

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 32 of 2017, which covers the period from 06-12 August.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 134.9 to 148.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.8' to 74.9' msl. Daily average project tailwater ranged from 12.3' to 13.3' msl. Secchi disk measurements stayed at or above 7.0'. Daily average water temperature ranged from 73°F to 74°F.
- b. Summer spill began 16 June. Daily average spill ranged from 90.9 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
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
11	0003 on 07 Aug	0925 on 11 Aug	PH2 Roof work
12	0003 on 07 Aug	0925 on 11 Aug	PH2 Roof work
13	0003 on 07 Aug	0925 on 11 Aug	PH2 Roof work
14	0003 on 07 Aug	0925 on 11 Aug	PH2 Roof work
15	1000 on 07 Aug	1513 on 07 Aug	PO Microwave Transfer Trip
16	1000 on 07 Aug	1500 on 07 Aug	PO Microwave Transfer Trip
17	1619 on 28 Jun	---	Forced out- STS stuck in slot
18	1000 on 07 Aug	1508 on 07 Aug	PO Microwave Transfer Trip

- 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
8/6	0.1	0.4
8/7	0.1	0.1
8/8	0.2	0.3
8/9	0.3	0.3
8/10	1.3	1.5
8/11	0.1	0.1
8/12	0.4	0.2

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV1-1 was closed for cleaning from 0706 to 0716 on 10 Aug.

b. STS/VBS inspections.

Unit	Date	Run Hours	Comments
11	8/7	418	Ok
12	8/7	207	Ok
13	8/7	135	Ok
14	8/7	0	Ok
15	8/7	49	Ok
16	8/7	32	Ok
17	8/7	-	OOS
18	8/7	422	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. **Starting 02 August sampling ceased immediately as temperatures exceeded 72°F.**

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 sampling will take place every other day until the daily average descends to 69.5°F. Sample & bypass mode will occur on alternating 24 hour periods (0700-0700). Gas Bubble Trauma examinations are typically

performed 2 days/week through the end of spill. However, due to higher water temperatures & decreased TDG levels, GBT exam effort has been reduced to 1 day/week. 0 were sampled due to extremely low fish numbers present during collection efforts. 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 ended on 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 06-12 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				
8/6,10-11	Weir 37	Water over weir < 0.9'	Unknown	Monitor
8/6-12	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) FG3-8 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.
- (4) 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.
- (5) 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.

(6) 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 09 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 NDE LFS/LPS, WA AWS, CI, and BI LPS all remain in service.

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

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
8/6	5	5	0	0	0
8/7	0	0	0	0	0
8/8	0	0	0	0	0
8/9	0	0	0	0	0
8/10	0	0	0	0	0
8/11	0	0	0	0	0
8/12	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](#).

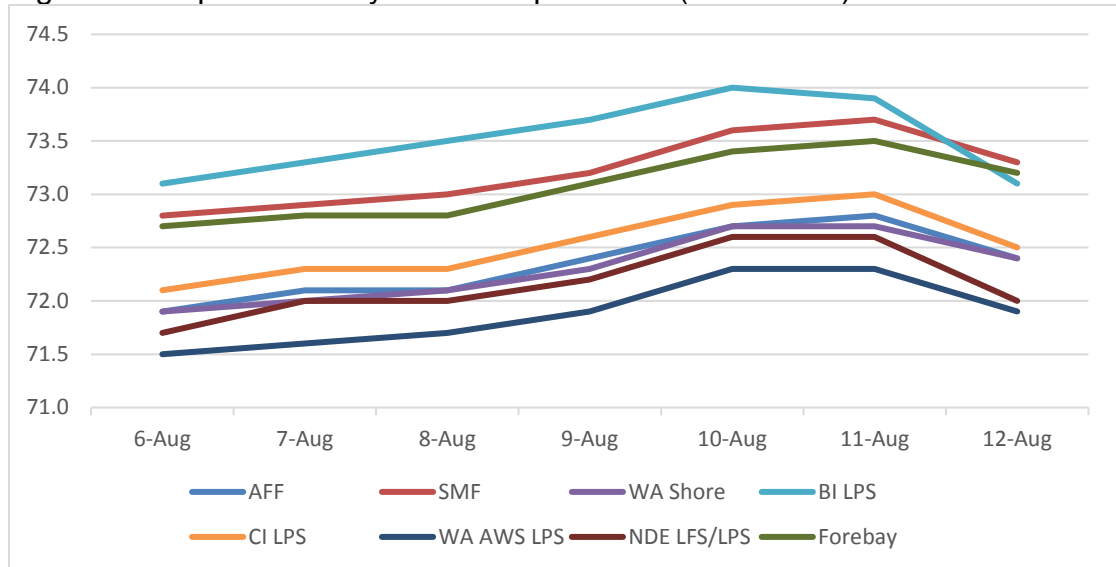
(1) Table 4. Average daily fishway water temperatures (Fahrenheit

Date	AFF	SMF	BI	WA Shore	BI LPS	CI LPS	WA AWS LPS	NDE LFS/LPS	Forebay
6-Aug	71.9	72.8	*	71.9	73.1	72.1	71.5	71.7	72.7
7-Aug	72.1	72.9	*	72.0	73.3	72.3	71.6	72.0	72.8
8-Aug	72.1	73.0	*	72.1	73.5	72.3	71.7	72.0	72.8
9-Aug	72.4	73.2	*	72.3	73.7	72.6	71.9	72.2	73.1
10-Aug	72.7	73.6	*	72.7	74.0	72.9	72.3	72.6	73.4

11-Aug	72.8	73.7	*	72.7	73.9	73.0	72.3	72.6	73.5
12-Aug	72.4	73.3	*	72.4	73.1	72.5	71.9	72.0	73.2

*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 11 August states that effective immediately and continuing until further notice operate in accordance with an adjusted turbine unit operating priority order. Unit 15 will be operated as last on, first off. This is to minimize operation due to loose bolts on the flow restrictor plate until repairs can be made.

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