triggers for gradual reductions in Libby outflows, followed by a week of 12 kcfs flows at the end of August, Alternative 3 looks essentially the same as it did when TMT reviewed Libby operations last week. Inflow forecasts for Libby are stable, Shaffer reported. On August 24, Libby will ramp down to 12 kcfs outflows for the rest of the month, regardless of inflows.

Current forecast projections put Libby at elevation 2453.4 feet by end August, which is higher than the previously planned elevation of 2449 feet. Libby would then ramp down to 6 kcfs flows for the Kootenai sturgeon habitat restoration work in September. Any excess water stored above 2449 feet will be released starting around mid November. Rick Kruger, Oregon, recalled that this water will be used to benefit chum in November. Shaffer noted that the Corps will be drafting the reservoir in November and December according to the VARQ flood control procedures and any draft, including of any additional water stored at the end of August, could be expected for release into the Columbia system and Grand Coulee.

There has been discussion of whether the Kootenai Tribe will be able to perform the habitat work with flows of 6.5-7.5 kcfs instead of 6 kcfs, Paul Wagner, NOAA, said. Shaffer noted that the current plan is to release 6 kcfs in September, but that the potential for higher allowable could provide flexibility in real-time operations. TMT members present today agreed that the Libby operation depicted in Alternative 3 looks like a good one. The COE plans to implement Alternative 3, with updated forecast information, after coordinating with TMT members who did not participate in today's call.

4. Dworshak Operations

Baus showed TMT the latest data on Dworshak release temperatures vs. temperatures at Lower Granite tailwater. Lower Granite temperatures slightly exceeded 68 degrees F on a couple of hourly readings over last weekend due to mixing of warmer water than anticipated, but the 12-hour average temperature remained below 68 degrees. The current temperature at Lower Granite tailwater is 67.6 degrees F.

Also linked to today's agenda are three scenarios for Dworshak operations: outflows of 10.5 kcfs, 12 kcfs and 13 kcfs, all beginning July 24. Rick Kruger, Oregon, pointed out a data anomaly with the reporting of Snake River/Clearwater temperatures at Anatone gage, which the COE will clarify. Kruger also suggested displaying 68 degrees F at Lower Granite tailwater as a solid line on the graphs.

Baus said the COE's plan is to provide cooler water temperatures with releases of 12-13 kcfs from Dworshak, per scenarios 2 or 3 of 12-13 kcfs. Russ Kiefer said Idaho would concur with 13 kcfs outflows now because the weather has been much hotter than predicted. The combination of hot weather and dropping back to full powerhouse flows at Dworshak have put Lower Granite tailwater briefly over its temperature limit of 68 degrees, where it remains close to the limit.

The planned operation for the near term is to hold Dworshak outflows as high as possible for temperature control without exceeding the 110% total dissolved gas water quality standard, Baus said. Accordingly, current Dworshak releases are 13.3 kcfs with spill of 3.6 kcfs, the maximum outflow possible while remaining in compliance with the 110% TDG downstream standard. Karl Kanbergs, COE, pointed out that cooler water is still available using undershot mode. Once Lower Granite temperatures are safely below 68 degrees F, flows from Dworshak will be conserved for later in the summer.

Wagner said NOAA would be happy with a flow range of 12.5-13 kcfs from Dworshak. Baus will inform TMT via email as soon as the Walla Walla district office clarifies details of the planned operation, which will focus on releasing as much water as possible within water quality standards. Wagner asked to be notified if discharge plans for Dworshak change significantly (e.g., a reduction in discharge from 12.5 to 10 kcfs). If the COE is considering a change in Dworshak operations, Kiefer asked to be notified with sufficient lead time to model the change (he does modeling daily) and respond before instructions are issued to the project.

The Walla Walla district has been sending out informative email alerts, whose original intent was to notify downstream fisheries operators and researchers of planned flow changes at Dworshak, Kiefer pointed out. Wagner said he would consider these emails sufficient notification of flow changes. Kruger suggested adding all interested TMT and FPAC members to the email list (Kiefer will follow up on this).

There was concern because the August 1 conference call was canceled with so many regular TMT participants planning vacations. Kruger advocated that TMT be open to meeting whenever needed, without the constraint of a weekly meeting schedule. Doug Baus, Steve Hall and Russ Kiefer agreed to meet after today's call to clarify the Dworshak operation. Kiefer will follow up on getting the COE's email list updated to include all TMT and FPAC members who want the Dworshak flow updates. The COE will monitor Dworshak closely and keep FPAC and TMT members informed of any anticipated operational changes.

5. Next TMT Meeting

TMT members debated when to hold their next meeting, given that many people will be out of town August 1 but the Dworshak temperature augmentation operation warrants close attention. There was agreement the next regular face-to-face TMT meeting will be August 15, with a conference call on August 8 (and on August 1 only if necessary).

<i>Name</i>	<i>Affiliation</i>
Doug Baus	COE
Steve Hall	COE
Karl Kanbergs	COE
Scott Bettin	BPA
Russ Kiefer	Idaho
Rick Kruger	Oregon
David Wills	USFWS
Paul Wagner	NOAA
Kevin Schaffer	COE Seattle
Steve Juul	COE
Lisa Wright	COE
Dave Benner	FPC
Russ George	WMC
Bruce McKay	hydro consultant
Richelle Beck	Grant PUD
Barry Espenson	CBB
Cindy Lefleur	Washington
Jim Litchfield	Montana

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday August 8, 2012 9:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274

Access Code 3871669

Security Code 3014

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

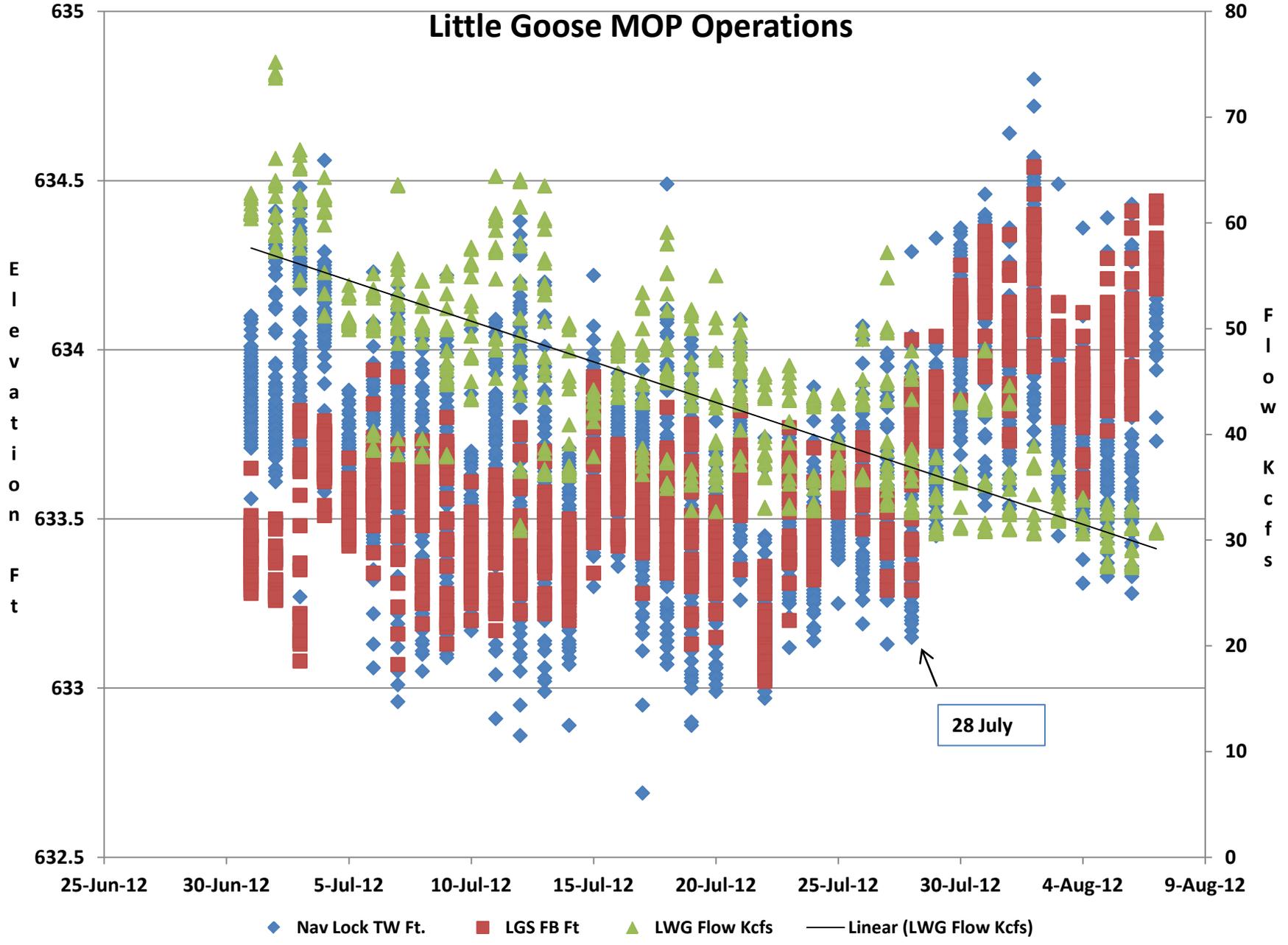
AGENDA

1. Welcome and Introductions
2. Dworshak Operations - Jeremy Giovando, COE-NWW
 - a. [Snake and Clearwater Temperatures](#)
 - b. [Water Temperature Comparisons](#)
3. Libby Operations - Doug Baus, COE-NWD and Joel Fenolio, COE-NWS
 - a. [Alternative 4](#)
4. Little Goose Operations - Doug Baus, COE-NWD
 - a. [MOP Operations](#)
5. Other
 - a. Set agenda and date for next meeting - **August 15, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:

[Doug Baus](#) at (503) 808-3995

Little Goose MOP Operations



Libby Dam Summer Operation

Alternative 3

- Use inflow triggers to set releases
 - ▶ Follow inflow recession to powerhouse
 - Release powerhouse capacity
 - ▶ Inflows reach 20 kcfs -> Release 22 kcfs
 - ▶ Inflows reach 18 kcfs -> Release 20 kcfs
 - ▶ Inflows reach 15 kcfs -> Release 18 kcfs
 - ▶ Inflows reach 13 kcfs -> Release 16 kcfs
 - ▶ Inflows reach 11 kcfs -> Release 14 kcfs
 - ▶ Inflows reach 9 kcfs -> Release 12 kcfs
 - ▶ Release 12 kcfs until 31-Aug
 - ▶ If release greater than 12 kcfs on 24-Aug then ramp down to 12 kcfs until 31-Aug



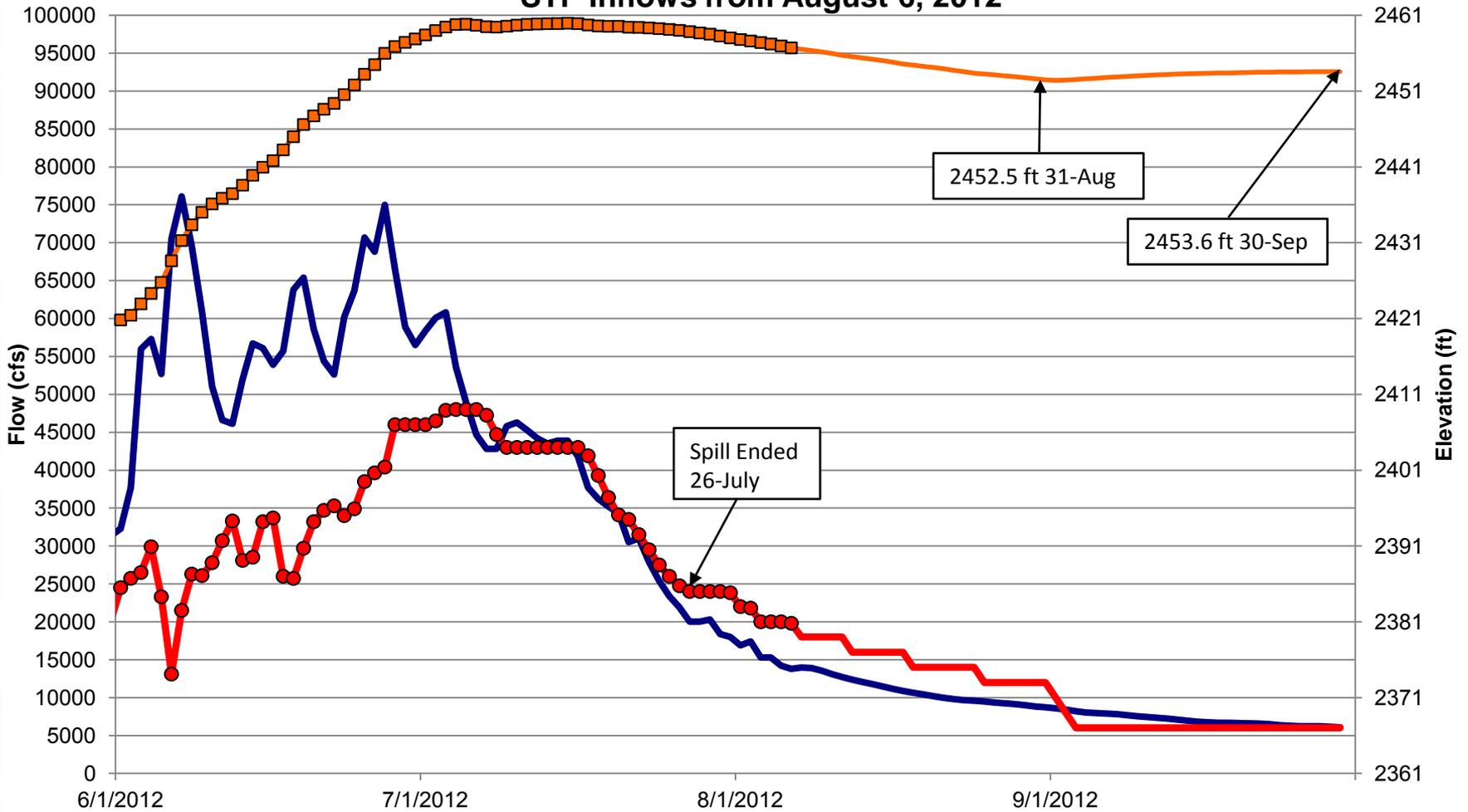
More Gradual Ramp-down and Higher September Flows

Alternative 4

- Follow Alt 3 inflow triggers in August
- Ramp down to 8 kcfs over 4 days instead of 2
- Hold outflow in September at 8 kcfs instead of 6 kcfs

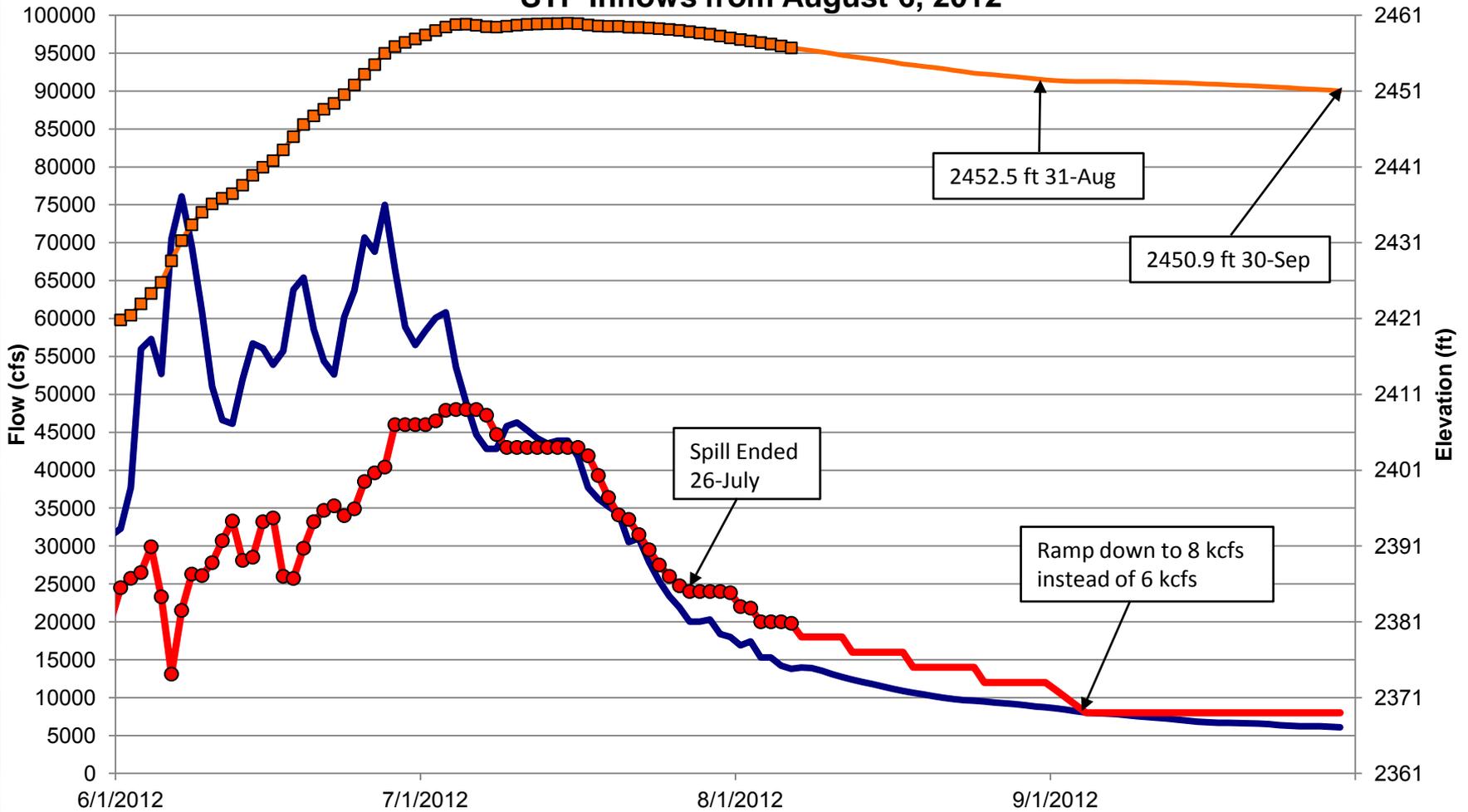


Libby Jun-Sep Ops WY 2012, Alt 3 - Inflow Triggers STP Inflows from August 6, 2012



▲ Obs Inflow ■ Inflow ● Obs Outflow ■ Regulated Outflow ■ Obs Elev ■ Regulated Elev

Libby Jun-Sep Ops WY 2012, Alt 4 - Gradual Rampdown w/ 8 kcfs in September STP Inflows from August 6, 2012



▲ Obs Inflow ■ Inflow ● Obs Outflow ■ Regulated Outflow ■ Obs Elev ■ Regulated Elev

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

August 8, 2012
Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired and facilitated by Doug Baus, COE. Representatives of USFWS, COE, Oregon, NOAA, BPA, BOR, the Colville Tribe, Montana, Idaho, Washington, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Dworshak Operations

Jeremy Giovando, COE, reported that the recent warm spell is forecasted to continue for the next few days, with temperatures continuing in the upper 90s in the Clearwater and Snake basins. For this reason, the COE has decided not to cut back Dworshak releases for temperature augmentation as previously planned. The current Dworshak releases of 12.5 kcfs will continue most likely through the end of this week. The 10-day outlook calls for cooler temperatures beginning next week.

However, one of the transformers at Dworshak is out of service, which results in an approximate loss of 1-1.5 kcfs generation through the powerhouse. This means more water has to be spilled which hurts operational flexibility. So far the project has spilled within its downstream TDG criteria.

Dave Wills, USFWS, asked what outflow temperatures were being targeted. Giovando explained that, after switching this morning to undershot mode, Dworshak operations will target 44 degrees F outflows in an effort to keep temperatures below 68 degrees F in the Lower Granite tailwater. Giovando cautioned TMT that the cause of the transformer outage is not easily remedied and repairs could take up to 10 days. This situation will limit the cool water available from Dworshak over the next two weeks for temperature management on the Snake.

Russ Kiefer, Idaho, asked how much longer 12-12.5 kcfs outflows can be maintained before the project reaches its end of August elevation target. The hope is that current releases can be maintained until next week, when moderate temperatures kick in and full powerhouse flows will probably suffice for temperature control. TMT will revisit Dworshak operations on August 15 with an update from the COE.

3. Libby Operations Update

The COE has received a request from Montana for an adjustment to the previously coordinated Libby operation, with September releases of 8 kcfs instead of 6 kcfs, Baus reported. Alternative 3, the operation previously chosen by TMT, drops releases based on inflow triggers to 22, 20, 18, 16, 14, and finally 12 kcfs in August, followed by releases of 6 kcfs in September to accommodate Kootenai Tribe sturgeon habitat work.

Joel Fenolio, COE, and Brian Marotz, Montana, described the COE's proposed adjustment to Alternative 3 in response to Montana's request, with comments and decision-making to occur at the August 15 TMT meeting. Alternative 4 uses the same inflow triggers identified in Alternative 3 to step down releases in August, but calls for a more gradual final ramp down (4 days instead of 2) to a higher September outflow (8 kcfs instead of 6 kcfs) to provide conditions more beneficial to the biological productivity in the river. The Kootenai Tribe has indicated that 8 kcfs flows in September would be sufficient to allow their habitat work to proceed. Alternative 4 would not change the end of August elevation achieved by following the inflow triggers (currently projected to be 2452.5 feet based on latest forecasts) and would result in approximately an additional 2.5 feet of draft in September to an elevation of 2450.9 feet by September 30. Releasing 8 kcfs versus 6 kcfs is only for this year. The flow in September during the habitat work, scheduled for 3 more years, is dependent on the construction activity for that year.

TMT members present today gave their views of Alternative 4, which is depicted in a link to today's agenda. Final coordination of Libby operations will occur next week.

- **Oregon** – No objections to implementing Montana's request, even without further discussion.
- **Idaho** – Supports Alternative 4.
- **NOAA** – No objection.
- **CRITFC/Umatilla** – No objection, pending further discussion.
- **Washington** – No objection.
- **USFWS** – No objection.
- **BPA** – No objection.
- **BOR** – No objection.
- **Colville** – No objection.
- **Nez Perce** – Did not participate in today's meeting but was contacted via phone after the meeting and did not object to Alternative 4.

4. Little Goose MOP Operation

Baus gave TMT an update on current conditions at Little Goose Dam and three operational adjustments that have occurred at since TMT last met on July

25. Little Goose outflows are currently 27.9 kcfs, with 11.1 kcfs of spill and a forebay elevation of 633.69 feet. The following three adjustments in Little Goose operations have occurred since the July 25 TMT meeting:

1. On July 28, TMT received email notification regarding an 0.5 ft increase to the LGS MOP range. The new LGS MOP range is 633.5 to 634.5 feet. This increase was made in order to provide safe navigation conditions at the entrance of the LWG navigation lock. During low flow conditions the normal LGS MOP operation range (633-634 feet) does not provide the 15 ft depth requirement over the sill at the entrance of the LWG navigation lock. This is a special low flow operation that is described in the 2012 Fish Operations Plan and was also implemented in 2010. Attachment a. to this item on today's agenda depicts the relationship between projected elevations in the Little Goose forebay and at the Lower Granite navigation lock entrance, and shows that the Lower Granite tailrace elevation has not decreased below 633 feet since the MOP+0.5' operation was implemented at Little Goose.
2. On August 6, the COE implemented a constant spill rate operation at Little Goose in place of the 30% spill rate identified in the FOP. As defined in the FOP, when daily average flow in the Snake River is less than or equal to 32 kcfs, the spill rate at Little Goose will transition from 30% spill to a constant spill rate of 7-11 kcfs (depending on inflows). During this low flow period the Little Goose powerhouse must switch between two units running at the lower end of 1% best efficiency and one unit operating at the upper end of 1% best efficiency in order to provide 30% spill and maintain MOP. Therefore, on August 6, the project transitioned to a constant spill rate of 11.1 kcfs now in light of FOP provisions for low flows on the Snake. The current STP forecast puts Little Goose inflows at 28.9 kcfs on August 31, indicating that a gradual recession of inflows is under way.
3. On August 6, the TSW was closed at Little Goose. As defined in the 2012 Fish Passage Plan, this operation was coordinated through FPOM and implemented when flows at Little Goose decreased below 35 kcfs.

5. Snake River Sockeye Conversion Rates

Russ Kiefer reported that Idaho is beginning an investigation of poor conversion rates this year for PIT tagged Snake River sockeye between Bonneville and McNary dams. The conversion rate for Snake River sockeye appears to be significantly lower than that for mid-Columbia stocks. TMT will revisit this issue as more information becomes available.

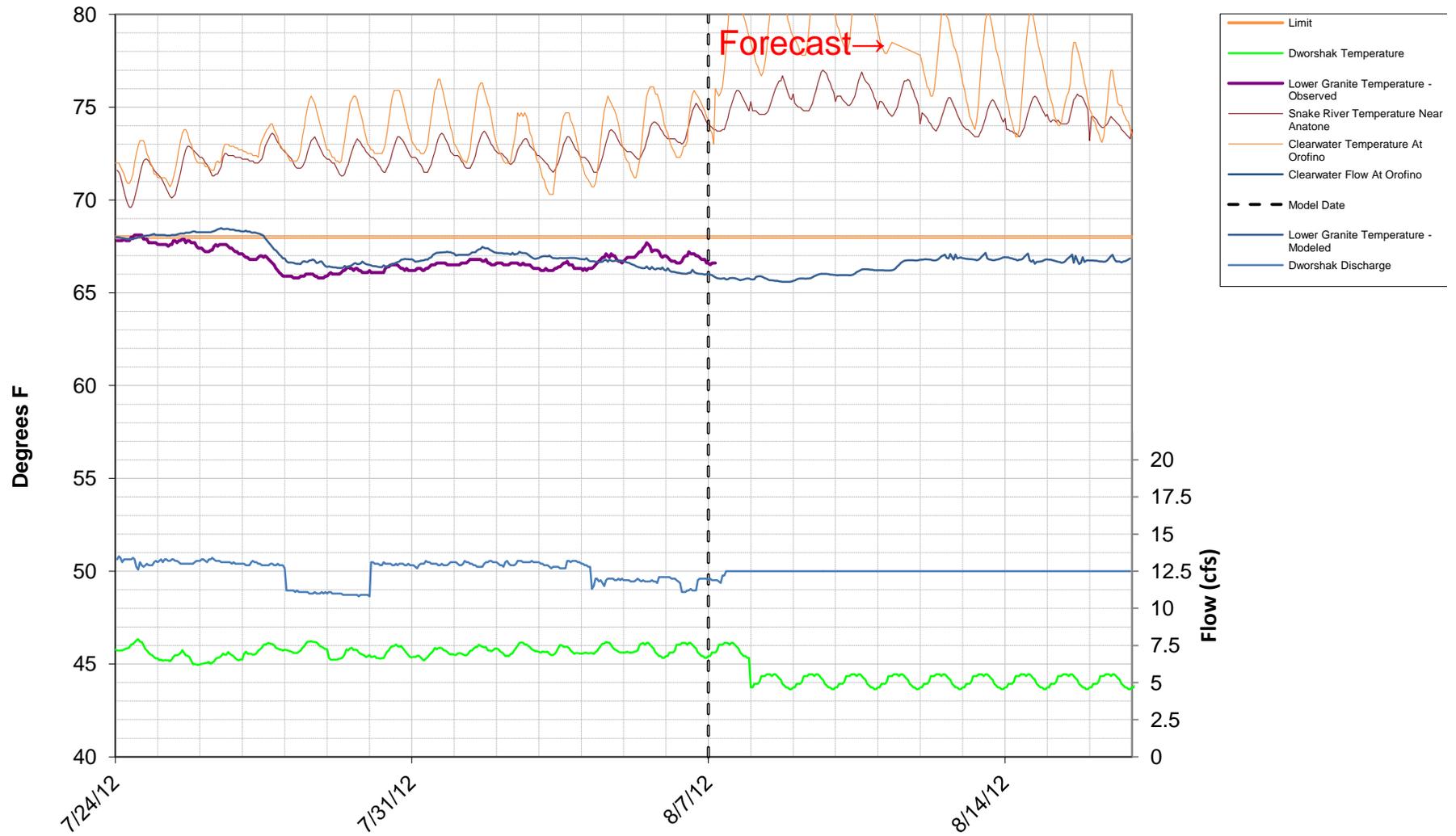
6. Next TMT Meeting

The next TMT meeting will be held in person on August 15 at the COE NW division offices in Portland. Agenda topics include an update on Dworshak and Libby operations, as well as sockeye conversion rates if information is available by next week.

<i>Name</i>	<i>Affiliation</i>
Doug Baus	COE
Dave Wills	USFWS
Rick Kruger	Oregon
Paul Wagner	NOAA
Scott Bettin	BPA
Sheri Sears	Colville
John Roache	BOR
Jim Litchfield	Montana
Brian Marotz	Montana
Joel Fenolio	COE Seattle
Tara Kelly	JP Morgan
Jeremy Giovando	COE Walla
Heather Dohan	Puget
XX	PP&L
Margaret Filardo	FPC
Dave Benner	FPC
Steve Hall	COE
Richelle Beck	Grant PUD
Laura Hamilton	COE
Kim Johnson	COE
Karl Kanbergs	COE
Lisa Wright	COE
Russ Kiefer	Idaho
Tom Lorz	CRITFC/Umatilla

Output from CEQUALUtility Pre-processor
w/ SILW from agrimet spreadsheet
12.5 KCFS beginning on the 8th (2006 AY)

Water Temperature Comparisons Model from 7/24/2012 to 8/17/2012 Observed Data to 8/7/2012



TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
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MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday August 15, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING
Phone Number (877) 336-1274
Access Code 3871669
Security Code 0411

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

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AGENDA

1. Welcome and Introductions
2. Review July 25 and August 8 Meeting Minutes
3. McNary Transport - Paul Wagner, NOAA Fisheries
4. Dworshak Operations - Steve Hall, COE-NWW
 - a. [Snake and Clearwater Temperatures](#)
 - b. [Water Temperature Comparisons](#)
5. Libby Operations - Doug Baus, COE-NWD
 - a. [Alternative 4](#)

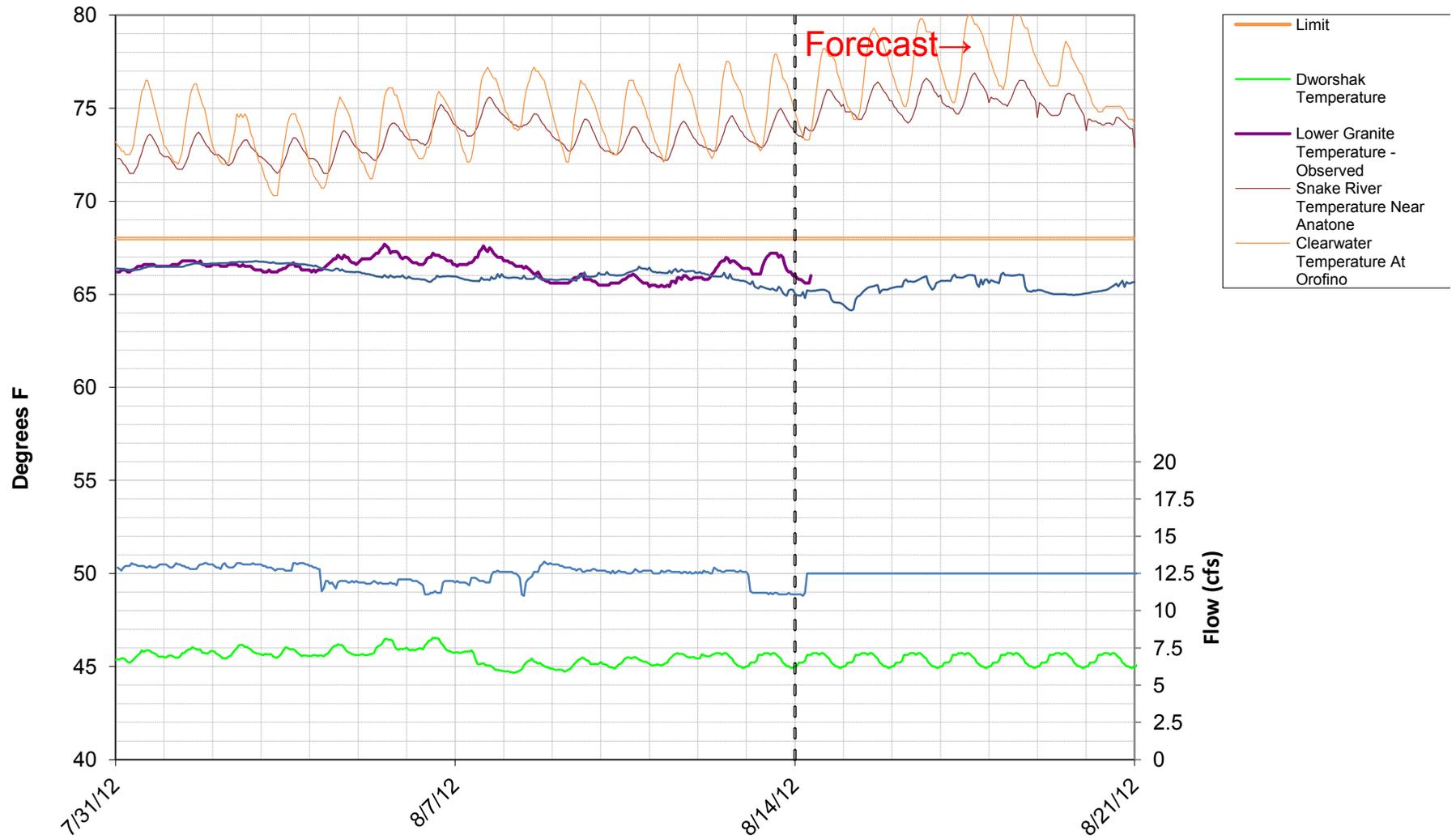
6. End of MOP - *Tony Norris, BPA*
7. Operations Review
 - a. Reservoirs
[LGS MOP Operation](#)
 - b. Fish
 - c. Water Quality
 - d. Power System
8. Other
 - a. Set agenda and date for next meeting - **August 22, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Dong Baus](#) at (503) 808-3995*

Output from CEQUALUtility Pre-processor

12500cfs out

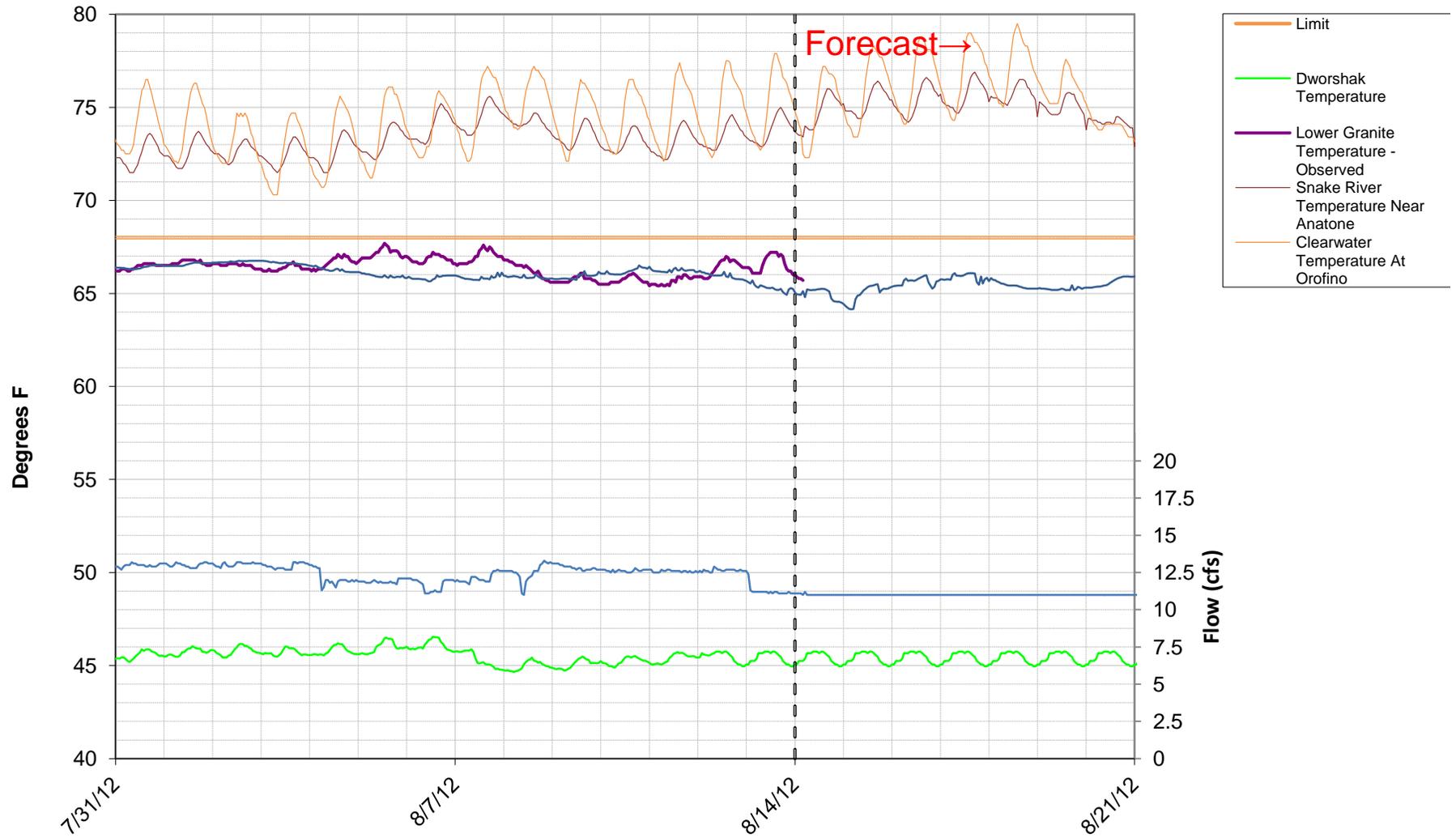
Water Temperature Comparisons Model from 7/31/2012 to 8/21/2012 Observed Data to 8/14/2012



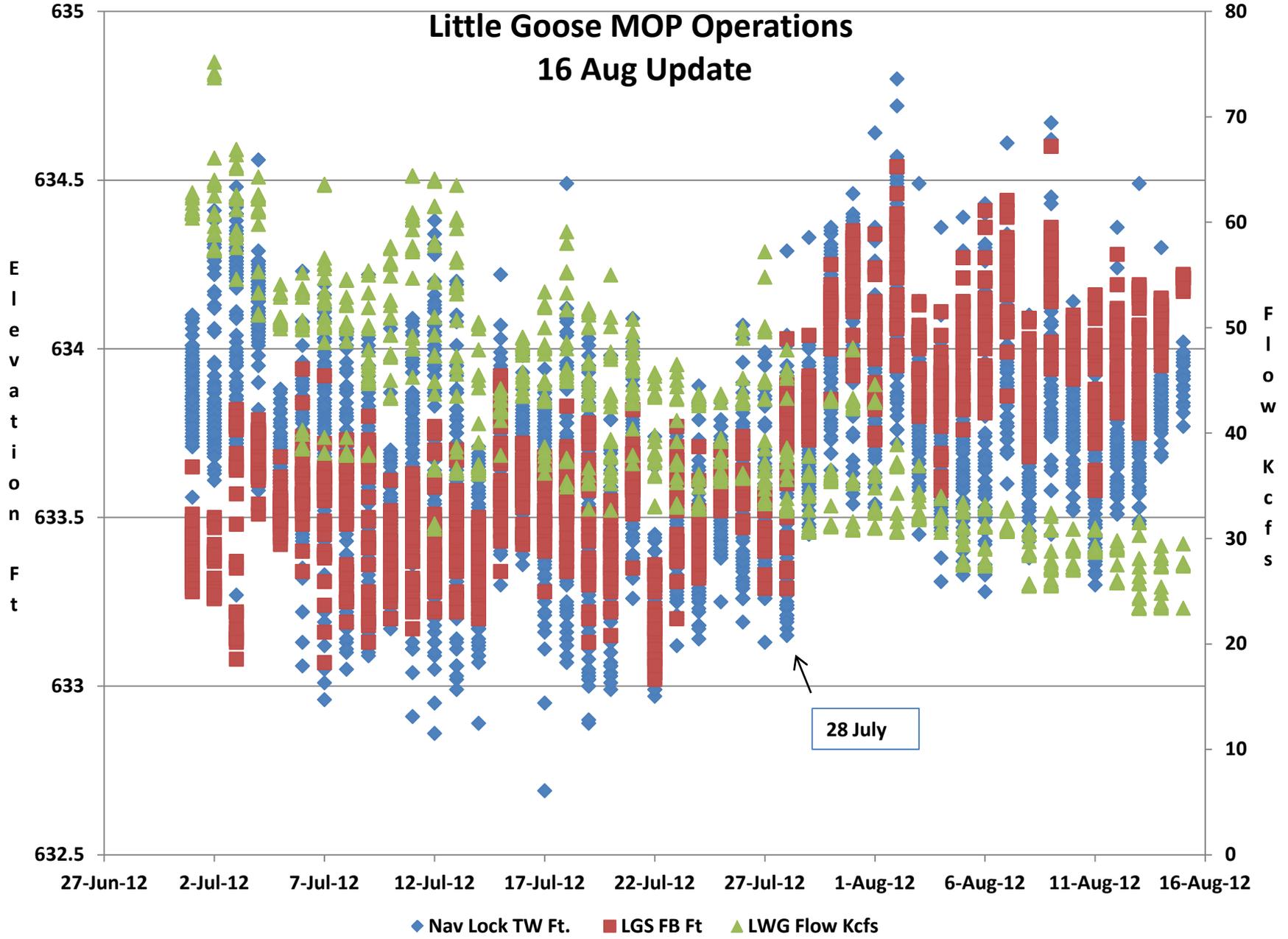
Output from CEQUALUtility Pre-processor

11000cfs out

Water Temperature Comparisons Model from 7/31/2012 to 8/21/2012 Observed Data to 8/14/2012



Little Goose MOP Operations 16 Aug Update



Libby Dam Summer Operation

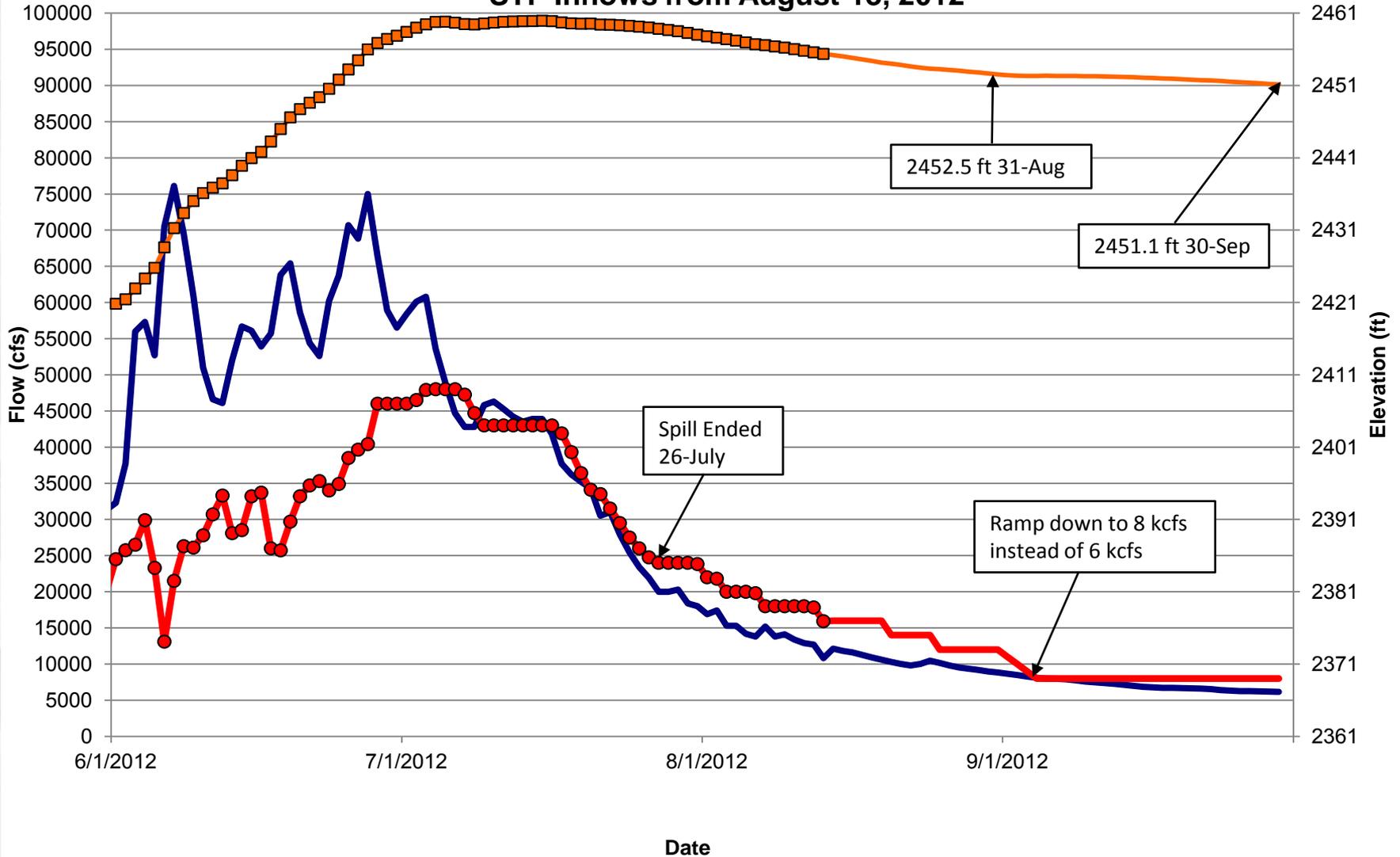
Alternative 4

- Use inflow triggers to set releases
 - ▶ Current outflow is 16 kcfs
 - ▶ Inflows reach 11 kcfs -> Release 14 kcfs
 - ▶ Inflows reach 9 kcfs -> Release 12 kcfs...OR...
 - ▶ If release greater than 12 kcfs on 24-Aug then ramp down to 12 kcfs

 - ▶ Ramp down to 8 kcfs over 4 days at beginning of September
 - ▶ Hold outflow in September at 8 kcfs



Libby Jun-Sep Ops WY 2012, Alt 4 - Gradual Rampdown w/ 8 kcfs in September STP Inflows from August 13, 2012



▲ Obs Inflow — Inflow ● Obs Outflow — Regulated Outflow ■ Obs Elev — Regulated Elev

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

August 15, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Review July 25, August 8 Meeting Minutes

The Official Minutes and Facilitator's Summary from the 7/25 TMT meeting, and Official Minutes from 8/8 were posted and reviewed. With no further edits or comments, the notes were considered final.

McNary Transportation

Paul Wagner, NOAA, said the salmon managers at FPAC discussed the start of McNary truck transportation, scheduled to begin this Friday 8/17. Upon their review of temperature and flow conditions, and given the improved bypass system, the salmon managers had reached consensus to recommend that truck transportation of subyearling Chinook at McNary be deferred for now. Paul said that a PSFMC study and report showed that higher temperature conditions were not a good environment for handling and holding fish for transportation. The Fish Passage Plan defines a temperature threshold of 70°F for John Day and Bonneville smolt monitoring facilities to alter sampling operations and both projects had reached that point already this year and had switched to every other day sampling. The McNary forebay is approaching that threshold but there are no FPP criteria for changing operations at the McNary collection facility due to warm temperatures. Also, with the high flows this year and the new outfall, the salmon managers felt that continuing to bypass the fish was the best option at this time.

Planned Operation/Next Steps: No objections were raised to the salmon managers' recommendation as it was described. The salmon managers will submit an SOR to the Corps by COB today (8/15) that includes the recommendation and a biological rationale. The Corps will review the SOR internally with its district biologists and policy/legal team. If there are no concerns, the Corps will implement the request as described. If further discussion and/or coordination is needed, TMT will reconvene at 1:00 pm on Thursday, 8/16, to revisit this issue. Doug Baus, Corps, will send an email notification to TMT with the decision and meeting cancellation, or, TMT will discuss the SOR during the conference call.

Dworshak Operations

Steve Hall, Corps Walla Walla, reported on Dworshak operations to manage temperatures at Lower Granite. He referred to a graph of daily temperatures linked to today's agenda and explained that the daily spikes that have occurred since 8/12 were due to transformer double testing at Lower Granite which required warmer water spill from the project. He also shared two Dworshak operating scenarios, one showing the current 11 kcfs release and the other showing a release of 12.5 kcfs, and their respective impacts at Lower Granite. He acknowledged that the models were not responding to the unique conditions with the Doble testing. To meet the end of August elevation target of 1535 feet at Dworshak while providing cool enough water to meet

temperature requirements at Lower Granite, the Corps planned to continue releasing 11 kcfs through Friday, 8/17, then back off to full powerhouse on 8/18 through the remainder of the month.

TMT questions:

- What are the impacts of the current warmer temperature releases on the adult trap and ladder? Corps response: Likely no impact on temperatures in these areas.
- How much difference would it make to draw water from a different depth? Response: Up to about 1° F by going down 5 meters. Turbine units draw water from ~15-20 meters, and spill pulls water from the top 10 meters of the pool. The temperature difference between the top ½ meter and 20 meters deep has been as much as 6-7°F. If the pool was higher, the water spilled would be cooler. Hall referred to the temperature string data showing temperature gradients through the water column in the forebay to illustrate the difference in temperature from drawing water from deeper in the water column.
- How much are temperatures impacted by Hells Canyon? Are there other ways to draw cooler water? Response: The Corps has explored options and do not see any that would produce a benefit. Comments were made that operating Lower Granite at full pool could potentially provided a cooling effect by spilling from a greater depth in the reservoir.
- Have you considered rescheduling the double testing in future years so as not to compound temperature issues during this migration period? Response: This will be discussed at a future FPOM meeting. The effect of the warm water spilled is highly localized to the immediate area of the Lower Granite tailrace temperature gauge, and the pool above Lower Granite is still cooled by Dworshak releases.
- We need to better understand the actual impact downstream from mixing this warmer water. Russ Kiefer, Idaho, response: We see steelhead passing McNary but there is still a thermal block at the confluence that is delaying their migration into the Lower Snake.

Planned Operation/Next Steps: The Corps will continue releasing 11 kcfs out of Lower Granite through Friday, 8/17, at which time double testing is scheduled to be completed. On 8/18, the project will back off releases to full powerhouse. The Corps Walla Walla will produce updated temperature and operation modeling at the next TMT meeting.

Libby Operations

The Action Agencies will implement Alternative 4 as discussed at the 8/8 TMT meeting. The slide attached to today's agenda shows this alternative with projected end of month elevations based on the latest forecasts, and the only difference was a slight increase of ~0.1 ft for the end of September elevation to 2451.1 ft. There was consensus from the TMT on this operation.

End of MOP Operations

Tony Norris, BPA, reminded TMT that there is no longer a BiOp requirement to hold the Lower Snake projects to MOP after August. While the constraint will be lifted thereby providing more flexibility, BPA will return all projects to MOP to meet the Nez Perce agreement for Dworshak flow augmentation.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects. Hungry Horse was at elevation 3556 feet and operating to meet a target elevation 3550 feet by the end of September; Grand Coulee was at elevation 1283.3 feet, targeting 1279.7 feet by the end of August. Lisa Wright, Corps, reported on projects. Libby was at elevation 2455.2 feet, with 12.5 kcfs inflows and 16 kcfs outflows. Albeni Falls was at elevation 2062.4 feet and passing inflows of 15.2 kcfs. Dworshak was at elevation 1555.1 feet with 1.4 kcfs inflows and 11.2 kcfs outflows. Lower Granite inflows were 25.8 kcfs; McNary inflows were 204.0 kcfs; and Bonneville inflows were 193.2 kcfs. Lisa pointed to a link to the agenda with a recap of Little Goose MOP operations that was modified on July 28 to increase MOP by 0.5 feet to provide safe navigation into the downstream entrance of the Lower Granite navigation lock. She said since the operation was implemented there have been no excursions below the 633-ft minimum tailwater elevation at Lower Granite and the operation was having the desired effect.

Fish – Paul Wagner, NOAA, reported on fish passage.

Juveniles: Subyearling Chinook passage was about 1,000/day at Lower Granite; less than 100/day at Lower Monumental; 23,000 at McNary and 10,000 at Bonneville. Juvenile lamprey passage counts at John Day were about 200/day, and about 20/day at Bonneville.

Adults: Fall Chinook counts at Bonneville were beginning to pick up, about 1,000/day, and expected to increase over the next two weeks. Jack counts were up but steelhead counts were below the 10-year average. At Lower Granite, steelhead passage was low, likely due to higher temperatures. Sockeye total count was 447. Russ Kiefer, Idaho, added that in the Stanley Basin, 67 sockeye were trapped, of which 26 were wild/natural. Charles Morrill, Washington, reported the latest COMPACT forecast for Fall Chinook is 654,000.

Water quality – Steve Juul, Corps, reported that there are no TDG issues.

Power system – Nothing to report.

TMT Schedule

- 8/22 Conference Call – cancelled unless major issues come up
- 8/29 – Face to face meeting at NOAA
- 9/12 – TMT are invited to a field trip at BPA Vancouver offices to look at the transmission operating room following the TMT conference call. TMT members should submit their names to Scott Bettin and Tony Norris if they plan to attend.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

August 15, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of BPA, Montana, Idaho, BOR, COE, NOAA, Nez Perce Tribe, Oregon, USFWS, Washington, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review July 25 and August 8 Meeting Minutes

There were no comments on the facilitator's notes and official minutes for July 25 and August 8, so they were deemed final.

3. McNary Transport

FPAC reached a consensus recommendation yesterday that truck transport at McNary be delayed because raceway temperatures are too high for fish to remain there 48 hours, Paul Wagner, NOAA, reported. The 2012 Fish Operations Plan says that truck transport will begin at McNary Dam on August 17 and continue through September 30. However, raceway temperatures were an average of 68.9 degrees F on August 3-9, with a daily average high of 69.7 degrees F and a maximum of 71.8 degrees F on August 8, according to the Pacific States Marine Fisheries Commission weekly monitoring report on temperature conditions at McNary. At Bonneville and John Day, sampling is limited to two days a week under similar conditions. Temperatures at McNary can only be expected to increase, and high flows on the lower Columbia would provide better passage via the newly upgraded McNary bypass outfall pipe. Because truck transport requires that fish be held in the McNary raceway up to 48 hours, trucking under current conditions is not advisable.

FPAC therefore recommends using the McNary bypass for juvenile passage in lieu of transport after August 17, with continued check-ins as the season progresses. Baus asked for clarification of how long FPAC recommends that truck transport be delayed. The Salmon Managers based their recommendation on current conditions and didn't address future conditions explicitly, Wagner replied. Nevertheless there was a sense that transport would probably be delayed for the entire 2012 season. With temperatures in the 100 degree range forecasted for the Pasco area in the next few days, it is highly unlikely that raceway conditions will improve by the time trucking is scheduled to begin. In addition, the presence of large numbers of shad in the river before September 30 often curtails the trucking operation early.

Russ Kiefer, Idaho, suggested the COE put trucking plans on hold indefinitely this year, unless an agency or tribe sees conditions that warrant transport and raises the topic for discussion at TMT. Charles Morrill, Washington, agreed with NOAA's prognosis that short-term conditions are not likely to improve in time to initiate transport this year.

Baus requested that the recommendation be presented to the COE as a system operational request (SOR) with supporting biological documentation, which Wagner said NOAA will provide by close of business today. A tentative TMT call was scheduled for 1 pm tomorrow to discuss the McNary SOR.

4. Dworshak Operations

Since August 12, temperatures have spiked daily at Dworshak, a unique condition reflected in the temperature modeling shown in attachment 4a to this item on today's agenda, Steve Hall, COE, reported.

Attachment 4b depicts two potential scenarios:

1. Increase Dworshak outflows to 12-12.5 kcfs in an effort to provide temperature control in Lower Granite tailwater.
2. Continue the current discharges of 11 kcfs into the near future.

Hall pointed out there's not much difference in temperatures between the two scenarios. The daily temperature spikes are an unintended result of Doble testing underway at Lower Granite Dam. The test requires that all generators at Lower Granite powerhouse be de-energized, which results in spilling the entire river with the exception of one small service generator. This operation tends to pull warm water from the surface of the reservoir over the spillway as opposed to deeper, cooler water that would be running through the generators.

The good news in this situation is that most of the warm water on the surface has already been spilled, leading to a slight cooling trend. Also, the angle of the sun is lower, with shorter days and longer nights. Therefore the COE's plan is to hold the current 11 kcfs releases from Dworshak through August 17, when Doble testing will end, then ramp down to full powerhouse flows in an effort to meet the August 31 elevation target of 1,535 feet.

Kiefer asked whether Doble testing has affected temperatures in the adult trap and ladder at Lower Granite; Hall doubted it would. Tony Norris, BPA, asked whether having Lower Granite pool at maximum elevation during the Doble testing would affect spillway temperatures; Hall said yes because spill would be drawn from deeper in the water column with the pool at maximum elevation. This could reduce temperatures in Lower Granite tailwater by approximately 1 degree

Fahrenheit. Dave Statler, Nez Perce, asked if anything else could be done to spill the trapped cooler water; Hall said going to full pool is the only possible remedy at present.

Kiefer noted that adults are currently avoiding entering the Snake because of a temperature differential (thermal block) between the Snake and Columbia rivers. This effect will gradually diminish. Meanwhile, the full-pool idea should be explored; possible impacts on the adult ladder at Lower Granite need to be examined closely. Would it pull warm water into the adult ladder? Scott Bettin, BPA, doubted this would be a problem. The Lower Granite tailwater gage only records water temperatures in one location, and the effect of the warmer water spilled is highly localized to the spillway tailrace near the gauge. The pool above Lower Granite is still cooled by Dworshak releases and fish have access to cooler areas than these data indicate.

Rick Kruger, Oregon, asked whether the future scheduling of Doble testing (which occurs biannually on lower Snake projects) would change as a result of these temperature spikes. This discussion of how to schedule future Doble testing in light of temperature impacts will continue at FPOM.

The Salmon Managers present today approved of the COE's plan to continue Dworshak operations at 11 kcfs outflows through the end of Doble testing on August 17. Statler suggested the COE monitor impacts of Doble testing downriver. TMT will check in on Dworshak operations at its next meeting.

5. Libby Operations

Baus reported the COE is continuing to implement Alternative 4 for Libby operations, which the COE presented last week in response to Montana's request for a gradual ramp down at Libby in September based on biological concerns. Alternative 4 maintains August ramp rates based on inflow triggers defined in Alternative 3, and specifies increased outflows of 8 kcfs at Libby Dam instead of 6 kcfs, which will be sufficient for the Kootenai Tribe's sturgeon habitat restoration in September. Based on the latest STP projections, this week's modeling run of Alternative 4 results in about a tenth of a foot difference in the projected September 30 reservoir elevation as opposed to last week's run, Baus said. Jim Litchfield, Montana, thanked the COE for implementing this operation, which successfully addresses the biological concerns.

6. End of MOP Operations

The BiOp doesn't require MOP operations after August 31, but in consideration of the Nez Perce settlement agreement to release 200 kaf of stored water from the Dworshak reservoir in the month of September, BPA has been returning projects to their current MOP range in September minus navigation adjustments, Tony Norris, BPA, said. This has been the standard

protocol for the past several years and will be again this year. In return for increased operational flexibility, BPA doesn't use fish augmentation volume for storage, Kiefer explained. **Idaho** supports this approach.

7. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3,556 feet, targeting 3,550 feet by the end of September. Current releases are 2.9 kcfs, with a goal of keeping these flows either steady or in slow decline to 2.7-2.5 kcfs by end August. Grand Coulee is at elevation 1,283.3 feet, targeting an August 31 elevation of 1,279.7 feet (1280 feet is the BiOp target, with .3 feet allocated to the Columbia River water management/Lake Roosevelt incremental storage release program).

Libby is at elevation 2,455.2 feet, with inflows of 12.5 kcfs and releases of 16 kcfs. Albeni Falls is at elevation 2,062.4 feet, passing inflows of 15.6 kcfs. Dworshak is at elevation 1555.1 feet, with inflows of 1.4 kcfs and releases of 11.2 kcfs. McNary inflows are 204.0 kcfs. Lower Granite inflows are 25.8 kcfs. Bonneville inflows are 193.2 kcfs.

Attachment 7a provides an update on the Little Goose MOP operation. Since the COE implemented a MOP +0.5 foot operation on July 28, there have been no excursions below the minimum tailwater depth requirement of 633 feet at Lower Granite navigation lock, Lisa Wright, COE, reported.

b. Fish. Juveniles: Wagner reported that subyearling passage is winding down, with an index count of 1,000 fish per day at Lower Granite and around 500 fish per day at Little Goose over the past few days. Lower Monumental is passing fewer than 100 fish per day. John Day is passing 1600 fish per day, per a sampling regime that is limited to twice weekly due to high temperatures. The Bonneville index count was 10,000 fish on August 14, now trending toward 1,500-3,000 fish per day. The McNary collection count today was 40,000 fish, which is higher than previous counts, Charles Morrill, Washington, reported. Wagner noted that juvenile lamprey passage at John Day is winding down after index counts of a few hundred per day over the past week.

Adults: Fall chinook passage is on the increase. Counts are approaching 1,000 adults per day, with a seasonal count of 8,00 fish. The fall chinook jack count this year is higher than it was for either the spring or summer chinook runs. Steelhead passage, which declines when temperatures rise, is at 3,400 fish per day, less than the 5,000-6,000 fish per day of a few weeks ago. The fall chinook forecast this year is for 655,000 fish at the mouth of the Columbia. As for steelhead passage further upriver, the temperature differential between the Columbia and Snake rivers appears to be a passage impediment. Sockeye trapping in the Stanley basin is on the increase, and 26 of the 67 fish trapped as

of August 13 were wild natural fish, Kiefer reported. This finding indicates that natural spawning is producing adult returns.

c. Water Quality. With declining flows in the river, there are no outstanding TDG issues, Steve Juul, COE, reported. The current spill priority list expires at the end of August, Laura Hamilton, COE, noted. TMT will discuss spill priority list on August 29.

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

8. September 12 TMT Meeting

Tony Norris, BPA, is coordinating the September 12 TMT meeting that will be held at BPA's Dittmer transmission complex. TMT members who want to be included in the tour should notify Tony Norris and Scott Bettin in advance for security clearance.

9. Next TMT Meetings

TMT scheduled a potential conference call for tomorrow at 1 pm to discuss McNary transport operations if needed in response to the SOR coming from NOAA at close of business today. The next regular TMT meeting in person will be August 29 at NOAA's Portland office.

Name	Affiliation
Tony Norris	BPA
Jim Litchfield	Montana
Russ Kiefer	Idaho
John Roache	BOR
Scott Bettin	BPA
Steve Juul	COE
Lisa Wright	COE
Paul Wagner	NOAA
Dave Statler	Nez Perce
Rick Kruger	Oregon
Dave Wills	USFWS
Doug Baus	COE
Kim Johnson	COE
Laura Hamilton	COE

Phone:

Charles Morrill	Washington
Cody Armstrong	EDF Trade
Steve Hall	Walla Walla
Heather Dohan	Puget Sound Energy
Dave Benner	FPC

Ruth Burris
Margaret Filardo
Greg Lawson
Richelle Beck
Barry Espenson
Tom Lorz
Bruce McKay

PGE
FPC
Thompson Reuters
Grant PUD
CBB
CRITFC/Umatilla
hydro consultant

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemmer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Thursday August 16, 2012 1:00pm - 3:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 9045

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. SOR 2012-4 Truck Transport from McNary Dam - Paul Wagner, NOAA Fisheries
 - a. [SOR](#)
3. Other
 - a. Set agenda and date for next meeting - **August 29, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

August 16, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

McNary Transportation: SOR 2012-4

TMT revisited McNary transportation discussion with an SOR submitted by FPAC Chair Paul Wagner, NOAA, and signed by NOAA, USFWS, CRITFC, ODFW, IDFW and WDFW. (Nez Perce was not able to sign on but Dave Statler said today that the tribe and all FPAC managers fully supported the SOR.) Paul said that current data on the benefits of transportation to fish are not available as all studies at McNary have ceased prior to August 16. That said, he described the request and biological rationale, which included:

- Average water temperatures in the McNary Forebay have ranged between 68.5-68.9°F from August 8-14, with daily maximum temperatures as high as 69.5°F. Average water temperatures in the McNary tailwater have ranged between 68.6-69.0°F from August 8-14, with daily maximum temperatures as high as 69.2°F (<http://www.nwdwc.usace.army.mil/tmt/documents/ops/temp/201208.lcol.html>).
- The August 3-9, 2012 McNary Dam Temperature report issued by the PSMFC Smolt Monitoring Program recorded daily average water temperatures in Raceway #1 between 67.8-69.7°F with daily maximum temperatures between 69.1-71.8°F (see attachment).
- Daily maximum air temperatures in the Tri-Cities area are expected to approach or exceed 100°F over the next five days, making it likely that water temperatures will continue to increase.
- Special sampling protocols have been implemented at the Bonneville and John Day Dam Smolt Monitoring Facilities in accordance with criteria defined in the 2012 Fish Passage Plan to reduce the frequency of sampling of juvenile fish when temperatures at those facilities are >70°F. While no such protocol currently exists for the McNary Juvenile Fish Facility (JFF), the salmon managers believe it is not prudent to hold fish for an extended period at this facility, especially when the flow in the river is in the 200 kcfs range.
- A new juvenile outfall has been constructed at the McNary project which should improve survival at this project.

Russ Kiefer, Idaho, added that data indicate that this proposed operation will likely return more adults than would occur with the transportation operation.

Corps Decision and Planned Operation: Doug Baus, Corps, said the Corps does not plan to implement the SOR. They acknowledge the current temperature situation at McNary Dam, and said they will follow the special operations described in the Fish Passage Plan to minimize mortalities. Mortalities at the McNary Juvenile Fish Facility have been $\leq 1\%$, and temperatures are normal for this time of year and consistent with past transportation operations in August; therefore the Corps has determined that an operational adjustment is not necessary at this time. Without an indication of elevated mortalities or abnormally high temperatures, the Corps does

not believe it is prudent to make a change at this time. The Corps is aware of the region's concern and is monitoring the situation closely. If the Corps becomes concerned with the level of mortality observed at the JFF, the Corps will respond by taking immediate corrective steps to switch to bypass operations and return fish to the river. He said the information the Corps currently has indicates there will be higher smolt to adult return rates (SARs) from truck transportation rather than keeping the fish in river.

Salmon manager response –

The salmon managers offered their responses to the Corps' decision:

- We know that stress can produce delayed mortalities and would prefer preventive action be taken, rather than waiting until we see a problem before taking action. Mortalities could be occurring even if they are not seen at the project.
- The salmon managers reached consensus on the adaptive management approach they outlined in the SOR and strongly urged the Corps to implement their request.
- The recommendation is based on unique and new conditions we have now and is intended for this year only.
- The biologists believe their approach would return more adults and that it is more cost effective than transportation.

Dave Statler, Nez Perce, added that he was frustrated with the decision process, saying a unilateral decision was made by the Corps based on administrative documentation rather than biological considerations, and saw this as a break down in the TMT process.

Next steps: Paul Wagner asked the Corps to consider modifying transportation operations to limit the amount of time the fish are held, possibly transporting fish on the same day they were collected. Doug Baus said he would explore options with the Corps' Walla Walla District and revisit this with TMT next week. **TMT agreed to hold a conference call next Wednesday, 8/22.**

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

August 16, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus and facilitated by Robin Gumpert, DS Consulting. Representatives of USFWS, COE, Idaho, NOAA, Nez Perce Tribe, BPA, BOR, Oregon, the Colville Tribe, Montana, Idaho, Washington, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. SOR 2012-4 Truck Transport from McNary Dam

This call was scheduled to follow up on TMT's discussion yesterday of possibly suspending truck transport operations at McNary Dam due to the concern regarding increasing temperatures in the raceways. As requested yesterday, Paul Wagner, NOAA, presented the consensus recommendation from FPAC as a system operational request (SOR) with supporting biological documentation. SOR 2012-4 advises that truck transport at McNary be suspended for the following reasons:

1. Average temperatures in the raceways were between 67.8 and 69.7 degrees F from August 8-14, with a maximum hourly reading of 71.8 degrees F and more hot weather coming. At these temperatures, it is not advisable to handle fish. Sampling is reduced to twice weekly at the Bonneville and John Day Smolt Monitoring Facilities under similar conditions.
2. Although the last transport study in 2002 correlated truck transport with greater smolt to adult return rates (SARs), since that time a number of fish mitigation improvements have been made to the hydro system. These changes would tend to reduce the comparative benefits of transport vs. in-river migration. McNary and John Day dams have 24-hour spill, compared to no spill in 2002. The McNary bypass was in poor condition and has since been replaced and relocated. Construction of The Dalles spill wall and spillway weirs at John Day have improved juvenile passage conditions considerably. Also, spill patterns have been altered to benefit fish.

Baus informed TMT the COE will not be implementing the SOR. With below average juvenile mortality rates of less than 1%, the COE is not concerned that transport operations would cause any increase in mortality at this time. The COE acknowledges temperatures approaching 70 degrees F but there is an extensive array of temperature probes throughout the project and the COE is monitoring

the situation closely. Temperatures tend to be elevated during the month of August at McNary Dam. Additionally, there are procedures identified in the 2012 Fish Passage Plan that minimize impacts of temperature on the juvenile transportation operation. The COE is operating in accordance with these procedures and has not observed elevated mortality at this time. If a problem develops the COE will take corrective action immediately which would include switching to full flow bypass and returning collected fish to the river.

When asked why the SOR would not be implemented, Baus said the 2001-02 data indicate that proceeding with truck transport will result in greater smolt to adult return rates. Therefore, the COE plans to proceed as identified in the FPP and initiate collection tomorrow at McNary unless a problem becomes evident.

The Salmon Managers present on the call disagreed with this decision, noting that the SOR represents the consensus opinion of fish biology experts in the region. (Although there was no time to sign the SOR before it was presented to the COE, the Nez Perce Tribe documented its support in an email.) Nez Perce, Idaho and Washington representatives emphasized that while no conclusive data exist to make a relative comparison of transport vs. in-river migration in 2012, the temperatures in the McNary raceways are known to stress fish which could lead to latent mortality. Several Salmon Managers stated their views of the decision to proceed with transport:

- **Washington** – Just because no mortality has been observed doesn't mean that mortality is not occurring. A fish doesn't have to die to be negatively impacted by improper handling at these temperatures. Holding fish in the McNary raceways presents a significant risk; waiting until a problem is seen would be a mistake.
- **Idaho** – Not initiating transport this year would both be likely to return more adults and save money. It makes no sense not to implement the SOR in light of current conditions and biological information.
- **Nez Perce** – For two reasons this decision mocks what should be a collaborative team process: (1) The decision is being made unilaterally despite compelling biological information to the contrary. (2) It appears to be based on administrative documentation rather than on real-time biological considerations for fish. Requested specifically that these comments be included in the record.
- **NOAA** – Supports the SOR. This year's high flows, in combination with conditions at McNary, present a unique opportunity to suspend truck transport to benefit fish. Given current temperatures in the McNary raceways, holding fish doesn't seem to be the best course of action.

Agrees with Washington that if we wait until a problem is observed, it will be too late.

Wagner then suggested the COE consider collecting and transporting fish on the same day to reduce holding time and to avoid holding them in the raceways for up to 48 hours. Baus said the COE will evaluate that suggestion and report back to TMT. A conference call was scheduled for August 22 to revisit the McNary truck transport operation. In the meantime, Baus will notify TMT members via email of any significant developments regarding the McNary transport operation.

3. Next TMT Meeting

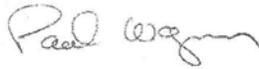
TMT scheduled an August 22 conference call for an update on McNary truck transport. The next TMT meeting in person will be on August 29 at NOAA's Portland office.

Name	Affiliation
Dave Wills	USFWS
Russ Kiefer	Idaho
Paul Wagner	NOAA
Doug Baus	COE
Dave Statler	Nez Perce
Scott Bettin	BPA
Ann Setter	COE
John Roache	BOR
Lisa Wright	COE
Derek Fryer	COE Walla Walla
Barry Espenson	CBB
Rick Kruger	Oregon
Richelle Beck	Grant PUD
Steve Hall	COE Walla Walla
Tom Lorz	CRITFC/Umatilla

SYSTEM OPERATIONAL REQUEST: #2012-4

The following State, Federal, and Tribal Salmon Managers have participated in the preparation and support this SOR: National Marine Fisheries Service, US Fish and Wildlife Service, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, the Idaho Department of Fish and Game, and the Columbia River Inter-Tribal Fish Commission.

TO: Col. Robert A. Tipton COE-NWD
James D. Barton COE-Water Management
David Ponganis COE-Director of Programs
Col. John W. Eisenhauer COE-Portland District
Col. Bruce A. Estok COE-Seattle District
Lt. Col. Andrew D. Kelly COE-Walla Walla
Lorri Lee USBR-Boise Regional Director
Steven Wright BPA-Administrator
Tony Norris BPA-PGPO-5
Scott Bettin BPA- KEWR-4
Steve Oliver BPA-PG-5
Lori Bodi BPA-KE-4



FROM: Paul Wagner, FPAC Chair

DATE: August 15, 2012

SUBJECT: Truck Transport from McNary Dam

OBJECTIVE: Do not initiate truck transport operations at McNary Dam on August 17, 2012.

SPECIFICATIONS: Delay the Start of truck Transport at McNary Dam until further notice. Due to relatively high existing water temperatures in the holding raceways at McNary Dam coupled with a very warm forecast in the Tri-Cities region, conditions would not be favorable to collect, hold for up to 48 hours, and transport by truck until conditions can be re-evaluated.

JUSTIFICATION: With regard to summer transportation at McNary Dam, the 2012 Fish Operations Plan (FOP) states:

Transportation will be initiated at McNary Dam between July 15–30 per the 2010 Supplemental BiOp (RPA 30, Table 4) and in coordination with NOAA Fisheries and the

TMT. Fish will be transported from McNary Dam by barge through August 16, then transported by truck every other day. All fish collected will be transported except those marked for in-river studies. Fish are expected to be transported through September 30. The presence of factors such as excess shad, algae or bryozoans that can clog screens and flumes may result in discontinuing transport operations at McNary Dam before September 30. Detailed criteria for McNary transport are contained in the FPP, Appendix B.

Transportation operations may be adjusted for research purposes, due to conditions at the collection facilities, or as a result of the adaptive management process (to better match juvenile outmigration timing and/or to achieve or maintain performance standards). If new information indicates that modifying (or eliminating) transportation operations at McNary Dam is warranted, adaptive management will be used to make appropriate adjustments through coordination with the FPOM/TMT.

The recommendation to not implement truck transport at McNary Dam on August 17 is based on the following information.

1. Average water temperatures in the McNary Forebay have ranged between 68.5-68.9°F from August 8-14, with daily maximum temperatures as high as 69.5°F. Average water temperatures in the McNary tailwater have ranged between 68.6-69.0°F from August 8-14, with daily maximum temperatures as high as 69.2°F (<http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201208.lcol.html>).
2. The August 3-9, 2012 McNary Dam Temperature report issued by the PSMFC Smolt Monitoring Program recorded daily average water temperatures in Raceway #1 between 67.8-69.7°F with daily maximum temperatures between 69.1-71.8°F (see attachment).
3. Daily maximum air temperatures in the Tri-Cities area are expected to approach or exceed 100°F over the next five days, making it likely that water temperatures will continue to increase.
4. Special sampling protocol has been implemented at the Bonneville and John Day Dam which reduce sampling of juvenile fish to just two days a week at those facilities given the warm water conditions present at those facilities. While no such protocol currently exists for the McNary facility, the fish managers believe it is not prudent to hold fish for an extended period at this facility, especially when the flow in the river is in the 200 kcfs range.
5. A new juvenile outfall has been constructed at the McNary project which should improve survival at this project.

There is very little data on the relative benefits of transport during this time period because all previous studies conducted at McNary ceased prior to this date. Environmental conditions at the project form the basis for this decision. However, the improvements made to make the river environment a safer route of passage during this past decade deserve mention. These include:

McNary Dam:

- 24 hours spill
- Relocated bypass outfall

John Day Dam:

- Top spill weirs
- Improved spill patterns
- Improved avian wire array
- 24 hours spill

The Dalles Dam:

- Spillway wall and associated improved spill patterns
- Improved ice and trash sluiceway chain gate opening patterns
- Improved avian wire arrays

Bonneville Dam:

- Second Powerhouse corner collector (surface bypass)
- Improved spill patterns (increased minimum openings)
- Increased spill volume
- Finished minimum gap runners at the First Powerhouse
- Heavy-up on Pikeminnow program

The signatories to this SOR believe that due relatively high existing water temperatures at McNary Dam (Forebay, Tailwater, Raceways, etc.) coupled with a very warm forecast in the Tri-Cities region, conditions would not be favorable to collect, hold, and transport by truck until conditions can be re-evaluated. Future evaluations of whether to begin, delay, or discontinue truck transport at McNary dam will consider factors such future water temperatures as well as excessive numbers juvenile of shad that can result in discontinuing transport operations at McNary Dam before September 30.



PSMFC McNary Dam, P.O. Box 1230, Umatilla, Oregon 97882
 Phone (541) 922-3630 Fax (541) 922-4101

**McNary Temperature Report #8
 August 3 - 9, 2012**

A total of 58,641 juvenile salmonids were collected at the McNary Juvenile Fish Facility (JFF) for this weekly period (Figure 1 and Table 1). Subyearling fall chinook accounted for 99.7% of the total collection. Daily flows for this week averaged 232.0kcfs. Spill averaged 116.3kcfs (50.1%). The system mortality averaged 0.05% for the week. Sample tank mortality averaged 1.03%. Mortalities are being enumerated from the separator, sample tanks and the recovery raceway before being returned to the river.

Fish are being sampled every other day with bypass return to the river. Bypass will continue until August 15. Units 3 and 8 are off for rewinding. All orifices are open.

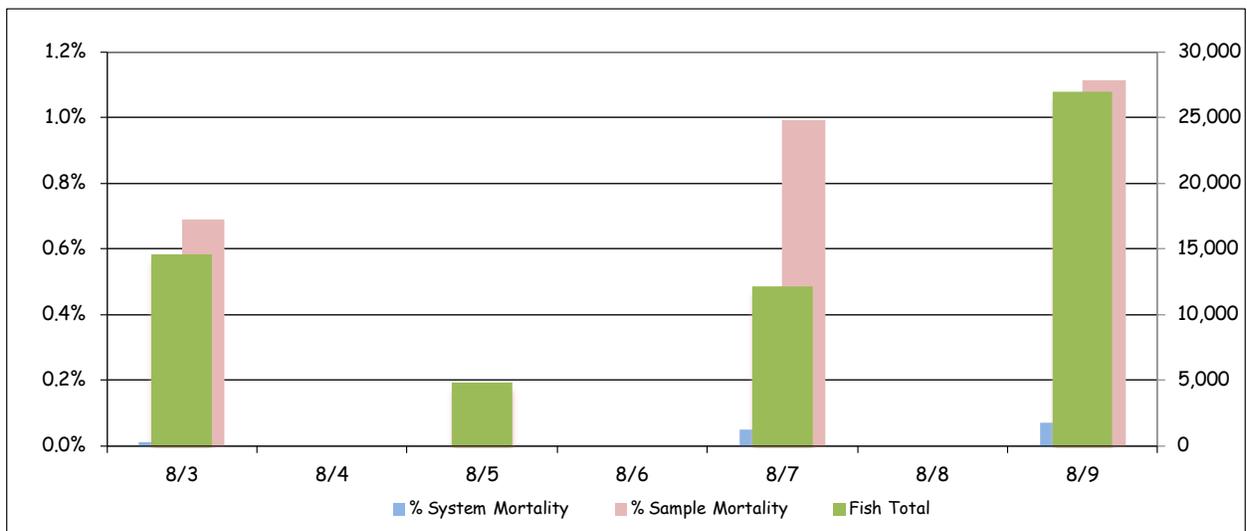


Figure 1: Collection and Mortality

Table 1: Collection and Mortality With Daily and Weekly Averages

	Mortality			Flow			Air Temp		Wind Speed	
	Collection	Sample	System	Total	Turbine	Spill	Avg.	Max.	Avg.	Max.
8/3/12	14,601	0.69%	0.01%	238.2	113.8	119.7	73.6	86.5	2.3	20.0
8/4/12				240.4	114.9	120.7	75.0	94.3	1.8	10.0
8/5/12	4,900	0.00%	0.00%	232.5	111.2	116.5	77.9	93.4	1.3	10.0
8/6/12				235.4	112.9	117.8	86.0	103.6	2.6	12.0
8/7/12	12,200	0.99%	0.05%	230.5	110.5	115.3	81.0	98.2	0.8	14.0
8/8/12				226.4	108.4	113.3	80.5	92.7	3.8	23.0
8/9/12	26,940	1.11%	0.07%	220.9	105.5	110.7	73.3	88.0	1.4	9.0
Weekly Average	14,660	1.03%	0.05%	232.0	111.0	116.3	78.2	103.6	2.0	23.0

Air temperatures at the McNary JFF averaged 78.2°F for the week. Maximum hourly air temperature was 103.6°F on August 6 (Figure 2). The minimum temperature was 57.8°F on August 4 from 5:30 until 6:30a.m. Winds over the course of the week averaged 1.97mph with gust peaking up to 23.0mph on August 8.

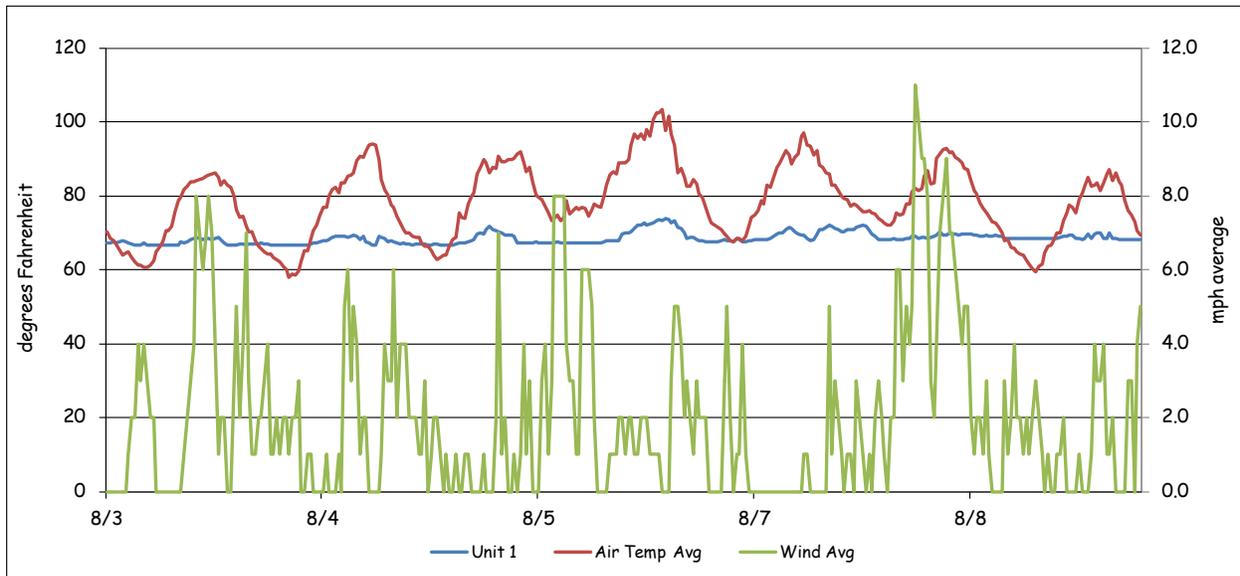


Figure 2: Weather and Forebay Water Temperature

There are 36 temperature probes located throughout the Project and the JFF. These probes are set to record temperatures at 30-minute intervals. These probes are located at the following locations:

- 1) Forebay, near elevation 335 approximately 5 feet below the surface. These are attached to the pier noses in front of turbine units 1, 3, 5, 7, 8, 10, 12, and 14.
- 2) In front of spillbays 22, 17, 12, 7 and 2, approximately 5 feet below the surface. These probes are hung in the center of the spillbay, on the tailrace side.
- 3) Attached to the handrail in the center of the “B” turbine gateway slots, approximately 2 to 3 feet below the surface, in all 14 turbine units.
- 4) Tailwater locations are at turbine unit 1 and 14 (tailrace), and the wingwall of the navigation lock. These were placed 5 feet below the water surface.
- 5) The collection channel had probes installed below turbine units 12, 8 and past unit 1 at the beginning of the transition screen.
- 6) The barge transportation dock.

- 7) Fish separator.
- 8) Transport holding raceway #1 at a depth of 2 – 3 feet.

Forebay water temperatures (Table 2) peaked this week with 75.9°F on August 6 at 6:30p.m., in front of unit 1. The average was 69.3°F across the forebay. Gatewell water temperatures for all units combined averaged 68.7°F (Table 3). Gatewell temperatures peaked at 75.0°F on August 6 in unit 5 at 6:00p.m.

Table 2: Forebay Water Temperatures

	Daily Average								Daily Max
	1F	3F	5F	7F	8F	10F	12F	14F	
8/3/12	68.0	67.3	68.4	68.3	67.9	68.6	68.9	69.1	71.8
8/4/12	68.0	68.1	68.5	68.8	68.5	68.9	69.1	69.1	73.0
8/5/12	68.5	68.2	69.2	68.8	68.6	69.2	69.4	69.4	74.8
8/6/12	70.0	69.7	70.6	69.9	69.4	70.2	70.0	69.6	75.9
8/7/12	69.8	69.5	70.7	70.5	69.9	71.2	70.9	70.4	74.5
8/8/12	69.7	69.7	70.1	69.8	69.6	69.8	69.7	69.4	72.3
8/9/12	69.2	69.0	69.4	69.4	69.0	69.8	70.3	70.1	74.1
Weekly Average	69.0	68.8	69.5	69.4	69.0	69.7	69.7	69.6	75.9

Table 3: Gatewell Water Temperatures for Units 1, 7 & 14

	Daily Avg.			Daily Max.			Daily Min.		
	1	7	14	1	7	14	1	7	14
8/3/12	67.3	67.5	68.9	68.7	69.1	70.5	66.6	66.6	67.8
8/4/12	67.6	67.9	69.2	69.4	69.6	70.7	66.6	66.6	68.4
8/5/12	67.9	68.0	69.6	71.8	70.9	71.2	66.7	66.9	68.5
8/6/12	69.5	69.0	68.7	73.9	71.4	70.5	67.1	67.3	67.3
8/7/12	69.0	69.1	67.9	72.0	71.2	70.3	67.6	67.8	65.5
8/8/12	69.3	69.4	65.7	72.0	70.7	68.7	68.0	68.9	62.6
8/9/12	68.6	68.8	66.4	70.0	70.0	69.1	68.0	68.4	62.2
Weekly Average	68.5	68.5	68.1	71.1	70.4	70.2	67.2	67.5	66.0

The differences in temperatures between the gatewell at unit 1 and the gatewell at unit 14 are illustrated in Figure 3. This graph takes the temperature in the gatewell and subtracts unit 14 from that gatewell (unit 1 – 14). It then continues down the powerhouse subtracting unit 14 from each consecutive unit. A negative number indicates that unit 14 was the warmer unit. Conversely, a positive number indicates that unit 1 was warmer. This shows the reader the amount of variance from one end of the powerhouse to the other that can be seen through out a 24-hour period.

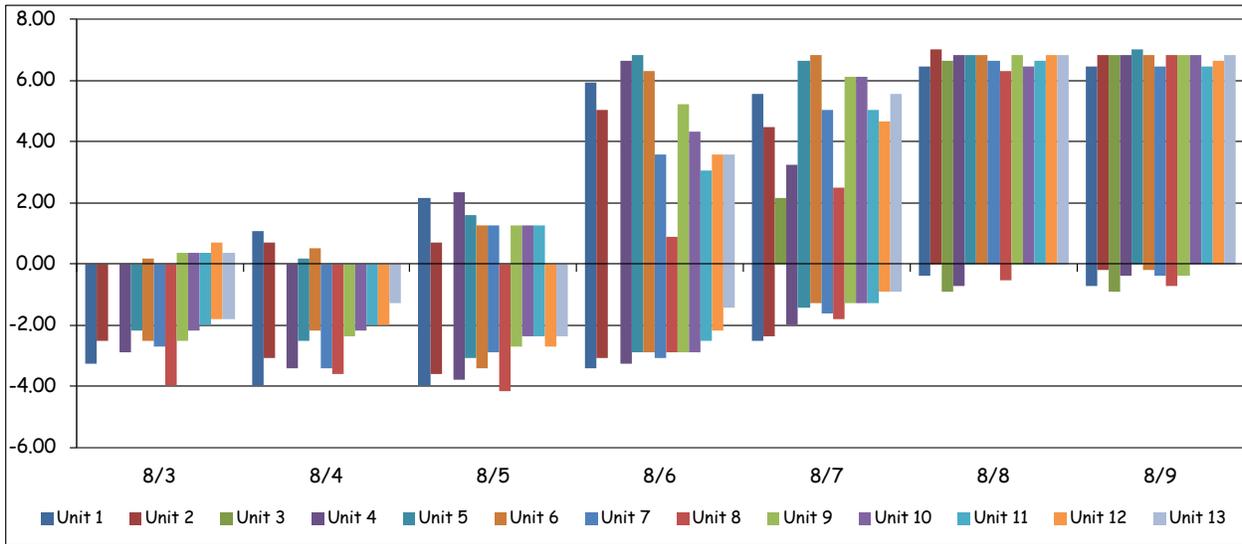


Figure 3: Average Gatewell Temperature Differentials for Units 1 - 14

Forebay differentials (Figure 4) are calculated by taking the forebay temperature and subtracting the corresponding gatewell temperature from it (1F – unit 1). A negative number would indicate that the gatewell was warmer. Conversely, a positive number indicates that the forebay is warmer. Again, this shows the reader the amount of variance that can be seen between the forebay and the gatewell throughout a 24-hour period.

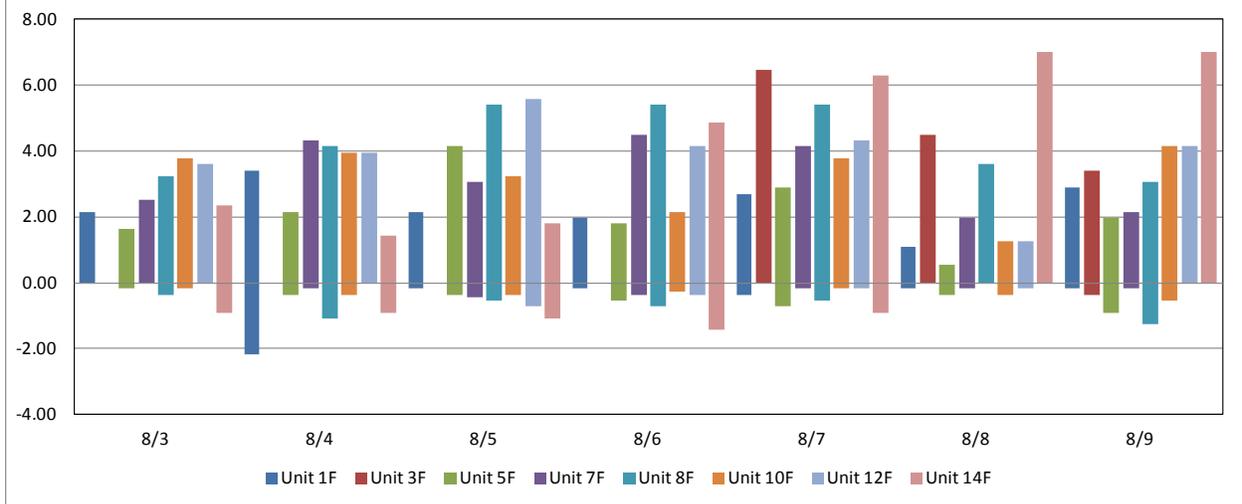


Figure 4: Average Temperature Differentials Between Forebay and Gatewell

Average water temperature in the collection channel was 68.7°F (Table 4) for the week. A maximum temperature of 71.2°F was recorded on August 5 at 7:00pm, below Unit 12. Temperatures at the separator averaged 68.3°F for the week with a maximum daily temperature of 71.1°F (Table 5). The temperature in raceway #1 averaged 68.9°F with a high of 71.8°F August 6 at 6:30pm.

Table 4: Collection Channel Average and Maximum Water Temperatures

	Daily Avg.			Daily Max.		
	1	8	12	1	8	12
8/3/12	67.3	67.7	68.3	68.4	69.4	70.3
8/4/12	67.5	68.0	68.5	69.1	69.6	70.3
8/5/12	67.9	68.4	68.9	69.6	70.3	71.2
8/6/12	68.9	69.1	69.0	71.2	70.7	70.2
8/7/12	68.8	69.4	69.5	70.2	70.5	70.2
8/8/12	69.1	69.3	69.4	70.0	70.2	70.0
8/9/12	68.7	69.1	69.5	69.4	70.2	70.5
Weekly Average	68.3	68.7	69.0	69.7	70.1	70.4

Table 5: Raceway, Barge Dock and Separator Maximum and Average Water Temperatures

	Daily Avg.			Daily Max.		
	Separator	Raceway 1	Dock	Separator	Raceway 1	Dock
8/3/12	67.3	67.8	67.0	68.7	69.1	67.3
8/4/12	67.6	68.1	67.2	69.1	69.6	68.2
8/5/12	67.9	68.4	67.3	69.6	70.2	68.0
8/6/12	68.9	69.5	67.9	71.1	71.8	68.7
8/7/12	68.9	69.4	68.2	70.2	70.5	68.9
8/8/12	69.1	69.7	68.9	69.8	70.5	69.4
8/9/12	68.7	69.3	68.6	69.6	70.0	69.3
Average	68.3	68.9	67.9	69.7	70.2	68.5

Collection channel differentials (Table 6) are calculated by taking the forebay temperature and subtracting the collection channel temperature from it at the three corresponding points. This is an average of the variances between the forebay and the collection channel. A negative number indicates that the collection channel was warmer. A positive number indicates the forebay was warmer. The graph (Figure 5) shows the variance through out the week.

Table 6: Average Differences between Forebay and Collection Channel

	1	8	12
8/3/12	0.8	0.3	0.6
8/4/12	0.4	0.4	0.6
8/5/12	0.6	0.2	0.5
8/6/12	1.1	0.3	0.9
8/7/12	1.0	0.5	1.4
8/8/12	0.6	0.3	0.3
8/9/12	0.5	-0.1	0.9
Average	0.7	0.3	0.7
Maximum	4.9	3.8	5.6
Minimum	-2.0	-1.6	-1.3

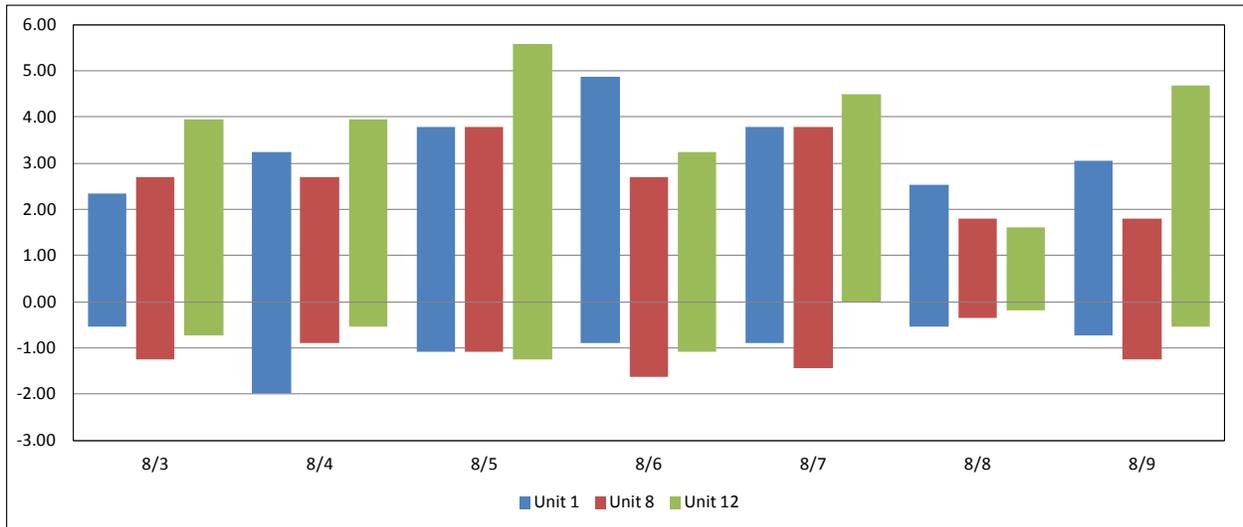


Figure 5: Average Temperature Differentials Between Forebay and Collection Channel

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
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MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday August 22, 2012 9:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 5736

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. McNary Transport - Doug Baus, COE-NWD
3. Other
 - a. Set agenda and date for next meeting - **August 29, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

August 22, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

McNary Transportation Update

Doug Baus, Corps, updated TMT that collection of fish for truck transport at McNary began on 8/17 and trucking transportation began on 8/18. Due to a high abundance of fish, trucking has occurred daily and Doug said this would likely (but not for sure) continue until next week if current conditions persist. Doug reported that water temperatures over the last week have stayed below 70°, with temperatures at 68.9° on 8/21; and air temperatures in the area had tempered some from last week. Fish mortalities remained below 1%; 0.46% mortality was recorded on 8/21.

Doug reported that with regards to an email he sent on Friday 8/17 with the Corps' proposed alternative operation, the Corps decided not to implement the operation given there was no consensus from TMT and temperatures will likely continue to decrease based on historical data and current forecasts. As such and because the Corps had decided not to implement the salmon managers' SOR, the Corps will continue to implement the current operation of truck transport at the project which is consistent with previous years' operations as well as the operation identified in the 2012 FOP.

Longer term next steps include reviewing performance standard testing results from this year in light of the relocated outfall at McNary and other structural improvements that have been made to the downstream projects to enhance in-river survival. Temperature criteria questions that were raised at TMT (temperature threshold, sample location and sample times) will also be discussed at FPOM during Fish Passage Plan review. Any revisions made to the 2013 Fish Passage Plan will impact operations starting next year. Some TMT members expressed an interest to add McNary Transportation Operations and Performance Standard Testing Results to this year's Year End Review agenda.

TMT members reiterated that they felt the Corps was missing an opportunity this year by not implementing the SOR, a consensus recommendation that the salmon managers felt would be the most cost effective and biologically beneficial operation given all the structural improvements, high temperatures and high flows this year. The Corps said their rationale for not implementing the request was because: 1) while the Corps recognized current temperatures at McNary Dam, the Corps did not share the same level of concern as these temperatures were well below average conditions for this time of year; 2) current mortality rates have been and continue to be low, and do not prompt a change in operations; and 3) the Corps does not have adequate data from this year's performance standard testing of the new McNary bypass outfall that would be necessary to inform any change in transport operations, and the Corps is committed to coordinating with

the region as soon as these data are available to inform future operational changes at McNary Dam.

TMT will hear an update on McNary transportation operations at the 8/29 TMT meeting, which will be held at NOAA Fisheries.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

August 22, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of NOAA, Idaho, the Nez Perce and Colville tribes, BPA, USFWS, COE, BOR, Oregon, Washington and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. McNary Transport

The purpose of today's call was for the COE to update TMT on truck transport at McNary following last week's discussion of SOR 2012-4 which gave a consensus recommendation by the Salmon Managers to temporarily suspend transport operations. Baus presented the latest temperature and survival data at McNary; reported on an alternative the COE had proposed via email on August 17 after not implementing the SOR; and laid out next steps for managing the McNary transport operation.

Collection of fish at McNary began August 17. On August 18 the first truck departed McNary and the plan was to conduct every-other-day truck transport. Due to the high abundance of fish collected and increasing water temperatures, the project initiated every-day trucking on August 19. Subsequently the project has been trucking every day since August 18. Based on current conditions it is likely the project will be trucking every day through August 29, but the project will revert back to every-other-day trucking should real time conditions (fish abundance and water temperature) change. Mortalities have been and continue to remain below 1% (August 21 mortality was 0.46%) since transport was initiated. The high temperatures from last weekend have passed and the August 21 water temperature reading was 68.9 degrees F at the lab at 0700 hours.. The weather has been cooling off, with the latest forecast showing temperatures in the 80s during the day and the 50s at night.

On August 17 the Corps sent out a proposed operation the Corps would like to have implemented regarding McNary transport and asked for comments from TMT. After reviewing TMT feedback there was no consensus on the proposed operation therefore the COE will continue to implement the current operation. As for long-term plans, the COE is committed to working with the region through FPOM to develop an appendix to the Fish Passage Plan that more clearly articulates the McNary transport operation, including temperature criteria (threshold, sample location and sample time) that will define conditions when transport operations are likely to be less beneficial than bypassing fish to

the river. The COE will analyze data from this year's performance standard testing to evaluate the new McNary bypass outfall survival data and will coordinate with the region when those data are available to inform future decisions regarding transport operations at McNary.

Charles Morrill, Washington, reported that temperatures in the McNary raceway exceeded 71.4 degrees F from 1500-2200 hours on August 19 and remained above 70 degrees until 2230 hours that evening. He emphasized that conditions for thermal stress are still present, and may have delayed adverse impacts (i.e., not observed at the project a mortality).

Sheri Sears, Colville Tribe, asked why the COE monitors temperatures with readings at 0700 hours in the morning, the coolest time of day, not in the afternoon when spikes can be prolonged and lethal. Sampling in the morning at McNary is consistent with the protocol followed for sampling at John Day and Bonneville, Baus replied. TMT members are invited to participate in the process this fall of identifying sampling protocols to be modified and revised in the FPP.

Some of the Salmon Managers (Washington, Oregon, the Colville and Nez Perce Tribes) objected to using a protocol to monitor temperatures at McNary based on protocols used in other locations. Morrill pointed out that state water quality standards limit water temperatures to 68 degrees in Oregon and 64 degrees in Washington, both of which have been exceeded in the McNary raceway.

Baus said the COE recognizes the regions concern associated with current temperatures at McNary Dam but wanted to reiterate that current daily water temperatures are well below average for this time of year. Between the years of 1995 and 2011 water temperatures on average would be warmer 75% of the time. The COE has not shared the same level of concern regarding water temperatures as some TMT members have expressed because water temperatures are well below average and mortality remains low.

Morrill said a key component in the Salmon Managers' transport recommendation is the new outfall location at McNary. One of the main concerns at McNary this year is the new outfall location, which has yet to be tested, Dan Feil, COE, replied. In the past, the McNary outfall was a primary reason to transport fish there. Criteria for transport operations when raceway temperatures exceed 70 degrees F should be established. Both of these issues need to be resolved before passage season next year.

While there was no official poll today, several of the Salmon Managers expressed strong views of the McNary transport operation for the record. **Washington** found it disappointing that transport isn't being adaptively managed to avoid imposing thermal stress on fish at McNary; **Oregon** also advocated adaptive management under these conditions. **Idaho** signed the SOR last week

because they believe public dollars the Action Agencies invested to improve migration conditions have been effective, and allowing fish to migrate in-river during above-average flow years would return more adults. Conditions this year are such that the Salmon Managers would prefer to implement the change now. The **Nez Perce** said an opportunity is being missed this year to protect fish from high temperatures when flows are available to provide better migration conditions, and requested that this topic be covered at the TMT year end review. **NOAA** sees transporting fish daily as a viable solution in the near term and approves of the COE's plan to address this issue long term via revisions to the FPP with supporting data. TMT will revisit the McNary transport operation next week.

3. Next TMT Meeting

The next TMT meeting will be held in person on August 29 at NOAA's Portland office.

<i>Name</i>	<i>Affiliation</i>
Paul Wagner	NOAA
Russ Kiefer	Idaho
Dave Statler	Nez Perce
Scott Bettin	BPA
Sheri Sears	Colville
David Wills	USFWS
Doug Baus	COE
Barry Espenson	CBB
John Roache	BOR
Richelle Beck	Grant PUD
Rick Kruger	Oregon
Charles Morrell	Washington
Dan Feil	COE
Lisa Wright	COE

DRAFT SPILL PRIORITY LIST - Effective September 1, 2012.

LEVEL 1 – up to the 110% TDG STANDARD ¹		
PRIORITY ORDER	PROJECT	SPILL ESTIMATE (KCFS)
01	LWG	20
02	LGS	18
03	LMN	18
04	IHR	25
05	MCN	48
06	JDA	20
07	TDA	45
08	BON	105
09	DWR	35% of total flow
10	CHJ	25
11	GCL	0 (OT) or 5 (DG) ²

LEVEL 2 – up to 115% TDG		
PRIORITY ORDER	PROJECT	SPILL ESTIMATE (KCFS)
12	LWG	30
13	LGS	23
14	LMN	23
15	IHR	35
16	MCN	80
17	JDA	80
18	TDA	60
19	BON	120
20	CHJ	61
21	GCL	5 (OT) or 10 (DG) ²

LEVEL 3 – up to 120% TDG		
PRIORITY ORDER	PROJECT	SPILL ESTIMATE (KCFS)
22	LWG	45
23	LGS	52
24	LMN	44
25	IHR	75
26	MCN	140
27	JDA	144
28	TDA	135
29	BON	140
30	CHJ	189
31	GCL	10 (OT) or 15 (DG)

LEVELS 4-7 (125%, 127%, 130%, and 135% TDG, respectively): Same project Priority Order as in Level 3.

¹ Outside of Fish Passage Season, the Clean Water Act standard for total dissolved gas (TDG) is ≤110% at all projects.

² Spill at GCL is either through the outlet tubes (OT) or the drum gates (DG), depending on reservoir elevation. Spill through the OT produces more TDG.

TECHNICAL MANAGEMENT TEAM

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MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday August 29, 2012 9:00am - 12:00pm

NOTE CHANGE IN LOCATION

NOAA Fisheries, Mt. St. Helens Room (10th Floor)
1201 NE Lloyd Blvd, Portland, Oregon 97209-4142

[Map & Directions](#)

TMT MEETING

Phone Number (877) 336-1274

Access Code 3871669

Security Code 1713

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AGENDA

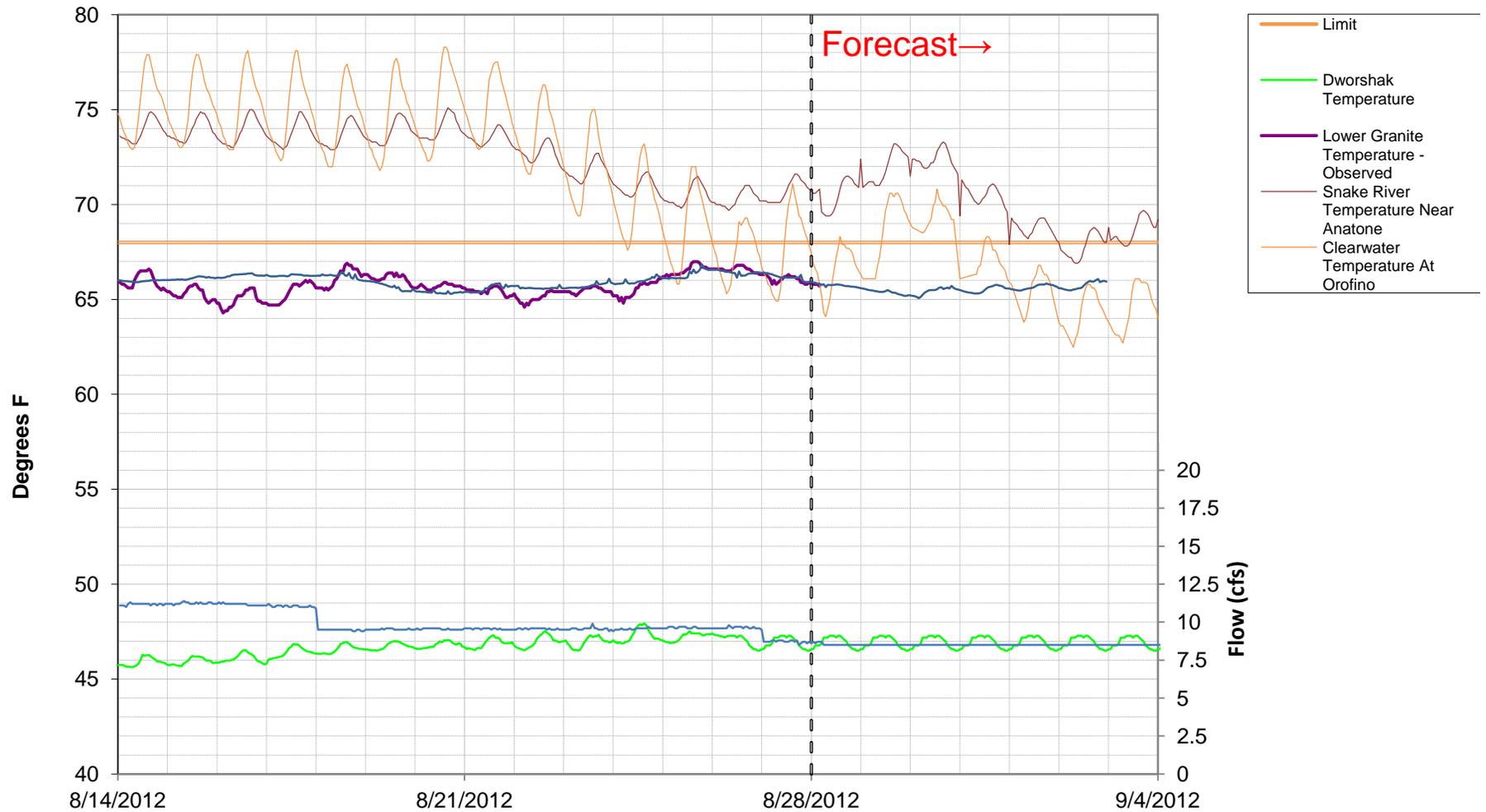
1. Welcome and Introductions
2. Review Meeting Minutes
3. McNary Transport - Doug Baus, COE-NWD
4. Dworshak Update - Doug Baus, COE-NWD, and Steve Hall, COE-NWW
 - a. [DWR Temperature Model Run 08/28/12](#)
5. Spill Priority List - Doug Baus, COE-NWD
 - a. [Wintertime](#)

6. Operations Review
 - a. Reservoirs
 - b. Fish
 - c. Water Quality
 - d. Power System
7. Other
 - a. Set agenda and date for next meeting - **Sept 5, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

Output from CEQUALUtility Pre-processor
Analog Year 2008 (+1 offset)
Flow is 8500

Water Temperature Comparisons Model from 8/14/2012 to 9/4/2012 Observed Data to 8/28/2012



COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

August 29, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

The 8/15, 8/16 and 8/22 Official Minutes and Facilitator's Summaries were reviewed. Paul Wagner, NOAA, and Charles Morrill, Washington, offered edits to the 8/22 facilitator's summary and Paul offered a revision to the 8/15 summary around the McNary discussion. The changes were accepted and with these, the notes were considered final.

Action: Robin Gumpert will make the changes and send the revised/final versions to TMT members and alternates, and the Corps will post them to the TMT web page.

McNary Transportation Update

Doug Baus, Corps, updated TMT that daily truck transport has continued, and would likely continue through 8/30 unless real time conditions warrant a change to the operation. On 8/28, temperatures in the lab in the morning at McNary were 66.4 F. On 8/26, 5,100 juveniles were transported with 0.0% descaled and 0.35% (18) mortality.

Dworshak Update

Steve Hall, Walla Walla District Corps, shared the temperature model for Dworshak and said this would be the last model for the year. It showed temperatures 'comfortably below' the threshold and continuing to drop. He concluded that this year saw a successful temperature augmentation operation from Dworshak to Lower Granite. Through coordination with the Dworshak Board and based on the current forecast, a plan for operations to release 200 kaf out of Dworshak per the Nez Perce agreement has been developed. Steve described the current plan: Current outflows of 8.5 kcfs will continue through about 9/5, be reduced to 8 kcfs for four days; reduced to 5.9 kcfs for three days; to 4.8 kcfs for two days; and to 2.4 kcfs until the full 200 kaf is out, anticipated to be around 9/21. Steve will keep TMT apprised of any shifts in the planned operation as the season progresses.

Spill Priority List

A draft spill priority list to take effect September 1 was posted for review. Paul Wagner, NOAA and Chair of FPAC, said the salmon managers had reviewed and developed a consensus recommendation to keep the current order until Dworshak operations conclude, then 'flip' the list so spill would start at the Lower Columbia projects where fish are more likely to be actively migrating. The salmon managers recognize that spill is unlikely and if it does occur will likely be low in magnitude and short in duration, so were not concerned about adult fallback. BPA clarified that work on the Bonneville spillway will be occurring starting in November and would prevent any spill at the project.

Action:. From September 1-21, the Action Agencies will implement the spill priority list posted to today's agenda that prioritizes spill at projects in order from upstream to downstream starting at LWG (e.g., Level 1 up to 110% TDG: LWG, LGS, LMN, IHR, MCN, JDA, TDA, BON, DWR, CHJ, GCL). From September 22-December 31, the Action Agencies will implement a spill priority list that reverses the order of Lower Snake and Lower Columbia projects and prioritizes spill at projects in order from downstream to upstream starting at BON (e.g., Level 1: BON, TDA, JDA, MCN, IHR, LMN, LGS, LWG, DWR, CHJ, GCL)

Operations Review

Reservoirs: John Roache, Reclamation, reported on projects. Grand Coulee was at elevation 1280.3 feet and operating toward 1279.7 feet by 8/31. Hungry Horse was at elevation 3553.8 feet, with 2.2 kcfs outflows and targeting 3550 feet by the end of September. Lisa Wright, Corps, reported on projects. Libby was at elevation 2452.3 feet with 7.4 kcfs in and 12 kcfs out. She confirmed that the Corps is still implementing 'Alternative 4', per discussion and agreement at the 8/8 TMT meeting. The current projected reservoir elevation on 8/31 is approximately 2451.5'-2451.8'. Albeni Falls was at elevation 2062.3 feet with 9.8 kcfs in and 10.8 kcfs out. Priest Rapids inflows were 129.9 kcfs. Dworshak was at elevation 1537.9 feet with 0.7 kcfs in and 8.7 kcfs out. Inflows at Lower Granite were 23.6 kcfs; at McNary were 157.9 kcfs; and at Bonneville were 147.6 kcfs.

Fish: Paul Wagner, NOAA, reported on fish.

- Adults – Fall Chinook numbers at Bonneville were picking up, around 7,300/day and 44,000 for the season (about average). Jack total counts were 10,000 (about average). Steelhead total counts were 167,000 and about 2,000/day (below average). Lamprey counts were 26,000 for the season and about 100/day. Downstream, at Ice Harbor, steelhead counts were 10,000 and about 12,000 at Lower Granite. Fall Chinook counts were 770 at Lower Granite. Sockeye were winding down, with counts at Lower Granite at 454 for the season. Russ Kiefer, Idaho, reported that in the Stanley Basin, 152 sockeye were captured of which 45 were unmarked naturals.
- Juveniles – Subyearling Chinook counts at Lower Granite were about 100-200/day; less than 100/day at Little Goose and less than 20/day at Lower Monumental. Subyearlings at McNary were about 19,000/day. Daily sampling was occurring again at John Day and Bonneville now that temperatures have gone down – counts were 10k-20k at John Day and about 3k-5k at Bonneville. Lamprey counts at John Day were less than 100/day.

Water quality: Nothing to report.

Power system: Nothing to report.

Next Meeting, 9/12 Conference Call and TMT Field Trip

An agenda will be developed and posted to the TMT page prior to the meeting.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

August 29, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of Montana, BPA, COE, NOAA, Washington, USFWS, CRITFC/Umatilla Tribe, Idaho, Nez Perce Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review August 15, 16 and 22 Meeting Minutes

Charles Morrill, Washington, commented on the August 22 facilitator's notes, adding language to the fourth paragraph on page 1 that documents raceway temperatures of over 70 degrees F on August 19. Paul Wagner, NOAA, commented on the August 22 official minutes, adding "to use a 7:30 am temperature reading to collect juvenile fish for transport" to the first sentence of the second paragraph on page 1. Wagner also commented on the August 15 facilitator notes, adding language to the first paragraph for the sake of clarity regarding high temperatures at McNary. The commenters will provide these edits in writing and the notes will be revised accordingly.

3. McNary Transport

The COE continues to transport juveniles by truck daily at McNary Dam, Baus reported. The current plan is to continue daily transport through August 30, but changes will be made if real-time conditions warrant. On the morning of August 28, McNary water temperature in the lab was 66.4 degrees F. On August 26, there were 5,100 fish transported, with a 0.0% descaling rate and a 0.35% mortality rate (18 fish). There were no questions today on the transport operation.

4. Dworshak Update

Steve Hall, COE Walla Walla, showed TMT the latest modeling of the Dworshak temperature augmentation operation and reported that temperatures at Lower Granite and Orofino are beginning to drop. Several TMT members agreed that Dworshak temperature augmentation this year was managed well.

Hall described the plan the COE has coordinated with the Dworshak Board for releasing the Nez Perce agreement of 200 kaf of flow augmentation in September. The dam is currently releasing about 8.5 kcfs, with an elevation target of 1535 feet on August 31. Releases of 8.5 kcfs will continue through approximately September 5. At that time the COE plans to reduce discharges to

approximately 8 kcfs for 4 days, 5.9 kcfs for 3 days, 4.8 kcfs for 2 days, and finally 2.4 kcfs on approximately September 17. Releases of 2.4 kcfs will continue until Dworshak reservoir reaches elevation 1520 feet, indicating the full 200 kaf has been released. That is expected to occur around September 21. There were no questions today regarding this operation.

5. Spill Priority List

Baus presented the draft wintertime spill priority list to take effect September 1 attached to today's agenda. Like last year's list, it begins with Lower Granite and proceeds downstream to Bonneville, ending with Dworshak, Chief Joseph and finally Grand Coulee. Baus reminded TMT that the wintertime list receives infrequent use for very short periods.

Wagner reported that FPAC's consensus recommendation yesterday was to maintain the spill priorities currently in effect until Dworshak September operations are completed, which will occur on approximately September 21. At that time, FPAC recommends reversing the order of the fish passage projects, with Bonneville at the top and proceeding in order upstream to Lower Granite. The priority order of Dworshak, Chief Joseph and Grand Coulee will remain unchanged at the bottom of each level. The goal of this recommendation is to spill first where juveniles are more likely to still be actively migrating. Adult migration will most likely be unaffected because there won't be much water to spill.

Baus said the COE will implement the spill priority list posted on today's agenda from September 1-21 that prioritizes spill at fish passage projects in order from upstream to downstream beginning at Lower Granite (e.g., Level 1 up to 110% TDG: LWG, LGS, LMN, IHR, MCN, JDA, TDA, BON, DWR, CHJ, and GCL). Per FPAC recommendations, beginning on September 22 through December 31, the order of the fish passage projects will be reversed to start at Bonneville and proceed in order upstream to Lower Granite. The order of non-fish passage projects (Dworshak, Chief Joseph and Grand Coulee) will not change and will be at the bottom of each level. Scott Bettin, BPA, reminded TMT that the Bonneville spillway will be out of service for repairs beginning in November, as coordinated through FPOM.

6. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1280.3 feet, headed toward an elevation of 1279.7 feet on August 31. Hungry Horse is at elevation 3553.8 feet, releasing 2.2 kcfs with an elevation target of 3550 feet by end September. Releases have been between 2.5-3 kcfs as inflows continue to drop.

Libby is operating per Alternative 4 as discussed at TMT on 8/8. The current elevation is 2452.3 feet, with inflows of 7.4 kcfs and releases of 12 kcfs.

August has been a dry month, so the current projected August 31 elevation is 2451.5-2451.8 feet, which is a little lower than was projected in the slide presented to TMT on 8/8.

Albeni Falls is at elevation 2062.3 feet, with inflows of 9.8 kcfs and releases of 10.8 kcfs. Priest Rapids inflows are 129.9 kcfs. Dworshak is at elevation 1537.9 feet, with inflows of 0.7 kcfs and releases of 8.7 kcfs. McNary inflows are 157.9 kcfs. Lower Granite inflows are 23.6 kcfs. Bonneville inflows are 147.6 kcfs.

b. Fish. Adults: Migration is most active in the lower Columbia, Wagner reported. Fall chinook are passing Bonneville at the rate of around 7,300 fish per day, with a total season count of 44,000 to date compared to a 10 year average of 51,000. Fall chinook jack returns are 10,000 to date, which is close to the 10 year average unlike the weak return of spring chinook jacks this year. Steelhead are currently passing Bonneville at the rate of about 2,000 fish per day, with a season count of 167,000 to date. While this is only 60-70% of the 10 year average for this time of year, steelhead migration has been on the increase. Steelhead are still delaying passage from McNary to Ice Harbor – nearly 57,000 have passed McNary but only 10,000 have reached Ice Harbor. This is probably due to a temperature differential in the river. From 10-12,000 steelhead have passed Lower Granite to date. The season count of 165,000 steelhead is well below the 10 year average of 165,000. Fall chinook passage at Lower Granite is 772 fish to date compared to a 10 year average of 484 fish. Sockeye passage is nearly done this season, with only 550 to date. Adult lamprey migration is on the wane, with fewer than 100 passing daily at both Bonneville and at John Day. The lamprey season count is 26,000 to date.

Juveniles: As of August 28, 152 sockeye have been captured in Stanley Basin, of which 45 were unmarked natural fish, Russ Kiefer, Idaho, reported. That is generally in line with expectations. The run has been consistent over the past 2 weeks, with 3-9 fish entering the basin daily. Wagner reported that juvenile passage on the Snake River is coming to an end. Over the past week or so, yearling chinook passage has been 100-200 fish at Lower Granite, less than 100 fish at Little Goose, and less than 20 fish at Lower Monumental. Juvenile sampling every other day has resumed at Bonneville and John Day, now that temperatures are below the 70 degrees F criteria for switching to twice weekly.

c. Water Quality. There was nothing to report today.

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

7. Next TMT Meetings

The next TMT meeting will be a conference call on September 12 followed by a tour of the BPA Dittmer transmission complex for TMT members

only. Those who want to participate in the tour should notify Tony Norris and Scott Bettin in advance for security clearance. The next regular TMT meeting in person will be September 19

<i>Name</i>	<i>Affiliation</i>
Jim Litchfield	Montana
Scott Bettin	BPA
Doug Baus	COE
Agnes Lut	BPA
Lisa Wright	COE
Steve Juul	COE
Laura Hamilton	COE
John Roache	BOR
Paul Wagner	NOAA
Charles Morrill	Washington
Dan Feil	COE

<i>Phone:</i>	
Dave Wills	USFWS
Tom Lorz	CRITFC/Umatilla
Steve Hall	COE Walla
Russ Kiefer	Idaho
Heather Dohan	Puget
Russ George	WMC
Margaret Filardo	FPC
Dave Benner	FPC
Bruce McKay	hydro consultant
Ruth Burris	PGE
Dave Statler	Nez Perce Tribe

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday September 12, 2012 10:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 6789

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

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AGENDA

1. Welcome and Introductions
2. Review August 29 Meeting Minutes
3. Treaty Fishing - Tom Lorz, Umatilla/CRITFC
 - a. [SOR 2012-C4](#)
4. Operations Review
 - a. Reservoirs
 - b. Fish
 - c. Water Quality
 - d. Power System
5. Other
 - a. Set agenda and date for next meeting - **September 19, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:

[Doug Baus](#) at (503) 808-3995

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

September 12, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

TMT reviewed the 8/29 Facilitator's Summary and Official Meeting Minutes. With no edits, the notes were considered final.

SOR 2012-C4

Doug Baus, Corps, reported that an SOR for treaty fishing had been submitted and was being implemented by the Corps for the period 9/11 at 6:00 am through 9/14 at 6:00 pm. Tom Lorz, CRITFC, said it was uncertain whether another fishery would occur after this period and that he would work with the Corps and keep TMT apprised via updates and future SORs.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects. Hungry Horse was at elevation 3551.9 feet, with 2.1 kcfs outflows and targeting an end of September elevation of 3550 feet. Grand Coulee was at elevation 1283.4 feet. Lisa Wright, Corps, reported on projects. Libby was at elevation 2450.7 feet with 8 kcfs outflows and 5.7 kcfs inflows. Albeni Falls was at elevation 2062.2 feet, with 6.6 kcfs inflows and 7.1 kcfs outflows. Priest Rapids inflows were 101.4 kcfs. Dworshak was at elevation 1523.0 feet, with 0.9 kcfs inflows and 5.8 kcfs outflows. Lower Granite inflows were 23.6 kcfs; McNary inflows were 119.8 kcfs; and Bonneville inflows were 121.0 kcfs.

Fish – Paul Wagner, NOAA, reported on fish. Subyearling counts at Lower Granite were up to 250/day, about 20/day at Little Goose and as high as 459/day at Lower Monumental. Paul said temperatures have fallen so the fish are moving. Subyearling counts at McNary were 6,000; at John Day were 3,000; and at Bonneville were 1,000. Juvenile lamprey counts were 20-50/day at McNary, John Day and Bonneville. Adult fall Chinook counts were up to 14,000 at Bonneville, with a season total to date 204,000 which is slightly below the 10-year average. Jack counts are very high so far, around 49,000 at Bonneville. Steelhead numbers at Bonneville are well below the 10 year average, about 195,000 for the season so far. At Ice Harbor, Fall Chinook counts were well above the 10 year average, about 16,900. Jacks also are well above the average at about 6,000. Steelhead are 'on the move', with counts below the 10 year average around 33,000. Dave Statler, Nez Perce, reported that adult lamprey conversions from Bonneville to The Dalles are very poor this year. For 2012, a total of 28,456 adult lamprey were detected at Bonneville and only 5,785 were detected at The Dalles. This low conversion rate has been a concern for the past couple years, and there is a study being implemented this year to tag and release adults near Bonneville in an attempt to shed some light on the fate of these adults.

Water quality – Nothing to report at this time.

Power – Nothing to report at this time.

September 19 TMT Meeting

Agenda items include:

- Lake Pend Oreille SOR Development Update – Russ Kiefer, Idaho
- Dworshak Operations Update (Nez Perce Agreement operation, MOP operation)– Corps
- Kootenai River Sturgeon Habitat Project Update (*pending*) – Sue Ireland, Kootenai Tribe
- Lower Granite Programmatic Sediment Management Plan (PSMP) EIS Schedule/Plan (*pending*) – Corps

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

September 12, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call/meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. As part of the meeting, TMT representatives toured the Dittmer Transmission Complex where electricity is dispatched throughout the region and exported to California and Canada. Representatives of BPA, COE, NOAA, Oregon, Idaho, BOR, CRITFC/Umatilla Tribe, Nez Perce Tribe and others participated. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review August 29 Meeting Minutes

There were no comments today on either the facilitator's notes or official minutes for August 29 so both sets of notes were deemed final.

3. Treaty Fishing – SOR 2012-C4

Baus reported that the COE is already implementing this SOR, which calls for the typical treaty fishery operation: a 1.5-foot limit on elevation fluctuations in the Bonneville, The Dalles and John Day pools. The SOR went into effect at 6 am on September 11 and will end at 6 pm on September 14.

Paul Wagner, NOAA, asked what the process is for scheduling fishery operational requests. Tribal participants and others including NOAA representatives look at catch information and determine whether viable take allowances under the treaty would allow more fishing, Tom Lorz, CRITFC/Umatilla explained. When the representatives agree, they draw up a fisheries SOR and submit it to the COE.

Scott Bettin, BPA, asked whether more fisheries are anticipated this fall. That will depend on take allowances for other species such as steelhead, as well as where fish are migrating, Lorz replied. Bettin later reported there are now 749 tribal fishery nets set up on the three lower Columbia River dams. The nets tend to be moved based on which run they are targeting. Lorz will keep TMT apprised of future fisheries.

4. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1283.4 feet. The operation is on track to maintain an elevation target of 1283 feet for kokanee resident fisheries in Lake Roosevelt from the end of September through mid November.

Hungry Horse is at elevation 3551.9 feet, discharging 2.1 kcfs and headed for an end of September elevation of 3550 feet. Inflows are around 500 cfs and continuing to drop, with no precipitation in the basin.

Libby is operating consistent with the Kootenai sturgeon habitat restoration SOR, maintaining discharges of 8 kcfs through September. Current elevation is 2450.7 feet, with inflows of 5.7 kcfs.

Albeni Falls is at elevation 2062.2 feet, with inflows of 6.6 kcfs and outflows of 7.1 kcfs. Priest Rapids inflows are 101.4 kcfs. Dworshak is at elevation 1523.0 feet, with inflows of 0.9 kcfs and outflows of 5.8 kcfs. McNary inflows are 119.8 kcfs. Lower Granite inflows are 23.6 kcfs. Bonneville inflows are 121.0 kcfs.

b. Fish. Juveniles: Subyearling chinook passage numbers at Lower Granite are in the 200 range after falling to fewer than 100 fish per day. This uptick is typical when temperatures cool. Passage numbers at Little Goose rose from 1 per day to 20 per day. Lower Monumental passed 459 fish yesterday, McNary from 3,000-6,000 fish per day, John Day 3,000 per day, and Bonneville 1,000 per day over the past week. However, the Bonneville screens have been removed, so the Bonneville numbers are not truly indicative of how many fish are passing the project.

Lamprey passage is down from 50 per day to 20 per day at McNary, John Day and Bonneville dams, Wagner reported. On the Snake River only a couple of juvenile lamprey are passing per day.

Adults: The peak fall chinook count at Bonneville was 14,000 fish per day, with 8,000 fish passing yesterday. The season count to date is 204,000, which is about 90% of the 10 year average. The jack count this year is unusually high, which could presage a stronger run next year.

Steelhead passage at Bonneville is running low this year average, with a seasonal count to date of 195,000 fish, only about 60% of the 10 year average. However, fall chinook are doing well on the Snake River. 16,900 fish have passed Ice Harbor which is 180% of the 10 year average. Fall chinook jack counts at Ice Harbor are 150% of the 10 year average. Steelhead counts indicate the fish are beginning to move upstream from the Columbia to the Snake as temperatures drop. Yesterdays steelhead count was 3,276 at Ice Harbor and 1,386 at Lower Granite, both well below the 10 year average.

Dave Statler, Nez Perce, reported that adult lamprey passage from Bonneville upriver continues to be poor, with the year to date count of 28,406 lamprey at Bonneville, but only 5,785 at The Dalles. This has been a problem for years and is currently being investigated as part of a JSATs tagging study.

c. Water Quality. There was nothing to report today.

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

7. Next TMT Meetings

The next TMT meetings in person will be September 19 and October 3 at the COE division office in Portland. The September 19 agenda will include updates on development of the Lake Pend Oreille SOR, the Bonners Ferry habitat project, Dworshak operations, possibly Lower Granite MOP operations and possibly an autumn treaty fishery. The annual Lake Pend Oreille SOR will be presented to TMT at the October 3 meeting.

8. Tour of BPA Dittmer Transmission Complex

Several TMT members toured the BPA Dittmer transmission complex, where power deliveries are scheduled and dispatched along 16,000 miles of high voltage power lines that extend from Canada to Albuquerque. The purpose of the Dittmer tour was to acquaint TMT members with the extensive demands and generation limitations involved in managing such a large grid as they affect forebay and tailwater elevations at each project.

Since electricity was deregulated in 1992, many new demands have been placed on the transmission system, notably wind generation capacity, now at 4,700 MW in the Northwest, and strict legal limits on hydropower operations to protect fish. Since deregulation, Dittmer's schedulers and dispatchers must deal with multiple energy providers and 2,500 transmission schedules a day. They are responsible for maintaining the necessary balance between generation and demand at all times throughout the system. BPA's dispatchers have the final say over whether line repairs can proceed. They also are responsible for voltage control. When things go awry, the consequences can be severe, such as the voltage collapse of summer 1996 when rolling blackouts impacted 21 million people. Furthermore, any major mishaps could result in fines or reserve generation capacity requirements of BPA that would raise the cost of electricity for everyone.

Dittmer's schedulers and dispatchers rotate positions so they can perform all jobs as needed. With new lines being built in the Snake River area and new loads coming on line in Idaho, as well as development of increasingly complex automated schemes to protect high voltage equipment, operation of the Northwest transmission system can only get more complex and challenging.

Name	Affiliation
Doug Baus	COE
Tony Norris	BPA
Lisa Wright	COE
Scott Bettin	BPA

Paul Wagner	NOAA
Rich Dominigue	NOAA
Rick Kruger	Oregon
Kim Johnson	COE
Steve Juul	COE
Agnes Lut	BPA

Phone:

Russ Kiefer	Idaho
Russ George	WMC
Dave Benner	FPC
Barry Espenson	CBB
John Roache	BOR
Margaret Filardo	FPC
Steve Hall	COE Walla Walla
Richelle Beck	Grant PUD
Mike XX	Chelan PUD
Ruth Burris	PGE
Stu Leavitt	Salish Kootenai
Tom Lorz	CRITFC/Umatilla
Dave Statler	Nez Perce Tribe



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

729 NE Oregon, Suite 200, Portland, Oregon 97232

Telephone 503 238 0667

Fax 503 235 4228

SYSTEM OPERATIONAL REQUEST: 2012 C-4

TO: Col. Anthony Funkhouser COE-NWD
James D. Barton COE-NWD-NP-Water Management
Karl Kanbergs, Douglas Baus COE-NWD-NP-WM-RCC
D. Feil, R. Peters, D. Ponganis COE-NWD-PDD (Fish Management Office)
Paul Cloutier COE-NWD (Tribal Liaison)
Col. John W. Eisenhower COE-Portland District
JR Inglis COE-Portland District (Tribal Liaison)
Lorri Lee USBR- PNW Regional Director
Steven J. Wright BPA Administrator
Steve Oliver, Greg Delwiche BPA-PG-5
Scott Bettin, Tony Norris BPA-Operations Planning-PGPO
Stan Speaks, Keith Hatch BIA, Northwest Regional Office

FROM: Babtist Paul Lumley, *Executive Director*

DATE: September 6, 2012

SUBJECT: **Operation of the Lower Columbia Pools for the Autumn 2012 Treaty Fishery**

The Columbia River Inter-Tribal Fish Commission, on behalf of its members, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation, requests the following reservoir operations in "Zone 6" (Bonneville to McNary dams) during the autumn 2012 Treaty fishery. This effort supports the 2012 ceremonial, subsistence, and commercial Treaty fishery times as established by the tribes and the Columbia River Compact.

SPECIFICATIONS: Implement the following pool operations as a hard system constraint, as follows:

September 11, 2012, 6 am, Tuesday, through 6 pm, September 14, 2012, Friday.

Bonneville: Operate the pool within a 1.5 foot band during the treaty fishing period.

The Dalles (Celilo): Operate the pool within a 1.5 foot band during the treaty fishing period

John Day: Operate the pool within a 1.5 foot band during the treaty fishing period.

JUSTIFICATION:

The 2012 autumn treaty fishing season is of critical importance to CRITFC's member tribes. The run size of an estimated of **420,000** (Columbia at Bonneville Dam) adult upriver fall Chinook, **215,000** Steelhead, and **78,300** Coho will create harvest opportunities for tribal fishers who will exercise their treaty rights by participating in this harvest using platform and gillnet fishing methods. This harvest will provide for the cultural, religious, and economic needs of the treaty tribes.

CRITFC will sponsor net flights each week to count the nets in each Zone 6 pools. The survey data will be shared with COE-RCC staff by early afternoon of the flight day. The September 5, 2012 survey showed 749 nets in the Zone 6 pools, as follows: 303 (41%) in Bonneville, 174 (23%) in The Dalles, and 272 (36%) in John Day.

Achieving good river conditions through managed river operations during the treaty fishery have been the basis of past litigation that have been supported by federal courts and are consistent with the trust and fiduciary responsibilities that the federal operators have with respect to CRITFC's member tribes. Good river conditions during the treaty fishery are also consistent with the spirit of the 10-year Memorandum of Agreements signed by tribal and Corps, BPA, and BOR officials.

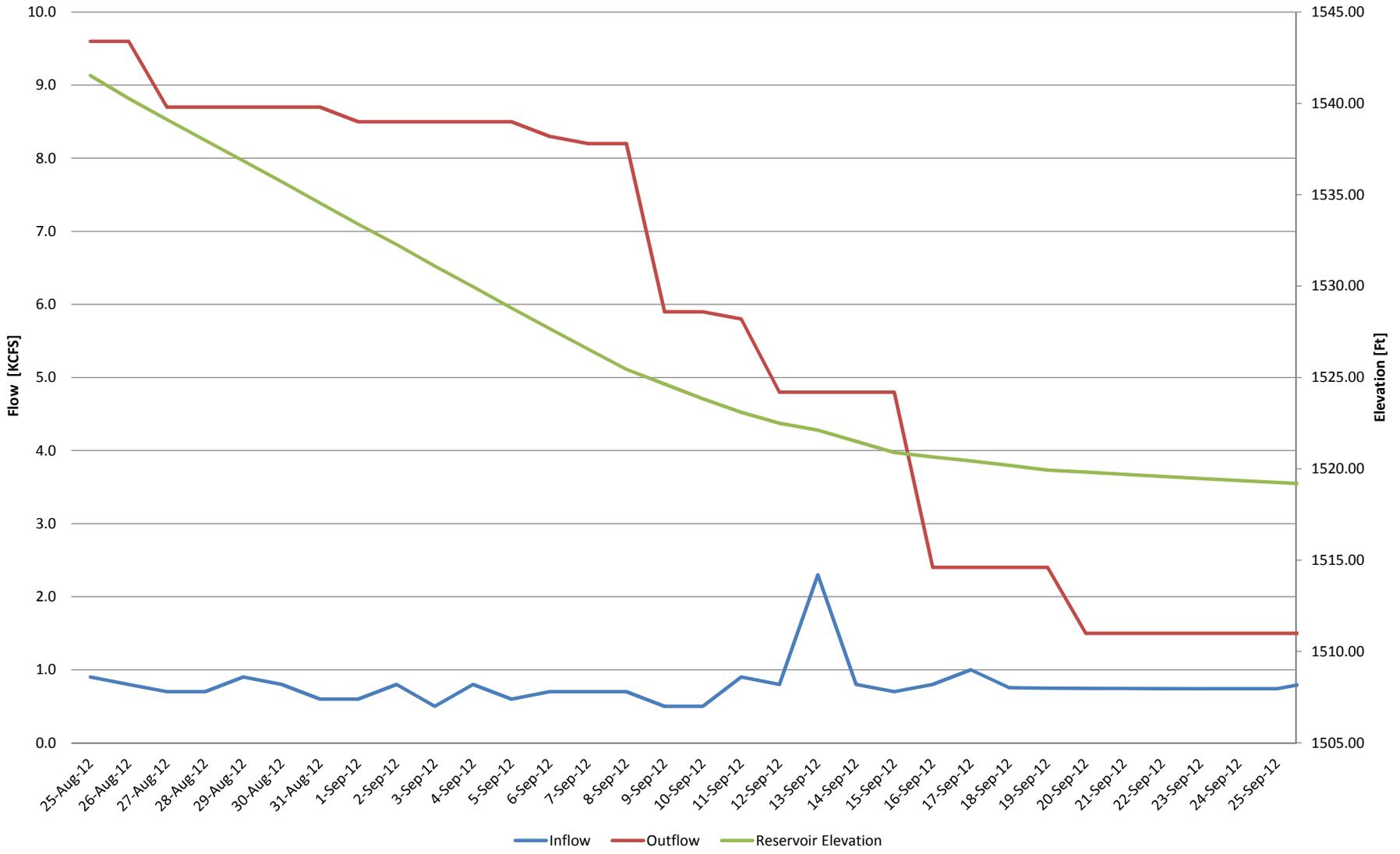
In past meetings with Corps officials, tribal fishers have explained that a pool fluctuation of more than 1.5 foot disrupts tribal fishery operations. Specific problems include: (1) increased local currents that sweep debris into fishing nets, (2) rapid 1-2 hour drops in water level can lead to entanglement of nets or change local currents that affect fishing success, (3) boat access problems, and (4) nets may be torn from their anchors if pools are raised after nets are set. Nets and gear may become lost and are costly to replace.

Any delays or disruptions to tribal fishing operations caused by the excessive pool fluctuations in Zone 6 can negatively impact tribal incomes, food resources and cultural practices. Much of the tribal fishers' annual income and food is generated during the brief treaty fishing season. The fishers have expressed to Corps officials that the loss of fishing opportunity during the extremely limited treaty fishery period cannot be replaced.

If this SOR cannot be accommodated, CRITFC requests a verbal response with an explanation from the federal operators by COB, Friday September 7, 2012. Thank you for considering this request. Please contact Kyle Dittmer or Stuart Ellis should you have any questions at (503) 238-0667.

cc: Tribal staffs and attorneys

DWR Regulation - Nez Perce 200kaf Inflows forecasted Sept. 19th - 25th



TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday September 19, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING

Phone Number (877) 336-1274

Access Code 3871669

Security Code 6387

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AGENDA

1. Welcome and Introductions
2. Review September 12 Meeting Minutes
3. Treaty Fishing - Tom Lorz - CRITFC/Umatilla
 - a. [SOR 2012-C5](#)
4. Lake Pend Oreille Operations - Russ Kiefer - IDFG
 - a. [SOR USFWS/IDFG 2012-1](#)
5. Dworshak Operations - Steve Hall - COE-NWW
 - a. [Regulation](#)

6. Programmatic Sediment Management Plan - *Richard Turner* - COE-NWW
7. Operations Review
 - a. Reservoirs
 - b. Fish
 - c. Water Quality
 - d. Power System
8. Other
 - a. Set agenda and date for next meeting - **October 3, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

SYSTEM OPERATIONAL REQUEST #___ - USFWS/IDFG -2012-1

TO: Col. Anthony Funkhouser COE-NWD
Jim Barton COE-Water Management
Doug Baus COE-RCC
David Ponganis COE-PDD
Karl Kanbergs CENWD-PDW-R
Col. Bruce A. Estok COE-Seattle District
Amy Reese CENWS-EN-HH-WM
Joel Fenolio CENWS-EN-HH-WM
J. William McDonald USBR-Boise Regional Director
Steven Wright BPA-Administrator
Tony Norris BPA-PGPO-5
Scott Bettin BPA- KEWR-4
Steve Oliver BPA-PG-5
Lori Bodi BPA-KE-4

FROM: Chip Corsi, Regional Supervisor, Idaho Department of Fish and Game (IDFG)
Ben Conard, Field Supervisor, U.S. Fish and Wildlife Service (USFWS)

SUBJECT: Request to implement a 2012-2013 winter lake elevation of 2055' for Lake Pend Oreille, Idaho.

SPECIFICATIONS:

IDFG and USFWS request that the Army Corps of Engineers (COE) draw Lake Pend Oreille down to a winter minimum control elevation (MCE) no lower than 2055' during the winter of 2012-2013. Conduct drawdowns while minimizing or eliminating the need to spill at Albeni Falls Dam. We request that the drawdown be completed by November 8 if reasonably possible. During the past five years, kokanee spawning has commenced around November 8 (earlier than years prior). If this is not possible, the MCE should be reached as soon as possible after November 8 and no later than November 15, and should not be dropped below this elevation for the duration of the winter. IDFG will monitor arrival time of kokanee at shoreline spawning areas and provide timely reports to the federal agencies. These proposed operations are not anticipated to cause exceedance of the state maximum total dissolved gas standards at downstream projects barring unforeseen circumstances. Lake Pend Oreille will then be held within 0.5' above the MCE to the end of kokanee spawning (monitored by IDFG) or December 31, whichever comes first.

JUSTIFICATION:

On September 27, 2011, IDFG and USFWS submitted a systems operations request (SOR) to the Technical Management Team (TMT) for 2011-2012 and 2012-2013 winter operations (USFWS/IDFG-1). The SOR requested an MCE of 2051' in 2011-2012 and 2055' in 2012-2013. TMT members voiced no objections to the SOR, with the caveat that 2012-2013 request be revisited the following year. This SOR follows up on that process. The justification for this SOR remains the same as the 2011-2012, including the determination to deviate from the decision tree. The justification language from the 2011-2012 SOR was as follows:

"In Lake Pend Oreille, bull trout are heavily dependent upon kokanee as forage. Without kokanee, the Lake Pend Oreille bull trout population is at risk of becoming severely depressed, threatening recovery efforts in both the Idaho and Montana portions of the Pend Oreille basin. Examples of this negative population interaction include Flathead Lake, Montana and Priest Lake, Idaho. Adult kokanee in Lake Pend Oreille are at low, but increasing, abundance. The estimated number of wild female kokanee expected to spawn this fall is about 86,000 fish. Research indicates three decades of annual deep draw

downs during the winter months is the primary contributing factor to the large declines in kokanee abundance observed from the 1970's into the 1990's. More recently, the combined predation effects of lake trout and rainbow trout have limited kokanee recovery, despite improved egg-to-fry survival as a result of the modified winter lake level management. Both populations of predators are being intensively researched, managed, and controlled to reduce their impacts on kokanee abundance, but kokanee recovery efforts will require adequate egg-to-fry survival in addition to reduced predation to be successful.

A decision tree has been developed (included below) to help guide selection of Lake Pend Oreille winter elevation. Data used in the decision tree in 2011 indicates a 2055' MCE for the winter of 2011-2012. The decision tree has been, and should continue to be, a useful tool to arrive at a decision that balances the spawning needs of both kokanee in Lake Pend Oreille and chum salmon below Bonneville Dam. However, circumstances have created a desire by managers to deviate from the decision tree for the next two years. The rationale for this recommendation is as follows:

The Lake Pend Oreille kokanee population was recently on the verge of collapse, with record low abundance in 2007. Management efforts in recent years have attempted to provide every advantage to kokanee to prevent population collapse (winter lake level management, kokanee fishery closure, and predator removal). Kokanee survival has improved dramatically, abundance increases have followed, and while abundance is still low relative to recovery goals, the population is trending upwards and there is lower risk of population collapse. We weighed the benefits of a 2055' MCE this winter (2011-2012) against the benefits an MCE of 2055' could provide the following year. This request to deviate from the decision tree for the next two years is being made to provide the greatest opportunity for achieving recovery goals in a more timely fashion.

While spawner abundance is the highest it has been since 2005, it is only 16,000 fish above the 70,000 fish threshold identified in the decision tree, and we anticipate a larger spawning population in 2012. An MCE of 2055' in winter 2012-2013 providing the best spawning conditions for this anticipated larger spawning population should contribute to achieving recovery goals sooner and help rebuild the weak cohort produced with the record low abundance in 2007.

Another factor strongly influencing our recommendation to deviate from the decision tree relates to a study of kokanee spawning ecology. A graduate project through the University of Idaho was developed to provide a better understanding of the role lake level management plays in kokanee egg-to-fry survival. A major component of this study involves incubating kokanee eggs in a variety of substrate types and lake depths, including elevations between 2051' and 2055'. Field work will begin this year, but most of the lakeshore incubation work will occur during the winter of 2012-2013 and will require a 2055' MCE to evaluate all elevations influenced by lake level management. Accommodating this study is important because information gained should help guide future Lake Pend Oreille water management decisions.

For these reasons, we recommend drafting Lake Pend Oreille to elevation 2051' during the winter of 2011-2012 and to elevation 2055' during the winter of 2012-2013. In both years, the spawning elevation should be maintained as the minimum through kokanee emergence."

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

September 19, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

TMT reviewed the 9/12 Facilitator's Summary and Official Meeting Minutes. With no suggested edits, the notes were considered final.

SOR 2012-C5

Doug Baus, Corps, reported that an SOR for treaty fishing had been submitted by CRITFC and was being implemented by the Corps for the period 9/18 at 6:00 am through 9/21 at 6:00 pm. Tom Lorz, CRITFC, joined the call later and said it was unlikely that another fishery would occur after this period and that he would have updated numbers around the end of September.

SOR USFWS-IDFG 2012-1

Russ Kiefer, Idaho, presented an SOR for operations to support recovering kokanee populations (a food source for listed bull trout) in Lake Pend Oreille. He reminded TMT that an SOR was submitted last year that requested a two-year operation that aligned with a two-year research project to study operation effects on kokanee. The operation held the pool at the lower, 2051 foot, elevation last year and would put the lake at the higher, 2055 foot, elevation this year. Agreements were reached last year to implement the request, with the caveat that TMT would revisit the recommendation this year with consideration for current conditions. The recommendation is a deviation from the decision tree the stakeholders developed to guide recommendations, and Russ said that the research results could lead to a refinement of the decision tree for future years. He also said that since the operations have been in place, biologists are seeing positive signs of kokanee recovery. He and colleagues Jason Flory, USFWS, and Andy Dux, IDFG, went on to describe some of the specifics of the research and said 'success' would be measured around the stages of incubation to pre-emergence.

TMT members were polled on their level of support for the recommendation:

- Oregon – no objection
- Washington – no objection
- Montana – no objection
- NOAA – no objection
- Nez Perce Tribe – no objection; noted that Lake Pend Oreille is a natural lake and treasured resource. Minimizing fluctuations of lake levels to be more consistent with naturally occurring hydrologic cycle is preferred.
- Colville Tribe – no objection
- CRITFC/CTUIR –not available during this discussion, did not weigh in at the meeting
- Reclamation – supports
- BPA – supports

- Corps – supports

Action/Planned Operation – the Corps planned to implement the SOR.

Dworshak Operations Update

Steve Hall, Walla Walla District Corps, updated TMT that the final steps of releasing 200 kaf per the Nez Perce agreement were underway, and shared a graph depicting the operation. Tony Norris, BPA, added that the Lower Snake projects would be returned to the MOP operating range with the conclusion of this flow augmentation operation.

PSMP

Richard Turner, Corps, reported on the schedule for the Programmatic Sediment Management Plan. The draft EIS is being revised with a modification to include channel maintenance as an action. A draft EIS is scheduled for release in December 2012; the Record of Decision (ROD) is anticipated to be signed in early September 2013; and channel maintenance is still scheduled to occur during the in-water work window of December 2013 - March 2014. Richard responded to TMT questions. He said the dredged sediment will be placed at river mile 116 in a 'ribbon' along the bank. Pacific lamprey are considered in the EIS. A link to the draft EIS will be distributed to TMT when it is available, and TMT members are encouraged to review it.

Operations Review

Reservoirs – Mary Mellema, Reclamation, reported on projects. Hungry Horse was at elevation 3551 feet, with 1.9 kcfs outflows and targeting an end of September elevation of 3550 feet. Grand Coulee was at elevation 1284.2 feet. Lisa Wright, Corps, reported on projects. Libby was at elevation 2449.98 feet with 8 kcfs outflows and 5.3 kcfs inflows. Albeni Falls was at elevation 2061.7 feet, with 6.0 kcfs inflows and 10.3 kcfs outflows. Priest Rapids inflows were 107.6 kcfs. Dworshak was at elevation 1520.1 feet, with 0.8 kcfs inflows and 2.4 kcfs outflows. Lower Granite outflows were 23.9 kcfs; McNary outflows were 122.7 kcfs; and Bonneville outflows were 121.2 kcfs.

Fish – Paul Wagner, NOAA, reported on fish. Adult fall Chinook counts peaked at 18,000/day at Bonneville; total counts at Bonneville were close to the 10-year average. Jacks were still running very high, well above the 10-year average, and 3,800/day at Bonneville. Steelhead counts at Bonneville were 1,700/day. At Ice Harbor, fall Chinook total counts were 18,000; jacks were 8,000; and steelhead were 33,000. Steelhead numbers are below the 10-year average.

Subyearling Chinook counts were 200/day at Lower Granite; less than 10/day at Little Goose; less than 100/day at Lower Monumental; and about 1,500/day at McNary. Descaling at Lower Granite was observed to be higher than usual. The salmon managers communicated this with the project and steps had been taken to address the concern – the project switched from running unit 1 to running units 2 and 3, and they were looking in to trash and debris as a potential cause. FPOM would continue to coordinate on this effort.

Water quality – The new spill priority list will go into effect as discussed at the TMT meeting on August 29, with the conclusion of the Dworshak augmentation operation.

Power – Nothing to report at this time.

October 3 TMT Meeting

Agenda items include:

- 2012 Survival Estimates (*pending*) – NOAA Science Center
- Operations Review

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

September 19, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of the Nez Perce Tribe, BOR, BPA, COE, NOAA, Oregon, Idaho, USFWS, Washington, the Colville Tribe, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review August 29 Meeting Minutes

There were no comments on the August 29 facilitator's notes or official minutes today, so both were deemed final.

3. Treaty Fishing – SOR 2012-C5

Baus reported that the COE is currently implementing this SOR, which calls for the typical treaty fishery operation in the three lower Columbia River pools from 6 am, September 18, through 6 pm, September 21. Tom Lorz, CRITFC/Umatilla, said this will probably be the last treaty fishery this year due to allowable take limits on steelhead.

4. Lake Pend Oreille SOR – USFWS/IDFG 2012-1

Russ Kiefer, Idaho, explained that this year's SOR is a continuation of last year's, when the lake level was held down to a lower elevation (2051') so the increasing kokanee adult population would benefit from improved spawning conditions with the lake at a higher elevation (2055') this year. Wave action at the lower elevation cleans the gravel beds, creating good spawning conditions the following winter if the lake is at a higher elevation.

There is a decision tree to facilitate decisions regarding winter elevations of Lake Pend Oreille. The focus was on keeping the lake low in dry years when the extra water would benefit chum spawning and power production. Last year, USFWS and IDFG decided to ask the Action Agencies to keep the lake at a lower elevation in order to facilitate research based on the 2012-2013 winter lake elevation of 2055'.

Lake Pend Oreille will then be held within 0.5' above the MCE to the end of kokanee spawning (monitored by IDFG) or December 31, whichever comes first.

The long term plan is to use the decision tree to maintain a winter elevation range at Lake Pend Oreille of 2051-2055 feet, with a higher elevation in effect for 3 years followed by a lower elevation for 1 year in order to clean the gravel beds. The

cleaning is needed because sediment accumulates from runoff into the lake. After 3 years at the higher elevation, there is enough sediment in the gravel beds to degrade spawning conditions.

Jason Flory, USFWS, Andy Dux, IDFG, and COE staff answered questions from TMT members about the SOR and lake operations. Dave Statler, Nez Perce Tribe, asked how the minimum control elevation is established.

Dux provided details of the egg-to-fry survival study, which started last year with burial of egg boxes at elevation 2051 feet. This will be the second and last year of study, with egg boxes buried in the 2051-2055 foot range and just below it at more than a dozen sites across the lake. Study results will provide insight into the success of kokanee incubation at various elevations. Paul Wagner, NOAA, asked how incubation success will be measured. Dux said the egg boxes are enclosed in mesh screens so the eggs can be counted when they hatch. Charles Morrill, Washington, asked about core sampling and Dux replied that a core sample is taken at each site where an egg box is buried in gravel.

Baus said the Action Agencies plan to implement the SOR as written. TMT members described their level of support:

- **Idaho** – Supports the SOR.
- **Oregon** – No objection.
- **Montana** – No objection.
- **Washington** – No objection.
- **USFWS** – Not present today, but was a signatory to the SOR.
- **NOAA** – Supports the SOR.
- **Nez Perce Tribe** – No objection. Commented that Lake Pend Oreille is a natural lake and a treasured resource. Generally, the fewer departures from natural hydrological influences, the better.
- **Colville Tribe** – No objection.
- **BOR** – Supports the SOR.
- **BPA** – Supports the SOR.
- **COE** – Supports the SOR.

5. Dworshak Operations

Steve Hall, COE Walla Walla, reported that Dworshak is operating to complete the release of 200 kaf of Nez Perce water, with minor adjustments to last month's plan devised by the Dworshak board based on inflow changes. When the 200 kaf has been released, Dworshak flow augmentation will end for the year. Tony Norris noted that as previously discussed at TMT once the Nez Perce water has been released (DWR reaching 1520.0') the Action Agencies will return the Snake Projects to MOP for a short duration prior to the resumption of the authorized pool range. This will demonstrate that any volume of the 200 kaf Nez Perce water that was stored between September 1 and Dworshak reaching 1520.0' was released from the Snake River. The Dworshak reservoir elevation is anticipated to reach 1520.0 feet tonight.

6. Programmatic Sediment Management Plan EIS

Richard Turner, COE project manager, gave an update on the PSMP EIS process and schedule. Initially the goal was to complete the ROD by December, but the EIS has since been modified to include an initial channel maintenance action, which affects the schedule. The overall goal is still to complete the in-water work during winter 2013-14 as previously coordinated at TMT. The draft EIS will be posted online in December and Baus will provide TMT with a hyperlink of the location. The ROD is expected to be signed in early September 2013.

Sheri Sears, Colville Tribe, asked what will be done with the sediment that is dredged from the channel. The habitat at river mile 116 is poor, and depositing the sediment there will help with habitat restoration, Turner replied. Statler requested that the channel maintenance operations include consideration of Pacific lamprey needs.

7. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1284.2 feet, well above the 1283-foot target at end September for kokanee spawning. The elevation is expected to remain around 1283-4 feet through the end of the month. Hungry Horse is at elevation 3551 feet, releasing 1.9 kcfs and on track to reach elevation 3550 feet by the end of September.

Libby is at elevation 2449.98 feet, with inflows of 5.3 kcfs and discharges of 8 kcfs through September 30 to accommodate the Kootenai sturgeon habitat restoration.

Albeni Falls is at elevation 2061.7 feet, with inflows of 6.0 kcfs and releases of 10.3 kcfs. Priest Rapids inflows are 107.6 kcfs. Dworshak is at elevation 1520.1 feet, with inflows of 0.8 kcfs and releases of 2.4 kcfs. McNary outflows are 122.7 kcfs. Lower Granite outflows are 23.9 kcfs. Bonneville outflows are 121.2 kcfs.

b. Fish. Adults: The fall chinook migration at Bonneville is still underway. This week's peak daily count of 18,000 fall chinook was probably the peak for the year. The seasonal count to date is 285,000 fall chinook, less than the 10 year average of

321,000. Daily fall chinook jack counts are still high. 6,200 on 9/15 and averaging around 4,000 per day for the week with a total season count of 83,617 (compared to 53,222 jacks last year). Steelhead are passing Bonneville in the range of 2,000-1,700 fish per day. The seasonal count is low at 207,000 fish vs. a 10 year average of 356,000 fish.

At Ice Harbor, about 1,100-1,300 fall chinook have been passing per day over the past week, with a total season count of more than 25,000 (as compared to 18,000 last year, and a 10 year average of 14,000). Fall chinook jack counts at Ice Harbor are almost 200% of the 10 year average. The seasonal count for steelhead passing Ice Harbor is 47,000. Lower Granite has passed 18,000 fall chinook adults, 8,000 fall chinook jacks, and 33,000 steelhead adults to date.

Juveniles: According to the latest smolt data, passage is winding down with 100 fall chinook passing Lower Granite per day, less than 100 passing Little Goose per day, 1,500 at McNary, 1,100 at John Day, and 1,000 at Bonneville.

Descaling rates at Lower Granite have recently been double what is typical for this time of year, Wagner reported. Baus indicated project staff were quick to respond, shutting down unit 1 and switching to units 2 and 3. Project staff will be raking trash this morning. The COE is investigating the cause of the descaling. Further coordination of this issue will occur via FPOM.

c. Water Quality. There are no water quality issues at present. Lisa Wright, COE, reported that when Dworshak attains elevation 1520 feet and flow augmentation ends, the COE will implement the wintertime spill priority list (BON, TDA, JDA, MCN, IHR, LMN, LGS, LWG, DWR, CHJ, GCL) previously discussed at TMT.

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

7. Next TMT Meeting

The next TMT meeting will be in person on October 3. The TMT year end review will be on December 5.

Name	Affiliation
Dave Statler	Nez Perce
Mary Mellema	BOR
Tony Norris	BPA
Lisa Wright	COE
Jim Litchfield	Montana
Paul Wagner	NOAA
Rick Kruger	Oregon
Russ Kiefer	Idaho
Doug Baus	COE
Russ George	WMC

Agnes Lut
Pat Flachs
Bill Proctor

BPA
COE division counsel
COE RCC

Phone:

Steve Hall
Richard Turner
Rob Allerman
Jeff Laughley
Joel Fenolio
Scott Bettin
Jason Flory
Charles Morrill
Andy Dux
Richard Turner
Tom Lorz
Sheri Sears

COE Walla Walla
COE Walla Walla
Deutsch Bank
COE Seattle
COE Seattle
BPA
USFWS
Washington
IDFG
COE
CRITFC/Umatilla
Colville Tribe



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

729 NE Oregon, Suite 200, Portland, Oregon 97232

Telephone 503 238 0667

Fax 503 235 4228

SYSTEM OPERATIONAL REQUEST: 2012 C-5

TO: Col. Anthony Funkhouser COE-NWD
James D. Barton COE-NWD-NP-Water Management
Karl Kanbergs, Douglas Baus COE-NWD-NP-WM-RCC
D. Feil, R. Peters, D. Ponganis COE-NWD-PDD (Fish Management Office)
Paul Cloutier COE-NWD (Tribal Liaison)
Col. John W. Eisenhauer COE-Portland District
JR Inglis COE-Portland District (Tribal Liaison)
Lorri Lee USBR- PNW Regional Director
Steven J. Wright BPA Administrator
Steve Oliver, Greg Delwiche BPA-PG-5
Scott Bettin, Tony Norris BPA-Operations Planning-PGPO
Stan Speaks, Keith Hatch BIA, Northwest Regional Office

FROM: Babtist Paul Lumley, *Executive Director*

DATE: September 17, 2012

SUBJECT: **Operation of the Lower Columbia Pools for the Autumn 2012 Treaty Fishery**

The Columbia River Inter-Tribal Fish Commission, on behalf of its members, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation, requests the following reservoir operations in "Zone 6" (Bonneville to McNary dams) during the autumn 2012 Treaty fishery. This effort supports the 2012 ceremonial, subsistence, and commercial Treaty fishery times as established by the tribes and the Columbia River Compact.

SPECIFICATIONS: Implement the following pool operations as a hard system constraint, as follows:

September 18, 2012, 6 am, Tuesday, through 6 pm, September 21, 2012, Friday.

Bonneville: Operate the pool within a 1.5 foot band during the treaty fishing period.

The Dalles (Celilo): Operate the pool within a 1.5 foot band during the treaty fishing period

John Day: Operate the pool within a 1.5 foot band during the treaty fishing period.

JUSTIFICATION:

The 2012 autumn treaty fishing season is of critical importance to CRITFC's member tribes. The run size of an estimated of **320,000** (Columbia at Bonneville Dam) adult upriver fall Chinook, **205,000** Steelhead, and **74,000** Coho will create harvest opportunities for tribal fishers who will exercise their treaty rights by participating in this harvest using platform and gillnet fishing methods. This harvest will provide for the cultural, religious, and economic needs of the treaty tribes.

CRITFC will sponsor net flights each week to count the nets in each Zone 6 pools. The survey data will be shared with COE-RCC staff by early afternoon of the flight day. The September 12, 2012 survey showed 748 nets in the Zone 6 pools, as follows: 300 (40%) in Bonneville, 168 (23%) in The Dalles, and 280 (37%) in John Day.

Achieving good river conditions through managed river operations during the treaty fishery have been the basis of past litigation that have been supported by federal courts and are consistent with the trust and fiduciary responsibilities that the federal operators have with respect to CRITFC's member tribes. Good river conditions during the treaty fishery are also consistent with the spirit of the 10-year Memorandum of Agreements signed by tribal and Corps, BPA, and BOR officials.

In past meetings with Corps officials, tribal fishers have explained that a pool fluctuation of more than 1.5 foot disrupts tribal fishery operations. Specific problems include: (1) increased local currents that sweep debris into fishing nets, (2) rapid 1-2 hour drops in water level can lead to entanglement of nets or change local currents that affect fishing success, (3) boat access problems, and (4) nets may be torn from their anchors if pools are raised after nets are set. Nets and gear may become lost and are costly to replace.

Any delays or disruptions to tribal fishing operations caused by the excessive pool fluctuations in Zone 6 can negatively impact tribal incomes, food resources and cultural practices. Much of the tribal fishers' annual income and food is generated during the brief treaty fishing season. The fishers have expressed to Corps officials that the loss of fishing opportunity during the extremely limited treaty fishery period cannot be replaced.

If this SOR cannot be accommodated, CRITFC requests a verbal response with an explanation from the federal operators by COB, Tuesday September 18, 2012. Thank you for considering this request. Please contact Kyle Dittmer or Stuart Ellis should you have any questions at (503) 238-0667.

cc: Tribal staffs and attorneys

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday October 3, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING
Phone Number (877) 336-1274
Access Code 3871669
Security Code 6387

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnmw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. Review September 19 Meeting Minutes
3. Treaty Fishing - Doug Baus - COE-NWD
 - a. [SOR 2012 C-7](#)
4. Water Management Plan - Doug Baus - COE-NWD
5. Operations Review
 - a. Reservoirs
 - b. Fish

- c. Water Quality
 - d. Power System
6. Other
- a. Set agenda and date for next meeting - **October 10, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

October 3, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

TMT reviewed the 9/19 Facilitator's Summary and Official Meeting Minutes. John Roache, Reclamation, corrected the Official Minutes, page 6 under Operations Review: Hungry Horse outflows were 1.9 kcfs, not 19 kcfs. With this and no additional suggested edits, the notes were considered final.

SOR 2012-C7

Tom Lorz, CRITFC, presented the SOR and said it was for treaty fishing for the period 10/2 at 6 am through 10/4 at 6 pm. Doug Baus, Corps, reported that the request was being implemented by the Corps and would continue to be implemented to the best of the agency's ability as a soft constraint, pending any other operational needs. Tom Lorz, CRITFC, thanked the Corps for meeting the request and said it was unlikely, but not certain, that another fishery would occur after this period.

Water Management Plan

Doug Baus, Corps, said a link to the draft 2013 WMP had been posted to the TMT home page on 10/1 and was open for comment. He outlined a schedule for finalizing the plan, as follows:

- 10/1 1st draft posted
- 11/15 Comments on 1st draft due via email to Doug, Tony Norris (BPA) and/or John Roache (Reclamation)
- 11/27 2nd Draft WMP will be posted incorporating comments received
- 12/14 Comments on 2nd draft due
- 12/31 Final WMP posted

Doug noted that the draft 2013 TDG Management Plan Appendix 4 was not yet posted but would be soon.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects. Hungry Horse was at elevation 3548.9 feet, with 1.9 kcfs outflows to meet Columbia Falls minimums. A dive operation scheduled for 10/13 and 10/14 will require some special flow operations at the project, and this is being coordinated between Reclamation and the Montana DEQ and Montana Fish, Wildlife & Parks. Grand Coulee was at elevation 1283.9 feet. Lisa Wright, Corps, reported on projects. Libby was at elevation 2448.4 feet with 6.6 kcfs inflows and about 5 kcfs outflows, ramping down to 4 kcfs minimum discharges for October. Albeni Falls was at elevation 2060.6 feet, with 12.0 kcfs inflows and 19.0 kcfs outflows. Priest Rapids inflows were 71.8 kcfs. Dworshak was at

elevation 1518.5 feet, with 0.5 kcfs inflows and 1.6 kcfs outflows. Lower Granite inflows were 18.8 kcfs; McNary inflows were 92.9 kcfs; and Bonneville inflows were 86.2 kcfs.

Fish – Paul Wagner, NOAA, reported on fish. Adult fall Chinook counts at Bonneville were about 2,000/day, with a total count of 334,821, close to the 10-year average. Jacks were still running very high, well above the 10-year average, at 1,100/day and 113,000 total. Steelhead counts were 1,000/day and 225,000 total, which is lower than the 10-year average. At Lower Granite, Fall Chinook counts were very high with a total of 30,700, about 500/day and jack counts were very high as well. Paul noted that WDFW has been doing adult surveys in the Lower Columbia and have not yet seen any chum.

Subyearling chinook counts were 650/day at Lower Granite, an uptick due to Clearwater fish passage. At McNary, counts were 500-1,000/day and less than 100/day at Bonneville.

Water quality – Laura Hamilton, Corps, reported that the projects have switched to wintertime fixed monitoring stations arrangement. She also reported that some involuntary spill had occurred at McNary and John Day. In response to a question, Laura said the Corps' data base was experiencing some challenges and so some of the tailwater temperature gauge data was not being reported on the web site. The Corps is working to correct this problem.

Power – Nothing to report at this time.

October 17 TMT Meeting

Agenda items include:

- 2012 Survival Estimates (*pending*) – NOAA Science Center
- Operations Review

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

October 3, 2012
Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of NOAA, BPA, COE, BOR, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review September 19 Meeting Minutes

John Roache, BOR, said Hungry Horse was releasing 1.9 kcfs, not 19 kcfs as reported on page 6 of the official minutes under Operations Review. With this change, the minutes and facilitator's notes can be considered final.

3. Treaty Fishing – SOR 2012-C5

This SOR calls for the typical fishery operation of 1.5 foot elevation bands in the three lower Columbia pools at Bonneville, The Dalles and John Day, from 6 am, October 2, to 6 pm, October 4. Baus reported that the COE has already implemented the SOR beginning yesterday. The COE has advised CRITFC that, due to operational issues, it may be difficult to maintain those requirements, but at present the request is being implemented. Tom Lorz, CRITFC, thanked the COE for their efforts.

4. Water Management Plan

The draft 2013 WMP has been posted to the TMT website since October 1, Baus reported. The plan is to release two drafts in November in order to avoid the holidays, and to post the final WMP on December 31 as in past years. Baus asked TMT members to send him their comments and outlined the schedule:

- November 15 – Deadline for comments on WMP first draft
- November 27 – COE will release second draft for review
- December 14 – Final comments due on second draft
- December 31 – Final WMP posted

Baus notified TMT that the current draft has last year's TDG management plan and Appendix 4 are excerpted from last year's WMP. The updated versions will be added to the 2013 WMP as soon as they are available.

5. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3548.9 feet, releasing 1.9 kcfs to meet the 3.5 kcfs flow criteria at Columbia Falls. This operation will continue through most of this fall. A dive scheduled for the weekend of October 13-14 might require some periods of low flow, during which BOR will release some discharge from the hollow jet valves to keep flows in the river. Grand Coulee is at elevation 1283.9 feet, attempting to maintain an elevation above 1,283 feet through mid November to support resident fisheries in Lake Roosevelt.

Libby is at elevation 2448.4 feet, with inflows of 6.6 kcfs and discharges of 5 kcfs which will be ramped down to 4 kcfs later today.

Albeni Falls is at elevation 2060.6 feet, with inflows of 12 kcfs and releases of 19 kcfs. Priest Rapids inflows are 71.8 kcfs. Dworshak is at elevation 1518.5 feet, with inflows of 0.5 kcfs and releases of 1.6 kcfs. McNary outflows are 92.9 kcfs. Lower Granite outflows are 18.8 kcfs. Bonneville outflows are 86.2 kcfs.

b. Fish. Adults: Fall chinook passage at Bonneville is declining, which is typical for this time of year, Paul Wagner reported. In the past week, the daily average has declined from as many as 3,900 fish to 2,000 fish per day over the past few days. The total for the year is 334,821 fish, which is 88% of the 10-year average for fall chinook adults. Jacks are outperforming adults with a total count of 113,000 fish, which is 220% of the 10-year average. Steelhead are passing Bonneville at the rate of about 1,000 per day with a total count of 225,000 fish for the year, 60% of the 10-year average. Daily steelhead counts are also declining as is typical at Bonneville for this time of year. Fall chinook passage at Lower Granite is about 30,700 fish to date, with about 500 fish per day passing the project. This has been a good year for Snake River fall chinook passage, with counts being over 200% of the 10 year average compared to 120% last year. The jack count is 200% of the 10 year average and 120% compared to last year.

Juveniles: The passage season is ending, with only subyearling passage at Lower Granite on the rise. This is typical for September and October. About 650 fish have passed Lower Granite per day over the last few days. Sampling at Lower Granite ends September 30. Passage at Little Goose and Lower Monumental is minimal. McNary is passing 1,000 to 500 fish per day and Bonneville less than 100 fish per day.

c. Water Quality. Laura Hamilton, COE, reported that the COE has switched to real-time fixed monitoring. McNary and John Day have had involuntary spill over the past few weeks. Wagner asked why there is no temperature report for Bonneville, and Hamilton said this is probably due to problems with the database. The COE is working on resolving this.

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

6. Next TMT Meeting

The next TMT meeting will be in person on October 17. At that time NOAA might have a survival report to present.

Name	Affiliation
Doug Baus	COE
Paul Wagner	NOAA
Tony Norris	BPA
Lisa Wright	COE
Karl Kanbergs	COE
Bill Proctor	COE
Laura Hamilton	COE
Lisa Wright	COE

Phone:

John Roache	BOR
Tom Lorz	CRITFC
Don Tinker	SCL
Barry Espenson	CBB
Russ George	WMC
Bruce McKay	consultant
Richelle Beck	Grant PUD
Bill Rudolph	NW Fish Letter
Glen Trager	Iberdrola Renewables
Scott Bettin	BPA



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

729 NE Oregon, Suite 200, Portland, Oregon 97232

Telephone 503 238 0667

Fax 503 235 4228

SYSTEM OPERATIONAL REQUEST: 2012 C-7

TO: Col. Anthony Funkhouser COE-NWD
James D. Barton COE-NWD-NP-Water Management
Karl Kanbergs, Douglas Baus COE-NWD-NP-WM-RCC
D. Feil, R. Peters, D. Ponganis COE-NWD-PDD (Fish Management Office)
Paul Cloutier COE-NWD (Tribal Liaison)
Col. John W. Eisenhauer COE-Portland District
JR Inglis COE-Portland District (Tribal Liaison)
Lorri Lee USBR- PNW Regional Director
Steven J. Wright BPA Administrator
Steve Oliver, Greg Delwiche BPA-PG-5
Scott Bettin, Tony Norris BPA-Operations Planning-PGPO
Stan Speaks, Keith Hatch BIA, Northwest Regional Office

FROM: Babtist Paul Lumley, *Executive Director*

DATE: October 1, 2012

SUBJECT: **Operation of the Lower Columbia Pools for the Autumn 2012 Treaty Fishery**

The Columbia River Inter-Tribal Fish Commission, on behalf of its members, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation, requests the following reservoir operations in "Zone 6" (Bonneville to McNary dams) during the autumn 2012 Treaty fishery. This effort supports the 2012 ceremonial, subsistence, and commercial Treaty fishery times as established by the tribes and the Columbia River Compact.

SPECIFICATIONS: Implement the following pool operations as a hard system constraint, as follows:

October 2, 2012, 6 am, Tuesday, through 6 pm, October 4, 2012, Thursday.

Bonneville: Operate the pool within a 1.5 foot band during the treaty fishing period.

The Dalles (Celilo): Operate the pool within a 1.5 foot band during the treaty fishing period

John Day: Operate the pool within a 1.5 foot band during the treaty fishing period.

This will likely be the last treaty fishing SOR for the 2012 season.

JUSTIFICATION:

The 2012 autumn treaty fishing season is of critical importance to CRITFC's member tribes. The run size of an estimated of **352,000** (Columbia at Bonneville Dam) adult upriver fall Chinook, **216,700** Steelhead, and **59,400** Coho will create harvest opportunities for tribal fishers who will exercise their treaty rights by participating in this harvest using platform and gillnet fishing methods. This harvest will provide for the cultural, religious, and economic needs of the treaty tribes.

CRITFC will sponsor net flights each week to count the nets in each Zone 6 pools. The survey data will be shared with COE-RCC staff by early afternoon of the flight day. The September 26, 2012 survey showed 637 nets in the Zone 6 pools, as follows: 206 (32%) in Bonneville, 132 (22%) in The Dalles, and 288 (46%) in John Day.

Achieving good river conditions through managed river operations during the treaty fishery have been the basis of past litigation that have been supported by federal courts and are consistent with the trust and fiduciary responsibilities that the federal operators have with respect to CRITFC's member tribes. Good river conditions during the treaty fishery are also consistent with the spirit of the 10-year Memorandum of Agreements signed by tribal and Corps, BPA, and BOR officials.

In past meetings with Corps officials, tribal fishers have explained that a pool fluctuation of more than 1.5 foot disrupts tribal fishery operations. Specific problems include: (1) increased local currents that sweep debris into fishing nets, (2) rapid 1-2 hour drops in water level can lead to entanglement of nets or change local currents that affect fishing success, (3) boat access problems, and (4) nets may be torn from their anchors if pools are raised after nets are set. Nets and gear may become lost and are costly to replace.

Any delays or disruptions to tribal fishing operations caused by the excessive pool fluctuations in Zone 6 can negatively impact tribal incomes, food resources and cultural practices. Much of the tribal fishers' annual income and food is generated during the brief treaty fishing season. The fishers have expressed to Corps officials that the loss of fishing opportunity during the extremely limited treaty fishery period cannot be replaced.

If this SOR cannot be accommodated, CRITFC requests a verbal response with an explanation from the federal operators by COB, Tuesday, October 2, 2012. Thank you for considering this request. Please contact Kyle Dittmer or Stuart Ellis should you have any questions at (503) 238-0667.

cc: Tribal staffs and attorneys

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday October 17, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING
Phone Number (877) 336-1274
Access Code 3871669
Security Code 6352

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
Please MUTE your Phone**

*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnmw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. Review October 3 Meeting Minutes
3. Operations Review
 - a. Reservoirs
 - b. Fish
 - c. Water Quality
 - d. Power System
4. Other

- a. Set agenda and date for next meeting - **October 24, 2012**
- b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Dong Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

October 17, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

TMT reviewed the 10/3 Facilitator's Summary and Official Meeting Minutes. No edits were offered but the team agreed to 'finalize' the notes at the next meeting to allow more time for review.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects. Hungry Horse was at elevation 3547.2 feet, with 1.6 kcfs outflows to meet Columbia Falls minimums. Grand Coulee was at elevation 1285.3 feet (holding a minimum 1283' for resident fisheries). Karl Kanbergs, Corps, reported on projects. Libby was at elevation 2448.65 feet with 4.0 kcfs outflows. Albeni Falls was at elevation 2057.99 feet, with 18 kcfs outflows. Dworshak was at elevation 1517.7 feet with 1.6 kcfs outflows. Lower Granite outflows were 14.6 kcfs; McNary outflows were 73.5 kcfs; and Bonneville outflows were 80.9 kcfs.

Fish – Paul Wagner, NOAA, reported on fish. Adult fall Chinook daily counts at Bonneville ranged from 283 to 888, with a total count of 346,200, close to the 10-year average. Jacks were still running very high, well above the 10-year average at 121,000 for the season. Steelhead counts were 200/day and 231,000 total, about 60% of the 10-year average. At Lower Granite, Fall Chinook total counts were 33,000, above the 10-year average. Jack total counts were 21,000, also above the 10-year average. Steelhead total counts were 85,000, about 60% of the 10-year average.

Subyearling chinook counts were 200-700/day at Lower Granite. Passage data will be collected at Lower Granite and Little Goose until the end of this month.

Paul said NOAA released a survival estimates memo late yesterday, and he offered to present the preliminary information to TMT at the next TMT meeting.

Water quality – Nothing to report at this time.

Power – Nothing to report at this time.

TMT Schedule

TMT held **10/24 for a tentative conference call** to discuss chum and agreed to meet via **conference call on 10/31** to discuss chum and the NOAA survival estimates memo. Participants were encouraged to check the TMT web page for the latest updates on agendas and schedules.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

October 17, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Karl Kanbergs, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of NOAA, BPA, COE, BOR, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review October 3 Meeting Minutes

There were no comments on either the official minutes or facilitator's notes for October 3.

3. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3547.2 feet, passing inflows due to rain and releasing 1.6 kcfs to meet the 3.5 kcfs Columbia Falls minimum flow target. Grand Coulee is at elevation 1285.3 feet, targeting 1283 feet or higher from now until mid November for resident fisheries in Lake Roosevelt. Libby is at elevation 2448.65 feet, continuing to release minimum outflows of 4 kcfs.

Albeni Falls is at elevation 2057.99 feet, releasing 18 kcfs. Dworshak is at elevation 1517.7 feet, with minimum releases of 1.6 kcfs. McNary daily average outflows are 73.5 kcfs. Lower Granite daily average outflows are 14.6 kcfs. Bonneville daily average outflows are 80.9 kcfs.

b. Fish. Adults: Fall chinook passage at Bonneville peaked at 888 fish per day and a low of 283 fish per day over the past week, Paul Wagner reported. These numbers are typical for this time of year. The total annual count to date is 346,286 fish, which is about 90% of the 10 year average. Fall chinook jack counts are 121,665 fish so far this year, which is well above the 10 year average. Steelhead at Bonneville are passing at the rate of a few hundred per day which is in line with current trends. The total season count is 231,000 steelhead, which is only about 60% of the 10 year average.

A total of 33,294 fall chinook adults have passed Lower Granite so far this year. This is well above the 10 year average but still not as plentiful a run as in 2010. Fall chinook jack passage counts are 20,797 fish for the year, which is close to 200% of the 10 year average. Steelhead counts at Lower Granite are 84,858 for the year, which is 1500 fish per week, around 60% of the 10 year average. Adult season is trending down for all species except for chum, which will be arriving soon.

Juveniles: Lower Granite and Little Goose are the only sites still collecting juveniles. Monitoring there will end October 31. Passage counts at Lower Granite ranged from 72 per day to 59 per day which is typical for this time of year.

c. Water Quality. There was nothing to report today.

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

6. Next TMT Meetings

A tentative TMT conference call was scheduled for October 24 and another on October 31 to discuss the chum operation. NOAA will have a survival report to present at the next meeting. TMT members were invited to suggest agenda items for the TMT annual review to be held on December 5.

Name	Affiliation
Tony Norris	BPA
Lisa Wright	COE
Karl Kanbergs	COE
Paul Wagner	NOAA
John Roache	BOR
Agnes Lut	BPA
Bill Proctor	COE
Kim Johnson	COE

Phone:

Russ Kiefer	Idaho
Dave Statler	Nez Perce
Tom Lorz	Umatilla
Heather Dohan	Puget
Russ George	WMC
Don Tinker	SCL
Margaret Filardo	FPC
Steve Hall	COE
Bruce McKay	consultant
Barry Espenson	CBB
Richelle Beck	Grant PUD

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane **BPA:** Tony Norris / Scott Bettin / Robyn MacKay
NOAA-F: Paul Wagner / Richard Dominique **USFWS:** David Wills / Steve Haeseker
OR: Rick Kruger **ID:** Russ Kiefer / Pete Hassemer
WDFW: Cindy LeFleur / Charles Morrill **MT:** Jim Litchfield / Brian Marotz
Kootenai: Sue Ireland / Billy Barquin **Spokane:** Deanne Pavlik-Kunkel / Andy Miller
Colville: Sheri Sears / Steve Smith **Nez Perce:** Dave Statler
Umatilla: Tom Lorz (CRITFC)
COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday October 31, 2012 9:00am - 12:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT CONFERENCE CALL

Phone Number (877) 336-1274

Access Code 3871669

Security Code 6352

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AGENDA

1. Welcome and Introductions
2. Review October 3 & 17 Meeting Minutes
3. 2012 Survival Estimates - Paul Wagner - NOAA Fisheries
 - a. [2012 Juvenile Salmonid Survival Estimates](#)
4. Operations Review
5. Other
 - a. Set agenda and date for next meeting - **November 7, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:

[Dong Baus](#) at (503) 808-3995

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
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Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday October 31, 2012 9:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274

Access Code 3871669

Security Code 6789

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AGENDA

1. Welcome and Introductions
2. Review October 3 & 17 Meeting Minutes
3. 2012 Survival Estimates - Paul Wagner, NOAA Fisheries
 - a. [2012 Juvenile Salmonid Survival Estimates](#)
4. Chum Update - Paul Wagner, NOAA Fisheries
5. Other
 - a. Set agenda and date for next meeting - **November 14, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

October 31, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

TMT reviewed the 10/3 and 10/17 Facilitator's Summaries and Official Meeting Minutes. With no edits, these were considered final.

2012 Juvenile Survival Estimates

Paul Wagner, NOAA, shared highlights from a NOAA Science Center memo on juvenile survival estimates for 2012. He said spring Chinook and steelhead ranked the second (59.6%) and third (59.8%) highest respectively for survival and that steelhead saw the highest error of 13.9%. This was due to the spring operation at Bonneville which saw fewer fish going through the corner collector so there was low detection. He added that transportation operations were very low this year due to a unique hydrograph that led to early migration of the fish. Russ Kiefer, Idaho, added that the take away was that there was not a lot of control this year, and that NOAA's research is showing that early migrating fish survive better in-river than transported. Overall, he suggested, TMT made good operations choices this year that best supported the fish. Charles Morrill, Washington, echoed this point and said Figure 6 in the memo reflects what was said. Paul said that research monitoring continues to improve our understanding of the effects of in-river and transported fish. Steve Smith, NMFS Science Center, will present this data in more detail at the TMT Year End Review on December 5.

Chum Update

Paul Wagner, NOAA, also reported that chum had been observed in the Grays River, captured in gill nets and also observed in the fish ladders at Bonneville, with a total of 11 passing Bonneville by last count. The salmon managers discussed and offered a consensus recommendation to initiate the operation described in the BiOp.

The action agencies responded that because of the amount of water in the system, the operation had begun. Bonneville is being operated to a daytime 11.3-11.7 foot tailwater range, targeting 11.5 feet. More water is being released at night as needed. As a contingency plan, BPA's Scott Bettin asked the salmon managers for their preferred operation if additional excess water needs to be released. Paul stated a preference to do as much at night, then expand the tailwater range up to 12 foot or a little higher, but use that expanded flexibility later in the day.

Next Steps: TMT will reserve 11/7 for a conference call to check in on chum operations. Paul Wagner will notify Doug by noon on Tuesday 11/6 if there is no expected change to operations, in which case Doug will send out a cancellation notice to TMT. This notice will also be posted to the TMT web page no later than 3:00 pm.

Other

- Comments on the 1st draft Water Management Plan are due to Doug no later than 11/15.
- The TMT water quality page has been reformatted using the Corps' new water quality data system. Laura Hamilton, Corps, pointed out some of these changes including the new system wide daily total spill table. TMT members commented that the changes were an improvement and thanked the Corps for their work on this. Laura welcomed more feedback as folks have a chance to explore the pages.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

October 31, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of NOAA, BPA, Idaho, CRITFC/Umatilla Tribe, COE, USFWS and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review October 3 and October 17 Meeting Minutes

There were no comments on either the facilitator's notes or official minutes for either meeting.

3. 2012 Survival Estimates

Paul Wagner, NOAA, presented highlights of a NOAA memo on 2012 survival estimates for spring chinook and steelhead from the Lower Granite trap to Bonneville, which has been posted to the TMT site for the past few weeks. The estimate for yearling chinook is the second highest at 59.6% since 1999-2012. For steelhead, the survival estimate is 59.8%, the third highest and nearly identical to the 2011 estimate.

One noteworthy thing about this year's survival is that it has the highest error ratio of any of the recent estimates (the highest was in 2009). In 2009, the survival estimate was 67.8% and the error ratio was 0.06%. In 2012, it was 59.8%, with an error rate of 13.9%. Wagner pointed out that the estimate for steelhead this year is uncertain, based on return numbers from McNary to Bonneville. The reason for the high error rate is low detection rates at the Bonneville corner collector where most steelhead are recaptured.

Another highlight from the NOAA report is the percentage of fish transported, which in 2012 was the lowest seen – in the low range of 20% for spring and summer chinook and the high 20% for steelhead. The reason for that was the shape of the hydrograph. Flows in the Snake River came up high, and passed the projects prior to the initiation of the juvenile transportation operation.

Russ Kiefer said Idaho is concerned about low adult steelhead returns this year. Generally we see a positive transport benefit for steelhead, but the way the hydrograph came up last year will cause confusion in how the data are interpreted. Generally, early in the season fish do better in-river, while later stocks benefit more from transport. TMT's transport decision this year was a good choice, and we can expect good returns from it, Kiefer said. Nevertheless, two points need to be understood in light of the current low steelhead returns: (1) Most steelhead entered the river early this year, when

it's likely better for them to be left in-river and they are likely to do well; and (20 Most of the early migrants passed the project in uncontrolled spill; collection for transport was impossible this year. Charles Morrill, Washington, pointed out that Figure 6 in the NOAA memo highlights this point.

Wagner said Steve Smith, NOAA, will follow up on this memo with a more in-depth presentation on survival estimates at the TMT year end review.

4. Chum Update

Wagner reported that based on field observations thus far, FPAC's consensus yesterday was to initiate the chum operation, typically targeting a range of 11.3-11.7 feet below Bonneville. Tony Norris, BPA, said that would be fine and Scott Bettin, BPA, asked how excess flows should be released if necessary. The preferred operation would be higher flows at night, targeting elevation 11.5 feet below Bonneville during the daytime, Wagner replied. The elevation range could be increased potentially to 12 feet or slightly higher if necessary, shaped later in the day or toward late afternoon, with an emphasis on moving flows at night. Based on FPAC's discussion the Action Agencies will formally initiate the chum operation on November 1 at 6am.

Wagner suggested that TMT schedule a placeholder conference call next week in the event any changes need to be made to the chum operation. The call will be canceled by noon the day before if not needed.

5. Other

Baus asked TMT members to send him comments on the first draft of the Water Management Plan by November 15.

Laura Hamilton, COE, briefed TMT on recent changes made to the water quality section of the TMT website. There are new links under water quality data that provide easy access to total daily spill amounts throughout the hydrosystem. Data for the lower Columbia projects are not posted yet, and Hamilton will let TMT know when the database has been updated. She pointed out that what has been called "historical" TDG data reports is now called "detailed" data reports.

6. Next TMT Meeting

A tentative conference call was scheduled for November 7. The next regular TMT meeting will be on November 14.

Name	Affiliation
Paul Wagner	NOAA
Tony Norris	BPA
Russ Kiefer	Idaho
Tom Lorz	CRITFC/Umatilla

Doug Baus	COE
Laura Hamilton	COE
Karl Kanbergs	COE
David Wills	USFWS
Ruth Burris	PGE
Margaret Filardo	FPC
Dave Benner	FPC
Russ George	WMC
Greg Lawson	Thompson Reuters
Rob Allerman	Deutsch Bank
Richelle Beck	Grant PUD
Barry Espenson	CBB
Charles Morrill	Washington
Peter Richardson	XX
John Roache	BOR
Jim Litchfield	Montana
Don Tinker	SCL
Heather Dohan	Puget Sound Energy
Mike Shapley	Snohomish PUD
Rick Kruger	Oregon
Deb Maloney	PP&L
Scott Bettin	BPA



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Fisheries Science Center
Fish Ecology Division
2725 Montlake Boulevard East
Seattle, WA 98112-2097
(206) 860-3270

October 12, 2012

MEMORANDUM FOR: F/NWR5 - Bruce Suzumoto

FROM:

F/NWC3 - Richard W. Zabel

Richard W. Zabel

SUBJECT:

Preliminary survival estimates for passage during the spring migration of juvenile salmonids through Snake and Columbia River reservoirs and dams, 2012

This memorandum summarizes conditions in the Snake and Columbia Rivers and preliminary estimates of survival of PIT-tagged juvenile salmonids passing through reservoirs and dams during the 2012 spring outmigration. We also provide preliminary estimates of the proportion of Snake River smolts that were transported from Snake River dams in 2012. Our complete detailed analyses and report for the spring migration will be available by the end of the year. As in past years, changes in the database between the time of our annual summer memo and the publication of our final report may result in differences of up to 3 or 4% in estimated survival values.

Summary of Research

For survival studies funded by BPA in 2012, NOAA Fisheries PIT tagged approximately 20,120 river-run hatchery steelhead, 20,120 wild steelhead, and 16,750 wild yearling Chinook salmon for release into the tailrace of Lower Granite Dam.

Survival estimates provided in this memorandum are derived from PIT-tag data from fish PIT tagged by or for NOAA Fisheries, as described above, along with fish PIT tagged by others within the Columbia River Basin.

For yearling Chinook salmon from Snake River Basin hatcheries, estimated survival to Lower Granite Dam tailrace has been



relatively stable since 1998 (Figure 1, Table 1). Mean estimated survival was a composite of production releases from hatcheries Dworshak, Kooskia, Lookingglass/Imnaha Weir, Rapid River, McCall/Knox Bridge, Pahsimeroi, and Sawtooth and has ranged between 54.9 and 69.7% since 1998. Mean estimated survival to Lower Granite Dam tailrace for the index hatchery release groups in 2012 was 63.2%.

Estimated survival for Snake River yearling Chinook salmon (hatchery and wild combined) in 2012 was above average (1993-2012) in most reaches (Tables 2 and 4, Figures 2 and 3). Mean estimated survival for yearling Chinook salmon from Lower Granite Dam tailrace to McNary Dam tailrace in 2012 was 79.5% (95% CI: 76.4, 82.6%). Mean estimated survival in 2012 from McNary Dam tailrace to Bonneville Dam tailrace was 80.7% (95% CI: 70.7, 90.7%). Mean estimated survival for yearling Chinook salmon from Lower Granite Dam tailrace to Bonneville Dam tailrace in 2012 was 64.2% (95% CI: 55.8, 72.5%). Estimated survival for the Lower Granite project (head of reservoir to tailrace) was 92.8%, based on fish PIT tagged at and released from the Snake River trap. The combined yearling Chinook salmon survival estimate from the trap to the Bonneville Dam tailrace in 2012 was 59.6% (95% CI: 51.7, 67.4%).

For Snake River steelhead (hatchery and wild combined), mean estimated survival in 2012 was above the average (1993-2012) in every reach (Tables 3 and 5, Figures 2 and 3). Mean estimated survival for steelhead from Lower Granite Dam tailrace to McNary Dam tailrace in 2012 was 69.8% (95% CI: 65.9, 73.7%). Mean estimated survival in 2012 from McNary Dam tailrace to Bonneville Dam tailrace was 85.6% (95% CI: 47.2, 100.0%). Mean estimated survival from Lower Granite Dam tailrace to Bonneville Dam tailrace was 59.7% (95% CI: 32.7, 86.8%). Estimated survival for the Lower Granite project (head of reservoir to tailrace) was 100.0%, based on fish PIT tagged at and released from the Snake River trap. The combined steelhead survival estimate from the trap to the Bonneville Dam tailrace in 2012 was 59.8% (95% CI: 32.6, 87.1%).

For PIT-tagged hatchery yearling Chinook salmon originating from the upper Columbia River in 2012, estimated survival from McNary Dam tailrace to Bonneville Dam tailrace was 84.1% (95% CI: 69.8, 100.0%; see Table 6).

For PIT-tagged hatchery steelhead originating from the upper Columbia River in 2012, estimated survival from McNary Dam



tailrace to Bonneville Dam tailrace was 100.0% (95% CI: 66.9, 100.0%; Table 6). For fish released from upper Columbia River hatcheries, we cannot estimate survival in reaches upstream from McNary Dam (other than the overall reach from release to McNary Dam tailrace) because of limited PIT-tag detection capabilities at Mid-Columbia River PUD dams.

Estimated survival in 2012 of Snake River sockeye salmon (hatchery and wild combined) from the tailrace of Lower Granite Dam to the tailrace of Bonneville Dam was 47.2% (95% CI: 36.5%, 70.0%; Table 7). Estimated survival in 2012 of Columbia River sockeye salmon (hatchery and wild combined) from the tailrace of Rock Island Dam to the tailrace of Bonneville Dam was 79.4% (95% CI: 32.9%, 100.0%; Table 7).

Our preliminary estimates of the proportion transported of non-tagged wild and hatchery spring-summer Chinook salmon smolts are 22.7% and 24.7%, respectively. For steelhead, the estimates are 28.4% and 26.7% for wild and hatchery smolts, respectively. These estimates represent the proportion of smolts that arrived at Lower Granite Dam that were subsequently transported, either from Lower Granite Dam or from one of the downstream collector dams.

Discussion

For Snake River yearling Chinook salmon in 2012, the estimated survival through the hydropower system (Snake River trap to Bonneville tailrace) of 59.6% was the second highest we've observed in the 1999-2012 time series (higher only in 2006), and greater than the 2011 estimate of 48.8% ($P = 0.07$; Table 4). Compared to long-term averages, estimated survival for yearling Chinook salmon in 2012 was 5.5% higher between Lower Granite Dam and McNary Dams, and 10.3% higher between McNary and Bonneville Dams.

For steelhead in 2012, estimated survival through the hydropower system was 59.8%, which is the third highest in the times series (behind 2008 and 2009), greater than the long-term average of 43.1%, and nearly identical to the 2011 estimate of 59.2% ($P = 0.96$; Table 5).



The pattern through time of flow volume in the Snake River in 2012 was unique among the last 8 migration seasons, in that the highest peak in flow occurred in late April rather than in May, and in fact the flow throughout May was no higher than in early April (Figure 4). The overall average of daily average flow volume was higher in 2012 than in the long-term series, but no other year's flow pattern had those characteristics. Snake River flow fluctuated around 100 kcfs for the first three weeks of April and, increased quickly to the season peak of 178 kcfs on April 27, decreased over the next week back to around 100 kcfs. Mean spill volume at the Snake River dams in 2012 was nearly equal the 2006-2011 average for the first three weeks of April and then jumped to a very high peak during the spike in flow volume (Figure 5). In terms of percentage of flow that was spilled, the first three weeks of April 2012 were below the average of recent years, jumped to near 50% during the spike in flow, and then returned to near-to-below average for the month of May (Figure 5). Water temperatures in the Snake River in 2012 were near average for most of the season (Figure 4). Water temperature increased relative to average during the spike in flow.

Relatively high rates of descaling of juvenile sockeye passing through Bonneville dam during the week of 8-14 May prompted a decision to decrease flow through Powerhouse 2 and route more flow through Powerhouse 1. On 16 May the turbines in Powerhouse 2 were reduced to half of the 1% efficiency, which resulted in lower flow entering the powerhouse. From 21-23 May the operations at Powerhouse 2 went back to normal, but then returned to operating at less than 1% efficiency from late 23 May until 13 June. The effect of these changes in operation on overall survival through Bonneville dam is not known, but it is known that PIT tag detection probabilities were drastically reduced during that period. The low detection probabilities made for very low precision in survival estimates during that period and made survival estimation to Bonneville impossible for some weekly groups.

Estimated percentages of yearling Chinook salmon and steelhead transported from Snake River dams in 2012 were the lowest seen in twenty years of our estimates 1993-2012. Collection for transportation began on 2 May at Lower Granite Dam, 4 May at Little Goose Dam, and 6 May at Lower Monumental Dam. However, a large spike in smolt passage was associated with the large spike in flow in late April (Figures 6 and 4), resulting in a large percentage of smolts (about 67% of yearling Chinook and 59% of



steelhead) passing Lower Granite Dam before transportation began. Throughout the migration season, high spill percentages, in combination with surface bypass collection at each of the collector dams on the Snake River, resulted in low proportions of fish entering juvenile bypass systems. During the period of general transportation in May, about 60% of smolts that arrived at Lower Granite Dam were transported from a collector dam. These relatively low collection rates and a late start in collection relative to run timing resulted in low proportions transported in 2012.

cc: F/NWC3 - Faulkner
F/NWC3 - Smith
F/NWC3 - Widener
F/NWC3 - Zabel



Table 1. Mean estimated survival and standard error (s.e.) for yearling **Chinook** salmon released at Snake River Basin and Upper Columbia River hatcheries to Lower Granite Dam tailrace (LGR) and McNary Dam tailrace (MCN), 2010 through 2012.

Hatchery	2010		2011		2012 ^a	
	Survival to LGR (s.e.)	Survival to MCN (s.e.)	Survival to LGR (s.e.)	Survival to MCN (s.e.)	Survival to LGR (s.e.)	Survival to MCN (s.e.)
Dworshak	0.898 (0.017)	0.780 (0.014)	0.722 (0.006)	0.511 (0.010)	0.743 (0.008)	0.642 (0.013)
Kooskia	0.744 (0.030)	0.624 (0.022)	0.729 (0.014)	0.542 (0.029)	0.652 (0.013)	0.409 (0.018)
Lookingglass (Catherine Cr.)	0.447 (0.020)	0.369 (0.015)	0.300 (0.007)	0.228 (0.020)	0.345 (0.007)	0.286 (0.015)
Lookingglass (Grande Ronde)	0.422 (0.029)	0.356 (0.034)	0.434 (0.019)	0.386 (0.097)	0.453 (0.018)	0.350 (0.033)
Lookingglass (Imnaha River)	0.682 (0.025)	0.563 (0.017)	0.572 (0.009)	0.424 (0.025)	0.689 (0.009)	0.568 (0.017)
Lookingglass (Lostine River)	0.447 (0.020)	0.369 (0.015)	0.490 (0.022)	0.409 (0.097)	0.665 (0.017)	0.546 (0.035)
McCall (Johnson Cr.)	0.322 (0.018)	0.230 (0.022)	0.264 (0.015)	0.222 (0.053)	0.357 (0.016)	0.370 (0.049)
McCall (Knox Bridge)	0.566 (0.014)	0.462 (0.010)	0.631 (0.007)	0.469 (0.018)	0.571 (0.006)	0.561 (0.012)
Rapid River	0.786 (0.019)	0.666 (0.012)	0.766 (0.006)	0.533 (0.016)	0.718 (0.014)	0.634 (0.030)
Entiat	---	---	---	0.536 (0.041)	---	0.680 (0.042)
Winthrop	---	0.634 (0.069)	---	0.529 (0.051)	---	0.535 (0.036)
Leavenworth	---	0.653 (0.028)	---	0.432 (0.022)	---	0.589 (0.020)

a. Estimates are preliminary and subject to change.

Table 2. Annual weighted means of survival probability estimates for yearling **Chinook** salmon (hatchery and wild combined), 1993–2012. Standard errors in parentheses. Reaches with asterisks comprise two dams and reservoirs (i.e., two projects); the following column gives the square root (i.e., geometric mean) of the two–project estimate to facilitate comparison with other single–project estimates. Simple arithmetic means across all years are given. Abbreviations: Trap–Snake River Trap; LGR–Lower Granite Dam; LGO–Little Goose Dam; LMO–Lower Monumental Dam; IHR–Ice Harbor Dam; MCN–McNary Dam; JDA–John Day Dam; TDA–The Dalles Dam; BON–Bonneville Dam.

Year	Trap–LGR	LGR–LGO	LGO–LMO	LMO–MCN*	LMO–IHR IHR–MCN	MCN–JDA	JDA–BON*	JDA–TDA TDA–BON
1993	0.828 (0.013)	0.854 (0.012)						
1994	0.935 (0.023)	0.830 (0.009)	0.847 (0.010)					
1995	0.905 (0.010)	0.882 (0.004)	0.925 (0.008)	0.876 (0.038)	0.936			
1996	0.977 (0.025)	0.926 (0.006)	0.929 (0.011)	0.756 (0.033)	0.870			
1997	NA	0.942 (0.018)	0.894 (0.042)	0.798 (0.091)	0.893			
1998	0.925 (0.009)	0.991 (0.006)	0.853 (0.009)	0.915 (0.011)	0.957	0.822 (0.033)		
1999	0.940 (0.009)	0.949 (0.002)	0.925 (0.004)	0.904 (0.007)	0.951	0.853 (0.027)	0.814 (0.065)	0.902
2000	0.929 (0.014)	0.938 (0.006)	0.887 (0.009)	0.928 (0.016)	0.963	0.898 (0.054)	0.684 (0.128)	0.827
2001	0.954 (0.015)	0.945 (0.004)	0.830 (0.006)	0.708 (0.007)	0.841	0.758 (0.024)	0.645 (0.034)	0.803
2002	0.953 (0.022)	0.949 (0.006)	0.980 (0.008)	0.837 (0.013)	0.915	0.907 (0.014)	0.840 (0.079)	0.917
2003	0.993 (0.023)	0.946 (0.005)	0.916 (0.011)	0.904 (0.017)	0.951	0.893 (0.017)	0.818 (0.036)	0.904
2004	0.893 (0.009)	0.923 (0.004)	0.875 (0.012)	0.818 (0.018)	0.904	0.809 (0.028)	0.735 (0.092)	0.857
2005	0.919 (0.015)	0.919 (0.003)	0.886 (0.006)	0.903 (0.010)	0.950	0.772 (0.029)	1.028 (0.132)	1.014
2006	0.952 (0.011)	0.923 (0.003)	0.934 (0.004)	0.887 (0.008)	0.942	0.881 (0.020)	0.944 (0.030)	0.972
2007	0.943 (0.028)	0.938 (0.006)	0.957 (0.010)	0.876 (0.012)	0.936	0.920 (0.016)	0.824 (0.043)	0.908
2008	0.992 (0.018)	0.939 (0.006)	0.950 (0.011)	0.878 (0.016)	0.937	1.073 (0.058)	0.558 (0.082)	0.750
2009	0.958 (0.010)	0.940 (0.006)	0.982 (0.009)	0.855 (0.011)	0.925	0.866 (0.042)	0.821 (0.043)	0.906
2010	0.968 (0.040)	0.962 (0.011)	0.973 (0.019)	0.851 (0.017)	0.922	0.947 (0.021)	0.780 (0.039)	0.883
2011	0.943 (0.009)	0.919 (0.007)	0.966 (0.008)	0.845 (0.012)	0.919	0.893 (0.026)	0.766 (0.080)	0.875
2012 ^a	0.928 (0.012)	0.915 (0.011)	0.940 (0.010)	0.939 (0.013)	0.969	0.918 (0.020)	0.871 (0.056)	0.933
Mean	0.939 (0.009)	0.927 (0.009)	0.918 (0.011)	0.860 (0.015)	0.927	0.881 (0.021)	0.795 (0.034)	0.889

a. Estimates are preliminary and subject to change.

Table 3. Annual weighted means of survival probability estimates for **steelhead** (hatchery and wild combined), 1993–2012. Standard errors in parentheses. Reaches with asterisks comprise two dams and reservoirs (i.e., two projects); the following column gives the square root (i.e., geometric mean) of the two–project estimate to facilitate comparison with other single–project estimates. Simple arithmetic means across all years are given. Abbreviations: Trap–Snake River Trap; LGR–Lower Granite Dam; LGO–Little Goose Dam; LMO–Lower Monumental Dam; IHR–Ice Harbor Dam; MCN–McNary Dam; JDA–John Day Dam; TDA–The Dalles Dam; BON–Bonneville Dam.

Year	Trap–LGR	LGR–LGO	LGO–LMO	LMO–MCN*	LMO–IHR IHR–MCN	MCN–JDA	JDA–BON*	JDA–TDA TDA–BON
1993	0.905 (0.006)							
1994	NA	0.844 (0.011)	0.892 (0.011)					
1995	0.945 (0.008)	0.899 (0.005)	0.962 (0.011)	0.858 (0.076)	0.926			
1996	0.951 (0.015)	0.938 (0.008)	0.951 (0.014)	0.791 (0.052)	0.889			
1997	0.964 (0.015)	0.966 (0.006)	0.902 (0.020)	0.834 (0.065)	0.913			
1998	0.924 (0.009)	0.930 (0.004)	0.889 (0.006)	0.797 (0.018)	0.893	0.831 (0.031)	0.935 (0.103)	0.967
1999	0.908 (0.011)	0.926 (0.004)	0.915 (0.006)	0.833 (0.011)	0.913	0.920 (0.033)	0.682 (0.039)	0.826
2000	0.964 (0.013)	0.901 (0.006)	0.904 (0.009)	0.842 (0.016)	0.918	0.851 (0.045)	0.754 (0.045)	0.868
2001	0.911 (0.007)	0.801 (0.010)	0.709 (0.008)	0.296 (0.010)	0.544	0.337 (0.025)	0.753 (0.063)	0.868
2002	0.895 (0.015)	0.882 (0.011)	0.882 (0.018)	0.652 (0.031)	0.807	0.844 (0.063)	0.612 (0.098)	0.782
2003	0.932 (0.015)	0.947 (0.005)	0.898 (0.012)	0.708 (0.018)	0.841	0.879 (0.032)	0.630 (0.066)	0.794
2004	0.948 (0.004)	0.860 (0.006)	0.820 (0.014)	0.519 (0.035)	0.720	0.465 (0.078)	NA	NA
2005	0.967 (0.004)	0.940 (0.004)	0.867 (0.009)	0.722 (0.023)	0.850	0.595 (0.040)	NA	NA
2006	0.920 (0.013)	0.956 (0.004)	0.911 (0.006)	0.808 (0.017)	0.899	0.795 (0.045)	0.813 (0.083)	0.902
2007	1.016 (0.026)	0.887 (0.009)	0.911 (0.022)	0.852 (0.030)	0.923	0.988 (0.098)	0.579 (0.059)	0.761
2008	0.995 (0.018)	0.935 (0.007)	0.961 (0.014)	0.776 (0.017)	0.881	0.950 (0.066)	0.742 (0.045)	0.861
2009	1.002 (0.011)	0.972 (0.005)	0.942 (0.008)	0.863 (0.014)	0.929	0.951 (0.026)	0.900 (0.079)	0.949
2010	1.017 (0.030)	0.965 (0.028)	0.984 (0.044)	0.876 (0.032)	0.936	0.931 (0.051)	0.840 (0.038)	0.917
2011	0.986 (0.017)	0.955 (0.004)	0.948 (0.010)	0.772 (0.014)	0.879	0.960 (0.043)	0.858 (0.051)	0.926
2012 ^a	1.001 (0.026)	0.958 (0.006)	0.914 (0.011)	0.811 (0.022)	0.901	0.814 (0.048)	1.021 (0.148)	1.010
Mean	0.955 (0.009)	0.919 (0.011)	0.903 (0.014)	0.756 (0.034)	0.865	0.807 (0.050)	0.778 (0.037)	0.879

a. Estimates are preliminary and subject to change.

Table 4. Hydropower system survival estimates derived by combining empirical survival estimates from various reaches for Snake River yearling **Chinook** salmon (hatchery and wild combined), 1997–2012. Standard errors in parentheses. Simple arithmetic means across all years are given. Abbreviations: Trap–Snake River Trap; LGR–Lower Granite Dam; MCN–McNary Dam; BON–Bonneville Dam.

Year	Trap–LGR	LGR–MCN	MCN–BON	LGR–BON	Trap–BON
1997	NA	0.653 (0.072)	NA	NA	NA
1998	0.924 (0.011)	0.770 (0.009)	NA	NA	NA
1999	0.940 (0.009)	0.792 (0.006)	0.704 (0.058)	0.557 (0.046)	0.524 (0.043)
2000	0.929 (0.014)	0.760 (0.012)	0.640 (0.122)	0.486 (0.093)	0.452 (0.087)
2001	0.954 (0.015)	0.556 (0.009)	0.501 (0.027)	0.279 (0.016)	0.266 (0.016)
2002	0.953 (0.022)	0.757 (0.009)	0.763 (0.079)	0.578 (0.060)	0.551 (0.059)
2003	0.993 (0.023)	0.731 (0.010)	0.728 (0.030)	0.532 (0.023)	0.528 (0.026)
2004	0.893 (0.009)	0.666 (0.011)	0.594 (0.074)	0.395 (0.050)	0.353 (0.045)
2005	0.919 (0.015)	0.732 (0.009)	0.788 (0.093)	0.577 (0.068)	0.530 (0.063)
2006	0.952 (0.011)	0.764 (0.007)	0.842 (0.021)	0.643 (0.017)	0.612 (0.018)
2007	0.943 (0.028)	0.783 (0.006)	0.763 (0.044)	0.597 (0.035)	0.563 (0.037)
2008	0.992 (0.018)	0.782 (0.011)	0.594 (0.066)	0.465 (0.052)	0.460 (0.052)
2009	0.958 (0.010)	0.787 (0.007)	0.705 (0.031)	0.555 (0.025)	0.531 (0.025)
2010	0.968 (0.040)	0.772 (0.012)	0.738 (0.039)	0.569 (0.032)	0.551 (0.038)
2011	0.943 (0.009)	0.746 (0.010)	0.687 (0.065)	0.513 (0.049)	0.483 (0.046)
2012 ^a	0.928 (0.012)	0.795 (0.016)	0.807 (0.051)	0.642 (0.043)	0.596 (0.040)
Mean	0.946 (0.007)	0.740 (0.016)	0.704 (0.025)	0.528 (0.026)	0.500 (0.025)

a. Estimates are preliminary and subject to change.

Table 5. Hydropower system survival estimates derived by combining empirical survival estimates from various reaches for Snake River **steelhead** (hatchery and wild combined), 1997–2012. Standard errors in parentheses. Simple arithmetic means across all years are given. Abbreviations: Trap–Snake River Trap; LGR–Lower Granite Dam; MCN–McNary Dam; BON–Bonneville Dam.

Year	Trap–LGR	LGR-MCN	MCN-BON	LGR–BON	Trap–BON
1997	1.020 (0.023)	0.728 (0.053)	0.651 (0.082)	0.474 (0.069)	0.484 (0.072)
1998	0.924 (0.009)	0.649 (0.013)	0.770 (0.081)	0.500 (0.054)	0.462 (0.050)
1999	0.908 (0.011)	0.688 (0.010)	0.640 (0.024)	0.440 (0.018)	0.400 (0.017)
2000	0.964 (0.013)	0.679 (0.016)	0.580 (0.040)	0.393 (0.034)	0.379 (0.033)
2001	0.911 (0.007)	0.168 (0.006)	0.250 (0.016)	0.042 (0.003)	0.038 (0.003)
2002	0.895 (0.015)	0.536 (0.025)	0.488 (0.090)	0.262 (0.050)	0.234 (0.045)
2003	0.932 (0.015)	0.597 (0.013)	0.518 (0.015)	0.309 (0.011)	0.288 (0.012)
2004	0.948 (0.004)	0.379 (0.023)	NA	NA	NA
2005	0.967 (0.004)	0.593 (0.018)	NA	NA	NA
2006	0.920 (0.013)	0.702 (0.016)	0.648 (0.079)	0.455 (0.056)	0.418 (0.052)
2007	1.016 (0.026)	0.694 (0.020)	0.524 (0.064)	0.364 (0.045)	0.369 (0.047)
2008	0.995 (0.018)	0.716 (0.015)	0.671 (0.034)	0.480 (0.027)	0.478 (0.028)
2009	1.002 (0.011)	0.790 (0.013)	0.856 (0.074)	0.676 (0.059)	0.678 (0.060)
2010	1.017 (0.030)	0.770 (0.020)	0.789 (0.027)	0.608 (0.026)	0.618 (0.032)
2011	0.986 (0.017)	0.693 (0.013)	0.866 (0.038)	0.600 (0.029)	0.592 (0.030)
2012 ^a	1.001 (0.026)	0.698 (0.020)	0.856 (0.196)	0.597 (0.138)	0.598 (0.139)
Mean	0.963 (0.011)	0.630 (0.039)	0.651 (0.046)	0.443 (0.044)	0.431 (0.046)

a. Estimates are preliminary and subject to change.

Table 6. Estimated survival and standard error (s.e.) through reaches of the lower Columbia River hydropower system for hatchery yearling **Chinook** salmon and **steelhead** originating in the upper Columbia River, 1999–2012. Abbreviations: Rel–Release site; MCN–McNary Dam; JDA–John Day Dam; BON–Bonneville Dam.

Year	Yearling Chinook Salmon				Steelhead			
	Rel–MCN	MCN–JDA	JDA–BON	MCN–BON	Rel–MCN	MCN–JDA	JDA–BON	MCN–BON
1999	0.572 (0.014)	0.896 (0.044)	0.795 (0.129)	0.712 (0.113)				
2000	0.539 (0.025)	0.781 (0.094)	NA	NA				
2001	0.428 (0.009)	0.881 (0.062)	NA	NA				
2002	0.555 (0.003)	0.870 (0.011)	0.940 (0.048)	0.817 (0.041)				
2003	0.625 (0.003)	0.900 (0.008)	0.977 (0.035)	0.879 (0.031)	0.471 (0.004)	0.997 (0.012)	0.874 (0.036)	0.871 (0.036)
2004	0.507 (0.005)	0.812 (0.019)	0.761 (0.049)	0.618 (0.038)	0.384 (0.005)	0.794 (0.021)	1.037 (0.112)	0.823 (0.088)
2005	0.545 (0.012)	0.751 (0.042)	NA	NA	0.399 (0.004)	0.815 (0.017)	0.827 (0.071)	0.674 (0.057)
2006	0.520 (0.011)	0.954 (0.051)	0.914 (0.211)	0.871 (0.198)	0.397 (0.008)	0.797 (0.026)	0.920 (0.169)	0.733 (0.134)
2007	0.584 (0.009)	0.895 (0.028)	0.816 (0.091)	0.730 (0.080)	0.426 (0.016)	0.944 (0.064)	0.622 (0.068)	0.587 (0.059)
2008	0.582 (0.019)	1.200 (0.085)	0.522 (0.114)	0.626 (0.133)	0.438 (0.015)	NA	NA	NA
2009	0.523 (0.013)	0.847 (0.044)	1.056 (0.143)	0.895 (0.116)	0.484 (0.018)	0.809 (0.048)	0.935 (0.133)	0.756 (0.105)
2010	0.660 (0.014)	0.924 (0.040)	0.796 (0.046)	0.735 (0.037)	0.512 (0.017)	0.996 (0.054)	0.628 (0.038)	0.626 (0.033)
2011	0.534 (0.010)	1.042 (0.047)	0.612 (0.077)	0.637 (0.077)	0.435 (0.012)	1.201 (0.064)	0.542 (0.101)	0.651 (0.119)
2012 ^a	0.478 (0.007)	0.854 (0.026)	0.985 (0.097)	0.841 (0.080)	0.282 (0.014)	0.801 (0.060)	1.251 (0.262)	1.002 (0.209)
Mean	0.546 (0.016)	0.900 (0.030)	0.834 (0.049)	0.760 (0.032)	0.423 (0.020)	0.906 (0.047)	0.848 (0.075)	0.747 (0.044)

a. Estimates are preliminary and subject to change.

Table 7. Estimated survival and standard error (s.e.) for **sockeye** salmon (hatchery and wild combined) from Lower Granite Dam tailrace to Bonneville Dam tailrace for fish originating in the Snake River, and from Rock Island Dam tailrace to Bonneville Dam tailrace for fish originating in the upper Columbia River, 1996–2012. Note that this table represents all available data on sockeye, and so estimates are provided regardless of the size of their associated standard errors. The estimates to Bonneville tailrace are of questionable quality in several cases due to small release sizes and low detection probabilities. Abbreviations: LGR–Lower Granite Dam; MCN–McNary Dam; BON–Bonneville Dam; RIS–Rock Island Dam.

Year	Snake River Sockeye			Upper Columbia River Sockeye		
	LGR-MCN	MCN-BON	LGR-BON	RIS-MCN	MCN-BON	RIS-BON
1996	0.283 (0.184)	NA	NA	NA	NA	NA
1997	NA	NA	NA	0.397 (0.119)	NA	NA
1998	0.689 (0.157)	0.142 (0.099)	0.177 (0.090)	0.624 (0.058)	1.655 (1.617)	1.033 (1.003)
1999	0.655 (0.083)	0.841 (0.584)	0.548 (0.363)	0.559 (0.029)	0.683 (0.177)	0.382 (0.097)
2000	0.679 (0.110)	0.206 (0.110)	0.161 (0.080)	0.487 (0.114)	0.894 (0.867)	0.435 (0.410)
2001	0.205 (0.063)	0.105 (0.050)	0.022 (0.005)	0.657 (0.117)	NA	NA
2002	0.524 (0.062)	0.684 (0.432)	0.342 (0.212)	0.531 (0.044)	0.286 (0.110)	0.152 (0.057)
2003	0.669 (0.054)	0.551 (0.144)	0.405 (0.098)	NA	NA	NA
2004	0.741 (0.254)	NA	NA	0.648 (0.114)	1.246 (1.218)	0.808 (0.777)
2005	0.388 (0.078)	NA	NA	0.720 (0.140)	0.226 (0.209)	0.163 (0.147)
2006	0.630 (0.083)	1.113 (0.652)	0.820 (0.454)	0.793 (0.062)	0.767 (0.243)	0.608 (0.187)
2007	0.679 (0.066)	0.259 (0.084)	0.272 (0.073)	0.625 (0.046)	0.642 (0.296)	0.401 (0.183)
2008	0.763 (0.103)	0.544 (0.262)	0.404 (0.179)	0.644 (0.094)	0.679 (0.363)	0.437 (0.225)
2009	0.749 (0.032)	0.765 (0.101)	0.573 (0.073)	0.853 (0.076)	0.958 (0.405)	0.817 (0.338)
2010	0.723 (0.039)	0.752 (0.098)	0.544 (0.077)	0.778 (0.063)	0.627 (0.152)	0.488 (0.111)
2011	0.659 (0.033)	NA	NA	0.742 (0.088)	0.691 (0.676)	0.513 (0.498)
2012 ^a	0.762 (0.032)	0.619 (0.084)	0.472 (0.062)	0.945 (0.085)	0.840 (0.405)	0.794 (0.376)
Mean	0.612 (0.043)	0.548 (0.090)	0.395 (0.063)	0.667 (0.037)	0.784 (0.103)	0.541 (0.073)

a. Estimates are preliminary and subject to change.

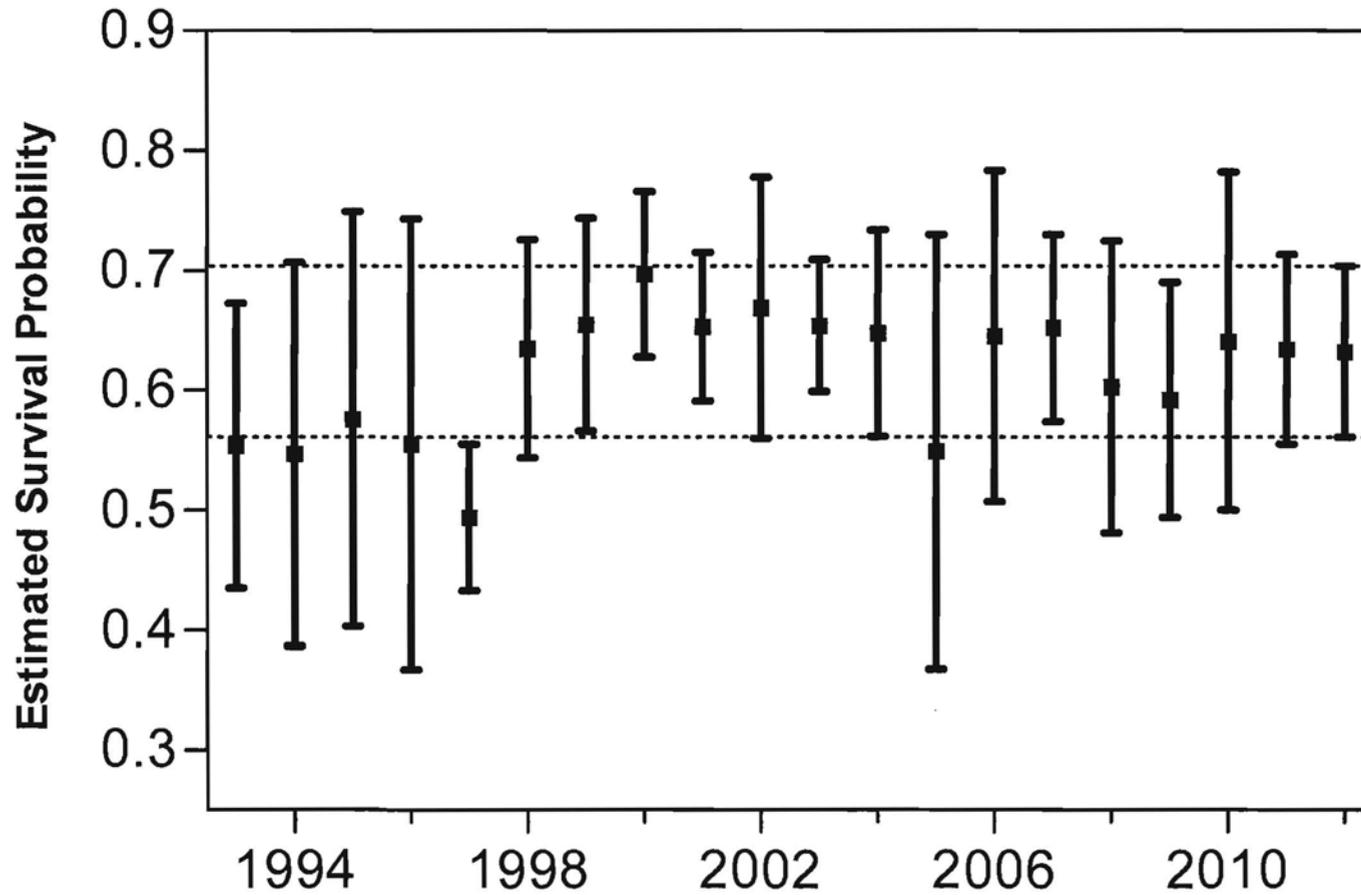


Figure 1. Annual average survival estimates from release to Lower Granite Dam for PIT-tagged yearling **Chinook** salmon released from Snake River Basin hatcheries, 1993-2012. Hatcheries used for average (index groups) are those with PIT-tag releases through a long series of years. Vertical bars represent 95% confidence intervals. Horizontal dashed lines are the 2012 confidence interval endpoints and are shown for comparison to other years.

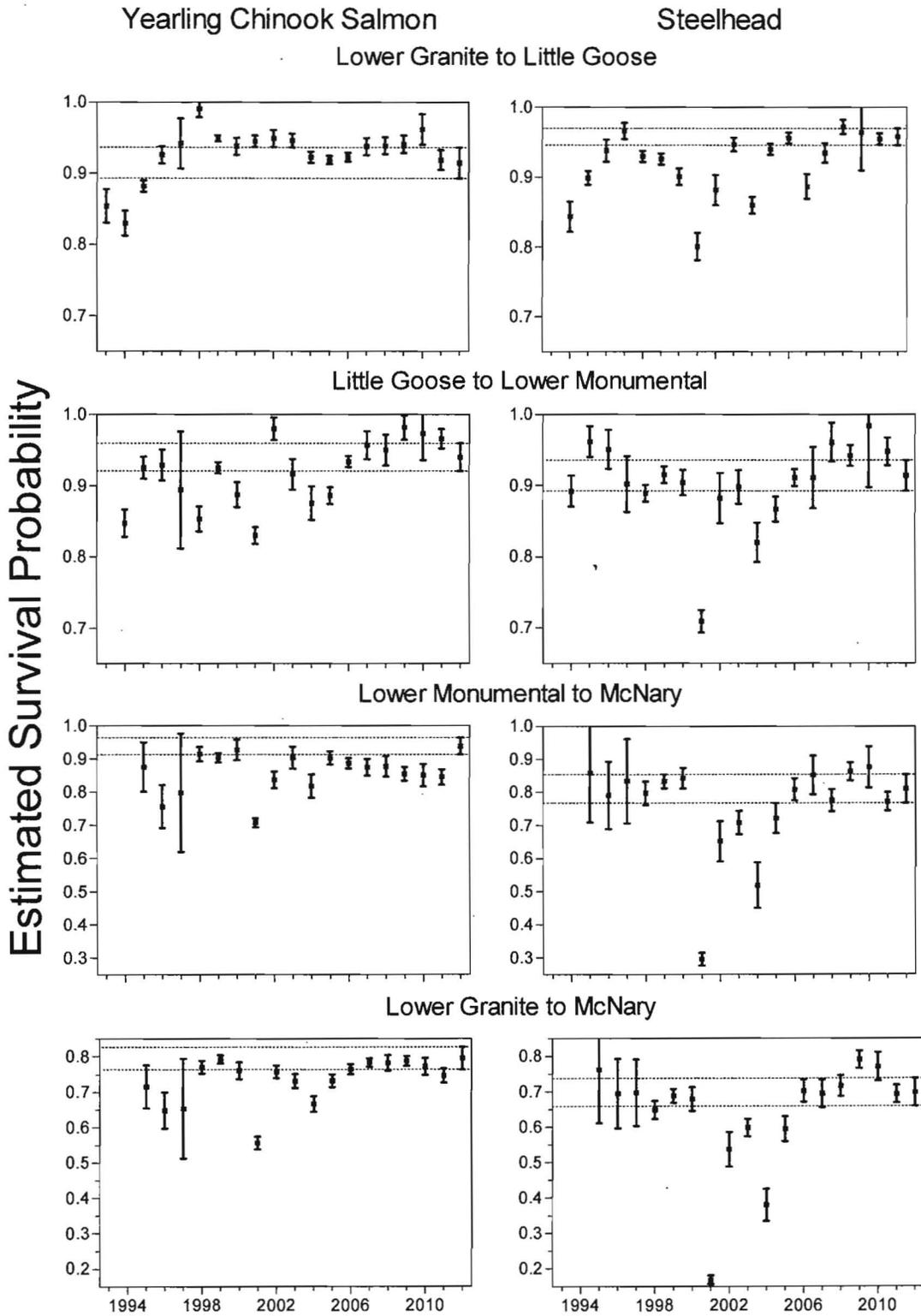


Figure 2. Annual average survival estimates for PIT-tagged yearling **Chinook** salmon and **steelhead**, hatchery and wild fish combined. Vertical bars represent 95% confidence intervals. Horizontal dashed lines are 95% confidence interval endpoints for 2012 estimates.

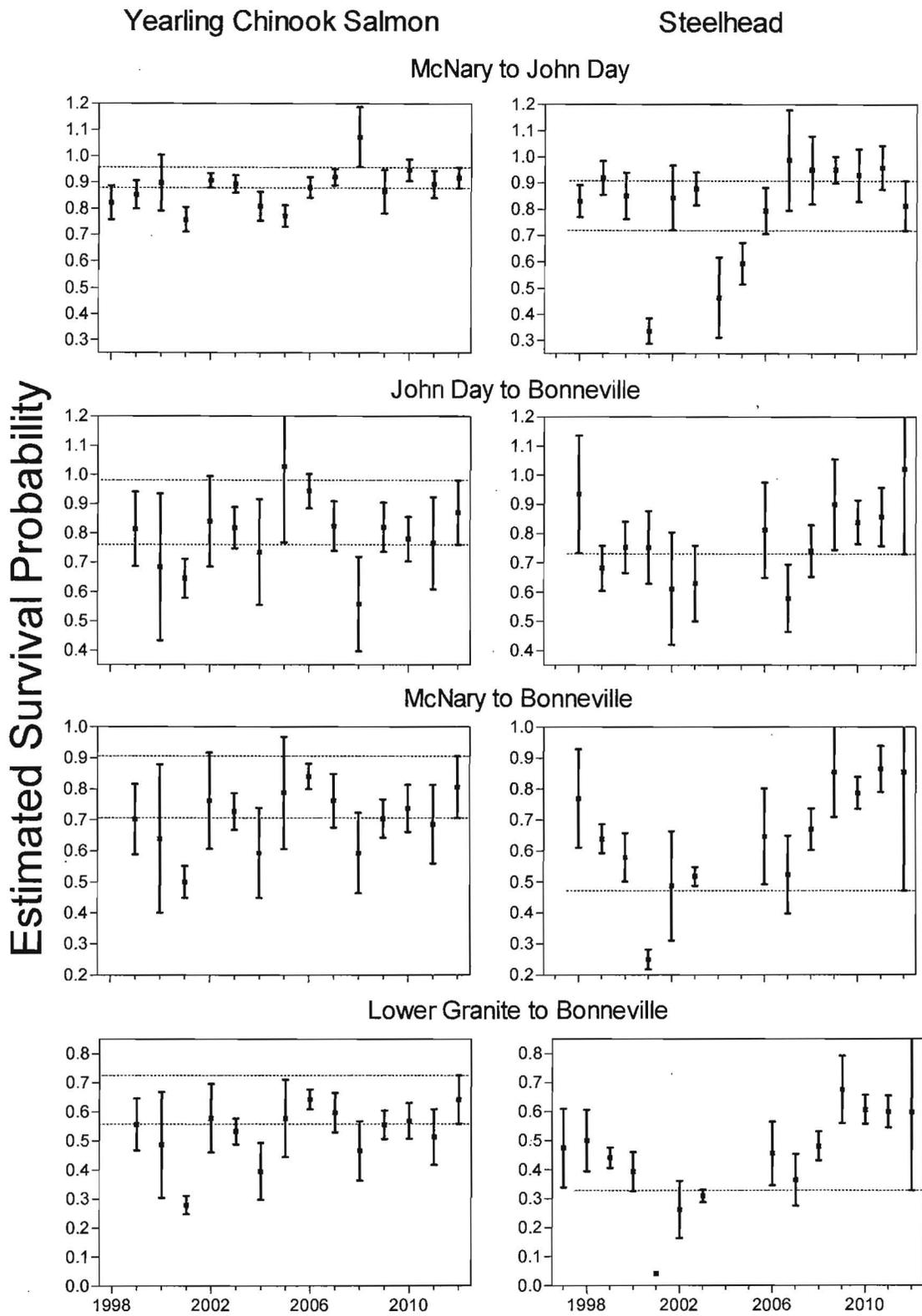


Figure 3. Annual average survival estimates for PIT-tagged yearling **Chinook** salmon and **steelhead**, hatchery and wild fish combined. Vertical bars represent 95% confidence intervals. Horizontal dashed lines are 95% confidence interval endpoints for 2012 estimates.

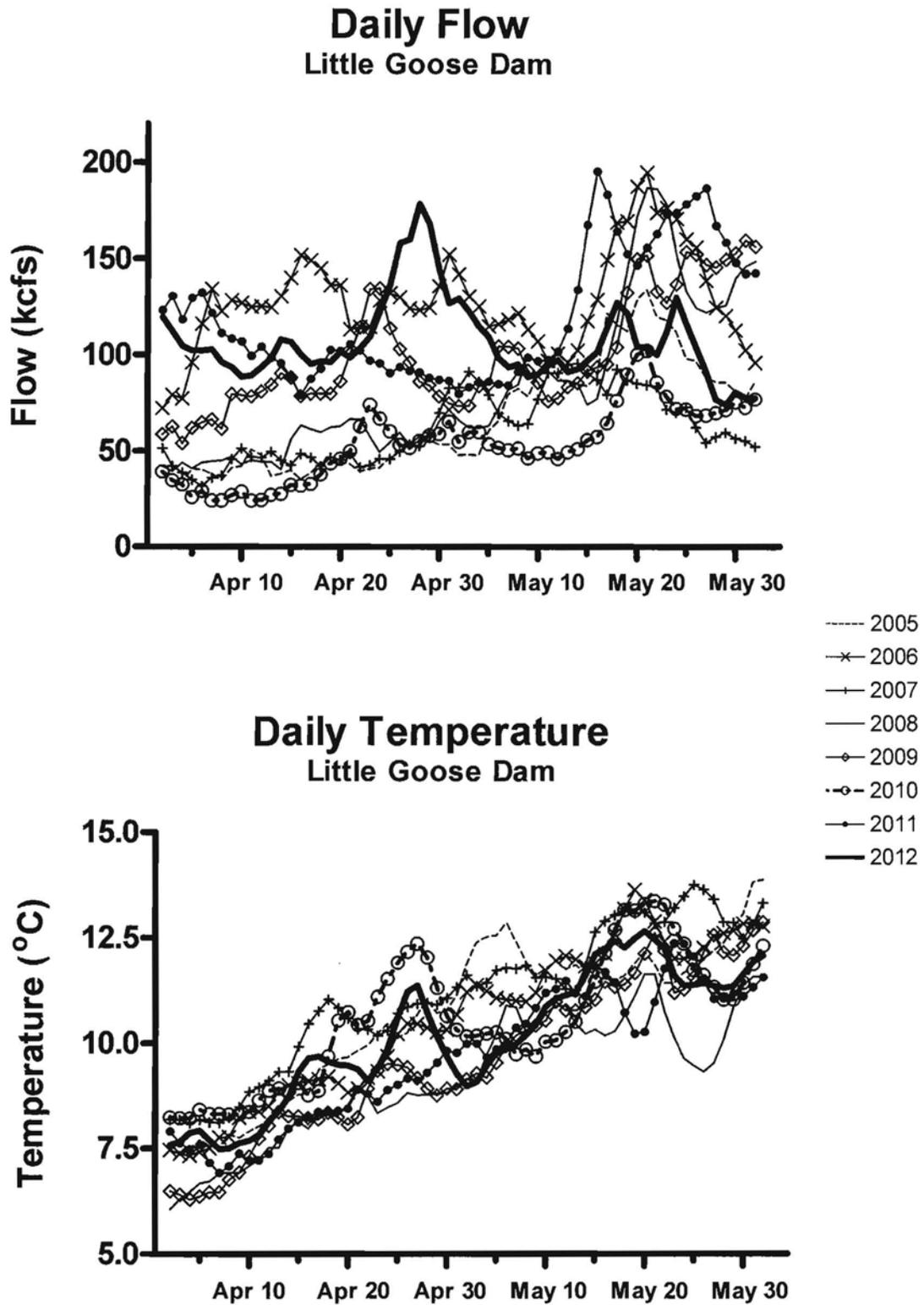


Figure 4. Snake River flow (kcfs; top panel) and water temperature (°C; bottom panel) measured at Little Goose Dam during April and May, 2005-2012.

Mean Spill

LGR, LGO, LMN

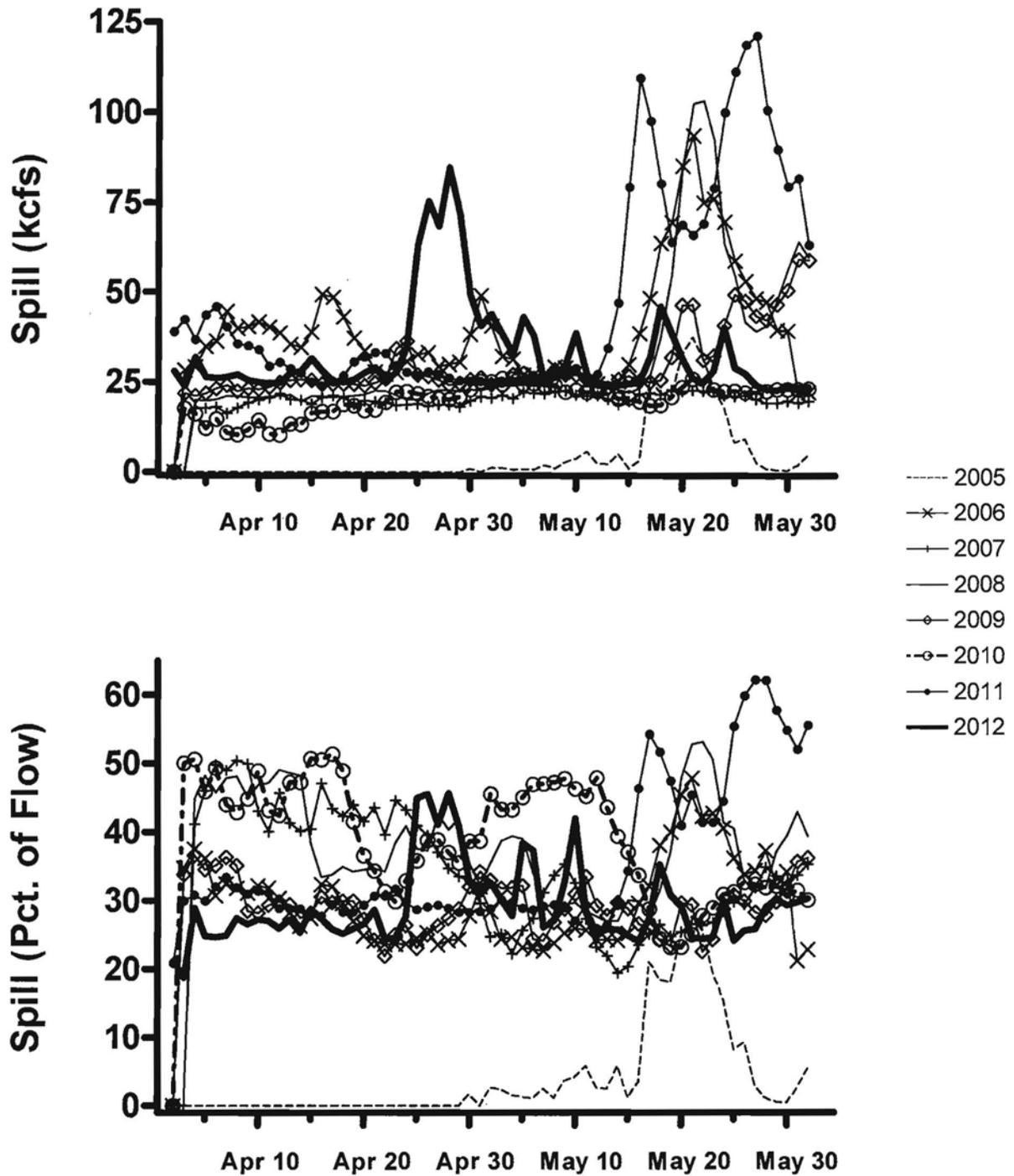
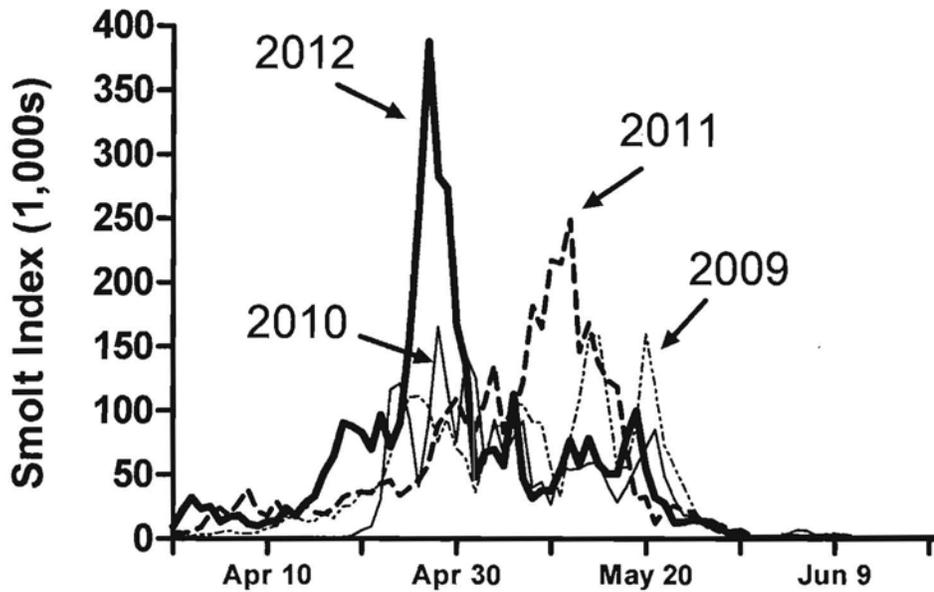


Figure 5. Mean spill (top panel shows kcfs; bottom panel shows percentage of total flow) at Snake River dams during April and May, 2005-2012.

Smolt Passage at Lower Granite Dam

Yearling Chinook



Steelhead

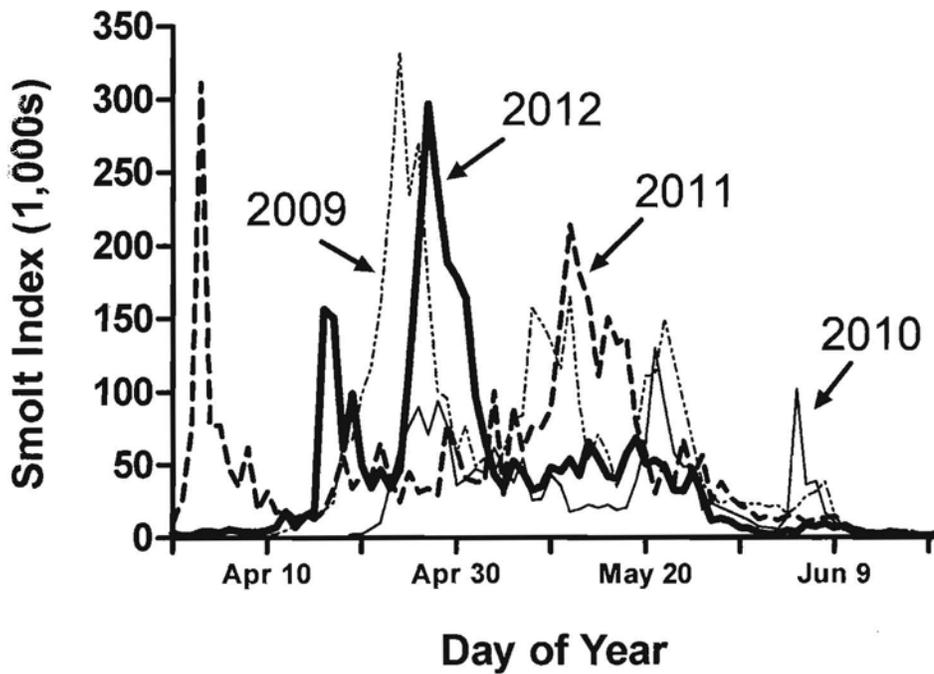


Figure 6. Smolt index in thousands at Lower Granite Dam 2009-2012 for hatchery and wild combined yearling Chinook and steelhead.

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
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Kootenai: Sue Ireland / Billy Barquin
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ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday November 7, 2012 9:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 0971

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*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. Chum Update - Paul Wagner, NOAA Fisheries
3. Other
 - a. Set agenda and date for next meeting - **November 14, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane **BPA:** Tony Norris / Scott Bettin / Robyn MacKay
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Umatilla: Tom Lorz (CRITFC)
COE: Doug Baus / Karl Kanbergs

TMT MEETING

Wednesday November 14, 2012 1:00pm - 4:00pm

1125 N.W. Couch Street, Suite 500, Columbia Room
Portland, Oregon 97209-4142
Map Quest [\[Directions\]](#)

TMT MEETING
Phone Number (877) 336-1274
Access Code 3871669
Security Code 9336

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AGENDA

1. Welcome and Introductions
2. Review October 31 Meeting Minutes
3. Chum Update - Paul Wagner - NOAA Fisheries
4. Operations Review
 - a. Reservoirs
 - b. Fish
 - c. Water Quality
 - d. Power System

5. Other

- a. Set agenda and date for next meeting - **November 28, 2012**
- b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

November 14, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Notes Review

TMT reviewed the 10/31 Facilitator's Summary and Official Meeting Minutes. With no edits, these were considered final.

Chum Update

The salmon managers reported that the last chum count, on 11/6, found 34 live and 1 dead chum in the Ives Island area. The action agencies were continuing to provide an operation to meet the requests of the salmon managers, targeting an 11.5 foot tailwater elevation during the day and releasing excess water at night. TMT discussed that night time flows had gone up as high as 200 kcfs, which the salmon managers were concerned about if it was a trend likely to continue. Tony Norris, BPA, offered that this increase in nighttime flows had resulted from a release from the Mid-Columbia, and likely would not continue.

Everyone agreed to monitor conditions closely and revisit the chum operation on a weekly basis as needed. A conference call was tentatively scheduled for next Wednesday, 11/21, with the option of cancelling the meeting if no operation change is warranted. TMT members will be notified by Tuesday afternoon if the meeting is cancelled, and this notification will also be posted to the day's agenda on the TMT site by 3:00 pm that day.

Operations Review

Reservoirs: John Roache reported on Reclamation projects. Hungry Horse was at elevation 3547.4 feet with 1 kcfs outflows. He noted that the basin had experienced record precipitation in October, which has kept inflows at Hungry Horse up. Grand Coulee was at elevation 1285.8 feet. Doug Baus reported on Corps projects. Libby was at elevation 2447.3 feet, with 23 kcfs outflows. Albeni Falls was at elevation 2055.3 feet, with 18.3 kcfs outflows. Dworshak was at elevation 1521.4 feet, with 1.6 kcfs outflows. Lower Granite outflows were 20.1 kcfs; McNary outflows were 126.9 kcfs and Bonneville outflows were 135.9 kcfs.

Fish: Paul Wagner, NOAA, reported on the fish. Juvenile fall Chinook counts on 10/31, the last day of recording, jumped to 1,492 and 1,068 at Little Goose. Total passage was very good this year. Adult fall Chinook counts at Bonneville were less than 30/day for the last week; the last adult steelhead count at Lower Granite was 483.

Water Quality: Laura Hamilton, Corps, reported that the Corps' water quality data base should be fully converted to the new system by January, no later than 1/30/13.

Power System: Nothing to report at this time.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

November 14, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of USFWS, COE, BOR, BPA, Washington, Oregon, Idaho and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review October 31 Meeting Minutes

There were no comments on either the official minutes or facilitator's notes for October 31.

3. Chum Update

Charles Morrill, Washington, reported that chum have been seen in every survey area above I-205 except Harley Creek. There are about 35 chum present above Bonneville and 2 above The Dalles. Normally, next week would be the peak die-off at Grays River. If the timing of this year's run is late, it might turn out to be a good run. Updated chum spawning data can be found on the TMT website under the Fish Passage Center's spawning data tab.

BPA has done a good job of maintaining an 11.5 foot tailwater elevation below Bonneville during the day, Morrill said. BPA expects to continue to operate within the teletype instructions, but the potential for a high Willamette River elevation complicates the chum operation, Tony Norris said. High Willamette flows impact Bonneville's ability to manage the Bonneville Dam tailwater operation for chum.

Paul Wagner, NOAA, expressed concern about night flows, which have been as high as 200 kcfs, producing a Bonneville tailwater elevation of approximately 16 feet. Norris said the higher flows caused by releases from mid Columbia projects that produced high tailwater elevations at night (up to 17 feet for one hour) have passed. Priest Rapids flows indicate that the mid Columbia PUDs released 150 kcfs, which BPA had to move downriver. While more water of that magnitude is not expected, BPA must continue to reverse load factor in order to maintain the daytime tailwater elevation for chum.

Norris invited the Salmon Managers to review the current operation and discuss any desired changes. The Salmon Managers would prefer to move a bit more water in daytime, Wagner said. Up to 12 feet daytime elevation would be acceptable, as 12 feet and 11.5 feet below Bonneville are synonymous in terms of chum spawning conditions. Norris said he will investigate whether this would take some of the pressure off night

flows. There is reluctance to keep Grand Coulee elevation high at this time of year because it can rain a lot between now and the end of winter, and storage space might be needed. TMT scheduled a tentative conference call on November 21 to revisit the chum operation.

4. Operations Review

a. Reservoirs. Hungry Horse is at elevation 3547.4 feet, which is high for this time of year, with releases of 1 kcfs, as there is enough local flow to meet the 3.5 kcfs Columbia Falls minimum, John Roache, BOR, reported. Hungry Horse is high as a result of record precipitation in October. The current flood control elevation is 3,555 feet, which isn't restrictive. However, the end of December flood control elevation of 3,549.2 feet might require some flood control releases in December.

Grand Coulee is at elevation 1,285.8 feet. Libby is at elevation 2447.3 feet, releasing 23 kcfs.

Albeni Falls is at elevation 2,055.3 feet, releasing 18.3 kcfs. Dworshak is at elevation 1,521.4 feet, releasing 1.6 kcfs. McNary outflows are 126.9 kcfs. Lower Granite outflows are 20.1 kcfs. Bonneville daily average outflows are 135.9 kcfs.

b. Fish. Juveniles: There's not much activity to report this time of year, Wagner said. Juvenile passage at Lower Granite this year ended with a mysterious uptick of 1,492 fish the day before monitoring ended. The same phenomenon occurred at Little Goose.

It's been a good year for subyearling chinook passage at Lower Granite, with 4.5 million fish, Wagner said. There was discussion of hatchery vs. natural production numbers. The combined counts on the FPC website include both marked and unmarked hatchery fish as well as natural production, Russ Kiefer, Idaho, noted.

Adults: Fall chinook are passing Bonneville at the rate of less than 30 per day. Per the zero nighttime generation operation discussed in the water management plan Lower Granite Dam may implement the zero nighttime generation operation when steelhead passage counts drop to 35 per day (or 10 per day for the wild count).

c. Water Quality. Laura Hamilton, COE, reported that the transfer of all water quality data into the new database is expected to be complete by January 30. This will change how the data query website operates. The new database is expected to be more stable and reliable than the old version. Hamilton will give TMT an update when the data transfer is complete.

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

6. Next TMT Meetings

A tentative TMT conference call was scheduled for November 21 to discuss chum, and another on November 28 to discuss the Lower Granite Dam zero nighttime generation operation. The TMT annual review will be held on December 5.

<i>Name</i>	<i>Affiliation</i>
John Roache	BOR
Tony Norris	BPA
Doug Baus	COE
Charles Morrill	Washington
Rick Kruger	Oregon
Russ Kiefer	Idaho
Laura Hamilton	COE
Paul Wagner	NOAA
Tom Lorz	CRITFC

Phone:

David Wills	USFWS
Dave Benner	FPC
Steve Hall	COE Walla Walla
Mike Landau	Snohomish
Don Tinker	SCL
Russ George	WMC
Kim Belotti	PP&L
Richelle Beck	Grant PUD
Barry Espenson	CBB
Rob Allerman	Deutsch Bank
Mike XX	Grant PUD

TECHNICAL MANAGEMENT TEAM

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Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday 21, 2012 9:00am - 12:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 5912

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AGENDA

1. Welcome and Introductions
2. Chum Operation - Paul Wagner, NOAA Fisheries
3. Other
 - a. Set agenda and date for next meeting - **November 28, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
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MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Wednesday 28, 2012 8:00am - 8:30am

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 0936

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AGENDA

1. Welcome and Introductions
2. Chum Operation - Paul Wagner, NOAA Fisheries
3. Other
 - a. Set agenda and date for next meeting - **December 12, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

November 28, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Chum Operations

Today's TMT conference call was convened to discuss a change in operations at Bonneville given high inflows in to the project. Doug Baus, Corps, said he emailed notification to TMT and interested parties yesterday afternoon describing the change:

The AA's will increase the Bonneville Dam tailwater for the chum operation to 14.0 ft. (operating range of 13.5 - 14.5 ft.) today. The previous operation targeted a 12.5 ft. tailwater operation (operating range of 12.2-12.8 ft.). Based on current conditions associated with higher Bonneville Dam inflows as well as NWRFC forecast information it is no longer possible to maintain the previous 12.5 ft. tailwater operation.

Doug added that the project commenced operating within the new operating band (13.5 to 14.5 ft.) at 1600 hours yesterday when the recorded Bonneville Dam tailwater reached 14.2 ft.

TMT members discussed the operation and one member asked if the action agencies had done long term modeling to ensure this elevation could be maintained throughout the season. Tony Norris, BPA, responded that while too early to know for sure, the current ESP analysis did not show any impact to Grand Coulee 4/10 elevation with the current 14.0 ft spawning operation and a 13.5 ft incubation operation through the rest of the chum operation. Also, the action agencies had no other option but to increase the tailwater elevation given the high flows and pending weather conditions.

Operation/Next steps: The action agencies will implement the current operation until further notice. Everyone will monitor conditions closely and agreed to discuss this issue again during a conference call next Tuesday, 12/4 at 3:00 pm PST. If there is no change to conditions or operation, TMT reserves the right to cancel the meeting and will do so with notification out no later than 3:00 pm the previous day, 12/3.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

November 28, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of the COE, BPA, USFWS, CRITFC/Umatilla, Montana, NOAA and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Chum Operations Update

The purpose of today's call was to review the chum operation in light of changes needed to handle higher inflows and forecasted water supply than previously expected. The previous chum operation targeted a 12.5 foot tailwater elevation below Bonneville. Yesterday, the COE issued a teletype to the project targeting a 1-foot band of 13.5-14.5 feet elevation to accommodate the increase in flows.

Tom Lorz, CRITFC, asked about potential impacts on spring flows. Tony Norris, BPA, said an incremental analysis of 54 ESP traces showed that, under present conditions, none of them would impact the ability to meet the April 10 elevation target at Bonneville. The ESP analysis assumed that Bonneville tailwater will remain at elevation 14 feet through December, then drop to 13.5-foot protection levels through the incubation phase of the operation.

3. Next TMT Meeting

A conference call was scheduled for 3 pm Tuesday, December 4, to revisit the chum operation. The TMT annual review will be December 5, and the next regular TMT meeting will be December 12.

Name	Affiliation
Doug Baus	COE
Cathy Rogers	COE
Russ George	WMC
Richelle Beck	Grant PUD
Tony Norris	BPA
Dave Wills	USFWS
Tom Lorz	CRITFC/Umatilla
Brian Marotz	Montana
Paul Wagner	NOAA
Chris Duncan	Jensket
Peter Richardson	Jensket

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
WDFW: Cindy LeFleur / Charles Morrill
Kootenai: Sue Ireland / Billy Barquin
Colville: Sheri Sears / Steve Smith
Umatilla: Tom Lorz (CRITFC)

BPA: Tony Norris / Scott Bettin / Robyn MacKay
USFWS: David Wills / Steve Haeseker
ID: Russ Kiefer / Pete Hassemer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

Friday - November 30, 2012 10:00am - 11:00am

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 1423

**We have had disruptions on the phone because people are not hitting 'mute' after dial in.
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*All members are encouraged to call Robin Gumpert with any issues or concerns they would like to see addressed.
Please e-mail her at rgumpert@cnnw.net or call her at (503) 248-4703.*

Note: Members of the public are encouraged to refer to the Official Meeting Minutes and the TMT agenda links for information re: discussions and decisions made at TMT. Operational decisions that are made outside a TMT meeting will be reported on at the next scheduled meeting and/or linked to the agenda item of the meeting at which it was discussed, as soon as is reasonably possible.

AGENDA

1. Welcome and Introductions
2. Chum Operation - Doug Baus, COE-NWD
3. Zero Nighttime Generation on the Lower Snake River Projects - Tony Norris, BPA
4. Other
 - a. Set agenda and date for next meeting - **December 4, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

November 30, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired and facilitated by Doug Baus, COE. Representatives of the COE, BOR, BPA, NOAA and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Chum Operations

There was agreement at the last TMT meeting (November 27) to target 12.5 feet elevation for chum spawning below Bonneville, with an operating range of 12.2-12.8 feet during daytime, Baus recalled. However, flows continue to be higher than anticipated at Bonneville, so it has become imperative to increase flows for the chum operation.

The Action Agencies (AAs) therefore proposed a daytime operating range of 13.5-15.5 feet elevation, targeting 14 feet below Bonneville. If tailwater exceeded 15.5 ft during daytime hours it would not set a higher chum protection level and the AA's would still be able to resume operation within 13.5 – 15.5 feet. A higher chum protection level would not be established at a higher elevation because: 1) the current range targets optimal habitat and 14 feet tailwater and 2) it may become increasingly difficult to maintain a chum protection level of greater than 13.5 while not compromising the April 10 forebay elevation at Grand Coulee. The maximum evening tailwater elevation will continue to be 18.5 feet in order to minimize day/night flow fluctuations.

Hopefully, this adjustment will maintain the chum operation until TMT convenes again on December 4, Tony Norris, BPA, said. BPA is concerned about uncertainty in forecasted inflows. The adjustment will most likely allow the AAs to avoid spill at Bonneville through December. Any excess flows that can't be moved at night will be moved during the daytime, Scott Bettin, BPA, noted.

Greg Bowers, COE, suggested shortening the span of daytime hours from 6 am-5 pm to 8 am-4:30 pm in order to pass more water. He asked whether spawning at higher elevation levels is a concern. Paul Wagner, NOAA, indicated the next TMT meeting could be a good time to discuss adjustments to daytime hours and he supported the current operation proposed by the AAs.

Baus noted that Sheri Sears, Colville Tribe, although not present today, has voiced via email the tribe's support for the proposed operation. Baus also noted it will give the AAs additional flexibility to avoid jeopardizing repair work now underway in the Bonneville spillway.

The COE will implement the new chum spawning operating range at Bonneville beginning today, Baus said. TMT will revisit chum operations at its next conference call on December 4.

3. Zero Nighttime Generation at Lower Snake Projects

The trigger for zero nighttime generation on lower Snake River projects is soon approaching, Norris said. He and Wagner conferred on what the exact trigger would be now, based on current flows and the number of wild and steelhead passing per day. Wagner reported the steelhead run to date is 30,000 wild fish and a total of 99,000 fish, wild and hatchery combined.

It was unclear during the TMT meeting if steelhead passage had achieved the triggers established to implement the zero nighttime generation operation. TMT will revisit the trigger for zero nighttime generation on its December 4 conference call.

4. Next TMT Meeting

TMT will meet next via phone on December 4 from 3-4:00pm to discuss chum flows and zero nighttime generation on the lower Snake. The TMT annual review will be held in Portland on December 5.

Name	Affiliation
Doug Baus	COE
Mary Mellema	BOR
Rob Allerman	Deutsch Bank
Scott Bettin	BPA
Tony Norris	BPA
Paul Wagner	NOAA
John Rokowsky	XX
Greg Bowers	COE
Bill Proctor	COE
Laura Hamilton	COE
Margaret Filardo	FPC

TECHNICAL MANAGEMENT TEAM

BOR: John Roache / Mary Mellema / Pat McGrane
NOAA-F: Paul Wagner / Richard Dominique
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MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

December 4, 2012 3:00pm - 4:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 2613

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AGENDA

1. Welcome and Introductions
2. Chum Operation - Paul Wagner, NOAA Fisheries
3. Zero Nighttime Generation on the Lower Snake River Projects - Tony Norris, BPA
4. Wintertime Spill Priority List - Doug Baus, COE-NWD
 - a. [Spill Priorit List](#)
5. Other
 - a. Set agenda and date for next meeting - **December 12, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

December 4, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Chum Operation

Doug Baus, Corps, reminded TMT that the chum operation coordinated last Friday (11/30) was a 13.5-15.5 foot tailwater at Bonneville, targeting 14 feet. He reported that since then, increased inflows will require more operating flexibility for the action agencies to manage the system. To do this, the action agencies proposed to shift the current operation to the following:

1. Continue to maintain the 13.5 minimum tailwater during all hours.
2. Make best efforts to continue to maintain the daytime 13.5 to 15.5 tailwater targeting to 14.0 foot tailwater.
3. If unable to maintain #2 above then pass up to a maximum of 18.5 feet during the nighttime.
4. If unable to maintain #3 above then pass up to a maximum of 18.5 feet during the daytime.
5. If unable to maintain #4 above then operate to full powerhouse plus operation of the B2CC. The goal of this is to avoiding spilling that would delay the spillway repair work that is currently underway.

Doug noted that ongoing repair work on the Bonneville spillway has been coordinated with the region and is a high priority project, so the action agencies are trying to avoid spill at the project which would force the crews to be pulled and delay the repair work. He also added a caveat that the corner collector might need to be turned off if necessary for crew safety reasons. Tony Norris, BPA, added that flows in to Bonneville are currently around 200 kcfs and the tailwater elevation is 17.5 feet.

Paul Wagner, NOAA, said FPAC discussed this, and there were no objections from the salmon managers to the action agencies' proposed operation. They see there are no other options given the high inflows. Charles Morrill, Washington, asked about the action agencies' best read on how long it will take to move the excess water that is current and pending in to the system. The action agencies said they don't know given forecast uncertainty, but it could be through December. He also asked about the potential opportunity to study steelhead movement while the corner collector is turned on for this operation.

Action: Scott Bettin, BPA, will check in to this possibility with the project and share information with TMT next week.

Action: The Corps shared that work is progressing on the spillway repair. They

will share more information and provide a schedule update during next week's TMT call.

Operation/Next steps: The action agencies will implement the operation they described today, until further notice. Everyone will monitor conditions closely and agreed to discuss this issue again during a conference call next Wednesday, December 12 at **8:00 am (NOTE the earlier start time!)**.

Zero Nighttime Generation on the Lower Snake River Projects

Tony Norris, BPA, reported that adult passage numbers are not low enough to trigger the start of zero nighttime generation on the Lower Snake River, and Paul Wagner, NOAA, confirmed this with specifics: The 'trigger' is a three-day average count for wild steelhead (currently, the number is 10) and combined steelhead (currently, the number is 35) based on a composite count. The most recent three-day count was 30 wild and 88 combined, so the trigger had not yet been met. Paul also said the composite numbers are approaching 100,000-150,000 which would increase the 3-day average daily count trigger to 50/day for combined steelhead.

Action/Next Step: The action agencies will coordinate with NOAA on this operation. Specifically, when the criteria are met, Paul will notify the action agencies and this will trigger them to begin the zero nighttime generation operation. TMT will receive an update during next week's call.

Wintertime Spill Priority List

Doug Baus, Corps, said the current list has been posted and is set to expire at the end of December. Today, the action agencies proposed to continue the same spill priority list order beyond December in to 2013, and gave the salmon managers a chance to request a change to the list. TMT will check in on the list next week after the salmon managers have a chance to review and discuss it.

Next Meeting: Note new time! December 12 conference call 8:00 am

Agenda items include:

- Chum Operations
 - Current weather conditions and operation
 - Update on spillway repair work schedule
 - Update on potential opportunity to study steelhead movement while CC is being used for operation
 - Plan forward
- Zero Nighttime Flow on Lower Snake River Projects
- Wintertime Spill Priority List

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

December 4, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of BPA, NOAA, Washington, the COE, BOR, Salish-Kootenai Tribe, CRITFC/Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Chum Operations

Coordination of the chum operation over the past week settled on an operating range of 13.5-15.5 feet elevation in the Bonneville tailwater for chum spawning, with a daytime target elevation of 14 feet, Baus recalled.

Because flows continue to increase at Bonneville, the Action Agencies proposed the following operation.

1. Continue to maintain the 13.5 minimum tailwater during all hours
2. Make best efforts to continue to maintain the daytime 13.5 to 15.5 tailwater targeting to 14.0 foot tailwater.
3. If unable to maintain #2 above then pass up to a maximum of 18.5 feet during the nighttime.
4. If unable to maintain #3 above then pass up to a maximum of 18.5 feet during the daytime.
5. If unable to maintain #4 above then operate to full powerhouse plus operation of the B2CC. The goal of this is to avoiding spilling that would delay the spillway repair work that is currently underway.

Baus noted that if the corner collector is operating it may have to be shut off for short periods in order to facilitate safe transit across the tailrace for the contractor working in the tailrace. The project is currently passing 190 kcfs with a tailwater elevation of 17.5 feet.

Charles Morrill, Washington, asked how long it will take to get rid of the extra water that's coming. Forecast uncertainty makes that a difficult question to answer, Scott Bettin, BPA, replied.

TMT scheduled a conference call at 8 am, December 12, to follow up on the chum operation. At that time, Baus will provide a more detailed update on the spillway repair project. Bettin will also report on operation of the PIT tag detection system at that meeting.

3. Zero Nighttime Generation at Lower Snake Projects

The trigger for zero nighttime generation on lower Snake River projects has not yet been reached, Paul Wagner, NOAA, reported. Based on the 2012 steelhead passage count of 99,850 fish from April 15 to date, the trigger will be 35 fish combined passing Lower Granite, or 10 wild fish as a 3-day average for the past 3 days. At present the 3-day average is around 30 fish. However, Wagner noted that the trigger may change if the total steelhead count exceeds 100,000 fish, which seems likely. At that point, the trigger would rise to 50 fish and 10 wild fish as a 3-day average for the past 3 days.

There was agreement that Wagner will notify the Action Agencies when the trigger for the zero nighttime generation operation has been reached. If that happens before the next meeting on December 12 – which Wagner deemed unlikely – the Action Agencies will notify TMT members via email.

4. Wintertime Spill Priority List

The current wintertime spill priority list is set to expire on December 31, Baus said. In light of the approaching holidays, the COE proposed to extend the same spill order (posted) into January: Bonneville, The Dalles, John Day, McNary, Ice Harbor, Lower Monumental and finally Lower Granite. Baus noted that spill would not actually occur at Bonneville due to spillway repairs underway, although Bonneville appears at the top of the list. He asked the Salmon Managers to begin thinking now about spill priorities and be prepared to provide feedback on this list at the next TMT call December 12.

There was discussion of the point at which spill would have to occur at Bonneville despite the repairs. Current turbine capacity is 200 kcfs right now, plus 5 kcfs for the corner collector, Tony Norris, BPA, replied. Flows in excess of 225 kcfs would therefore result in forced spill at Bonneville.

4. Next TMT Meeting

TMT will meet next via phone on December 12 at 8am. The agenda will include updates on the chum operation, Bonneville spillway repairs and zero nighttime generation on the lower Snake River.

Name	Affiliation
Tony Norris	BPA
Scott Bettin	BPA
Agnes Lut	BPA
Paul Wagner	NOAA
Charles Morrill	Washington
Doug Baus	COE

John Roache	BOR
Greg Bowers	COE
Laura Hamilton	COE
Barry Espenson	CBB
Stu Leavitt	Salish-Kootenai
Bruce McKay	Consultant
Jeff Richter	Energy GPS
Richelle Beck	Grant PUD
Peter Richardson	XX
Tom Lorz	CRITFC/Umatilla

SPILL PRIORITY LIST - Effective December 4, 2012 through February 28, 2013.

LEVEL 1 – up to the 110% TDG STANDARD¹		
PRIORITY ORDER	PROJECT	SPILL ESTIMATE (KCFS)
01	BON	105
02	TDA	45
03	JDA	20
04	MCN	48
05	IHR	25
06	LMN	18
07	LGS	18
08	LWG	20
09	DWR	35% of total flow
10	CHJ	25
11	GCL	0 (OT) or 5 (DG) ²

LEVEL 2 – up to 115% TDG		
PRIORITY ORDER	PROJECT	SPILL ESTIMATE (KCFS)
12	BON	120
13	TDA	60
14	JDA	80
15	MCN	80
16	IHR	35
17	LMN	23
18	LGS	23
19	LWG	30
20	CHJ	61
21	GCL	5 (OT) or 10 (DG) ²

LEVEL 3 – up to 120% TDG		
PRIORITY ORDER	PROJECT	SPILL ESTIMATE (KCFS)
22	BON	140
23	TDA	135
24	JDA	144
25	MCN	140
26	IHR	75
27	LMN	44
28	LGS	52
29	LWG	45
30	CHJ	189
31	GCL	10 (OT) or 15 (DG)

LEVELS 4-7 (125%, 127%, 130%, and 135% TDG, respectively): Same project Priority Order as in Level 3.

¹ Outside of Fish Passage Season, the Clean Water Act standard for total dissolved gas (TDG) is ≤110% at all projects.

² Spill at GCL is either through the outlet tubes (OT) or the drum gates (DG), depending on reservoir elevation. Spill through the OT produces more TDG.

TECHNICAL MANAGEMENT TEAM

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NOAA-F: Paul Wagner / Richard Dominique
OR: Rick Kruger
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ID: Russ Kiefer / Pete Hassemmer
MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

December 12, 2012 8:00am - 9:00am

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 5018

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AGENDA

1. Welcome and Introductions
2. Chum Operation - Doug Baus, COE-NWD
3. Zero Nighttime Generation on the Lower Snake River Projects - Paul Wagner, NOAA Fisheries and Tony Norris, BPA
4. Wintertime Spill Priority List - Doug Baus, COE-NWD
 - a. [Spill Priority List](#)
5. Other
 - a. Set agenda and date for next meeting - **December 19, 2012**
 - b. [\[Calendar 2012\]](#)

Questions about the meeting may be referred to:

[Doug Baus](#) at (503) 808-3995

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

December 12, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Chum Operation

Doug Baus, Corps, reminded TMT that the chum operation coordinated last week (12/4) was as follows:

1. Continue to maintain the 13.5 minimum tailwater during all hours.
2. Make best efforts to continue to maintain the daytime 13.5 to 15.5 tailwater targeting to 14.0 foot tailwater.
3. If unable to maintain #2 above then pass up to a maximum of 18.5 feet during the nighttime.
4. If unable to maintain #3 above then pass up to a maximum of 18.5 feet during the daytime.
5. If unable to maintain #4 above then operate to full powerhouse plus operation of the B2CC. The goal of this is to avoiding spilling that would delay the spillway repair work that is currently underway.

Given the continuing high flows, the Action Agencies preferred to maintain this operation over the next week. Doug reported specifically that yesterday's day average outflows were 203 kcfs and tailwater elevations ranged from 15-19 feet. Paul Wagner, NOAA, said on behalf of FPAC the salmon managers had no objections. They see there are no other options given the high inflows. Charles Morrill, Washington, said the surveys have been very challenging but he would relay any new data about the chum as it is available.

Action: *(This is carry over from the 12/4 TMT meeting: Scott Bettin, BPA, had offered to check in with the project as to the possibility of studying steelhead movement while the corner collector is turned on for this special operation.)*

Action: *(Also carry over from the 12/4 TMT meeting: The Corps shared that work is progressing on the spillway repair. They will share more information and provide a schedule update during next week's TMT call.)*

Operation/Next steps: The action agencies will implement the operation described above, until further notice. Everyone will monitor conditions closely and agreed to discuss this issue again during a conference call next Tuesday, December 18 at **2:00 pm** (NOTE the different day and start time!).

Zero Nighttime Generation on the Lower Snake River Projects

Paul Wagner, NOAA, said the criteria for implementing zero night time generation on the Lower Snake projects had not been met, and in fact numbers of passing steelhead had gone up since last week's report. The most recent three-day count was 72 wild and 332 combined, and the triggers were 10 and 50, respectively.

Action/Next Step: The action agencies will coordinate with NOAA on this operation. Specifically, when the criteria are met, Paul will notify the action agencies and this will trigger them to begin the zero nighttime generation operation. TMT will receive an update during next week's call.

Wintertime Spill Priority List

The salmon managers had a chance to review the current spill priority list and offer any changes. At this time, they did not request any changes, though noted that while Bonneville is at the top, it won't actually be the first priority given the special operation currently being implemented. Doug Baus, Corps, acknowledged this and said the action agencies will always defer to special operations before using this list; and that to be efficient, they will not revise the list to reflect special operations as they occur throughout the year. TMT will revisit the spill priority list in January or February, 2013.

Next Meeting: December 18 conference call 2:00 pm

Agenda items include:

- Chum Operations
 - Current weather conditions and operation
 - Update on spillway repair work schedule
 - Update on potential opportunity to study steelhead movement while CC is being used for operation
 - Plan forward
- Zero Nighttime Flow on Lower Snake River Projects

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

December 12, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of the COE Washington, NOAA, Idaho, BOR and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Wintertime Spill Priority List

Yesterday FPAC members discussed the current spill priority list and concluded it should remain in effect for the rest of the winter season, Wagner reported. Although Bonneville is at the top of the list, it will not actually be called into service while spillway repairs are underway. The Action Agencies are aware that special operations take precedence over the list, and it would be inefficient to revise the order each time a special operation takes place, Baus said.

3. Chum Operations

Last week TMT coordinated the chum spawning operation as a range of 13.5-15.5 feet elevation in the Bonneville tailwater, with a daytime target elevation of 14 feet and a minimum of 13.5 feet, Baus recalled.

Flows continue to be high at Bonneville. Yesterday the day average outflow was 203 kcfs with an hourly tailwater elevation range of 15-19 feet. As of 7 am this morning, Bonneville outflows were 165 kcfs and the tailwater elevation was 16.3 feet.

Therefore the Action Agencies proposed to continue the current operation. Wagner and Charles Morrill, Washington, both said that would be acceptable and acknowledged this is the best the Action Agencies can do, given high Bonneville inflows.

High tailwater elevations and weather conditions have made it impossible to date for field crews to survey chum spawning, Morrill reported. Populations above I-205 may have peaked early this year, but that can't be confirmed until detailed surveying is possible. The next scheduled survey date is December 18, if weather conditions allow. Morrill expects to have an update for TMT on the state of chum spawning by the end of this week or early next week. TMT scheduled a follow-up conference call on this operation for 2 pm, December 18.

4. Zero Nighttime Generation at Lower Snake Projects

The steelhead passage count at Lower Granite from June 1 to date has exceeded 100,000 fish. This raises the trigger for zero nighttime generation on lower Snake River projects to 50 marked and unmarked steelhead at Lower Granite and 10 wild (unmarked) fish. The previous trigger was 35 marked and unmarked and 10 wild fish.

The latest three-day running average count was 232 marked and unmarked fish and 72 wild fish, so zero nighttime generation is a long way off, Wagner observed. TMT will revisit this issue on its next conference call. If the trigger to implement the operation is achieved prior to the next TMT meeting the Action Agencies will implement the operation and coordinate with Wagner and provide the TMT with notification.

4. Next TMT Meeting

TMT will meet next via phone at 2 pm, December 18, to discuss chum operations and zero nighttime generation on the lower Snake River.

Name	Affiliation
Doug Baus	COE
Charles Morrill	Washington
Paul Wagner	NOAA
Russ Kiefer	Idaho
John Roache	BOR
Russ George	WMC
Bruce McKay	consultant
Don Tinker	Seattle City Light
Barry Espenson	CBB
Richelle Beck	Grant PUD
Mike XX	Chelan PUD

TECHNICAL MANAGEMENT TEAM

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MT: Jim Litchfield / Brian Marotz
Spokane: Deanne Pavlik-Kunkel / Andy Miller
Nez Perce: Dave Statler

COE: Doug Baus / Karl Kanbergs

TMT CONFERENCE CALL

December 18, 2012 2:00pm - 3:00pm

CONFERENCE CALL INFORMATION

Phone Number (877) 336-1274
Access Code 3871669
Security Code 8319

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AGENDA

1. Welcome and Introductions
2. Chum Operation - Doug Baus, COE-NWD
3. Zero Nighttime Generation on the Lower Snake River Projects - Paul Wagner, NOAA Fisheries and Tony Norris, BPA
4. Other
 - a. Set agenda and date for next meeting - **December 26, 2012**
 - b. [\[Calendar 2012\]](#)

*Questions about the meeting may be referred to:
[Doug Baus](#) at (503) 808-3995*

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

December 18, 2012

DRAFT Facilitator's Summary

Facilitator: Robin Gumpert

The following notes are a summary of issues that are intended to 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.

Chum Operation

Doug Baus, Corps, reminded TMT that the chum operation coordinated last week has continued. Based on today's chum surveys, which found 2 dead and no live chum, the action agencies proposed transitioning to a chum incubation operation this Friday, 12/21, with a 13.5 foot minimum tailwater elevation as a hard constraint at Bonneville. Paul Wagner, NOAA, and the salmon managers agreed with this plan forward given the chum counts and flows. With no objections, the Corps said they would issue a teletype to initiate the operation on 12/21. Doug also reported that tests at PH2 were planned for tomorrow to prepare for installation of a Lamprey Passage Structure (LPS). This would likely limit tailwater ranges but would stay within the parameters of the chum incubation operation. It was also noted that a trap at Duncan Creek will be removed tomorrow if possible – and if not possible due to unsafe conditions – a lower tailwater of 11.7 ft will be provided on 12/26 to allow the crew to pull the trap. Charles Morrill, WA, said if all goes well, it should take no more than 3 hours to pull the trap.

Zero Nighttime Generation on the Lower Snake River Projects

Paul Wagner, NOAA, said the steelhead passage criteria for implementing zero night time generation on the Lower Snake projects had not yet been met, but because the Lower Granite ladder was out of service for maintenance (which had been coordinated through FPOM), he coordinated with the action agencies to initiate zero nighttime generation. Russ Kiefer, Idaho, raised concerns about this, saying the planned maintenance should not occur while fish are still passing or disrupt passage, and he and the salmon managers would take this up with FPOM during a scheduled meeting this Thursday, 12/20.

Libby Operations

Tom Lorz, CRITFC/CTUIR, noted the water supply forecasts from the Corps and RFC were divergent to the point of implicating different flood control management scenarios at Libby. He asked the Corps to share their plan. Joel Fenolio, Seattle District Corps, said that with WSF and snow pack, their overall prediction is 102% of normal for Jan. 1. The December 1 Corps' WSF for Libby is 6238 kaf (106% of normal), full draft at the end of December is called for if the WSF is greater than 5900 kaf. Looking ahead, using the parameters for the January forecast, the Corps 'early bird' prediction is showing about 6339 kaf, which also supports continuing to draft to 2411' at Libby in December. Joel also relayed that their meteorologist was predicting two storms over the next week, which will take the water supply even higher – so he felt very comfortable targeting 2411' this year. He added that there is scheduled maintenance (resulting in two units out of service)

at Libby from 1/7 through 3/31 that the Corps will accommodate this year since it has been postponed for the previous two years, and that this is another reason the Corps does not want to relax the end of December draft . Tom Lorz acknowledged the Corps' explanation and said the salmon managers would have preferred the Corps wait at least to see if the two pending storms actually hit.

Next Meeting: January 9, Face to Face 9:00 am

An agenda will be developed early in the New Year.

Happy Holidays everyone!!

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

December 18, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT conference call was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of NOAA, Washington, BPA, COE, BOR, Idaho and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Chum Operation Update

Baus reported that the COE continues to implement the chum spawning operation as agreed upon at the last TMT meeting, with a tailwater elevation range of 13.5-15.5' below Bonneville while targeting elevation 14'. Given that WDFW conducted a survey today that found 2 dead chum and no live ones, the Action Agencies proposed a transition to the incubation phase beginning December 21. This would set a hard constraint of a 13.5' tailwater elevation below Bonneville. Baus asked TMT members for comments on the proposal.

Paul Wagner said **NOAA** would support it. This year's chum run was early, with no indications of a second wave of fish, as is sometimes seen. Charles Morrill said that **Washington** wouldn't have a problem initiating the incubation phase given current flows.

Baus reported there will be a test tomorrow at Bonneville powerhouse 2 in order to determine if hydraulic conditions will allow for the installation of the lamprey passage structure. While the test is underway, the project will continue to operate within the constraints of the chum spawning teletype. The current tailwater elevation of 18' during daytime hours may decline to 14.5' but will go no lower than 13.5' during testing. Tomorrow WDFW will attempt to pull the trap at Duncan Creek. If that attempt is unsuccessful due to high flows the Action Agencies will lower the Bonneville tailwater down to approximately 11.7' so WDFW may remove the trap on December 26. TMT will revisit the chum operation at its next meeting on January 9.

3. Zero Nighttime Generation on the Lower Snake River Projects

The criteria for initiating the Zero Nighttime Generation Operation at Snake River projects was a 3-day running average of less than 50 combined (marked and unmarked) steelhead and 10 unmarked steelhead passing Lower Granite, Wagner recalled. The latest 3-day running average reported was 70 fish combined, Margaret Filardo, FPC, reported. Although the criteria have not been met, the fish ladder at Lower Granite closed on December 17 for annual

maintenance, which was coordinated through FPOM. The maintenance will continue through February 28.

Russ Kiefer, Idaho, said the ladder closure does not mean the criteria for zero nighttime generation have been met, but this was the date coordinated in a previous FPOM meeting. Russ will express this concern at the next FPOM meeting that is scheduled for December 20. Tom Lorz, CRITFC, noted that historically the ladder is taken out of service on December 20 for 3 months at Lower Granite every year. FPOM may continue the discussion of whether this is the best maintenance schedule.

Scott Bettin, BPA, proposed that under the circumstances, zero nighttime flows begin tonight. **NOAA** and **Idaho** voiced no objection. Today the Action Agencies will inform the Snake River Projects they may implement the Zero Generation Operation between December 18 and February 28, 2013.

4. Libby Operations Update

Lorz pointed out that the COE and RFC forecasts for Libby seem to be divergent, indicating two different courses of action. Joel Fenolio, COE Seattle, reported that the RFC's ESP traces for Libby have been around 90% of average, but snowpack is running from 80-126% of average in the basin. The current draft target is 2411 ft for 31 December. The early bird forecast for January is for 6339 kaf (107% of normal) which calls for drafting to elevation 2409' by 31 January. The current snowpack in the Kootenai Basin is 102% of normal for January 1 and that the Corps forecast of 107% of normal is the most appropriate forecast.

However, two significant storms are expected to pass over the basin in the next week, which could increase volume. The forecast could rise from 6600 kaf to 7000 kaf or higher, which would involve drafting below 2400' at the end of January. Furthermore, two units are scheduled to go offline from January 7-March 31. Current indications are that this could be a wet year. The COE has already relaxed the forecast by about 400 kaf in December. Therefore, the COE does not plan to relax the end of December draft.

Lorz didn't support using the December forecast as an indicator of how deep to draft Libby. He recommended waiting to see what the storms bring this week, and said he's not optimistic this will be a big water year. Given that precipitation was above average in November and December, Fenolio said he had no problem drafting Libby to 2411'. Given today's numbers and the scheduled unit outages, Libby should be required to draft to at least 2409' by end January and possibly to below 2400 ft. If there's no increase in snowpack amounts over the next 10 days, Karl Kanbergs, COE, said, that means there would be no need to draft Libby in January.

5. Next TMT Meeting

TMT will meet next on January 9.

<i>Name</i>	<i>Affiliation</i>
Paul Wagner	NOAA
Charles Morrill	Washington
Scott Bettin	BPA
Doug Baus	COE
Joel Fenolio	coe
Adam Price	COE
Margaret Filardo	FPC
Bruce McKay	Consultant
Russ Kiefer	Idaho
Richelle Beck	Grant PUD
John Roache	BOR
Karl Kanbergs	COE
Tom Lorz	CRITFC