

## MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 18 of 2017, which covers the period from 30 April to 06 May.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 340.8 to 388.4 kcfs. Daily average powerhouse forebay elevation ranged from 72.6 to 73.5' msl. Daily average project tailwater ranged from 24.7 to 27.3' msl. Secchi disk measurements ranged from 3 to 4.0'. Daily average water temperature ranged from at 51 to 53 °F.
- b. Spring spill began 10 April. Daily average spill ranged from 134 to 180.5 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
3	0831 on 24 Feb	---	5-year overhaul
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
14	0918 on 02 May	1627 on 03 May	STS inspection camera stuck
16	0709 on 27 Mar	---	4-year overhaul

- d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder.

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

Date	F1	F2
4/30	0.2	0.4
5/1	0.3	0.4
5/2	0.3	0.4
5/3	0.2	0.8
5/4	0.1	0.1
5/5	0.1	0.2
5/6	0.2	0.4

**2. MAINTENANCE ACTIVITIES:**

- a. Auxiliary Water System Closures. None.

b. STS/VBS inspections. Table 2a

Unit	Date	Run Hours	Comments
11	5/1	650	OK
12	5/1	648	OK
13	5/1	651	OK
14	5/1	649	OK
15	5/1	640	OK
16	5/1	---	OOS
17	5/1	650	OK
18	5/1	650	OK

c. Dewatering and Fish Salvages. None.

**3. RESEARCH:**

- a. CRITFC – Adult sampling. Annual adult sampling in the AFF began on 17 April.
- b. NOAA – PIT evaluation. A biological study of the B2CC PIT antenna occurred 24-28 April.
- c. Normandeau – Fish counting. Visual counting began on 01 April.
- d. PNNL – FGE testing. A hydroacoustic study at the PH2 gatewells as part of biological testing of the FGE mods began on 10 April.
- e. PSMFC – Smolt Monitoring. SbyC is active for USFWS and NOAA. 200 yearling Chinook and steelhead were examined for GBT: four fish (2.0%) were observed with symptoms. Fallbacks recorded crossing the separator bars: 27 steelhead, 2 salmon, and 5 unknown salmonid. More details can be found on the [FPC web page](#).
- f. USDA – Pinniped and avian hazing. Deck-based pinniped hazing began 01 March, avian hazing on 01 April.
- g. 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.
- h. UI – 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 April – 06 May.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
<b>BRADFORD ISLAND –</b>				
5/6	PH1 entrances	Entrance Diffs > 2'	Unknown	Monitor
<b>CASCADES ISLAND –</b>				
5/6	Entrance	Entrance Diff < 1'	Bad sensor read	Repair
<b>WASHINGTON SHORE</b>				
5/2,3	Weir 37	Water over weir > 1.1'	Sampling in AFF	None
4/30, 5/1, 5/6	Weir 38	Water over weir < 0.9'	Unknown	None

- (2) 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.
- (3) 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.
- (4) FG3-5 has been stuck halfway open since mid-January. The next opportunity for repair is the 2017-18 winter maintenance period.
- (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.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration did not occur this week.
- (3) SLEDs are installed in all fishway entrances.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is on.
- (3) The B2CC remains open.

(4) The DSM remains in service.

e. Lamprey Fishways.

(1) The Bradford Is, Cascades Is, and WA shore AWS LPSs remain in service.

(2) The NDE LFS/LPS remains out of service until pumps are installed.

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

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
4/30	12	0	0	0	0
5/1	12	0	0	0	0
5/2	14	0	0	0	0
5/3	8	0	0	0	0
5/4	33	0	0	0	0
5/5	32	0	0	0	0
5/6	54	6	0	0	0

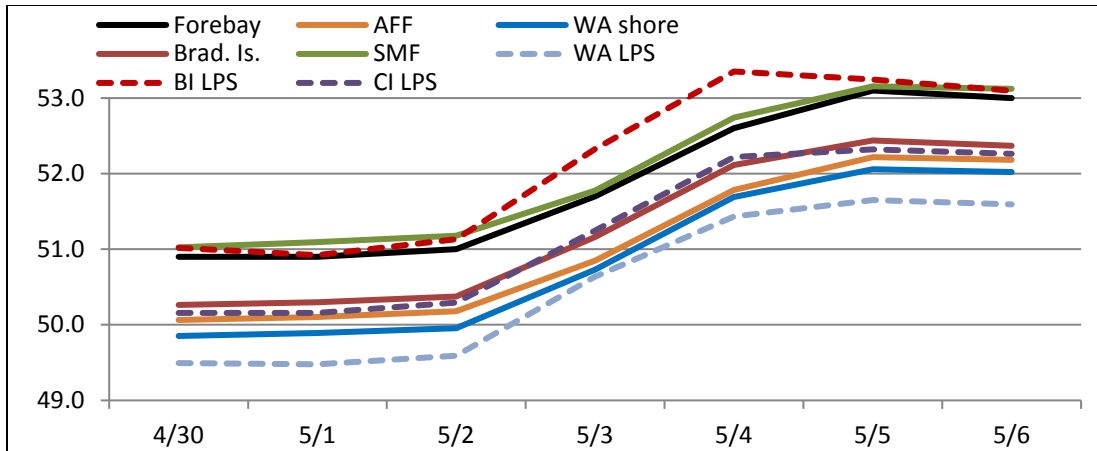
**5. WATER QUALITY MONITORING:**

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	Forebay	Fishways				Lamprey		
		Brad. Is.	WA shore	AFF	SMF	BI LPS	WA LPS	CI LPS
4/30	50.9	50.3	49.9	50.1	51.0	51.0	49.5	50.2
5/1	50.9	50.3	49.9	50.1	51.1	50.9	49.5	50.2
5/2	51.0	50.4	50.0	50.2	51.2	51.1	49.6	50.3
5/3	51.7	51.2	50.7	50.8	51.8	52.3	50.6	51.2
5/4	52.6	52.1	51.7	51.8	52.7	53.4	51.4	52.2
5/5	53.1	52.4	52.1	52.2	53.2	53.2	51.7	52.3
5/6	53.0	52.4	52.0	52.2	53.1	53.1	51.6	52.3

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



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

**6. CONSTRUCTION:**

a. Equipment installation for a biological study of the FGE mods at PH2 began 07 March and will continue through 10 May.

**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 2 May provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.

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