

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

February 9, 2011

FACILITATOR'S SUMMARY NOTES

Facilitator//Notes: 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 of Meeting Minutes for December 8 Year End Review and January 12, 2011 Meeting

With no additional changes to the sets of notes under review, they were considered final.

Pinnipeds Report

Robert Stansell, COE, provided a 2010 report on the Pinnipeds management program at Bonneville Dam. Pinniped abundance rose in 2010 for both California Sea Lions (CSL) and Steller Sea Lions (SSL). This came as a surprise since 2009 saw a drop in numbers. Many entering the system were ‘new’ animals, and those present at the dam per day and total # of days had dropped from previous years. SSL counts were higher than CSLs for the first time, indicating a growing problem and concern to the managing agencies. Total salmon consumption was up but a lower percentage was taken given the high fish run counts from this past year. Sturgeon consumption had increased and Robert noted that these counts may be underestimated given that sturgeon are taken further away from the dam than Chinook, and observation capabilities further out are not as good as right at the dam. Lamprey predation, he reported, was lower than previous years. He shared information about non-lethal deterrents used in 2010 that included Sea Lion Exclusion Devices, acoustic techniques, hazing and use of concrete blocks to prevent haul out. Over the period 2008-2010 during program implementation, 40 animals were trapped and removed. Trap and removal efforts fell short of the 90 animals anticipated/targeted for removal over this period of time.

A Pinnipeds-Fishery Interaction Task Force reconvened in October and November 2010 to review the program they had a role in developing based on their last round of deliberations in 2007, and submitted recommendations in a report released on December 12. Within that report, the majority of the task force recommended making it easier to remove nuisance animals, including increased traps and trapping capabilities, allowing for shooting, and loosening the requirements around ‘identifiable animals’ criteria that would enable trapping and removal. Just after the Task Force met, the 9th Circuit Court of Appeals ruled that NOAA had not sufficiently explained that California sea lion predation at Bonneville was “significant”, in light of comparisons to human harvest levels allowed. NOAA has since then accepted the court’s ruling and plans to address those concerns and formulate a new Pinniped program by March 2011. In the meantime, monitoring and non-lethal hazing efforts continue. Robert shared that as of 2011, no CSLs have been observed (a first for this time of year) and a higher than average number

of SSLs have been observed. Sturgeon take is also higher than the average. Removal efforts will remain discontinued until NOAA releases its revised program.

Robert responded to a question about injured fish: Some estimates show that about 1% of those caught by pinnipeds get away, and 15-30% of the fish have marine mammal marks (not necessarily from pinnipeds at Bonneville).

In closing, he said that the weekly reports he and his crew produce will continue to be posted to the TMT web page for anyone interested in continuing to follow this program.

Water Supply Forecasts

Karl Kanbergs, COE, shared information from the COE, RFC and other February final forecasts and provided a SNO link to show snow pack estimates. He reported that current snow conditions and water supply in the north and northeast part of the basin are normal to above normal, while along the west they are below normal. Total water supply forecast at The Dalles was 99% of average, and 105% of average at Libby. The Clearwater was showing 90-109% of normal snow pack. The current high pressure conditions are expected to give way to a wetter and more seasonal pattern for most of February according to the latest information from the National Weather Service

Specific to Dworshak, Karl and Steve Hall, Walla Walla District, acknowledged the difference between the COE's official forecast and the RFC's February final forecast (showing the Corp's forecast to be 362 kaf higher than the RFC's)) and suggested that in general, the COE will continue to monitor and coordinate in response to changing conditions with its regional partners. Karl said the COE would provide a formal response to a Joint Technical Staff memo that was sent to the COE raising concerns about these discrepancies and the implications on current and spring operations, and suggesting the COE use caution with how they manage the system to enable flexibility later in the spring during fish migration and the need to provide critical flows. In looking at the various forecasts on the graph provided, Karl noted that the differences were to be expected for this time of year, and Traci Schwarz, Walla Walla District, added that the NWW 'standard' forecast, used by the Walla Walla District over the last 20 years as a back up check to the official forecast, did not show much difference from the RFC forecast.

TMT members asked questions about the differences in methodology between the RFC and COE forecasts and suggested that perhaps one of the biggest differences is the use of the January observed inflows in the COE's equation. These methodologies are continually reviewed by a Columbia River Forecasting Group and this particular issue will be reviewed internal to the COE and with that group. TMT members also acknowledged the challenges the action agencies face in managing operations with changing weather conditions and multiple needs, and said they trusted that the COE understands and is striving to meet the multiple needs of the river. Russ Kiefer, Idaho, also noted that concerns had been raised about entrainment of overwintering kokanee at Dworshak, and said he would follow up with more details and would request to revisit this if it were a significant concern.

Suggestions were made to the COE for exploring options around managing Dworskak operations under these unique and uncertain weather conditions. They included:

- Consider a flood control swap between Grand Coulee and Dworshak. COE response: This option is currently being explored as a way to take the pressure off of the end of month flood control target at Dworshak.
- Reduce flows to 7.4 kcfs this week and continue until the precipitation begins to pick up again before returning to the current full powerhouse operation (~10 kcfs). COE response: The COE will track the conditions closely and could potentially modify operations as early as next week. That said, all options are linked and need to consider the suite of needs/impacts in the system, both near and longer term.
- Discuss the possibility of a TDG waiver with Idaho and the Nez Perce Tribe. Russ Kiefer, Idaho, suggested that while the State would likely not support a 'plan' to exceed TDG, they might be willing to discuss risk management around TDG as it relates to providing a spring flow benefit to migrating endangered fish.

Planned Operation/Next Step Actions: Dworshak will continue to operate at full powerhouse while the COE does an internal review of the varying forecasts and explores options for managing the project to best meet current and spring needs. The agency will provide a written response to the Joint Technical Memo, will work with the Columbia River Forecasting Group, and will engage TMT members at the appropriate time to continue discussing the operation. Karl will send a status update email to TMT no later than next Wednesday, 2/16 regarding Dworshak operations. Unless there is a need to convene a conference call sooner to discuss this operation, TMT will revisit at their next scheduled meeting on 2/23.

Fish Operations Plan

Doug Baus, COE, reported that internal coordination on the Fish Operations Plan was underway and a draft for external review was expected to be released on 2/18. This will be posted to the TMT web page prior to and discussed at the 2/23 TMT meeting. CRITFC noted that this FOP would be split in to spring and summer documents. Doug will check internally and update TMT at the next meeting as to when they can expect to see the summer plan draft.

Operations Review

Reservoirs: Karl Kanbergs reported on COE projects: Libby was at elevation 2405.58 feet with 2.4 kcfs in and 19.6 kcfs out. Albeni Falls was at elevation 2055.7 feet, with 22.6 kcfs out. Priest Rapids day average outflows were 153 kcfs. Dworshak was at elevation 1519.24 feet with 4.5 kcfs in and 10.7 kcfs out. Flows at Lower Granite averaged 40 kcfs, flows at McNary averaged 202 kcfs; and flows at Bonneville averaged 214 kcfs. John Roache reported on Reclamation projects: Grand Coulee was at elevation 1279.1 feet and targeting spring elevations. Hungry Horse was at elevation 3532.8 feet with 9 kcfs out. The water supply forecast at Hungry Horse was 117% of normal. John also noted that a one-day generator test planned for next week might produce an increase in TDG due to spill through the jet valves; Reclamation had coordinated with its state, federal and tribal partners on this and planned to monitor conditions closely.

Fish: Nothing to report.

Power: Nothing to report.

Water quality: Nothing to report.

Next TMT Meeting, February 23, 9:00 am:

Agenda items will include:

- Updated Weather and Water Supply Forecasts
- Dworshak Operation
- Fish Operations Plan
- Operations Review
- Other?

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

February 9, 2011

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, the COE, BOR, Washington, BPA, Idaho, CRITFC, Umatilla Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript. Any comments on these notes can be brought to the chair or the next TMT meeting.

2. Review Meeting Minutes for December 8 and January 12

There were no comments today on the official minutes and facilitator's notes for the December 9 year-end review or the January 12 TMT meeting, so these were all deemed final.

3. Pinniped Update

Robert Stansell, COE, gave an update on pinniped abundance in 2010, predation estimates, and the effect on salmon returns. He also discussed the pinniped removal program and presented recommendations from a November 2010 meeting of the regional pinniped task force.

Abundance and predation counts. The population of Steller sea lions observed in the vicinity of Bonneville Dam is rapidly increasing. In 2010, Stellers often filled the four traps intended for trapping and removal of California sea lions, and up to 54 of the federally protected species were observed in the Bonneville area in a single day.

The past year brought an increase in both Steller and California sea lion populations. This was surprising because the California sea lion removal program, which began in 2008, was followed by a population drop in 2009 which was expected to continue. Many of the sea lions that showed up at Bonneville in 2010 were new to the area. There were also significant increases in both Steller and California sea lion predation; much of that was due to growing predation by Stellers. Sea lions in 2010 took over 6,000 salmonids in the Bonneville tailrace, as compared to 4,400 salmonids in 2009. The percentage of the Chinook run lost to pinnipeds was only 2.2% because the 2010 run was so large. Steller sea lions also took more than 1,800 sturgeon just at Bonneville Dam.

Researchers in 2010 broke the Bonneville observation area into zones, spotlighting areas where predation was highest. While most California sea lion catches of Chinook occurred near the face of the dam, Steller sea lion predation on Chinook was equally distributed around the project. It appears that the sea lions are getting bolder and are less deterred by hazing.

Sea lions also took sturgeon in 2010, predominantly in the downstream zones. The amount of sturgeon predation in zone 7 is unknown because that area cannot be observed. Stansell noted that if the focus were on sturgeon instead of salmon, more observation sites would be needed. Sturgeon predation by sea lions typically begins in November, peaks from January to March and ends in early April. Monitoring of sea lion predation begins in January.

In 2010 a few steelhead were taken during the monitoring period, but once the large Chinook run showed up, sea lions preyed mainly on them. Very few lamprey were taken in 2010, even fewer than in 2002. This probably reflects the small number of lamprey counted at Bonneville last year.

Nonlethal deterrents. The most effective deterrents are sea lion exclusion devices, which have been 100% successful at keeping sea lions out of the Bonneville fishway. Acoustic deterrents used through 2010 were found to be ineffective. Hazing continued in 2010 with limited effectiveness.

To date, the trapping and removal program has removed a total of 40 sea lions (11 in 2008, 15 in 2009, and 14 in 2010). That's about a third of the program goal to remove at least 30 sea lions per year. California sea lions removed in 2010 had been in the Bonneville area for an average of 101 days and had taken at least 91 salmon, as compared to an average of 64 days and 65 salmon for all listed California sea lions. These findings indicate that the biggest offenders were successfully targeted.

Pinniped task force recommendations. This multi-agency task force was scheduled to meet after the third year of the removal program. Their report, released in December 2010, gave four basic recommendations:

1. Reduce the requirements to qualify California sea lions for removal.
2. End mandatory hazing efforts; increase trapping and removal. Limit haul-out sites.
3. Implement shooting as a tool to remove targeted California sea lions.
4. Explore new ways of marking so more individuals can be identified for removal.

Paul Wagner, NOAA, asked whether injury estimates are included in the reports of salmon consumed. The researchers have been tracking marine mammal marks on fish, which have been increasing and are seen on 15-30% of fish in the area, Stansell replied. These fish are coming from the estuary and the lower river, not just from Bonneville Dam.

4. Update on Water Supply Forecasts

Karl Kanbergs, COE, reported on snowpack and weather forecasts for the basin. Snowpack is below average on the west side of the Cascades and above average to average on the east side and near normal within the northern portions

of the basin. The April-August Northwest River Forecast Center's water supply forecast for The Dalles is 99% of average and for Libby (COE forecast) it is 105% of average. Precipitation in January followed by warm weather brought rain to the west side and melted snow in the Cascades. During that period, the higher elevation sites in British Columbia and the Rockies accumulated significant snowpack. The current SNOTEL map illustrates that snowpack conditions go from below average to average and above average, moving from west to east. The Clearwater basin is 90-109% of normal in terms of current snowpack.

The current 30-day forecast calls for above average precipitation in the Columbia basin. Northern areas and portions of Idaho and Montana have seen some recent precipitation. Long-term modeling indicates that the water supply will equalize by the second half of February, with more precipitation west of the Cascades.

5. Dworshak Water Supply Forecasts

Kanbergs presented a graph comparing several water supply forecasts for the Dworshak basin. A Joint Technical Staff Memo released on January 21 highlighted significant differences this year between the Weather Service and COE official forecasts and asked the COE to exercise caution regarding flood control drafts. The COE is in the process of formally responding to that memo.

The two most commonly used forecasts differ by 362 kaf, a larger spread than usual. The COE principal components water supply forecast for April-July is 117% of average (3,142 kaf), and the Northwest River Forecast Center's regression forecast for the same period is 105% of average (2,780 kaf). While the COE forecast is significantly above the 30 year average, most of the other forecasts are clustered close to the 30 year average. In response to this disparity and resulting concerns, the COE has asked technical experts at the Columbia River Forecast Group to investigate. Kanbergs pointed out that it's still early in the year, and by March the COE and RFC forecasts may be closer.

Tracy Schwartz, COE Walla Walla, pointed out that the Walla Walla standard forecast, a regression methodology the COE has used for the past 20 years, as a back-up forecast, parallels well with the 30 year average.

In January the COE cut off spill at Dworshak and the project is now operating at full powerhouse with a release of about 10.7 kcfs, Kanbergs said. The current STP forecast suggests that the project should be operating at slightly above full powerhouse releases in order to meet the current end of February local flood control target.

Wagner asked how much weight the Southern Oscillation Index has in the COE official forecast, and whether the COE forecast is the only one to incorporate this measure of El Nino/La Nino sea surface trends. Steve Hall, COE Walla Walla, didn't know whether the RFC factors SOI into its official forecast, but it is part of the COE forecast. The higher COE forecast reflects both January

inflows and the SOI. While snow station readings ranged from 90-108% of normal, January inflows were 211% of normal, and the SOI was the largest on record. Present snowpacks are 105% of normal and inflows have dropped to about 87% of normal, Kanbergs said. Hall added that the north fork of the Clearwater had a current snowpack of 102% of normal. There's an ongoing debate over which forecast will give the overall best consistent results. Bill Proctor, COE, said there's a historical correlation between January inflows above 350 kcfs (this year, it was 430 kcfs) and high seasonal runoff. There continues to be a strong signal of La Nina conditions.

Russ Kiefer, Idaho, expressed concern that if this turns out to be a medium-flow year, meeting refill targets could impact the ability to provide spring flow augmentation from Dworshak. He acknowledged that it's a difficult balancing act to manage the project so it meets refill targets and provides augmentation without causing gas problems throughout the Columbia and Snake. Kiefer said he has heard reports of kokanee being entrained in the Dworshak powerhouse, but didn't know the estimated number of fish affected. The COE has just received a report of kokanee being flushed through the powerhouse, Hall said. He will report back to TMT when the COE has had time to investigate this phenomenon.

Tom Lorz, CRITFC/Umatilla, asked two questions: (1) Has the COE considered a flood control swap between Grand Coulee and Dworshak? (2) Is the COE planning to release full powerhouse from the project through all of March? If the weather cooperates, would it be feasible to drop outflows and release additional water in February.

Kanbergs said the COE is considering such a swap, which would take pressure off the end-of-month targets at Dworshak. The COE will be closely examining weather patterns and forecasts early next week. Lorz requested that it be done the end of this week; speed is essential. The COE looks at flows not only in February but March and April, when inflows could be higher than usual, Hall said. High inflows limit drafting capacity, and it's not uncommon to see 8-10 kcfs inflows in April. This could impact the ability to meet end of April flood control targets at Dworshak.

Lorz asked whether it would be a problem if TDG saturation levels went to 112% this spring. High TDG has potentially dramatic impacts on fish at the Dworshak hatchery, which reports a higher incidence of GBT when saturation levels go above 105%, Hall replied. In high water years, sometimes the COE has no choice but to spill above state standards, Kanbergs added. Kiefer said that Idaho would be willing to discuss whether a slight increase in the incidence of GBT would be an acceptable tradeoff for the ability to provide spring flows for migrants. The COE will follow up on Dworshak via an email to TMT members by February 16.

6. Fish Operations Plan Update

February 18 is the tentative release date for the COE to share the draft FOP with regional parties, Doug Baus, COE, reported. TMT will revisit the FOP at its next meeting February 23.

7. Operations Review

a. Reservoirs. Libby is at elevation 2,405.58 feet, with inflows of 2.4 kcfs and releases of 19.6 kcfs. Albeni Falls is at elevation 2,055.7 feet, operating between 2,055-2,056 feet with outflows of 22.6 kcfs. Dworshak is at elevation 1,519.24 feet, with inflows of 4.5 kcfs and releases of 10.7 kcfs.

Lower Granite is discharging 40 kcfs average flows; McNary is discharging 202 kcfs average flows; and Bonneville is discharging 214 kcfs average flows. In the recent days, flows have picked up in response to cooler weather and more load demand and higher outflows from headwater projects to meet flood control targets.

Grand Coulee is at elevation 1,279.1 feet, drafting toward elevation requirements for drum gate maintenance and spring flood control. Hungry Horse is at elevation 3,532.8 feet, releasing 9 kcfs. The water supply forecast is 117% of normal and snowpack is 128% of normal. On February 15, the Hungry Horse generators are scheduled for a black start, which means generation will be shut down for 3-6 hours during the day for tests and releases of about 6.5 kcfs will be made through the jet valves. This could have TDG implications, which BOR and Montana will monitor and have coordinated with state authorities.

b. Fish. There was nothing to report today.

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

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

3. Next Meetings

The next TMT meeting in person will be February 23. Dworshak operations, the spring FOP, and water supply forecasting will be on the agenda.

| Name | Affiliation |
|-----------------|--------------------|
| Karl Kanbergs | COE |
| Paul Wagner | NOAA |
| Doug Baus | COE |
| Steve Hall | COE Walla Walla |
| Laura Hamilton | COE |
| Rich Hilt | COE |
| Tim Heizenrader | Centaurus |
| Scott English | COE |
| Ruth Benson | COE |
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