

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

January 30, 2019

DRAFT Facilitator's Summary

Facilitator: Emily Stranz; Notes: Colby Mills, 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/2019/>.

Water Supply Forecasts

Doug Baus, Corps, began by providing the TMT with an update on the water supply forecasts for Corps projects. He noted that the official forecast doesn't come out until February 5, and that these are current conditions:

- **Lower Granite:** NWRFC April to August volume forecast (5 days QPF) is 17.6 MAF, or 83% of average.
- **The Dalles:** NWRFC April to August volume forecast (5 days QPF) is 76 MAF, or 87% of average.

Doug continued with a report on the water year precipitation and monthly temperature trends, which generally show a pattern of below average precipitation with above average temperatures throughout the basin. For precipitation, the Snake River Basin above Ice Harbor Dam is currently at 7.4 inches, or 79% of normal. The same pattern is observed along the Upper and Middle Columbia River with below normal precipitation. The Columbia River mainstem, above The Dalles has 9.6 inches, or 80% of normal. Temperatures are mostly above average. For the current month, the Snake River above Ice Harbor Dam is 2 degrees above normal. Looking at the Upper Columbia River, above Arrow Dam is 4.7 degrees above normal. The Columbia River mainstem above The Dalles is 2.7 degrees above normal.

In regard to snowpack, the Cascades have predominantly below average snowpack, and near Dworshak there is below average snowpack as well. Steve Hall, Corps, noted that some gauges in the Hemlock Butte area are out of service.

Looking ahead at the NWRFC forecasts, Doug was excited to report that the 5 and 10-day QPF shows some encouraging precipitation.

The climate forecasts show a probability of temperatures below average over the next 6-10 day period with a probability of above average precipitation in Oregon, Idaho, and Montana, and near normal in Washington; these conditions could help snowpack accumulation. The 8-14 day outlook shows a probability of below average temperatures and below average precipitation. The 30-day outlook is warming up and drying out, with similar forecasts 90 days out showing above average temperatures and below average precipitation.

Chum Operation

Doug reported no change to chum incubation operations since implementation began on December 21, 2018. Operations at Bonneville Dam continue to maintain a tailwater elevation no lower than a minimum of 11.3 feet at all hours, and will do so until otherwise coordinated with the TMT.

Current hourly data at Bonneville show a total outflow of 136.5 kcfs and project tailwater elevation at 11.9 feet. RFC inflow forecasts over the next 10-day period anticipate a slight increase in project inflows up to 148 kcfs tomorrow, then coming back down to 120 kcfs by the end of the 10-day period. Charles Morrill, WA, noted that the most recent chum survey data are listed on the FPC website.

The next TMT meeting is a conference call on February 13, 2019, at 9:00 AM.

This summary is respectfully submitted by the DS Consulting Facilitation Team. Suggested edits are welcome and can be sent to Colby at colby@dsconsult.co.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES
January 30, 2019
Minutes: Melissa Haskin, FLUX Resources

1. Introduction

Representatives of Corps, BPA, the Colville tribe, WA, OR, Reclamation, USFWS, NOAA and others participated in today's TMT meeting chaired by Doug Baus, Corps, and facilitated by Emily Stranz, DS Consulting. See the end of these minutes for a list of attendees.

2. January Water Supply Forecast - Doug Baus, Corps

2a-b. Forecasts

Doug Baus, Corps, updated TMT on current water supply forecasts.

The Dalles Dam: The forecast is 76 maf for the April-August volume (87% of 30-year average).

Lower Granite: The April-August forecast is 17.6 maf (83% of the 30-year average).

2c. NWRFC Water Year Precipitation Table

The NWRFC precipitation table shows below normal precipitation throughout the basin (see table below).

October 1, 2018 through January 31, 2019
 Water Year Precipitation Table
 Percent normal comparisons based on 1981-2010 average

Snake River				
DIVISION NAME	OBSERVED (in)	NORMAL (in)	DEPARTURE (in)	PERCENT of NORMAL
Henry's Fork River Basin	10.2	12.6	-2.4	81
Upper Snake Tributaries	8.1	10.6	-2.5	76
Upper Snake River Basin abv American Falls Dam	6.9	8.4	-1.4	83
Middle Snake Tributaries	7.0	8.6	-1.6	82
Malheur-Owyhee-Boise River Basins	5.0	6.9	-1.9	72
Payette River Basin	9.9	13.8	-3.9	72
Snake River Basin abv Hells Canyon Dam	6.0	7.7	-1.7	78
Clearwater River Basin	15.3	18.1	-2.8	85
Salmon River Basin	8.5	11.7	-3.2	73
Grande Ronde River Basin	10.3	12.4	-2.2	82
Palouse River Basin	8.5	9.3	-0.8	92
Snake River Basin abv Ice Harbor Dam	7.4	9.6	-2.2	77
Upper Columbia Basin				
DIVISION NAME	OBSERVED (in)	NORMAL (in)	DEPARTURE (in)	PERCENT of NORMAL
Clark Fork River Basin	9.5	10.5	-1.1	90
Flathead River Basin	11.3	14.6	-3.4	77
Pend Oreille River Basin abv Waneta Dam	11.0	13.7	-2.7	80
Kootenai River Basin	12.1	16.6	-4.5	73
Spokane River Basin	16.7	19.8	-3.1	84
Columbia River Basin abv Arrow Dam	21.8	25.2	-3.4	87
Middle Columbia Basin				
DIVISION NAME	OBSERVED (in)	NORMAL (in)	DEPARTURE (in)	PERCENT of NORMAL
Middle Columbia Upper Tributaries	11.6	15.2	-3.6	76
Yakima River Basin abv Kiona	13.5	17.4	-3.9	77
Middle Columbia Lower Tributaries	8.4	11.5	-3.1	73
Columbia River Main Stem				
DIVISION NAME	OBSERVED (in)	NORMAL (in)	DEPARTURE (in)	PERCENT of NORMAL
Columbia River Basin abv Grand Coulee	13.6	16.8	-3.2	81
Columbia River Basin abv The Dalles	9.6	12.2	-2.6	79

2d. NWRFC Monthly Temperature Table

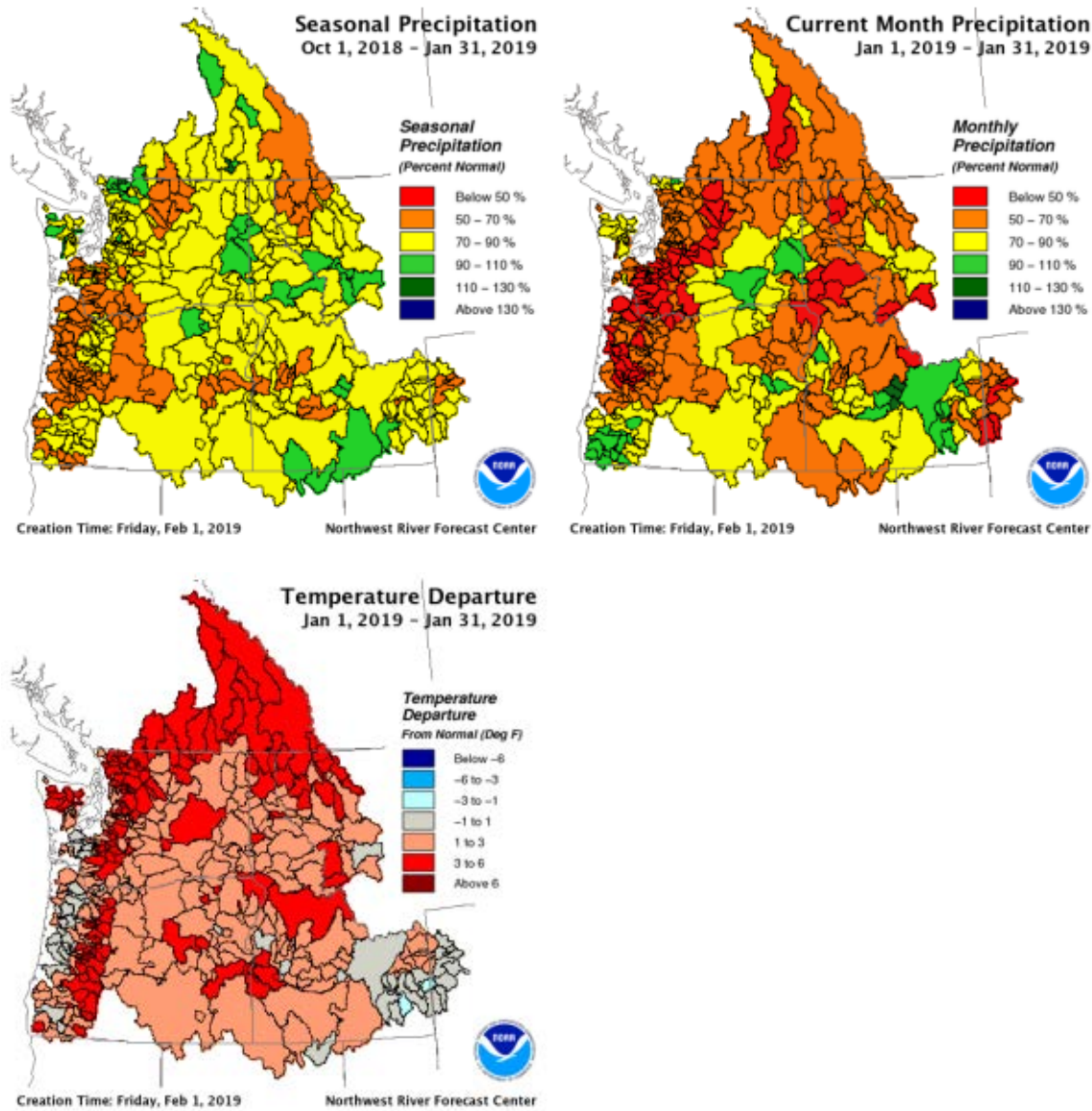
The NWRFC Monthly Temperature Table shows above average temperatures for many locations. For instance, so far this month, temperatures above Ice Harbor are 1.9 degrees F above normal and the Upper Columbia River Basin above Arrow Dam is 4.9 degrees F above normal for the month.

October 1, 2018 through January 31, 2019
 Monthly Temperature Table (Deg F)
 Deviations from normal based on 1981-2010 average

Snake River														
DIVISION NAME	Current Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Seasonal
Henrys Fork River Basin	1.6	-0.9	-2.0	0.5	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.1
Upper Snake Tributaries	-0.5	-2.2	-2.9	-1.3	-0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.6
Upper Snake River Basin abv American Falls Dam	0.8	-1.4	-1.9	0.2	0.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.5
Middle Snake Tributaries	1.7	-0.8	-0.6	-0.2	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1
Malheur-Owyhee-Boise River Basins	2.2	-1.0	-1.4	-0.2	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.1
Payette River Basin	2.2	0.2	0.0	0.4	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.7
Snake River Basin abv Hells Canyon Dam	1.7	-1.0	-1.3	0.2	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0
Clearwater River Basin	2.1	-1.0	0.3	-0.1	2.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.3
Salmon River Basin	2.6	-0.8	-0.4	-0.6	2.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.3
Grande Ronde River Basin	2.0	-0.9	0.3	-0.2	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.3
Palouse River Basin	2.3	-0.4	0.3	2.2	2.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.1
Snake River Basin abv Ice Harbor Dam	1.9	-0.9	-0.8	0.2	1.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1
Upper Columbia Basin														
DIVISION NAME	Current Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Seasonal
Clark Fork River Basin	2.3	-1.5	-0.5	-0.3	2.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0
Flathead River Basin	3.1	-0.9	0.7	1.6	3.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.1
Pend Oreille River Basin abv Waneta Dam	2.7	-1.0	0.4	0.9	2.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.7
Kootenai River Basin	4.6	-0.5	2.5	2.5	4.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2
Spokane River Basin	2.6	0.4	1.2	1.0	2.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.2
Columbia River Basin abv Arrow Dam	4.9	-0.4	3.7	2.4	4.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6
Middle Columbia Basin														
DIVISION NAME	Current Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Seasonal
Middle Columbia Upper Tributaries	3.9	0.2	2.5	1.7	3.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0
Yakima River Basin abv Kiona	2.4	0.4	0.8	1.5	2.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.2
Middle Columbia Lower Tributaries	2.3	-0.3	0.3	0.5	2.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.7
Columbia River Main Stem														
DIVISION NAME	Current Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Seasonal
Columbia River Basin abv Grand Coulee	3.7	-0.6	1.8	1.8	3.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.6
Columbia River Basin abv The Dalles	2.7	-0.6	0.4	1.1	2.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.9

2e. NWRFC Current Month Summary Graphics

For the most part, for the water year and the current month, precipitation is below average. For the month of January, temperature departures were warmer than normal.

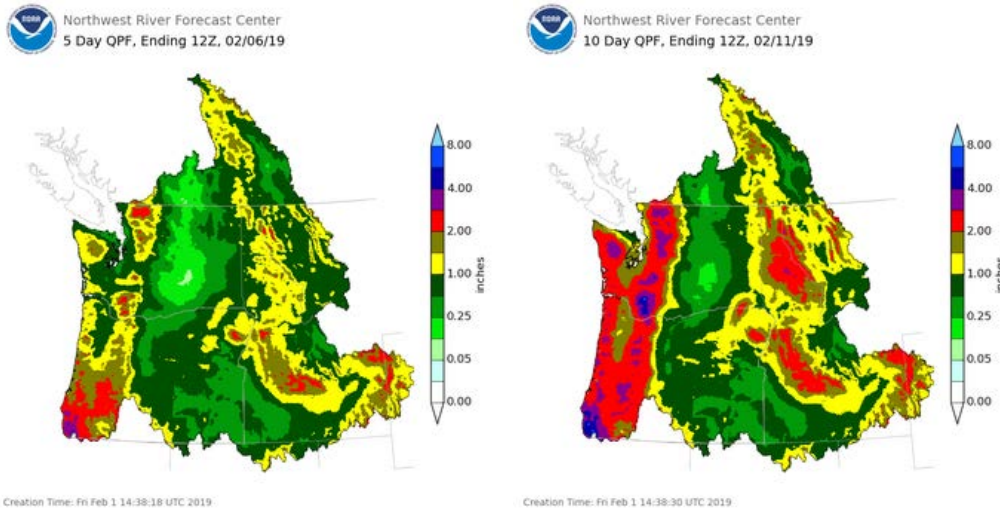


2f. NWRFC Current Snow Conditions

Throughout the basin, snowpack is below average. Some gauges are out of service near Dworshak, including Hemlock Butte.

2e. NWRFC Forecast Precipitation Summary

The 5-day and 10-day forecasts show precipitation. In some areas, precipitation will be above average.



2f. Climate Forecast

The 6-10-day forecast shows temperatures below average with above average precipitation for all areas (Oregon, Montana, Idaho) except Washington.

The 8-14-day forecast shows a probability of below average temperatures and below average precipitation. The 30-day mirrors this. Meanwhile, the 90-day forecast shows a probability of above average temperatures and below average precipitation.

3. Chum Operations

There is nothing new to report. The chum incubation operation continues with a Bonneville Dam tailwater minimum of 11.3 ft all hours. Today’s tailwater was 11.9 ft and outflows at 0800 were 136.5 kcfs. The inflow forecast is for an increase over the 10-day period with flows increasing to 148 kcfs tomorrow. By the end of the 10-day period, they are forecast to subside to 120 kcfs.

4. Next TMT. The next TMT meeting is a conference call on February 13, 2019, at 9 a.m.

Today’s Attendees:

TMT Members:

Agency	TMT Representative
Army Corps of Engineers	Doug Baus (Chair), Lisa Wright, Julie Ammann
Bonneville Power Administration	Tony Norris, Scott Bettin
Bureau of Reclamation	Joel Fenolio
NOAA Fisheries	Paul Wagner
US Fish & Wildlife Service	Dave Swank

Agency	TMT Representative
Washington	Charles Morrill
Oregon	Erick Van Dyke
Idaho	N/A
Montana	N/A
Nez Perce Tribe	Jay Hesse
Umatilla Tribe	Tom Lorz
Colville Tribe	Sheri Sears
Warm Springs Tribe	N/A
Kootenai Tribe	N/A
Spokane Tribe	N/A

Other Attendees (non-TMT members):

Corps – Dan Turner, Aaron Marshall, Steve Hall, Alfredo Rodriguez, John Heitstuman, Erin Kovalchuk

DS Consulting – Emily Stranz (Facilitator), Colby Mills

FLUX Resources – Melissa Haskin (Note taker)

Columbia Basin Bulletin – Mike O’Bryant

Clearing Up – K.C. Mehaffey

Portland General Electric – Ruth Burris