COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

November 22, 2016

Facilitator's Summary

Facilitator: Emily Stranz, Notes: Tory Hines, 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.

Chum Operation

Paul Wagner, NOAA, shared an update on chum operations. He noted that chum counts at Bonneville are at 46, compared to historical averages of more than 100 chum for this time of the season. The November 15th chum spawning ground surveys show 125 live and 38 dead, with no redds noted in the Ives/Pierce Island Complex. These numbers are consistent with past years, with peak spawning occurring in the third week of November. Chinook numbers continue to be strong in the Ives/Pierce Island Complex, with 2,911 live Chinook observed on November 8th and 1,311 observed on November 15th. Additionally, over 2,000 Chinook redds were observed on November 8th and November 15th. The group then revisited the current chum operation (available on TMT website).

Paul added that the objective of maintaining lower elevations during daytime hours is to encourage earlier spawning and to discourage spawning at night at elevations that are not maintainable throughout the incubation period. Dave Swank, USFWS, stated that higher flows would push the highest current in to the deepest part of the channel, encouraging fish to move to shallower areas during nighttime spawning. Tony Norris, BPA, noted that the primary goal of the operation is to maintain daytime spawning elevations at 13ft or below and move water as needed during nighttime hours.

Doug Baus, COE-NWD, provided an update on the tailwater elevation at Bonneville Dam as well as the forecast. He noted that the nighttime tailwater elevation for November 22nd was 16.3ft. Looking forward, the inflow forecast for Bonneville is around 150kcfs for the next ten days. The NWRFC climate forecast indicates above average precipitation in the Cascades over the next ten days, as well as cooler temperatures. Additionally, the freezing level is expected to drop down to 3,000-4,000ft. The April-August water supply forecast for The Dalles is 89maf (101% of average).

Charles Morrill, WA, suggested a change in the chum operation, which increase nighttime hours from 1700-0600 to 1500-0900. This is intended to allow the project to maintain the 16.5ft tailwater and move more water through in order to avoid jumping up to 18.5ft and is based on research conducted by the USGS, Cook Lab, (Ken Tiffan et al, in Annual Reports submitted to BPA for 2002-3, 2003-4 and 2005) that chum can maintain spawning at velocities up to 1m/sec (which roughly equates to 16.5ft tailwater elevation). Chum, however, move off the redds and out of the area with tailwater elevations in excess of 16.5ft. Charlie shared that Washington acknowledges that there is a risk fish may spawn at higher elevations, there may not be sufficient water to protect those redds, and that spring refill at Grand Coulee is the top priority for the region. He also noted that the region will be able to review data and conditions in December to continue the discussion on appropriate protection elevations going forward into 2017.

Tony Norris, BPA, cautioned against any desires to set higher protection levels, noting that the current operation was specifically designed to avoid placing spawners at an elevation that could not later be supported. Emily Stranz, DS Consulting, asked for other salmon managers input on the proposed operation. There were no objections from those present, which included NOAA, USFWS, Colville Indian Tribe, Oregon, and Idaho. Dave Swank, USFWS, noted that the operational changes still allows for survey crews to go out and observe whether spawning is occurring at higher elevations. Sheri Sears, Colville, clarified that the operation change is not asking for more water, instead it is modifying the way flows are managed.

Emily asked the Action Agencies if they had any objections to the operational change. BPA, the Corps and BOR did not voice any objections, however, briefly discussed whether or not the change to "nighttime hours" should also be made for Step 6 to provide consistency to the project. The Salmon Managers were comfortable with the AAs making that call on their own.

- **ACTION**: The Corps will implement the revised chum operation which modifies the nighttime hours from 1700-0600 to 1500-0900 hours. The revised operation is as follows:

  1. Effective **Tuesday, November 22 at 1200 hours** until further notice.
  2. Operation of the Bonneville Dam tailwater in the following order of operating ranges as project outflow increases.
  3. During all hours, operate project outflow to provide a tailwater elevation in the range of 11.5 to 13.0 feet.
  4. Then, if necessary to increase project outflow, the tailwater may be operated up to 16.5 feet during nighttime hours **(1500-0900).** Concentrate highest elevations around 2400 hours.
  5. Then, if necessary to increase project outflow, the tailwater may be operated up to 18.5 feet during nighttime hours **(1500-0900).**
  6. Then, if increasing river flow precluded the ability to manage tailwater within the steps above, operate to provide a tailwater in the range of 13.0-16.5 feet during daytime hours **(0900-1500)** and up to the maximum within project 24-hour ramp rate limits during nighttime hours **(1500-0900).**

Charlie thanked TMT members for considering Washington's proposal, specifically the Action Agencies. Emily echoed his appreciation and commended the group for working through this change in operation. And with that the meeting was adjourned.

The next TMT meeting will be a conference call on November 30th at 9:00AM

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM MEETING – OFFICIAL MINUTES

November 22, 2016
Minutes: Pat Vivian

1. Introduction

Representatives of NOAA, the Colville Tribe, Idaho, USFWS, BOR, COE, BPA, Washington, Oregon and others participated in today's TMT meeting. Doug Baus, COE, chaired the meeting with facilitation by Emily Stranz, DS Consulting.

2. Chum Operation

Paul Wagner, NOAA, walked TMT through a series of attachments regarding the current operation of Bonneville Dam to promote chum spawning in the Ives Island area.

2a. Bonneville Dam Adult Salmon Counts. Wagner reported that 46 chum have passed Bonneville this week, similar to last week's count of 40.

2b. Chum Salmon Spawning Ground Surveys 2017-17. Spawning surveys indicate that chum are in the Ives Island area, Wagner reported. On November 15 the count was 125 chum, with 38 dead and 10 redds marked. This timing is normal, with peak spawning typically occurring in the second or third week of November. Chinook returns are especially strong this year – 2,900 spawners were counted on November 8 and 1,300 on November 15. With more than 2,000 redds established, fall chinook have made good use of the Ives Island area this year.

2c. Current Chum Operation. Every year the goal of the chum operation is to discourage spawners from establishing redds at 14-15 ft elevation, a historic spawning ground where redds are difficult to maintain. As a prelude to Washington's proposal, Wagner outlined the steps of the current operation:

1. Effective Tuesday, November 1, at 0600 hours until further notice.
2. Operation of the Bonneville Dam tailwater in the following order of operating ranges as project outflow increases.
3. During all hours, operate project outflow to provide a tailwater elevation in the range of 11.5 to 13.0 feet.
4. Then, if necessary to increase project outflow, the tailwater may be operated up to 16.5 feet during nighttime hours (1700-0600). Concentrate highest elevations around 2400 hours.
5. Then, if necessary to increase project outflow, the tailwater may be operated up to 18.5 feet during nighttime hours (1700-0600).
6. Then, if increasing river flow precluded the ability to manage tailwater within the steps above, operate to provide a tailwater in the range of 13.0-16.5 feet during daytime hours (0600-1700) and up to the maximum within project 24-hour ramp rate limits during nighttime hours (1700- 0600).

The chum operation currently is at step 4, with releases concentrated at up to 16.5 feet at night while maintaining 11.5-13 ft tailwater elevation during the day, Baus reported.

Wagner said one goal of allowing the tailwater elevation to rise to 18.5 ft at night is to dissuade fish from spawning in locations where the redds will be unsustainable. The fish will spawn at night, but they choose their mates during the day. The main goal of maintaining a lower daytime elevation of 11.5-13 ft is to encourage fish to spawn during daylight hours at elevations where the redds will be sustainable. Tony Norris, BPA, said another goal of the operation is to maintain a lower daytime elevation range by moving excess water at night.

2d. Bonneville Dam Current Hourly Data. Bonneville inflows led to a peak tailwater elevation of 16.3 ft at midnight, with the elevation down to 15.2 ft by 3 am this morning, Wagner reported.

2e. NWRFC Water Supply Forecast at TDA. The current NWRFC inflow forecast for Bonneville Dam is approximately 140-150 kcfs over the next 10 days. Over the next 10 days, increased precipitation is expected west of the Cascades, accompanied by a drop in temperatures. The current NWRFC April to August volume forecast as measured at The Dalles is 89 maf, which is 101% of average.

2f. NWRFC Climate Forecast. The next 6 to 10 days are predicted to bring below average temperatures and above average precipitation to the basin, as will the next 8-14 days, Baus reported.

2g. Proposed Chum Operation at Bonneville. Charles Morrill presented Washington's request for an adjustment to the current chum operation (not linked to today's agenda). The rationale behind the recommendation? Previous study findings indicate that chum will maintain their redds at tailwater elevations of up to 16.5 ft, but the 18.5 ft tailwater invoked in step 5 will push chum spawners out of the Ives Island area. The tradeoff is an implicit risk of not being able to keep redds inundated if inflows dwindle.

So Washington aims to forestall the 18.5 ft nighttime tailwater elevation in step 4 by adding 5 hours each night of 16.5 ft tailwater elevation, while accommodating the project ramp rate of about 2.5 ft per hour. The recommendation redefines the daytime operation as 9 am-3 pm (currently 6 am-5 pm). This is the only substantial change from the existing operation.

Washington aims to maintain the elevation range of 11.5-13 ft during daytime hours because it's difficult for WDFW survey crews to mark escapement if the tailwater rises above 13.5 ft, Morrill said. Instead of allowing provide tailwater elevations of up to 16.5 ft during all hours, Washington would prefer to keep daytime elevations at 11.5-13 ft during the hours of 9 am-3 pm and allow 16.5 ft during the remaining hours. Morrill noted that spawners can take up to 30 hours to establish a redd, so the 18.5 ft nighttime tailwater elevation in step 5 should be avoided if at all possible.

The recommended operation has the potential to set a higher protection level for the chum incubation phase, which is problematic for BPA, Tony Norris said. FPAC shares the concern that fish will spawn at a higher elevation, Wagner said. But because Washington has the biggest stake in the consequences, NOAA defers to Washington's judgement on the issue. Washington accepts the risk that redds will be established at unsustainable elevations as a result of adopting this recommendation, Morrill said. Washington acknowledges that refill and spring flows are a higher priority than chum redd protection in allocating flow augmentation.

The following is the revised chum operation based on the recommended change by WDFW:

1. Effective, Tuesday, November 22, at 1200 hours, operate the Bonneville Dam tailwater in the following order of operating ranges as project outflow increases.
2. During all hours, operate project outflow to provide a tailwater elevation in the range of 11.5 to 13.0 feet.
3. Then, if necessary to increase project outflow, the tailwater may be operated up to 16.5 feet during nighttime hours (1500-0900). Concentrate highest elevations around 2400 hours.
4. Then if necessary to increase project outflow, the tailwater may be operated up to 18.5 feet during nighttime hours (1500-0900).
5. Then, if increasing river flow precludes the ability to manage tailwater within the steps above, operate to provide a tailwater in the range of 13.0-16.5 feet during daytime hours (0900-1500) and up to the maximum within project 24-hour ramp rate limits during nighttime hours (1500-0900).

TMT members gave their views of Washington's proposal:

- **NOAA** – No objection to the proposal.

- **BPA** – An additional 3 hours of 16.5 ft tailwater elevation might not be sufficient to make a difference. Nevertheless, no objection if protection levels don't rise.

- **USFWS** – While it might not be enough to pass inflows, the proposed change makes sense and should be adopted. One benefit is it allows survey crews to collect information.

- **Idaho** – No objection to the proposal.

- **Colville Tribe** – No objection to the proposal.

- **Oregon** – No objection to the proposal.

The COE will implement Washington's recommendation today, Baus said. It could take a day or two for the changes to show up in the hourly data. Morrill expressed appreciation for the feedback and support of TMT members.

3. Next TMT Meeting

TMT will meet next in a conference call November 30 to review the chum operation.

Name	***Affiliation***
Paul Wagner	NOAA
Sheri Sears	Colville
Russ Kiefer	Idaho
Dave Swank	USFWS
Chris Runyan	BOR
Doug Baus	COE
Tony Norris	BPA
Aaron Marshall	COE
Tory Hines	DSC
Laura Berg	Energy News Data
Margaret Filardo	FPC
Charles Morrill	Washington
Erick Van Dyke	Oregon