

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

October 4, 2017

Facilitator's Summary

Facilitator: Emily Stranz; Notes: Charles Wiggins, DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions and actions, as well as 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. Official minutes can be found on the TMT website: <http://www.nwd-wc.usace.army.mil/tmt/agendas/2017/>

Preliminary Survival Estimation Memo

Paul Wagner, NOAA, summarized the findings of NOAA's Northwest Fisheries Science Center survival estimates for PIT-tagged juvenile salmonids in the Columbia/Snake River 2017 spring outmigration. This document is available on the TMT web site.

- Table 1 shows, in part, the estimated survival of yearling Chinook salmon from the hatcheries to Lower Granite. The average survival rate was about 65%, which is a little lower than last year.
- Table 2 shows estimated survival data for both hatchery and wild Chinook from Lower Granite through the lower system's various reaches. The critical finding is for salmon traveling between McNary to John Day. This year's survival estimate is at 74%, compared to an 85% mean for the 18 year record and a high of 92%. Estimates for other reaches are close to the mean.
- Table 3 shows 20 years of combined rates for yearling Chinook from the Snake River system. This year's figure is 47.8%, which is below the overall mean, brought down by the McNary to John Day figure noted above. The mean for Lower Granite to Bonneville is 52.4%. Paul noted there was no measurement available this year from the Snake River Trap to Lower Granite, as high water prevented site reports.
- Table 4 indicates that steelhead survival from John Day to Bonneville was very much lower than average, and seems to be an outlier.
- Table 5 shows yearly survival averages for Snake River steelhead, and this year's numbers are in line with the combined yearly figures.
- Table 6 shows survival estimates for both steelhead and Chinook from the Upper Columbia. Paul noted that for steelhead from McNary to Bonneville, the rate is an exceptionally high 96.4% compared to the average of 74.7%.
- Table 7 combines the results of both the Snake and Upper Columbia Sockeye runs, with figures for the Lower Granite to Bonneville Snake River fish considerably lower than average, at 17.6%. Russ Kiefer, ID, explained that there an expected issue at the hatchery that they are working on identifying. At this point, they think it is a water quality issue regarding different water hardness levels where fish are reared and released. Russ will keep TMT informed on this matter.
- Upper Columbia sockeye average from McNary to Bonneville is 61% this year, compared to a 10 year average of 72.3%, and from Rock Island to Bonneville at the mean at 50.0%.

The next set of graphics in the report show a similar story. Survival estimates for Snake River Chinook passing Lower Granite were at about the 25-year average rate. Upper Columbia fish showed poorer results this year from John Day to Bonneville. Daily flows started high and stayed high until May before coming back. Water temperatures were average for the season, not cooler as would be expected from the high flows. Mean spill was "huge" compared to normal, as was the percent of spill. Smolt passage was earlier than usual for both yearling Chinook and steelhead. Travel time through the system this year was fast for all species, especially for steelhead, all aided by high flow and spill. Estimated survival figures for wild fish were poorer than for hatchery fish, at 29.9% for steelhead and 30.9% for Chinook. It is unclear why these figures are lower. Doug Baus, Corps, wondered why these figures were so low when water flow

numbers were so high. Paul said it could be the difference between fish that are detected versus those that are not. Additionally, there were problems at multiple facilities with debris, especially on the Snake. This could explain why Upper Columbia survival was better than for Snake River survival.

Draft Water Management Plan

Doug Baus, Corps, explained the process for comments on the Draft Water Management Plan. There will be two drafts. The first one was released on October 1. This draft is available on the TMT web site. TMT members can comment on this draft until October 31. Comments should be emailed to: John Roache, BOR, Tony Norris and Scott Bettin, BPA, and Doug Baus, Corps.

The action agencies will review the comments and release the second draft by November 14. TMT members can comment on the second draft until November 20. TMT members were encouraged to use *PDF Compare* if they are interested in seeing the changes made between the different versions of the plan. If TMT members have problems comparing the documents, they can contact DS Consulting for assistance.

Tony Norris also requested that members review the Power System Emergency Management Plan in Appendix 1 of the WMP. He welcomed any proposed changes.

The next TMT meeting is currently scheduled for October 18th at 9:00 AM, however, may be rescheduled due to a competing RIOG meeting.

**Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES**

October 4, 2017
Minutes: Pat Vivian

1. Introduction

Representatives of Washington, the Nez Perce Tribe, CRITFC, BPA, Warm Springs Tribe, NOAA, the COE, Oregon, the BOR, and others participated in today's TMT conference call. Doug Baus, COE, chaired the meeting and Emily Stranz, DS Consulting, facilitated the conversation.

2. Preliminary Survival Estimation Memo

Paul Wagner, NOAA, presented findings from a Northwest Fisheries Science Center memo that summarizes preliminary survival estimates for spring migrants in the Columbia River hydro system in 2017 as compared with survival estimates from the past 18 years (1999 to 2017).

Hatchery Fish from Upstream to Lower Granite (LWG) – Average estimated survival in 2017 for all PIT tagged spring migrants was around 65%, which is only slightly lower than the average rate of survival over the past 18 years.

Wild and Hatchery Spring Chinook from Lower Granite Through Various River Reaches – From this breakdown of 2017 estimated survival rates for various reaches, Wagner focused on MCN to JDA. Survival in this reach at 72% was substantially lower than the 86.5% average for the past 18 years, and fell far short of the 92-93% survival rates of recent years. The poor outlook for the 2017 spring chinook run brought down their overall survival rate.

Lower Granite to McNary, McNary to Bonneville, and Lower Granite to McNary – Survival from LWG to BON was 47.8% which is less than average, and was particularly brought down by poor survival in the MCN to JDA reach, which affects survival all the way to BON. Survival from LWG to MCN was 74% this past year vs. 73% on average, while MCN to BON was 64% this year vs. 70% on average, bringing overall survival to 47.8% for 2017 vs. the 52.4% average. Wagner pointed out the Lower Granite trap was not tracked this year because it had to be removed during high flow conditions.

Steelhead – The upper Snake reaches – LWG to LGS and LGS to LMN – all had average or above average steelhead survival, but survival in the JDA-BON reach was only 64.3%, which is considerably lower than the long term average of 79.6%. In some years (e.g. 2012 and 2013) steelhead survival estimates in that reach have exceeded 100%, which is within the error bounds.

Lower Granite to Bonneville – The survival estimate for all spring species in the entire reach was 45.9%, which is in line with prior years.

Upper Columbia Yearling Chinook – From MCN to BON, an estimated 94% of tagged yearling chinook survived, which is quite a bit higher than the 18 year mean of 81.8%.

Upper Columbia Steelhead – From MCN to BON, the steelhead survival rate was 96.4% vs. a long term average of 74.7%. For some reason, survival in the upper Columbia was considerably higher this year than for Snake River fish. It was noted the error bounds on these estimates were wider than in previous years.

Snake River Sockeye – Survival from LWG to BON was 17.6% which is considerably lower than the average, one of the lowest rates observed in the past 18 years (but not lower than the 2016 estimate of 11.9%). Survival in 2015 was 37.3%. The decline over the past two years may be attributed to hatchery issues, particularly exposure of hatchery fish to different water hardness compared to wild fish, Russ Kiefer, Idaho, explained. Sockeye have adapted to starting out in the pristine moraine lakes of the Stanley basin that have almost pure water, then migrating downstream through harder water, while the hatchery fish are raised on harder water. So IDFG researchers are looking at acclimation strategies for smolts prior to release. This investigation is in its preliminary phase; IDFG will publish a report when more is known.

Upper Columbia Sockeye – These fish fared much better than Snake River sockeye, with an estimated survival rate of 61% from MCN to BON vs. the 18 year average of 73%. Survival from Rock Island to BON is 50% for upper Columbia sockeye vs. the 18 year average of 50.3%.

Daily Flow and Spill – Spring 2017 inflow and spill rates on the Snake were exceptionally high and kept rising until mid-May. Temperatures, however, remained close to the 10 year average despite heavy runoff. This year set a record in terms of spill on the Snake. Spill as a percentage of flow was also extremely high, and smolt passage started early.

Transport Percentages – Most of the spring 2017 fish migrated before transport started, with the vast majority of yearling Chinook and steelhead leaving prior to May 1. Transport percentages this year were 17.8% for wild yearling Chinook; 21.6% for hatchery chinook; 23.3% for wild steelhead; and 20.9% for hatchery steelhead. All of these rates were similar to the past two years, with the lowest transport rates occurring in 2015.

Travel Time – With the high flows, juvenile migrants moved fast this year. A comparison of travel times in 1998-2006 to 2006-2017 show marked

increases for all species in recent years, most notably steelhead. The 2017 yearling Chinook migration was the fastest on record, faster than for all years combined.

Wild Fish from Lower Granite to Bonneville – Apparently wild spring migrants didn't fare as well as others this year, but the error bounds are large for these estimates. Survival from LWG to BON was 29.9% for wild steelhead and 30.9% for wild Chinook. Both estimates are below average.

Baus wondered why survival rates weren't better in 2017, given that it was an abundant water year with extremely high spill levels. The data can only capture movement of tagged fish that were observed or detected at bypasses, Wagner pointed out. Fish traveling undetected could have different rates of survival and adult returns.

Furthermore, the high flows of spring 2017 dislodged a lot of debris, clogging orifices and taking fish screens out of service. Debris was a persistent problem on the Snake, more so than on the Columbia. Did debris contribute to higher rates of survival on the Columbia than the Snake? The answer to that is speculative, Wagner said.

3. 2018 Draft Water Management Plan

The first draft of the 2018 Water Management Plan was posted to the TMT website October 1, and Baus invited TMT members to send their comments on the draft WMP to the Action Agencies (i.e. Doug Baus, John Roache, Tony Norris and Scott Bettin) by October 31. A second draft of the WMP will be posted November 14 with comments due November 20.

Baus suggested that reviewers use PDF Compare to highlight any changes made from the 2017 Water Management Plan. The electronic comparison requires a full Adobe download, not just Adobe Reader. Emily Stranz said DS Consulting staff could help reviewers with any questions they have about the comparison process. Baus invited people to give him a call if they have questions about the draft 2018 WMP.

Tony Norris directed reviewers to the power system emergency actions list and asked people to let BPA know if there are any recommended changes in the prioritizing of steps BPA would take in the event of a power emergency. There is no deadline for comments on the power system emergency actions list.

Wagner asked about the emergency actions defined for the September-March period that increase generation above the 1% but only in September-October. The hard constraint of operating within the 1% range ends October 31, so this action wouldn't require a power system emergency to operate the

turbines outside of 1%, Lisa Wright pointed out. This provision is covered in Appendix 1 to the draft 2018 WMP.

Next TMT Meeting

TMT had planned to meet in person at 9 am, October 18, followed by a process meeting. However, in light of a RIOG meeting scheduled to start the same time, DS Consulting will survey the possibility of moving the next TMT meeting to October 25 and will keep TMT posted. *[UPDATE 10/6/17: the TMT meeting has been rescheduled for October 25 (same time and place)]*

| <i>Name</i> | <i>Affiliation</i> |
|--------------------|---------------------------|
| Charles Morrill | Washington |
| Jay Hesse | Nez Perce |
| Tom Lorz | CRITFC |
| Scott Bettin | BPA |
| Jen Graham | Warm Springs |
| Paul Wagner | NOAA |
| Tony Norris | BPA |
| Julie Ammann | COE |
| Lisa Wright | COE |
| Doug Baus | COE |
| Laura Hamilton | COE |
| Charles Wiggins | DSC |
| Erick Van Dyke | Oregon |
| John Roache | BOR |
| Russ Kiefer | Idaho |
| Brian Zigler | Snohomish PUD |
| Chris Runyan | BOR |
| Dave Benner | FPC |
| Michael Bryant | CBB |
| Peter Cooper | BOR |
| Steve Burrell | COE |
| Steve Hall | COE |