

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

March 7, 2012

Facilitator's Summary

Facilitator: 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.

Meeting Minutes

There were no suggested revisions to the 2/15/12 TMT Official Minutes or Facilitator's Notes, so both were considered final.

Vernita Bar Update

Russell Langshaw, Grant County PUD, provided an update for Hanford Reach operations, saying the emergence protection operation was scheduled to begin tomorrow, 3/8. Russell showed graphs depicting temperature unit accumulations, and also said a report from 2011 had been submitted by Grant PUD and was available for review.

Action: Russell will include excerpts from the 2011 report in his next update to TMT on 4/4. (*Note – The meeting schedule was inaccurately reported and a follow up email was sent to confirm that the meeting will be held on 3/28 instead of 4/4.)

Water Supply Forecasts

John Roache, Reclamation, reported that the March final Hungry Horse water supply forecast for March-July is 1,984 kaf (95% of average) and May-September, which drives its flood control elevation, is 1,739 kaf (95% of average). He also reported that Grand Coulee flood control elevations are set based on The Dalles water supply, and currently the April-August forecast is 90.6 MAF (97% of average). Doug Baus, COE, added that the Lower Granite April-August forecast is 20.4 MAF (89% of average); Libby April-August is 5,635 kaf (96% of average); and Dworshak April-July is 2,585 kaf (96% of average). He showed a SNOTEL graph and said the latest forecasts here are trending toward normal conditions. A question was asked about how close the COE and NOAA forecasts are lining up. TMT may revisit this comparison later this year.

Chum Update

Charles Morrill, Washington, provided a map depicting chum redd locations and temperature gauges, a second graph comparing 2006-2007 data (to show the wide range of variability in emergence timing) and a third page containing data for the current year. Chum emergence is expected to be 50% complete by March 21-28, about a week earlier than last year which, it was noted, was a cool year. Paul Wagner, NOAA, added that the pre-season forecast assumed 'normal' conditions and indicated the peak of chum emergence to be around April 3.

Given all this, Doug Baus, COE, said the operation at Bonneville would continue at 12' tailwater minimum until TMT revisits during their 4/4 (*again, this date was later corrected to 3/28) meeting. TMT discussed that TDG in the system might increase when

the B2 Corner Collector begins operating, and this will need to be monitored to avoid negative impacts to chum. If an issue such as this arises before TMT meets again, a conference call may be scheduled to discuss in-season management.

Planned Operation/Next Steps: NOAA will send an email to indicate when the end of chum emergence has officially occurred, and this will indicate to the action agencies there is no longer a need to maintain a 12' minimum tailwater elevation at Bonneville to protect emerging chum.

Adult Forecast

Charles Morrill, Washington, shared a power point developed by his colleague Cindy LeFleur of the current 2012 adult return forecasts. Most forecasts have gone up from last year, most notably sockeye, except Snake River sockeye (slightly down from last year) and Summer steelhead. The final two slides re-capped the 2011 non-Indian fisheries and Treaty Indian fisheries. Charles said TAC would be updating their forecast in late April/early May, and that he or Cindy would provide an update to TMT later in May.

Ocean Conditions

Paul Wagner, NOAA, shared information about NOAA's work on ocean conditions and adult return predictions. The main indicators for these predictions are the Pacific Decadal Oscillations (PDO) index and copepod biodiversity. Paul showed ocean condition indicators for previous years and resulting Spring Chinook adult return predictions for 2012 (150,000) and 2013 (233,000) – not quite as optimistic as what was reported earlier from Washington. Paul emphasized that this work is still in an 'experimental phase' and NOAA plans to track how well these predictions line up with actuals to determine how accurate and useful the tool will be. He also said a synthesis report with an analysis of years 1998-2011 has just been completed and describes the methodology and observations to date. NOAA will continue working with TAC on ways to integrate this tool into their forecasting methods, and said NOAA hopes to be able to do in-season forecasts in the future that can inform in-season management.

Action: Paul will email the synthesis report to Doug Baus for posting to today's TMT agenda.

Operations Review

Reservoirs – John Roache, Reclamation, reported on projects. Hungry Horse was at elevation 3530.29 feet, with 2.3 kcfs outflows, about 1 kcfs inflows, and operating to meet Columbia Falls minimums. Grand Coulee was at elevation 1275.1 feet; the flood control target will be set later this week. Lisa Wright, COE, reported on projects. Libby was at elevation 2407.4 feet, with 3.6 kcfs inflows and 4.0 kcfs outflows. Albeni Falls was at elevation 2051.9 feet, with 18.8 kcfs inflows and 17.0 kcfs outflows. Priest Rapids outflows were 105.7 kcfs. Dworshak was at elevation 1526.8 feet with 3.0 kcfs inflows and 5.6 kcfs outflows. Lower Granite outflows were 36.1 kcfs; McNary outflows were 146.8 kcfs; and Bonneville outflows were 160.6 kcfs.

Fish – Paul Wagner, NOAA, reported that smolt monitoring began at Bonneville; numbers were still few at this point.

Water quality – Scott English, COE, reported that water quality monitoring will go on line a little early this year to allow the action agency to run its newly converted CWMS 2.1 database. He said RCC has been working closely with the Districts, USGS and other service providers to verify that the new system is functioning properly, ahead of spill season. Water quality web reports will convert before spill season so TMT should not notice any changes – if there are any changes in the plan, TMT will be notified.

Power system – Tony Norris, BPA, reported about a recent peak high wind generation of over 3,900 MW in the power system.

Other – Rick Kruger, Oregon, requested a status update on the Fish Operations Plan. Doug Baus, COE, responded that RIOG met on this topic and were reviewing the draft plan. When it is finalized, it will be posted to the TMT page.

Next Meeting, 3/14; 9:00 am

Agenda items had not yet been identified. Participants were asked to send agenda items to the facilitator and chair in advance of the next meeting.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM – OFFICIAL MINUTES

March 7, 2012

Notes: Pat Vivian

1. Introduction

Today's TMT meeting was chaired by Doug Baus, COE, and facilitated by Robin Gumpert, DS Consulting. Representatives of the COE, Oregon, BPA, NOAA, Washington, USFWS, Idaho, the Colville Tribe, BOR, CRITFC/Umatilla Tribe, the Salish-Kootenai Tribe and others attended. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review February 15 Meeting Minutes

There were no suggested changes today, so the facilitator's notes and official minutes for February 15 are considered final.

3. Vernita Bar Update

Russell Langshaw, Grant PUD, reported. Protection flows were scheduled to begin today, but a temperature anomaly last weekend delayed the actual start of protection flows until tomorrow. The first page of attachment 3a to today's agenda presents the latest life stage and flow constraint data for the Hanford Reach fall chinook protection program. Temperatures so far this year have been around average. Grant PUD recently completed its 2011 stranding and entrapment report, which Langshaw will provide with his next TMT update in early April.

4. March Final Water Supply Forecasts

Baus and John Roache, BOR, gave March final water supply forecasts for specific projects:

- Hungry Horse (March-July) 1984 KAF, 95% of average.
- Grand Coulee –The water supply forecast for The Dalles, not the forecast for Grand Coulee, determines the flood control space requirement.
- The Dalles (April-August) – 90.6 MAF, up from last month's forecast of 84.5 MAF.
- Lower Granite (April-August) – 20.4 MAF, 89% of average.
- Libby (April-August) – 5635 KAF, 96% of average.
- Dworshak (April-July) – 2585 KAF, 96% of average.

Tony Norris, BPA, pointed out that these forecasts are being measured against an old 30-year norm for historic flows. If compared to the updated 30-year norm, the forecasts would be above average.

5. Chum Update

The minimum tailwater elevation of 12 feet below Bonneville continues, Paul Wagner, NOAA, said. Charles Morrill, Washington, gave TMT a slideshow on chum emergence and the accumulation of temperature units. The data show a great deal of variability in temperature units and relative emergence at different locations. Temperature accumulation data used to predict the 10%, 50% and 90% emergence dates indicate that 90% emergence will occur about a week earlier this year than last year, Morrill said. That would put the 90% emergence date at sometime during the week of March 21-24. Wagner noted that conditions are relatively warmer this year than average, which accounts for the earlier emergence expectations.

The COE will continue to operate Bonneville tailwater to a 12 foot minimum. The Action Agencies requested notification when the Salmon Managers determine the end of the chum operation. Knowing the end of the chum operation is helpful to the Action Agencies when planning other operations. The only potential conflict would be any operation resulting in TDG values that exceed the compensation depth of coverage, Wagner replied. With a minimum depth of 12 feet, TDG levels would have to exceed 110% for the redds to be adversely affected. Operating the Bonneville 2nd powerhouse corner collector is known to cause elevated TDG levels. The default date for beginning corner collector operation is April 10, but it could be earlier if specific triggers are reached. TMT will revisit the chum operation in early April.

6. Adult Return Forecast

Morrill gave TMT a slideshow presentation, linked to this item on the agenda, which provides the latest adult return forecasts for 2012.

- Upper river spring chinook – The forecasted return is 14,200, the 10 year average is 22,700, and the 50% arrival date at Bonneville is May 6. Bill Proctor, COE, asked whether the numbers for 2011 are actual counts or forecasts, and Baus noted the numbers in today's presentation don't look right. Morrill will follow up on this.
- Upper Columbia spring chinook – The forecasted return is 39,000 fish compared to a 10 year average of 37,200 fish.
- Upper Columbia wild spring chinook – The forecasted return is 2,800 fish compared to the 10 year average of 2,300 fish.
- Upper Columbia summer chinook – The forecasted return is 91,200 fish compared to the 10 year average of 62,600 fish.

- Sockeye – The forecasted return is 462,000 fish, well above the previous 10 year average of 413,300 fish.
- Snake River sockeye – The forecasted return is 1,900 fish. Returns over the past 3 years have been 1,600 to 2,600 fish.
- Upriver summer steelhead – The last 10 year average return was 395,000 fish; this year's forecast is 380,300. However, the average percentage of wild summer steelhead arriving at Bonneville for 2011 was 27%; this year's wild percentage is expected to rise to 29%.
- 2011 Non-Indian fisheries – Sport fisheries catches are expected to be 15,900 fish and commercial fisheries about 9,500 fish.
- 2011 treaty Indian fisheries – Tribal fishers are expected to have caught 13,200 spring chinook, 20,600 summer chinook and 1,280 sockeye below Bonneville in 2011.

Morrill will provide an update on adult returns at a TMT meeting near the projected 50% return date of May 6.

7. Ocean Conditions

Wagner gave TMT a recap of NOAA's efforts over the past 12 years to correlate ocean conditions more closely to smolt survival rates. It appears the biggest influence by far is the PDO index, which indicates ocean temperatures. Water temperatures and wind patterns strongly influence ocean productivity, and the strongest indicator of survival is the copepod zooplankton index. The cooler northern currents bring large nutrient-rich copepods from Alaska to the shelf along the Pacific coast for smolts to feed on, while currents from the south bring their less nourishing relatives. Thus, warmer ocean temperatures create conditions in which there is a shortage of food for smolts. Also, the lack of food leads to more predation within the 80 km of shoreline where smolts reside.

Return sizes in a given year reflect the ocean conditions of 2 years ago, so productive ocean conditions in 2011 can be expected to result in healthy adult returns in 2013. However, this year's returns will reflect ocean conditions in 2010, which weren't as good as last year. Negative PDO numbers correlate to abundant conditions while positive numbers are less desirable. There are PDO records going back to 1900.

Predicted returns as of January 2012 based on ocean conditions are 150,000 spring chinook in 2012 and 233,000 spring chinook in 2013. These predictions are based on a principal components analysis, which is a regression analysis. This is covered in depth in a report recently published by the NPCC, titled Marine Ecology of Columbia Basin Salmonids, Research 1988-2011. The

report, which will be linked to today's agenda, describes what is known about ocean conditions and how the knowledge is used to predict adult returns. About 70% of the relationship between ocean conditions and adult returns is driven by the copepod biodiversity index. First-year ocean survival rates are only around 5%, but the likelihood of survival increases after the first year.

Richelle Beck, Grant PUD, asked whether there are any PDO predictions for summer 2012. There is no way to predict PDO conditions because they are based on El Nino and La Nina trends, which aren't known until after the fact, Wagner replied.

8. Operations Review

a. Reservoirs. Grand Coulee is at elevation 1275.1 feet, with an increasing inflow forecast. Flood control elevations will probably drop as a result. Hungry Horse is at elevation 3530.29 feet, with inflows of 800-1,000 kcfs and discharges of 2.3 kcfs to meet Columbia Falls minimum flows.

Libby is at elevation 2407.4 feet with inflows of 3.6 kcfs and releases of 4 kcfs. Albeni Falls is at elevation 2051.9 feet with inflows of 18.8 kcfs and releases of 17 kcfs. Priest Rapids discharges are 105.7 kcfs. Dworshak is at elevation 1526.8 feet with inflows of 3 kcfs and discharges of 5.6 kcfs.

Lower Granite discharges are 36.1 kcfs. McNary discharges are 146.8 kcfs. Bonneville discharges are 160.6 kcfs.

b. Fish. The first smolts of the 2012 passage season are arriving at Bonneville, Wagner reported.

c. Water Quality. Scott English, COE, reported that all monitoring stations are expected to be on line in time for the start of spill season. The COE is in the process of converting its database from CWMS 1.5 to CWMS 2.1, a major transition. The goal is to complete the transition by April 3 when spill starts.

d. Power System. Peak wind generation recently reached 3900 MW, Tony Norris reported.

e. Fish Operations Plan. Rick Kruger, Oregon, asked when the FOP for 2011 will be published. The FOP, which is appendix C of the Fish Passage Plan, will be posted to the TMT site as soon as it is completed, Baus replied.

4. Next TMT Meeting

A tentative meeting was scheduled for March 14.

Name	Affiliation
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Rick Kruger	Oregon
Tony Norris	BPA
Lisa Wright	COE
Paul Wagner	NOAA
Charles Morrill	Washington
Doug Baus	COE
Karl Kanbergs	COE
Bill Procter	COE
Laura Hamilton	COE
Kim Johnston	COE
Scott English	COE

Phone:

Dave Wills	USFWS
Russ Kiefer	Idaho
Sheri Sears	Colville Tribe
John Roache	BOR
Tom Lorz	CRITFC/Umatilla Tribe
Stu Leavitt	Salish Kootenai
Margaret Filardo	FPC
Dave Benner	FPC
Heather Dohan	Puget
Shane Scott	PPC
Russ George	WMC
Bruce McKay	hydropower consultant
Greg Larson	Thompson Reuters
Rob Allerman	Deutsch Bank
Barry Espenson	CBB
Richelle Beck	Grant PUD
Russell Langshaw	Grant PUD
Scott Bettin	BPA
Steve Hall	COE
John Redden	Grant PUD