

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

April 28, 2010

FACILITATOR'S SUMMARY NOTES

Facilitator: Erin Halton

Notes: Christa Leonard

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 of Meeting Minutes for April 21, 2010

There were no changes offered to either the facilitator's summary or the official meeting minutes.

Action/Next Steps: The group will revisit and finalize these minutes at the next TMT meeting on 5/5.

Updated Weather and Flood Control Forecasts

Steve Barton, COE, directed TMT to two maps, both posted as links to the agenda. The mid-month forecast was issued on 4/22 by the River Forecasting Center and reported no major changes. Barton noted that the final and early bird forecasts assumed normal precipitation as of April 26th. Currently, the basin as a whole is near to above normal with Grand Coulee at 88%, Snake at 124% and The Dalles at 108% of normal. He reported updated water supply volumes as 64% of normal at The Dalles (June-July), 72% at Grand Coulee (June-July) and 54% of normal for the Snake (April- July). As to the snow pack data, conditions have been cool and moving towards normal, but Barton noted that calculations and statistics have been volatile. He reported that some areas are below to much below normal, but that there are areas with melt conditions and some run-off. Region-wide, a few areas are below 50% of average and much of the region is in the 50-79% of average range. Barton also shared that the ICF was declared as of 4/27, marking the initiation of refill operations at all projects may commence.

Action/Next Steps: This item has been discontinued from future TMT agendas for the time being.

Hanford Reach Update

Russell Langshaw, Grant County PUD, directed TMT to a link, posted to the agenda, which included the previous two weeks' operational data from 4/12- 4/25 (updated data to be posted to the TMT agenda later today). The mean daily discharge was 61.3-114.7, daily maximums were 61.5-120.5, daily delta constraints were 20-40 kcfs and the daily delta was .3-29.2 kcfs. He reported that the first week of protection flows had mean flow deltas of 1.5 kcfs and the second week the mean delta was 20.8 kcfs. He noted that operations have been tight, but that flows were picking up. He further noted that operations are half way through weekend minimum protections (two more weekends to go), with 947 temperature units and that emergence is projected to be done in five days.

Action/Next Steps: Langshaw will provide another update to TMT in two weeks.

B2CC Update

Steve Barton, COE, recalled that as of last week's TMT meeting, the B2CC was closed and the COE was waiting for the high winds to die down to re-open. It re-opened at 31300 on 4/22, but was closed again Monday (4/26) morning due to safety issues surrounding a broken Boat Exclusion device; Barton reported that the B2CC reopened at 10:45 yesterday. He reminded TMT that next year a crane lift is expected to be in place, which will support easier opening/closing of the corner collector.

Action/Next Steps: Barton will update TMT on any activities surrounding the corner collector as necessary.

Spring Treaty Fishing – SOR #2001-C-1

Tom Lorz, CRITFC, detailed for TMT SOR 2010-C-1 posted as a link to the agenda. This SOR marks the beginning of the 2010 Spring Tribal Fishing season. The SOR requested a 1.5' band at Bonneville, John Day and The Dalles pools from 0600 Tuesday 4/27 to 1800 Thursday 4/29. While SOR's are typical this time of year it was noted that the 1.5' band is different than in past years and Lorz explained that it aids in the net setting operations. The COE thanked CRITFC for putting together a very implementable SOR.

Action/Next Steps: The COE will implement the SOR as written; Lorz will report on Treaty Fishing at the next TMT meeting on 5/5.

Libby Phase 2 Discussion

Steve Barton and Joel Fenolio, COE, recapped for TMT the options for Phase 2 of operations at Libby Dam. Barton and Fenolio reviewed power point slides that described the specifics of the options for TMT to consider, noting that the latest water supply data had been incorporated into a new "Alternative 1 modified." They also clarified that sturgeon operations can't begin until May 28th, when all five units of Libby will be available. The COE originally proposed to keep Libby Dam discharge at project minimums (4 kcfs) until the VARQ flows commence, on or about 6/1. The COE said that alternative 1 has now been modified with updated information and that the volume of water stored behind Libby Dam that would otherwise have been released above minimums between the start of refill (April 17th) and the beginning of VARQ flows would be released either by the end of June (Alternative 1) or the end of August (Alternative 2). The COE made the following distinctions for the two "alternative" operations:

Alternative 1 (modified) (release stored volume by the end of June) provides for a volume neutral condition at Libby Dam within spring and minimal impact to Grand Coulee Dam's ability to provide spring and summer flow augmentation in the amounts under the base VARQ operation at Libby Dam. The latest model guidance suggests no significant impact to Grand Coulee refill or spring/summer flow augmentation objectives. The latest results also indicate that the maximum volume that could be stored under this alternative is 260 KAF due to the limited discharge capability and time between the end of the sturgeon operation and June 30. It is estimated that Libby would reach 260 KAF remaining at minimum discharge until approximately May 10, at which time the project

would increase discharge to those derived under the VARQ procedure. Fenolio clarified that it may not be possible to get all 260 KAF out by June 30th. There may be limitations due to hydrologic conditions, maximum outflow constraints at the dam, or other unforeseen issues that would limit the projects ability to release the 260 KAF. It was also noted that while it currently looks like Alternative 1 should be flow neutral on the mainstem it cannot be guaranteed that the actual operation of Kootenay Lake will allow for a 1-to-1 ratio of water to occur had Libby Dam operated to VarQ flows during the spring.

Alternative 2 (release stored volume by the end of August) results in a shift of volume from spring (May-June) to summer (July-August) of between 60 and 200 KAF (reduction of May-June average flow at McNary of 0.5 to 1.7 kcfs, and a corresponding increase in the average flow July-August).

The COE noted that both alternatives provide an increase chance of meeting minimum elevations to allow for the spill provisions of the sturgeon operation at Libby Dam under a Tier II year as specified in RPA, as clarified, of the USFWS 2006 Libby BiOp. The COE's latest modeling results indicated an 80% chance of meeting elevation 2415', which would allow for 5 kcfs spill operation under the proposed operation, compared to a 55% chance under a VARQ operation. The COE data also suggests a 40% chance of meeting elevation 2420', allowing for the maximum spill of 10 kcfs, compared to a 5% chance under a VARQ operation. If the COE's May Final April-August water supply forecast is below 4,800 KAF (e.g. Tier I), then the project would operate to VARQ after the forecast is issued.

Jim Litchfield, MT, stated that it would be better for sturgeon to spread the volume out over a long period of time and asked if it would be possible to do something between Alternatives 1 and 2 and release the stored volume by the end of July. The COE clarified that a "between Alternatives 1 and 2" operation would have an impact on lower Columbia River flows. Paul Wagner, NOAA, noted that information has been changing weekly and forecasts ahead will also affect Libby operations as we move through the season. Barton suggested that if TMT decided to go with Alternative 1, TMT could continue to assess the latest data as time progresses and use adaptive management to make decisions along the way. Rick Kruger, OR, noted that the COE's forecast for Libby has a bias that tends toward the high side and that using it to establish the Tier level (1 or 2) may not be using the best scientific information. Kruger also asked about the sturgeon pulse operations from the previous year; he added that in this low flow year, even with a spill operation, the river may not even get as high as occurred during non-spill pulses due to lower inflows from tributaries below Libby. Jason Flory, USFWS, commented that it is stated in the RPA of the 2006 USFWS BiOp that the spill test will be done in 2010-2012; he added that in future years it would be good to see what TDG levels there are with higher river flows. Flory said he thought it would be prudent to plan operations for the spill test so that if there are higher river stages, all will be in place to take advantage of that. Flory said that an elevation of ~1764' at Bonner's Ferry for 7-21 days when the sturgeon are spawning is what is needed for the test; he acknowledged that there are a unique set of conditions that are needed for the spill test and that it will depend on what flows, precipitation and snow melt levels are over the coming months. The COE stated that with the pulse operation, elevation should be in the range of ~1758-1763'.

Following a brief caucus, Barton clarified that regardless of TMT's input on Libby Phase 2 operations, this issue will be moved to the policy/legal level and the Action Agencies will consider TMT input as they make their final decision. Barton thanked TMT for their good faith participation in helping the COE work through this issue and he also thanked Fenolio and the Seattle District for their presentation of the complex data. An official TMT member poll was taken and the responses were as follows:

- NOAA: okay with Alternative 1, as described, so long as the volume stored is released by June 30. They are not willing to plan on an operation that reduces flows in spring at McNary. On this basis, NOAA objects to Alternative 2.
- OR: Does not object to Alternative 1, subject to the same provisions described by NOAA. Oregon expressed concern over the forecasts. Oregon objects to Alternative 2.
- USFWS: Supports Alternative 1. Alternative 2 does not meet objectives in the lower river (e.g. does not support).
- MT: Montana is fine with Alternative 1 and Alternative 2. Under Alternative 1, Montana would like to revisit the requirement to release the volume by the end of June. Montana also stated Alternative 2 provides a better flow scenario and pool operation from their perspective.
- ID: Supports Alternative 1. Agrees it is a good plan to revisit the June operation (e.g. Montana). Does not support Alternative 2.
- WA: Concurs with the above statements on Alternative 1. Also concurs with the above statements (except for those from Montana) on Alternative 2.
- Confederated Tribes of the Colville Indian Reservation: No objection to Alternative 1. Does not support Alternative 2. Agrees it is prudent to revisit June operations.
- BPA: No objection to Alternative 1 or 2.
- BOR: No objection to Alternative 1 or 2.
- COE: No objections to Alternative 1 or 2.

Action/Next Steps: The COE will reach out to those TMT members not present at today's meeting for their official positions. An update on these operations will be given at the next TMT meeting on 5/5.

Water Management Plan Comments

Steve Barton, COE, reported back to TMT that several comments on the plan have been received by the COE. He requested more feedback from the Salmon Managers, BPA and BOR. He reminded TMT that a copy can be found and downloaded from the TMT site.

Action/Next Steps: Barton asked that suggested changes be submitted to him and Doug Baus, COE, in MS Word track changes. The preferred due date is 4/30 and the drop dead date for submissions is 5/7. The COE will submit the final plan on 5/15. Barton offered that folks may contact him should they have any issues meeting the above deadlines. A final update will be given at the next TMT meeting on 5/5.

Priest Rapids Flow Objectives

Paul Wagner, NOAA, reminded TMT of this week's scheduled ramp up to 100 kcfs. He noted that migration has picked up and that it is in sync with historic timing due to the increased flows. He said that the Salmon Managers recommended that flows be increased to 110 kcfs (weekly average) next week, with a target 135 kcfs ahead.

Action/Next Steps: Priest Rapids flows will be increased next week, with a weekly average target of 110 kcfs. Wagner will update TMT on these operations at the next TMT meeting on 5/5.

Operations Review

Reservoirs: Grand Coulee was at elevation 1269.2' - meeting Priest Rapids objectives. Hungry Horse was at 3527.79', with 0.7 kcfs outflows filling slightly. On Friday April 30th outflows at Hungry Horse will pick up to around 3 kcfs. Starting on April 30 flows out of the Boise River will be approximately 650 cfs for flow augmentation. Flow augmentation for the Upper Snake above Milner will start on May 1 and by May 3, flows past Milner will be around 3200 cfs. Total flow augmentation flows from the Upper Snake will average around 3.85 kcfs for the month of May. Libby was at elevation 2405.94', with 10.5 kcfs inflows and 4.0 kcfs outflows. Albeni Falls was at 2055.44' with inflows of 28.4 kcfs, and outflows of 23 kcfs. Dworshak was at elevation 1544.45' with inflows of 7.8 kcfs and outflows of 1.2 kcfs. Steve Hall, COE, noted that the current water supply forecast shows a 40% probability of Dworshak meeting refill and the project will likely be 5-15' from full. He also noted that no snow has been observed below 4500 and the COE is very concerned about refill. Hall said he will have more analysis for TMT at the 5/5 meeting. Priest Rapids had 100 kcfs outflows, Lower Granite had 53.2 kcfs outflows (peaking at 73) and McNary had 179.2 kcfs outflows.

Fish: Cindy LeFleur, WDFW, reported on adult passage: 110,000 Spring Chinook at Bonneville. She noted that the prediction for the season is 250,000 when looking at the 1980-2009 average, 315,000 for the 10 year average and 685,000 for the 5 year average. She also shared that the run timing is earlier this year. Paul Wagner, NOAA, reported that Yearling Chinook had a high of 166,000 at Lower Granite and that transport started on 4/24. Little Goose transport is starting on 5/2. A 24 hour sample taken on 4/26 yielded 25,000 fish. McNary saw 17,000 and Bonneville saw 30,000. He moved on to report on Steelhead which are picking up; 95,000 at Lower Granite, 46,000 at Little Goose, 8,000 at McNary and 4,000 at Bonneville. TMT then looked at DART webpage data which showed 10,000 adults at Bonneville. Wagner noted that Steelhead are tracking about where they should be for this time of year.

Jim Litchfield, MT, asked if the local sea lion population had become active. Wagner directing TMT to the sea lion link on the TMT page and noted that as of 4/23, 1600 fish have been taken which is similar to data from previous years. TMT planned to check on this link in a couple weeks as more data becomes available.

Power: Tony Norris, BPA, had nothing to report.

Water Quality: Laura Hamilton, COE, reported on exceedances at both the Camas and Ice Harbor forebay gauges, which are typical for this time of year.

Other: David Wills, USFWS, reported that the May release from the Spring Creek Hatchery is scheduled for 5/10, with 4.65 million fish planned for release. The Service is coordinating with the COE on this operation. Wills will report back to TMT on the success of the release.

The next TMT meeting will be: face to face on **5/5 at 9:00 am at the COE.**

Agenda items will include:

- Treaty Fishing Update
- Libby Phase 2 Update
- Spring Creek Hatchery Release Update
- Priest Rapids Update
- Water Management Plan Comments Update
- Operations Review

Future TMT meeting schedule:

5/12 - conference call

5/19 - face to face- COE

5/26 - conference call

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

April 28, 2010

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Steve Barton (COE) and facilitated by Erin Halton (DS Consulting). Representatives of NOAA, USFWS, Oregon, the COE, Montana, BPA, BOR, CRITFC, Idaho, Washington and others attended. This summary is an official record of the views expressed and decisions made, not a verbatim transcript. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review Meeting Minutes for April 21

The minutes and facilitator's notes for April 21 will be finalized on May 5.

3. Updated Weather and Flood Control Forecasts

The RFC mid-month water supply forecast was issued April 22, indicating little change from the previous forecast, Barton said. Both the final and early bird forecasts assumed normal precipitation for the balance of the forecast time periods. The April 26 precipitation forecasts are:

- Above Grand Coulee – 88% of average
- Snake River above Ice Harbor – 124% of average
- Above The Dalles – 108% of average

The volume forecast hasn't changed much either:

- The Dalles, Jan.-July – 64% of average, or 68.8 maf
- Grand Coulee, Jan.-July – 72% of average, or 45.6 maf;
April-Sept. – 74% of average, or 47.1 maf
- Snake River, April-July – 54% of average, or 11.7 maf

Snow pack data indicate the region has been cool and is moving toward normal temperatures, though Barton reiterated his earlier warning regarding the statistical definition of "normal" when conditions change as rapidly as they have been. Snow pack is below to far below normal in northern Idaho and western Montana, and slightly below normal in Canada. The snowmelt is well under way, and the region will see some runoff in the coming weeks.

Since TMT last met, the initial controlled flow was declared as of April 27, also the beginning of refill operations. This will have a significant impact on decisions regarding Libby operation (see agenda item 7 below).

4. Hanford Reach Update

Flows at Priest Rapids Dam peaked on April 19, with mean daily discharges of 61.3-114.7 kcfs for April 12-25, Russell Langshaw (Grant PUD) reported. Daily minimum flows were 61.2-94.3 kcfs, and daily maximums ranged from 61.5-120.5 kcfs. Daily delta constraints were 20-40 kcfs, and daily deltas 0.3-29.2 kcfs. For the first week of protection flows, the mean of the daily deltas was 1.5 kcfs, and the second week, 20.8 kcfs.

Flows have started to pick up, allowing more operational flexibility. Weekend minimum protection flows will continue for the next two weekends. Accumulation of temperature units is at 947, with emergence expected to end in about 5 days. Weekend protection flows will continue for another 400 TU's after the end of emergence, or approximately a month.

5. B2CC Update

The transducer installation and BGS work scheduled for April 20 was completed, but high winds prevented the corner collector from reopening that day as planned, Barton said. When the B2CC opened again at 1 pm on April 22, the COE notified TMT members via email. On April 26 at 3:00pm B2CC has been closed again due to safety concerns associated with a broken device that keeps boats out of the B2CC. As of 10:45 am yesterday, April 27, the boat exclusion device has been repaired and the B2CC reopened.

Rick Kruger (Oregon) noted that B2CC closure for wind-related issues won't be a problem next year. A new design will allow the bulkhead to be lifted by a crane without being suspended, which is risky in high winds.

6. SOR 2010 C-1 – Operation of Lower Columbia Pools for Spring 2010 Treaty Fishery

Tom Lorz (CRITFC) presented this SOR, linked to today's agenda. The tribal fishery began yesterday, April 27. CRITFC is requesting a 1.5-foot operating band at Bonneville, John Day and The Dalles pools from 6 am on April 27 to 6 pm on April 29. The COE is implementing the SOR as written.

7. Libby Phase 2 Discussion

Joel Fenolio (COE) led TMT's follow-up discussion of alternatives for the operation of Libby Dam in June through August. Phase 1 of the Libby operation for April and May was approved by TMT last week. Fenolio explained two attachments to this item, a PowerPoint presentation and modeled scenarios.

Most of today's discussion of Phase 2 revolved around Alternative 1, a flow-neutral scenario that would release the volume stored in May (the difference between VARQ and minimum flows) around the sturgeon pulse in June. The

scenarios assume this will be a Tier 2 year including a sturgeon pulse. Alternative 1 aims to be flow-neutral by June 30, thus having no impact on Grand Coulee operations. After June 30, Alternative 1 targets elevation 2,443 feet in Libby reservoir on August 31, then 2,439 feet on September 30. Alternative 2 (not considered in depth today) would use some of the stored volume for summer flow augmentation.

The start of refill being declared on April 27 instead of May 1 as initially projected is a big change in terms of Libby operations, Fenolio explained. The effect is to increase Libby VARQ flows from 10 to 15 kcfs, making it more risky to plan on flow neutrality by June 30 under Alternative 1. Today's discussion included modification of Alternative 1 to address the increased risk.

The original proposal was to hold minimum flows of 4 kcfs through May 14, then increase flows to 6 kcfs from May 15 until the sturgeon pulse starts. The accumulated VARQ volume under Alternative 1 was 280-300 kaf according to last week's projections. Now it's 400 kaf, which is too much to release by June 30 because it would force more spill at Libby, violating TDG limits. Fenolio cited 260 kaf as a conservative estimate of how much water the reservoir could discharge by June 30 at powerhouse capacity. The 260 kaf would be released in addition to the sturgeon pulse.

In response to the ICF date change, the COE modified Alternative 1 so that Libby would only release minimum flows until the 260 kaf is stored in the reservoir, then increase to VARQ flows until May 31. Libby would shift to VARQ releases on May 11-13 under this proposal.

Jim Litchfield (Montana) asked, how flexible is the June 30 deadline for flow neutrality in terms of anadromous fish needs? The purpose of the deadline is to aid Grand Coulee refill and keep Grand Coulee operations as flow-neutral as possible, Steve Hall (COE Walla Walla) explained. Most listed stocks migrate in May and June, and this year's migration will definitely extend into June under the low-flow conditions, Wagner noted. It will be especially important to schedule releases during the migration benefit period this year.

Jason Flory (USFWS Spokane) asked, what if sturgeon flows started early? That would make flow neutrality more achievable, but it won't be possible to use all five units at Libby until May 28, assuming scheduled repairs proceed as planned, Fenolio said. The unit outages would make it impossible to provide sturgeon flows earlier.

Fenolio presented graphs that depict modified Alternative 1 operations under different water supply scenarios, assuming this is a Tier 2 year with a sturgeon pulse. Modification of Alternative 1 increases the likelihood of reaching elevation 2,420 feet in Libby reservoir, required for 10 kcfs of gated spill for the sturgeon spill test. By contrast, the VARQ scenario would yield an elevation of around 2,415 feet on May 31, or 5-6 kcfs of gated spill for the test, but not the full 10 kcfs specified in the settlement agreement.

The first graph in attachment 7b shows an April-August inflow volume of 5,157 kaf, with an elevation of 2,421.7 feet on May 31 under Alternative 1, and 2,414.5 feet under the VARQ flow scenario. The second graph contrasts the same two operations with an inflow volume of only 4,550 kaf. The third graph shows potential releases from Corra Linn Dam, which can constrict releases from Libby. At present, the graphs indicate the VARQ and deviation (Alternative 1) scenarios would both release the same volume from Corra Linn. By contrast, last week's data showed that only 97% of the water released under the deviation was able to pass through Corra Linn. The elevation at Corra Linn would be higher under Alternative 1 than under the VARQ scenario.

Barton noted that the volume released during Phase 1, which was approved by TMT last week, should have no impact on the ability to achieve sufficient elevation for the spill test because Phase 1 is flow-neutral compared to the VARQ scenario. Karl Kanbergs (COE) noted that the shape of actual inflow and runoff, not just volume, will drive Libby operations. In effect, the Phase 2 deviation request would replace Phase 1 if TMT approves Alternative 1, Litchfield and Barton noted.

Rick Kruger (Oregon) expressed concern that Alternative 1 would affect the flow neutrality of Phase 1. An overriding goal of Alternative 1 is to make Grand Coulee operations flow-neutral, Barton replied. Fenolio said there's still some risk of trapped water at Corra Linn Dam, but that appears unlikely.

The final graph in attachment 7b compares Libby reservoir elevations based on multiple inflow traces. Alternative 1 has approximately an 80% chance of providing 5 kcfs spill and a 40% chance of providing 10 kcfs spill for the spill test, according to these projections. Limiting the amount below VARQ flows to 260 kaf would make the impact on Corra Linn as flow-neutral as possible.

Litchfield suggested a compromise between Alternatives 1 and 2: release the stored water by June 30 instead of May 31. Wagner and Kruger noted that a change in the inflow forecast could impact the ability to provide 10 kcfs for the spill test. Barton noted that it will be possible to give Litchfield's idea further consideration while taking new forecasts into account as updated information becomes available.

In summary, there's about an 85% chance of spilling 5 kcfs and about 45% chance of spilling 10 kcfs under the modified Alternative 1, Fenolio said. Under VARQ flows, those odds shift to a 50% chance of 5 kcfs spill and less than 10% chance of 10 kcfs spill for the spill test.

Barton polled TMT members on their views of Phase 2. He will solicit the views of any member not present today.

- **NOAA** – Supports Alternative 1 of Phase 2 as long as the stored volume is released by June 30. Might support another approach if updated

information indicates it wouldn't conflict with the overriding goal of shaping declining flows. Would object to a decrease in flows that impacts migration of listed stocks.

- **Oregon** – Doesn't object to Alternative 1 as modified, but has concerns about the risks associated with forecasting. Would object to Alternative 2.
- **USFWS** – Supports Alternative 1 but would object to Alternative 2.
- **Montana** – Supports Alternative 1 because it maximizes the chance of providing a good sturgeon operation this year. Wants TMT to revisit Libby operations in June and consider the possibility of a more gradual ramp down of stored releases. Requested updates on Libby operations at each meeting in May and June. Would support Alternative 2.
- **Idaho** – Supports Alternative 1. Agrees that Libby operations should be revisited in June. Would object to Alternative 2.
- **Washington** – Agrees with NOAA, USFWS and Idaho on Alternative 1. Agrees with Montana regarding further decision-making in June. Would object to Alternative 2.
- **Colville Tribe** – No objection to Alternative 1; would object to Alternative 2. It's prudent to revisit Libby operations in June.
- **BPA** – No objection to either Alternative 1 or 2.
- **BOR** – No objection to either Alternative 1 or 2.
- **COE** – No objection to either Alternative 1 or 2.

With consensus on Alternative 1 as modified, the COE will proceed with legal and policy review leading to implementation. TMT will review Libby operations again on May 5, when the final May forecast is available, and weekly throughout May and June. As requested by Montana and others, the COE will reopen the decision process in June.

8. Water Management Plan Comments – Spring/Summer Update

The COE has received Action Agency comments on the WMP spring/summer update but has yet to receive comments from the Salmon Managers. Doug Baus (COE) solicited their comments in "track changes" format. While the deadline for final publication is May 15, the spring/summer update is essentially a living document. The absolute deadline for comments is May 7, with substantive comments due by April 30.

9. Priest Rapids Flow Objectives

The flow objective for Priest Rapids is 100 kcfs this week, , but FPAC increased it to 110 kcfs next week to accommodate increased migration, Paul Wagner (NOAA) said. The flow objective is a weekly average. FPAC will reconsider it each week in light of updated information. The ultimate goal is to provide 135 kcfs if inflows allow. Like Libby operations, this topic will remain on TMT's weekly agendas throughout passage season.

10. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1,269.2 feet, releasing 100 kcfs (weekly average) for Hanford Reach protection flows. Hungry Horse is at elevation 3,527.79 feet, discharging 700 cfs and filling slightly. Discharges from Horse will increase to about 3 kcfs on April 30. Flow augmentation from the upper Snake will start on April 30 from the Boise system and May 1 from the Upper Snake above Milner. Total Upper Snake flow augmentation is projected to average around 3.85 kcfs for the month of May, John Roache (BOR) reported.

Libby is at elevation 2,405.94 feet, with inflows of 10.5 kcfs and outflows at minimums of 4 kcfs. Albeni Falls is at elevation 2,055.94 feet with inflows of 28.4 kcfs and releases of 23 kcfs.

Dworshak is at elevation 1,544.45 feet and refilling to the extent possible. Steve Hall estimated a 40% chance of Dworshak refill this year, based on the COE's official April water supply forecast. The odds increase to 50% based on the mid-April STP regression forecast, which is a single trace forecast. Dworshak is one of the basins with less than 50% of average water supply this year. Next week, the COE will show TMT an analysis of how many feet the reservoir might fall short of its refill target.

Lower Granite inflows peaked at 73 kcfs a few days ago and are now 50.2 kcfs. McNary inflows are 179.2 kcfs.

b. Fish. Adults: Approximately 111,000 spring Chinook passed Bonneville, Cindy LeFleur (Washington) reported. This year's run isn't as late as it has been for the past 5 years. Wagner noted that 111,000 is about double the 10-year average seen to date, with more fish coming.

Juveniles: Daily smolt reports for the past 2 weeks show they're still appearing at tributary traps, which means more are coming, Wagner reported. The latest passage index for spring Chinook at Lower Granite was 166,000, the highest count so far this season. The previous seasonal high was 121,000 fish at Lower Granite during the spring freshet on the Snake. Transport began on April 24 at Lower Granite; it will start on May 2 at Little Goose. The latest passage index for yearling Chinook is 25,000 at Little Goose, which shows that migration is taking longer than usual. The yearling Chinook passage index is 117,000 at McNary, and 30,000 at Bonneville. For steelhead, it's 95,000 fish at Lower Granite; 46,000 at Little Goose; 8,000 at McNary; and 4,000 at Bonneville. Smolt

passage is at or above the 10-year average for the past week, while steelhead passage is average.

Pinnipeds: As of April 23, 11 California sea lions were trapped and 9 removed from the Bonneville Dam area; 53 Stellers have been observed. Recent catch data indicate increased sturgeon consumption, presumably by Stellers.

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

d. Water Quality. During the past 2 weeks, there have been a few exceedances at Camas Washougal and Ice Harbor forebay, which is typical for this time of year, Laura Hamilton (COE) reported.

11. Next Meeting

The next TMT meeting will be May 5 at the COE NW division office. Agenda items will include the treaty fishery, Priest Rapids protection flows, Libby Phase 2 operations, the Spring Creek Hatchery release, WMP final comments, and the usual operations review.

<i>Name</i>	<i>Affiliation</i>
Steve Barton	COE
Paul Wagner	NOAA
Rick Kruger	Oregon
David Wills	USFWS
Doug Baus	COE
Jim Litchfield	Montana
Tony Norris	BPA
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Tom Lorz	CRITFC
Greg Hoffman	COE
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Mike Shapley	Snohomish PUD
Tim Heizenrader	Centaurus
Holli Krebs	JP Morgan
Rob Allerman	Deutsch Bank
Russ George	WMC

Greg Lawson
XX
Russell Langshaw
Barry Espenson
Richelle Beck
Russ Kiefer
Cindy LeFleur
John Hart
Mark Bagdovitz
Sherry XX
Margaret Filardo
Sherry Sears

Point Carbon
Seattle City Light
Grant PUD
CBB
DRA
Idaho
Washington
EWEB
USFWS
Puget Power
FPC
Colville Tribe