

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

September 30, 2009 Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Gumpert

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 Meeting Minutes for September 16, 2009

The team had no changes to either the facilitator notes or meeting minutes- both are considered final.

Lake Pend Oreille SOR

Russ Kiefer, ID, presented SOR 2009-1, posted as a link to the agenda, which detailed the proposed winter lake elevation of Lake Pend Oreille. Using the operational Decision Tree (which can be viewed at the TMT home page) as guidance, this year's recommended operation is to target elevation of 2051 feet by 11/15. Russ acknowledged the complexity of the tree and explained several factors leading to the recommendation:

- Forecasters are calling for a dry fall with El Nino conditions (Russ noted the September forecast was used instead of the decision tree recommended October 15th forecast)
- The additional water can be re-regulated to help meet conditions for chum, given the low flow conditions and added system constraints from The Dalles spill wall construction and turbine work.
- Kiefer further explained other factors such as early kokanee spawning- the COE can begin positioning the lake for this occurrence.
- It was clarified that the recommendation is for a minimum elevation of 2051 feet.

The recommendation also took into account what occurred last year and planning for future years – with expected higher numbers of kokanee next year, the recommendation will likely be to hold the lake higher. (Lake management over the last few years, Kiefer offered, has been good resulting in egg to fry survival and ultimately an increase in adult Kokanee.)

TMT members discussed the SOR. Tony Norris, BPA, asked how frequently Idaho will be monitoring for end of spawning. Kiefer responded that monitoring will occur every few days and that operations will conclude on 12/31/09 or end of spawning (whichever comes first). Norris reported that BPA plans to request increased flexibility after the end of spawning for winter operations. Discussions are ongoing between BPA, IDFG, USFWS and others to determine a plan that will provide the needed flexibility for power without adversely impacting fish – and this will likely include some monitoring. TMT will revisit winter operations at a future meeting.

Dan Feil, COE, asked Joel Fenolio, COE, to review draw down scenarios, posted as a link to the agenda. Joel proceeded to explain the three scenarios, noting that inflows are similar to last year and that outflows are lower than the median average. In summary, all scenarios (given current inflow forecasts) show the project reaching 2051 feet by November 8 or November 15. Joel Fenolio will present updated data at the next TMT meeting.

TMT members provided a response to the recommendation:

- NOAA: no objection
- MT: no objection
- OR: no objection (though noted that had not yet reviewed the document)
- ID: no objection- and stated a preference for draw down scenario #2 as the most beneficial to fish and power production balance.
- Nez Perce: no objection
- BOR: no objection
- BPA: no objection
- COE: no objection- Feil noted that the COE does not see any issues getting to 2051' as requested, and plans to implement operations as stated in the SOR.
- CRITFC: no objection. Kyle Dittmer noted that "strong El Nino" is not guaranteed for winter but that the near future forecast calls for a dry early autumn.

Action: The COE will implement the request and operate to meet a 2051 foot target elevation by November 15.

Autumn Treaty Fishing Update

Kyle Dittmer, CRITFC, reviewed specifics of SOR 2009-C8 requested Friday 9/25, posted as a link to the agenda. Current operations began on Tuesday 9/29 at 0600 and will continue through Thursday 10/1 at 1800 hours. The requested elevation at the three pools was: The Dalles 264.5-263.5, Bonneville 76.5-75.5, and John Day 159.5-158.5. Net flight data was recorded on Thursday 9/24 as follows: Of 779 nets, 214 were located at Bonneville, 131 at The Dalles and 326 at John Day.

The COE responded that the three project were being operated to: 3' hard constraint at The Dalles, 1.5' hard constraint at John Day and 1.5' hard constraint at Bonneville. The COE continued to commit to a 1' soft constraint at all projects to support the treaty fishing request.

Dan Feil, COE, requested catch data as it becomes available – Kyle will provide information to TMT when available.

Preliminary Spring Juvenile Salmonid Survival

Paul Wagner, NOAA, directed TMT to the Survival Memo linked to the agenda. He noted that the annual memo, produced by the NMFS Science Center, is a preliminary estimate only (not all data has come in) and that final estimates could vary by 3-4%. Additional data will be presented at the TMT Year End Review. Wagner pointed out several key points in the document:

- Mean estimated survival at Lower Granite tailrace was 59%
- Spring Chinook were similar to the 6yr average of 55.6%
- Snake River Steelhead survival was above average in every reach, at 69.1%
- Upper Columbia hatchery Spring Chinook survival was 84%
- Upper Columbia hatchery Steelhead survival was 72.5%
- Proportion of transported chinook was 40% wild and 38% hatchery; and for steelhead, 46% wild and 43% hatchery.

The memo speculated that this year's survival could be accounted for by several factors:

- Early steelhead smolt passage at Lower Granite
- Many more fish left in river
- Less avian predation @ John Day
- Partially created spillwall at The Dalles
- Surface passage at all project
- Good ocean conditions

Wagner noted wide confidence range for steelhead due to limited tagged fish and that there are plans to tag more hatchery and wild fish in 2010. The group discussed flows and spill passage over the last few years. A suggestion for future analysis was made to look at spillway proportion as well of total spill, to account for surface bypass now in place.

Operations Review

Reservoirs: Grand Coulee was at elevation 1283.4'. Hungry Horse was at 3549.87' at minimum outflows of 2.5 kcfs. Libby was at elevation 2441.5', with inflows of 3.8 kcfs and outflows of 6 kcfs. Albeni Falls was at elevation 2060', with inflows of 8.4 kcfs and outflows of 15.1 kcfs. Dworshak 1518.4' with inflows of 1 kcfs and at minimum outflows of 1.7 kcfs to manage TDG. Lower Granite daily average flows were 17.6 kcfs. McNary daily average flows were 86.6 kcfs; Bonneville average flows were 92.6 kcfs.

Fish: Paul Wager, NOAA, referred TMT to information posted to the Fish Passage Center site (DART data). Sub yearling Chinook numbers spiked up to the 200s range for a few days. Adult fall chinook counts at Bonneville were 1,000-2,000 per day, with a total count of 269,000 (this is below the 10 year average). Jack counts were high at 108,000. Steelhead total numbers were 583,000 (wild counts were 166,00- this high number was good news). At Ice Harbor 10,000 steelhead were counted.

Power System: Nothing to report.

Water Quality: Laura Hamilton reported that the COE is now into wintertime operations so forebay gauges on the Lower Columbia River are no longer in use and Warrendale has been turned on.

TMT Schedule: The 10/14 meeting was cancelled. The next meeting was tentatively scheduled for 10/21 – time TBD depending on the FFDRWG schedule. TMT will receive confirmation in the near future.

Agenda items may include:

- Notes Review
- Chum Operations
- The Dalles spillwall construction update
- Albeni Falls operations
- Water Management Plan (draft)
- Autumn Treaty Fishing- possible preliminary catch numbers
- Vernita Bar update
- Burbot SOR
- Year-end-review planning (The Year End Review is currently being scheduled – an update will be provided to the group as soon as possible.)

**Columbia River Regional Forum
Technical Management Team Meeting
September 30, 2009**

1. Introduction

Today's TMT meeting was chaired by Dan Feil (COE) and facilitated by Robin Gumpert (DS Consulting), with representatives of COE, NOAA, BPA, BOR, Idaho, IDFG, the Nez Perce Tribe, CRITFC, USFWS, Montana, Oregon, and others participating. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. 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 September 16, 2009

There were no comments on either the meeting minutes or facilitator's notes for September 16 so both were deemed final.

3. Lake Pend Oreille SOR 2009-1

Russ Kiefer (Idaho and IDFG) introduced this SOR signed by Idaho and the USFWS. The 2009 final Water Management Plan, available via the TMT web page, includes on page 30 the decision tree that Idaho and USFWS use to develop recommendations for the winter operation of Lake Pend Oreille. Kiefer explained how the decision tree helped shape the request conveyed in SOR 2009-1, linked to today's agenda.

Idaho and USFWS are asking that the 2009 winter operation target a minimum control elevation (MCE) of 2,051 feet at Lake Pend Oreille for the winter of 2009-10. This is based on forecasts of a dry fall, which is the type of season when extra water stored in the lake helps to provide good spawning conditions for chum salmon below Bonneville Dam.

For several reasons, Idaho and USFWS agreed to make an early recommendation this year for winter operations, basing the recommendation on the September long-range winter forecast. The reasons for the early recommendation are: (1) it appears to be an El Nino year, which increases the likelihood of a dry fall; (2) the Action Agencies will need time to plan this winter's operation around elevation requirements for The Dalles spill wall construction; (3) kokanee spawning is likely to occur earlier this year, therefore it is important to coordinate in advance how the drawdown of Lake Pend Oreille may affect kokanee spawning; (4) a disabled turbine at Box Canyon Dam will make it more difficult this season to meet the needs of both resident fish in Lake Pend Oreille without exceeding state water quality standards.

When female kokanee abundance is low, as it is now, a lower lake elevation leads to better spawning and egg-to-fry survival. IDFG research confirms that predatory fish populations have been successfully reduced, which should result in improved kokanee abundance.

Idaho will monitor kokanee spawning activities once every few days during the spawning season. Once the end of spawning has been declared, or December 31 arrives, whichever comes first, the SOR includes a provision that sets the minimum lake elevation at 2051.0 feet until kokanee emergence is complete. Internal discussions between BPA, the Corps and signatories to the SOR are underway with a goal of possibly operating the lake within its full winter operating range between 2051.0 and 2056.0 feet, after spawning is over, with a goal of minimal restrictions on power production while avoiding impacts to operations for listed fish. The spawning elevation will become the minimum elevation, Tony Norris (BPA) said. The SOR contains a provision for the draft to be stopped if wave action disturbs eggs in their gravel beds and establishes that point as the minimum elevation, Kiefer added. The details of that provision are specified in the SOR.

Andy Dux (IDFG) reported to TMT the preliminary analysis of kokanee surveys that ended in August. There are an estimated 40,000 females in the lake this year, up from 22,000 from last year. Even more encouraging are the survival rates for age-1 to age-2 fish, the age most vulnerable to predators. Compared to the all-time low of 10% in 2007, then 32% in 2008, the 77% survival rate this year is a phenomenal improvement. IDFG believes these increases are the result of successful reductions in predatory lake trout and rainbow trout populations.

Joel Fenolio (COE Seattle) presented three inflow scenarios for the Lake Pend Oreille drawdown, linked to today's agenda. All three graphs cover the period from September 15 to November 30 and are based on last week's inflow projections. The first graph depicts a maximum outflow of 21 kcfs, assuming that all 3 units at Box Canyon Dam are operating. It shows that inflows for the past two years have been lower than average.

The second graph targets the Minimum Control Elevation (MCE) by November 8, with a maximum of 21 kcfs flows. There is actually more flexibility under this scenario than the graph shows because Box Canyon Dam operators say they can spill up to 8 kcfs without violating state water quality standards. This makes it feasible to release up to 30 kcfs from the lake.

The third graph shows median inflows through the end of November and indicates that the lake would not reach the MCE by either November 8 or 15, hitting instead an elevation of 2,052.8 feet on November 15. Fenolio characterized this last scenario as highly unlikely. The scenarios do not include releases from Priest Rapids Dam.

Because it would be very likely possible to spill enough water to reach the MCE by November 8 or 15 without exceeding the state water quality standards, the COE will implement the SOR as written. Idaho preferred to implement scenario 2 if possible. If not, Idaho's second choice would be to meet fishery needs as fully as possible without exceeding state water quality standards below Box Canyon Dam. NOAA, Montana, Oregon, the Nez Perce Tribe, BOR, and CRITFC had no objections to implementing the SOR as written.

BPA also had no objections to implementing the SOR, but notified TMT that it is requesting the COE to allowing BPA to utilize the full winter operating range once kokanee spawning has ended. This would result in pool elevations ranging from 2051 to 2056. This would be of significant benefit to the region from a power rates standpoint. There will be further discussions of the monitoring portion of the operation before implementation this winter.

4. Autumn Treaty Fishing Update – SOR 2009-C8

Kyle Dittmer (CRITFC) presented this SOR to TMT, which requests 1-foot elevation bands of 76.5-75.5 feet at Bonneville, 159.5-158.5 feet at The Dalles, and 264.5-263.5 feet at John Day. The fishery started at 6 am on September 29 and will run through 6 pm on October 1. This could be the last treaty fishery of the 2009 season.

CRITFC's latest net flight survey found 214 nets (32%) in the Bonneville pool, 131 nets (20%) in The Dalles pool, and 326 nets (48%) at John Day pool. Feil expressed interest in seeing total fish counts at the end of the season.

Due to The Dalles spill wall construction the COE is targeting 77.5-76.0 feet elevation at Bonneville pool as a hard constraint, Doug Baus said. The Dalles is operating under the usual 3-foot hard constraint and John Day under a 1.5-foot hard constraint as well. Soft constraints are for the 1-foot elevation bands as requested.

5. Preliminary Spring Juvenile Salmonid Survival

Paul Wagner (NOAA) gave TMT highlights from a survival memo prepared by the NOAA Science Center on survival rates for juveniles throughout the hydro system. These estimates are preliminary, based on tags processed to date; the final estimates could vary by up to 3-4% of current estimated values.

The mean estimated survival rate through Lower Granite tailrace for all hatchery release groups was 59% in 2009, which is typical of prior years. The mean estimated survival rate for spring Chinook traveling from Lower Granite tailwater to Bonneville tailwater was 55.6% with a confidence interval of 50-61%, which is also typical.

For Snake River steelhead, the mean estimated survival rate in 2009 was higher than the 6-year average for every reach, and 69.1% from Lower Granite tailwater to Bonneville tailwater – a big improvement over past years. Steelhead counts have wider confidence intervals than those for Chinook – a span of 57%-82% for steelhead, as compared to only a 6% spread for Chinook. This is because there are fewer tagged steelhead in the river. In 2010 tagged steelhead numbers will increase, so their survival estimates will become more precise.

PIT-tagged hatchery yearling Chinook originating in the upper Columbia has an estimated survival rate of 84% at the McNary tailrace. For PIT-tagged hatchery steelhead, the estimated survival rate from McNary to Bonneville tailwaters was 72.5%.

Regarding transport, the preliminary estimated proportions of transported to non-tagged wild and hatchery spring/summer Chinook were 40% and 38%, respectively. For steelhead, the estimates were 46% and 43% for wild and hatchery smolts, which is in line with estimates for recent years but much lower than in the past. The historical average is well over 80% of steelhead transported. Now a much lower percentage of steelhead are being transported.

Reaches with unusually high survival estimates were Lower Granite to Little Goose tailwaters, and John Day to Bonneville tailwaters. Peak steelhead smolt passage was much earlier this year than in 2007 or 2008. By April 30, approximately 44% of steelhead had passed Lower Granite Dam, as compared to only 18% on the same date in 2007 and 2008.

If the total number of fish lost to predation remains relatively constant, increased numbers of fish migrating downstream will lead to higher survival estimates as the percentages of PIT-tagged fish taken by predators drops. In terms of estimated survival for yearling Chinook passing through the hydro system, the Lower Granite to Bonneville reach is of greatest interest.

Estimated survival rates for steelhead are not available for all years because in some years PIT tag detection was unavailable at the Bonneville corner collector. Estimated steelhead survival rates are 30% for 2003; 45% for 2006; 36% for 2007; 48% for 2008; and 69.1% for 2009. This is the first year all Snake River projects have surface passage, which steelhead strongly prefer.

For yearling Chinook originating in the upper Columbia, the reach of greatest interest is McNary to Bonneville, where estimated survival was 84%, a higher rate than for Snake River spring Chinook. Steelhead survival in the lower Columbia was less at 72.5%. Sockeye survival rates remain considerably lower at 29% from McNary to Bonneville and 18% at McNary – no improvement over prior years.

Reach survival rates for yearling Chinook are similar to past rates from Lower Granite to Little Goose, but higher for steelhead. From Little Goose to Lower Monumental, survival rates are consistently high for both steelhead and spring Chinook. From Lower Monumental to McNary, spring Chinook survival was high, and for steelhead consistently higher throughout the reaches. From Lower Granite to McNary, spring Chinook survival was typical of previous years. From McNary to John Day, spring Chinook survival rates are unchanged, but steelhead rates are higher. Steelhead survival rates are the highest from John Day to Bonneville and from McNary to Bonneville.

In terms of environmental conditions at the projects, flows were in line with prior years, and spill was also in line with prior years. Temperatures in 2009 were cooler than in previous years. In general, the reach estimates are good news for the 2009 passage season, much better than expected.

Because the purpose of installing spillway weirs was to move more fish over the dam spillway for the amount of water spilled, at some point we need to transition from tracking percentage of flows spilled to tracking the spillway passage of fish, Kiefer and Wagner agreed. Norris wondered whether any of the peaks in survival estimates were coincident with hatchery releases; Wagner wasn't sure. These are reach survival estimates, not project survival estimates, pursuant to BiOp requirements.

Discussion of the implications for future returns led to ocean productivity, which appears to be declining compared to last year's green-light conditions. The trend will become more apparent by the end of 2009. More definitive findings on juvenile survival will be available at TMT's year-end review in November.

6. Operations Review

a. Reservoirs. Libby is at elevation 2,441.5 feet, with inflows of 3.8 kcfs and outflows of 6 kcfs. Albeni Falls is at elevation 2,060 feet, with inflows of 8.4 kcfs and outflows of 15.1 kcfs, Feil reported.

Dworshak is at elevation 1,518.4 feet, with inflows of 1 kcfs and outflows of 1.7 kcfs.

Daily discharge averages are 17.6 kcfs at Lower Granite, 86.6 kcfs at McNary, and 92.6 kcfs at Bonneville.

Grand Coulee is at elevation 1,283.4 feet, John Roache (BOR) reported. Hungry Horse is at elevation 3,549.87 feet, with discharges of 2.5 kcfs. Discharges will be managed to meet the Columbia Falls minimum flow requirement of 3.5 kcfs.

b. Fish. Juveniles – There’s been a slight resurgence of migration activity, with a few hundred fish per day passing Lower Granite, up from the teens. The reason for the resurgence might be temperature increases that occurred when Dworshak flow augmentation ended. A similar increase at Bonneville raised passage numbers from a few hundred to 500 fish per day.

Adults – Fall Chinook have been passing at the rate of 1,000-2,000 per day for the past week. The total count for 2009 to date is 269,000 fish, a little below the 10-year average. Jack counts are a record-setting 108,000 to date, way above the 10-year average. The steelhead count is 582,000, a bit short of the 2001 record. Wild steelhead set a record this year of 166,000 fish.

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

d. Water Quality. The water quality fixed-monitoring network has transitioned to winter operations, which includes removal of the forebay gages from the lower Columbia projects and turning on the Warrandale gage, Laura Hamilton (COE) reported.

7. Next Meeting

The next scheduled TMT meeting will be in person in the afternoon of October 21, with a construction update on The Dalles spill wall, drafting Albeni Falls, autumn treaty fishing, chum spawning, and plans for the TMT year-end review on the agenda. Possible dates for the year-end review are November 20, December 11, and December 17. This summary prepared by consultant and writer Pat Vivian.

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