

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 29 of 2017, which covers the period from 16-22 July.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 158.2 to 196.5 kcfs. Daily average powerhouse forebay elevation ranged from 74.9' to 75.4' msl. Daily average project tailwater ranged from 14.1' to 16.3' msl. Secchi disk measurements ranged from 5.0' to 7.0'. Daily average water temperature ranged from 69°F to 70°F.
- b. Summer spill began 16 June. Daily average spill ranged from 90.0 to 100.5 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
2	0001 on 10 Jul	---	PO Annual maintenance
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
9	0001 on 10 Jul	0959 on 20 July	PO U1 Out Bank
11	0636 on 17 Jul	1454 on 17 Jul	STS Repair
13	0705 on 19 Jul	1001 on 19 Jul	STS Repair
14	1007 on 19 Jul	1439 on 19 Jul	STS Repair
17	1619 on 28 Jun	---	Forced out- STS stuck in slot
18	1442 on 19 Jul	1715 on 19 Jul	STS Repair

- 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
7/16	0.2	0.3
7/17	0.3	0.5
7/18	0.4	0.5
7/19	0.2	0.4
7/20	0.3	0.4
7/21	0.3	0.4
7/22	0.3	0.3

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. None.
- 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.
- b. Normandeau – Fish counting. Visual counting continues.
- c. PNNL – FGE testing. A hydroacoustic study at the PH2 gatewells as part of biological testing of the FGE mods continues through 15 July.
- d. PSMFC – Smolt Monitoring. SbyC is active for NOAA. 200 subyearling Chinook examined with one fish (0.5%) was observed with GBT symptoms. Fallbacks recorded crossing the separator bars: 1 steelhead and 6 salmon. More details can be found on the [FPC web page](#).
- e. USDA – Avian hazing. Deck-based hazing began on 01 April.
- f. USFWS – Fish Health Survey. Juvenile and 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.
- g. 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 16-22 July.
- b. Fish passage plan observations.

(1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
7/17	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE – Nothing to report				
7/16-22	Weir 37	Water over weir > 1.1'	Unknown	Monitor
7/16-22	North Downstream Entrance	Submergence < 13'	Gate is jammed and will not open past 5'	The gate will be inspected by ROV

- (2) 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.
- (3) 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.
- (4) The FG3-4 diffuser shaft was found to be vibrating unusually. The diffuser was closed on 29 Dec 2017 to prevent further damage to the gate. The next opportunity for repair is the 2017-18 winter maintenance period.
- (5) 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.
- (6) 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.
- (7) 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.

c. Adult Fishways.

- (1) The Bradford Island fish ladders went to shad mode at 1500 on 02 June. The Washington shore fish ladders went to shad mode at 1225 on 25 June.
- (2) The AFF remains in service.
- (3) Sensor calibration check occurred on 22 July.
- (4) SLEDs are installed in all fishway entrances.

d. Juvenile Fishways.

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

e. Lamprey Fishways.

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

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

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
7/16	20+	0	0	0	0
7/17	20+	0	0	0	0
7/18	20+	1	0	0	0
7/19	20+	4	0	0	0
7/20	20+	3	0	0	0
7/21	20+	0	0	0	0
7/22	20+	2	0	0	0

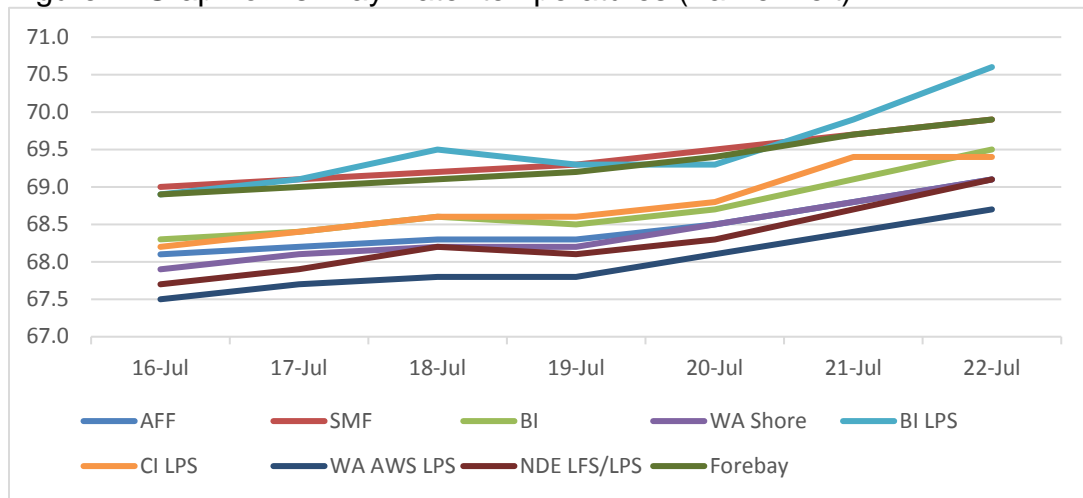
5. WATER QUALITY MONITORING:

- 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
16-Jul	68.1	69.0	68.3	67.9	68.9	68.2	67.5	67.7	68.9
17-Jul	68.2	69.1	68.4	68.1	69.1	68.4	67.7	67.9	69.0
18-Jul	68.3	69.2	68.6	68.2	69.5	68.6	67.8	68.2	69.1
19-Jul	68.3	69.3	68.5	68.2	69.3	68.6	67.8	68.1	69.2
20-Jul	68.5	69.5	68.7	68.5	69.3	68.8	68.1	68.3	69.4
21-Jul	68.8	69.7	69.1	68.8	69.9	69.4	68.4	68.7	69.7
22-Jul	69.1	69.9	69.5	69.1	70.6	69.4	68.7	69.1	69.9

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



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

6. **CONSTRUCTION:** Nothing to report.

7. **HAZMAT, SPILLS AND CLEANUP:** Nothing to report.

8. **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 07 July requests that BON forebay operate at elevations of 74.5' as a soft constraint and 74.0' as a hard constraint during the following times: 1600 on 18 July to 1000 on 19 July, 1600 on 19 July to 1000 on 20 July, 1600 on 20 July to 1600 on 22 July, and 1100 on 23 July to 1400 on 23 July. This is to facilitate a sailboat and kiteboarding event.
- d. A teletype sent on 18 July requests that BON pool operate within a 1.5' band, hard constraint, effective from 0600 on 19 July to 1800 on 22 July and from 0600 on 24 July to 1800 on 28 July for treaty fishing.

- e. 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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