

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 30 of 2017, which covers the period from 23-29 July.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 145.4 to 178.4 kcfs. Daily average powerhouse forebay elevation ranged from 75.1' to 75.8' msl. Daily average project tailwater ranged from 13.1' to 15' msl. Secchi disk measurements ranged from 6.0' to 7.0'. Daily average water temperature ranged from 70°F to 71°F.
- b. Summer spill began 16 June. Daily average spill ranged from 89.9 to 100.0 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	0712 on 27 Jul	PO Annual maintenance
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
12	1012 on 27 Jul	1145 on 27 Jul	Exciter issue
15	0700 on 23 Jul	1110 on 26 Jul	PO FGE mods
17	1619 on 28 Jun	---	Forced out- STS stuck in slot

- 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
7/23	0.3	0.3
7/24	0.3	0.3
7/25	0.3	0.3
7/26	0.4	0.3
7/27	0.2	0.2
7/28	0.4	0.4
7/29	0.3	0.5

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. None.
- b. STS/VBS inspections.

Unit	Date	Run Hours	Comments
11	7/24	955	OK
12	7/24	1042	OK
13	7/24	1003	OK
14	7/24	485	OK
15	7/24	947	OK
16	7/24	507	OK
17	7/24	---	OOS
18	7/24	1055	OK

- 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). 81 subyearling Chinook examined with no GBT symptoms observed. Fallbacks recorded crossing the separator bars: 4 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 23-29 July.
 b. Fish passage plan observations.
 (1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
7-26	A-Branch	Differential > 1.1'	Unknown	NA
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE – Nothing to report				
7/23,27,28	Weir 37	Water over weir < 0.9'	Unknown	Monitor
7/23,27,28	Weir 38	Water over weir < 0.9'	Unknown	Monitor
7/23-29	North Downstream Entrance	Submergence < 13'	Gate is jammed and will not open past 5'	Believed to be full of sand.

- (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.

b. Adult Fishways.

- (1) Due to declines in shad passage, the Bradford Island fish ladder returned to salmon mode at ~1345 on 21 July. The Washington Shore fish ladder returned to salmon mode at ~1410 on 21 July.
- (2) The AFF remains in service.
- (3) Sensor calibration check occurred on 22 July.
- (4) 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
7/23	4	0	0	0	0
7/24	6	0	0	0	0
7/25	2	1	0	0	0
7/26	20+	4	0	0	0
7/27	20+	3	0	0	0
7/28	20+	0	0	0	0
7/29	20+	2	0	0	0

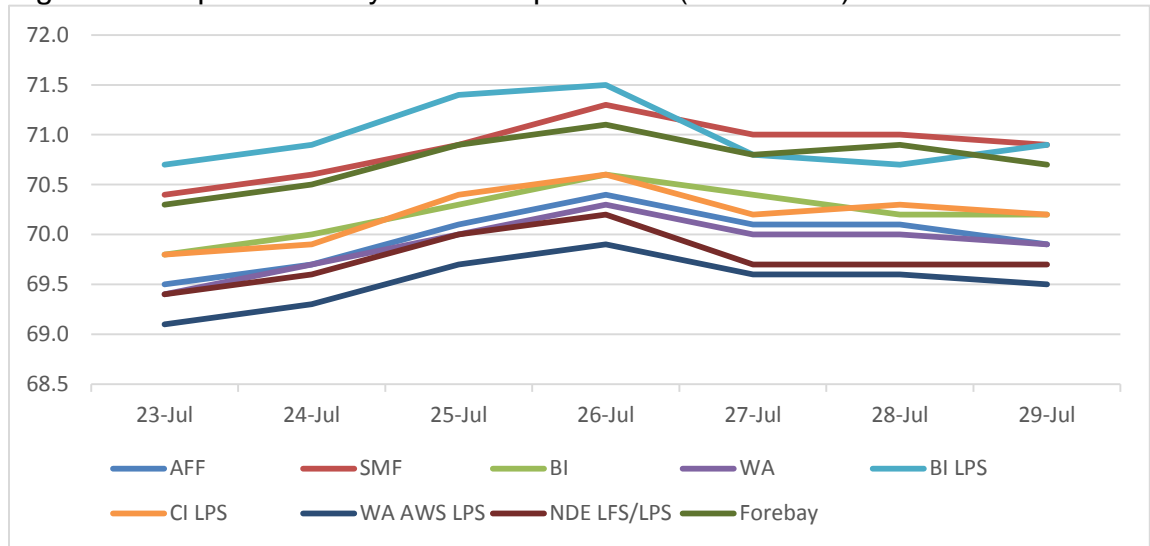
2. WATER QUALITY MONITORING:

- 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	BI LPS	CI LPS	WA AWS LPS	NDE LFS/LPS	Forebay
23-Jul	69.5	70.4	69.8	69.4	70.7	69.8	69.1	69.4	70.3
24-Jul	69.7	70.6	70.0	69.7	70.9	69.9	69.3	69.6	70.5
25-Jul	70.1	70.9	70.3	70.0	71.4	70.4	69.7	70.0	70.9
26-Jul	70.4	71.3	70.6	70.3	71.5	70.6	69.9	70.2	71.1
27-Jul	70.1	71.0	70.4	70.0	70.8	70.2	69.6	69.7	70.8
28-Jul	70.1	71.0	70.2	70.0	70.7	70.3	69.6	69.7	70.9
29-Jul	69.9	70.9	70.2	69.9	70.9	70.2	69.5	69.7	70.7

(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 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.
- d. 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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