

COLUMBIA RIVER REGIONAL FORUM TECHNICAL MANAGEMENT TEAM

Overall Lessons Learned: 2007 was a roller coaster of a year with a winter like 1996 (very wet) and a summer/fall similar to 2001 (drought). In spite of this, water temperatures and gas levels were generally well managed—and the fish story, once the data is complete and analyzed, will likely provide useful information for future management strategies in unusual weather years.

RE: Conditions Review

- There is value to using a combined approach to forecasting, utilizing the CRITFC, CIG and NOAA forecasts since no single technology has been proven to be the best for long term forecasting
- With an eye toward combined, collaborative forecasting and modeling, a suggestion was made: **Action:** look back at how well the predictions from CEQUAL and RBM-10 temperature models matched with actual temperatures.
- Increased spill and reduced water travel time show strong correlations to higher survival. Even though this was a low flow year, in river migration rates and survival were relatively high because of the spill provided.
 - **Action:** Spill proportion (not just flow) and travel time are important – this should be considered when making management decisions.
 - Some management actions were not implemented consistent with fish protection goals – so, for example, spill occurred this year during lower flow conditions while transportation might have been the more beneficial action.
 - This year provided a unique opportunity to ‘think outside the box’ and try different management options.
 - **Action:** Adult survival data should be reviewed as a management tool and indicator of in-river management success, not just juvenile survival. It was noted that data is now emerging that allows the region to begin teasing out the resulting impact on adults from management scenarios and other conditions.
 - **Action:** Temperature effects on spring migration should be considered.
 - **Action:** Information on Fall Chinook holdovers should be gathered to help aid in management decisions. Migration timing and size information is also important.
 - **Action:** Need to build time into TMT discussions to integrate new information.
- It was noted that the Dworshak operation went well this year – how was the project operated differently than in the past? **Action:** Cathy offered to look into the specifics and follow up with TMT.
- Will information gathered this year be taken into account during finalization of the 2007 FCRPS BiOp? (*NOAA: Given that this is a unique low flow/high spill year, it is difficult to draw too many definitive conclusions. AND the data does need to be considered.*)

- Need to look at transportation/spill very carefully – are we doing a good job spreading the risk?

RE: Specific Operations

- Re: Fall Chinook Protection Program, peaking operations have potential.
 - Pre- and post-hatching periods continue to see a high level of protection.
 - Dramatic improvements have been observed during emergence and rearing; protection criteria was met 94% of the time in 2007, and the maximum exceedance was 2.9 kcfs.
 - Hourly coordination and the new management philosophy led to success this year.
 - Observations of redds this year showed few stranding. This may be correlated to low escapement numbers.
- Lower Monumental TDG is very sensitive both in modeling and real time monitoring. The COE and the salmon managers need enhanced communication and collaboration regarding setting spill caps and choosing modeling scenarios to improve overall management.
 - In the future, from the salmon manager perspective, TDG management should be more flexible and time travel delays of up-stream operations and changing conditions in the river should be considered.
 - **Action:** The COE will pursue improvements to the weather component of SYSTDG as a long term solution to better TDG management.
- With the installation of an RSW at Lower Monumental next spring, operations might change and will need to be reviewed.
 - **Action:** New RSW's and other structural changes will need to be considered in context in the coming year, and will require early and frequent communication to make the best management choices around navigation safety.
- Better communication, including more notice with special operations, tests, etc. at the projects has proven effective at helping aid safe navigation. Improvements in operations could be made at Lower Granite.
- Constraining one pool impacts all projects, so operating within 6 inches is a challenge – and while it was a soft constraint for the COE, BPA considered it the operation to manage to.
- **Action:** Mechanical issues and scheduled outages that will impact fish measures should be communicated to TMT ahead of time, to the extent possible.
 - **Action:** The salmon managers need to identify for the action agencies which units are important so proper notice and communication can occur; and so they can be folded into the Fish Passage Plan.
 - Given the aging system, everyone supported the need to secure budgets for inspection, maintenance and repair. Questions remain about how to do that.
 - **Action:** given the aging system, a need to create contingency plans was identified by the group for future action.

RE: Reservoir Operations:

- **For Libby:** Setting April 10 flood control targets in the spring causes fluctuations and a less than optimal operation for the fish. A stable flow through the spring migration would be better.
 - Use flexibility of VARQ at the appropriate time – at the end of the period when the threat of flooding has passed and during refill.
 - **Consider** setting guiding criteria January-April similar to Albeni Falls decision tree; also consider setting flat flow targets in the summer based on ending elevation, forecasted flows and available volume. Make weekly adjustments.
- **For Dworshak:** More guidance to the COE would provide for a better coordinated strategy for developing and modeling alternative scenarios for Dworshak operations. This is challenging given varying perspectives around flow/temperature approaches and Idaho Power decisions. Another suggestion was that the COE offer operation recommendations for TMT to discuss.
 - Are there other management targets that could be considered besides the temperature criteria at Lower Granite?
 - **Action:** A control structure is needed for Hell's Canyon/Brownlee as they cause significant temperature impacts on the system.
- **For Upper Snake Flow Augmentation:** Carry over storage water is down so much that it will require an average or above average water year to fill the reservoirs.
 - The Biological Assessment for the 2008 Upper Snake proposes to shift releases (likely out of the Upper Snake and Boise) from June/July/August to May/June/July. **Consideration:** While an agreement has not been set with Idaho Power, the FERC process may require conditions that would aid this shift.
- **For Grand Coulee:** What if the April 10 refill target cannot be met while meeting target flows for chum? NOAA gives preference priority to refill. A retrospective look shows that the action agencies have been successful in operating to meet the upper rule curve.
- **For Bonneville:**
 - The cause of Spring Creek hatchery Fall Chinook mortalities is unknown, and continues to be a concern. A research proposal to further study this issue will be led by NOAA and PFMFC, and will test travel time, descaling rates, and mortality rates. **Action:** This study will be discussed with TMT. Also a transportation test is being proposed for March and April that will require discussion at TMT.
 - Preliminary results indicate that chum may not be as susceptible to negative effects of total dissolved gas in the fry stage compared to other salmonid species that have been studied.