

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 31 of 2017, which covers the period from 30 July – 05 August.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 137.4 to 165.5 kcfs. Daily average powerhouse forebay elevation ranged from 74.2' to 75.6' msl. Daily average project tailwater ranged from 12.4' to 13.8' msl. Secchi disk measurements stayed at or above 7.0'. Daily average water temperature ranged from 71°F to 73°F.
- b. Summer spill began 16 June. Daily average spill ranged from 89.9 to 100.4 kcfs.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
5	0545 on 05 Aug	---	BPAQ RC2 grounding Terminal
6	0545 on 05 Aug	---	BPAQ RC2 grounding Terminal
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
9	0024 on 31 Jul	---	Bank 9/10
10	0024 on 31 Jul	0036 on 31 Aug	Bank 9/10
16	0556 on 02 Aug	1119 on 02 Aug	FGE
17	1619 on 28 Jun	---	Forced out- STS stuck in slot
18	0549 on 31 Jul	1055 on 31 Aug	FGE

- d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder. Nighttime operations for lamprey began 01 June.

(1) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
7/30	0.2	0.1
7/31	-	-
8/1	-	-
8/2	0.5	0.3
8/3	0.3	0.3
8/4	0.7	0.5
8/5	0.4	0.3

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV6-9 was closed for ROV inspections from 0718 to 1419 on 01 Aug.
- (2) FV1-1 was closed for a hydro-survey from 1040 to 1142 on 02 Aug, and 1355 to 1408 on 03 Aug.
- (3) FV3-7 was closed for a hydro-survey from 1040 to 1142 on 02 Aug.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages. None.

3. RESEARCH:

a. CRITFC – Adult sampling. Annual adult sampling in the AFF continues Monday through Friday. Starting 24 July, restrictive sampling (70-72°F) commenced; 0600-1030 up to four days per week for *US vs Oregon* requirements.

b. Normandeau – Fish counting. Visual counting continues.

c. PSMFC – Smolt Monitoring. SbyC is active for NOAA. Higher temperature sampling protocols were initiated on 23 July (sample end-date of 24 July) when water temperatures ascended to 70°F. Modified sampling during higher temperatures means Index/Condition sampling will take place every other day until the daily average descends to 69.5°F. Sample and bypass mode will occur on alternating 24 hour periods (0700-0700). 100 subyearling Chinook examined with no GBT symptoms observed. Fallbacks recorded crossing the separator bars: 1 salmon. More details can be found on the [FPC web page](#).

d. USDA – Avian hazing. Deck-based hazing runs from 01 April to 31 July.

e. USFWS – Fish Health Survey. Juvenile & adult shad, and juvenile hatchery Chinook will be collected from the fish facilities as part of the annual survey. BON mortalities will also be sent to the USFWS for pathogen analysis.

- f. University of Idaho – Video monitoring. A DIDSON camera study began in late April to monitor fish in the UMT junction area near the new LPS extension.

4. FISHWAYS:

- a. Project biologists inspected 30-31 July, & 02-05 August.
 b. Fish passage plan observations.
 (1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND – Nothing to report				
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
8/2-5	Weir 37	Water over weir < 0.9'	Unknown	Monitor
7/30-8/5	Weir 38	Water over weir < 0.9'	Unknown	Monitor

- (1) FG3-3 is currently open and unplugged. The diffuser cannot be repaired until the north PH1CC area is dewatered. The next opportunity will be the 2017-18 winter maintenance period. It should be closed below tailwaters of 8.2' msl.
- (2) The FG3-4 diffuser shaft was found to be vibrating unusually. The diffuser was closed on 29 Dec 2016 to prevent further damage to the gate. The next opportunity for repair is the 2017-18 winter maintenance period.
- (3) FG3-5 was found to be not able to close all the way on 13 July. It has been left open in manual pending the next winter maintenance period.
- (4) FG3-8 was found to be banging loudly on 11 May. It was closed until repairs can be made. It should be open above tailwaters of 28.2' msl.
- (5) Bonneville had the majority of its avian lines broken due to the ice storm (not including the lines that were already removed for the spillway work). These broken lines will be replaced when high flow conditions reduce to a level that allows safe access to these tailrace locations.
- (6) PH2 diffuser B4 was discovered to have its stem bent on 24 May. It likely occurred while trying to close and is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.
- (7) The NDE cannot open past 5' putting the entrance into FPP violation for submergence (>13.0'). It is believe to be full of sand. The NDE gate will have to be removed at a future date and the sand sucked in order for this gate to open past 5'.

b. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration check occurred on 04 August.
- (3) SLEDs are installed in all fishway entrances.

c. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is on.
- (3) The DSM remains in service.

d. Lamprey Fishways.

- (1) The Bradford Is, Cascades Is, and WA shore AWS LPSs remain in service as does the NDE LFS/LPS.

e. Avian Monitoring. Bird counts are made between 01 April and 31 October.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
7/30	0	0	0	0	0
7/31	0	0	0	0	0
8/1	-	-	-	-	-
8/2	0	0	0	0	0
8/3	0	0	0	0	0
8/4	0	0	0	0	0
8/5	0	0	0	0	0

2. WATER QUALITY MONITORING:

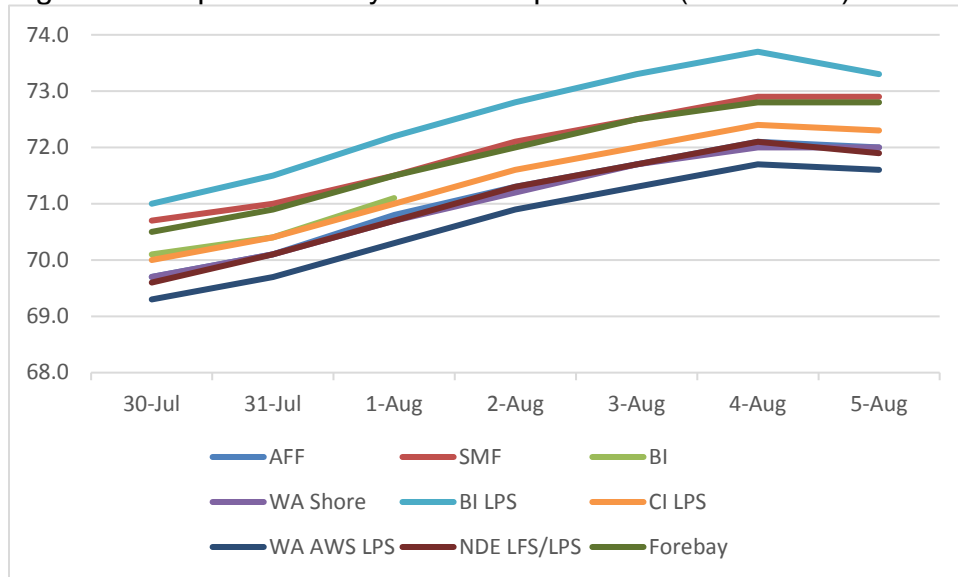
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(1) Table 4. Average daily fishway water temperatures (Fahrenheit).

Date	AFF	SMF	BI	WA Shore	BI LPS	CI LPS	WA AWS LPS	NDE LFS/LPS	Forebay
30-Jul	69.7	70.7	70.1	69.7	71.0	70.0	69.3	69.6	70.5
31-Jul	70.1	71.0	70.4	70.1	71.5	70.4	69.7	70.1	70.9
1-Aug	70.8	71.5	71.1	70.7	72.2	71.0	70.3	70.7	71.5
2-Aug	71.3	72.1	*	71.2	72.8	71.6	70.9	71.3	72.0
3-Aug	71.7	72.5	*	71.7	73.3	72.0	71.3	71.7	72.5
4-Aug	72.1	72.9	*	72.0	73.7	72.4	71.7	72.1	72.8
5-Aug	72.0	72.9	*	72.0	73.3	72.3	71.6	71.9	72.8

*Temperature data for Bradford Island went out of service at 1600 on 02-August.

(2) Figure 1. Graph of fishway water temperatures (Fahrenheit).



b. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

3. CONSTRUCTION: Nothing to report.

4. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

5. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent 06 April states effective 10 April – 31 August, operate BON pursuant to the 2017 FOP, as described within.
- b. A teletype updated on 21 June provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.
- c. A teletype sent on 20 July requests that BON pool operate at elevations of 75.0'-76.5' as a hard constraint and 75.5' - 76.5' as a soft constraint from 1400-2100 on 04 August and from 1400-2100 on 05 August for a sailboat race.

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