

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 14 of 2017, which covers the period from 02 to 08 April.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 384.5 to 448 kcfs. Daily average powerhouse forebay elevation ranged from 72.5 to 74.0' msl. Daily average project tailwater ranged from 26.9 to 30.1' msl. Secchi disk measurements ranged from 2.0' to 3.0'. Daily average water temperature ranged from 44 to 46 °F.
- b. Spill bays 01 and 18 are open at least 0.5' during daylight hours to provide attraction flow for Cascades Island and Bradford Island fishways, respectively. Daily average spill ranged from 176.9 to 255.5 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
F1	0823 on 02 Apr	1534 on 03 Apr	Water in turbine bearing
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
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) F2 was placed in reserve service from 1546 to 1702 on 04 Mar, and from 1839 to 1940 on 08 April (drawdown 3.4') to float trash.

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

Date	F1	F2
4/2	0.3	0.4
4/3	0.3	0.2
4/4	0.1	0.1
4/5	0.2	0.2
4/6	0.0	0.2
4/7	0.0	0.3
4/8	0.6	3.4

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV3-7 was closed for cleaning from 0708 to 0715 on 03 Apr, and 0945 to 1001 on 05 Apr.

(2) FV3-9 was closed for cleaning from 1001 to 1007 on 05 Apr.

b. STS/VBS inspections. Table 2a.

Unit	Date	Run Hours	Comments
11	4/3	938	OK
12	4/3	279	OK
13	4/3	932	OK
14	4/3	658	OK
15	4/3	850	OK
16	4/3	---	OK
17	4/3	935	OK
18	4/3	935	OK

c. Dewatering and Fish Salvages. None.

3. RESEARCH:

a. Normandeau – Fish counting. Video counting continues. Visual counting began on 01 April.

b. PNNL – FGE testing. A hydroacoustic study at the PH2 gatewells as part of biological testing of the FGE mods will begin on 10 April. Equipment installation began on 07 March.

c. PSMFC – Smolt Monitoring. No research fish were collected this week. Fallbacks recorded crossing the separator bars: 3 steelhead. More details can be found on the [FPC web page](#).

d. USDA – Pinniped and avian hazing. Deck-based pinniped hazing began 01 March, avian hazing on 01 April.

4. FISHWAYS:

a. Project biologists inspected 02- 08 April.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
CASCADES ISLAND				
4/4	Ladder Entrance	Entrance Differential low	Unknown	None
WASHINGTON SHORE				
4/4	Weir 37	Water over weir < 0.9'	Unknown	None
4/2-5,8	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 was checked on 05 April.
- (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 kelt trigger was reached on 0800 22 March.
- (4) The DSM remains in service.

e. Lamprey Fishways.

- (1) The WA shore AWS LPS began operating 28 Feb to test the new pumps.
 - (2) The Bradford Is and Cascades Is LPSs returned to service on 31 March.
 - (3) 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
4/2	0	0	0	0	0
4/3	27	0	0	0	0
4/4	3	0	0	0	18
4/5	9	0	0	0	12
4/6	-	-	-	-	-
4/7	-	-	-	-	-
4/8	28	1	0	0	16

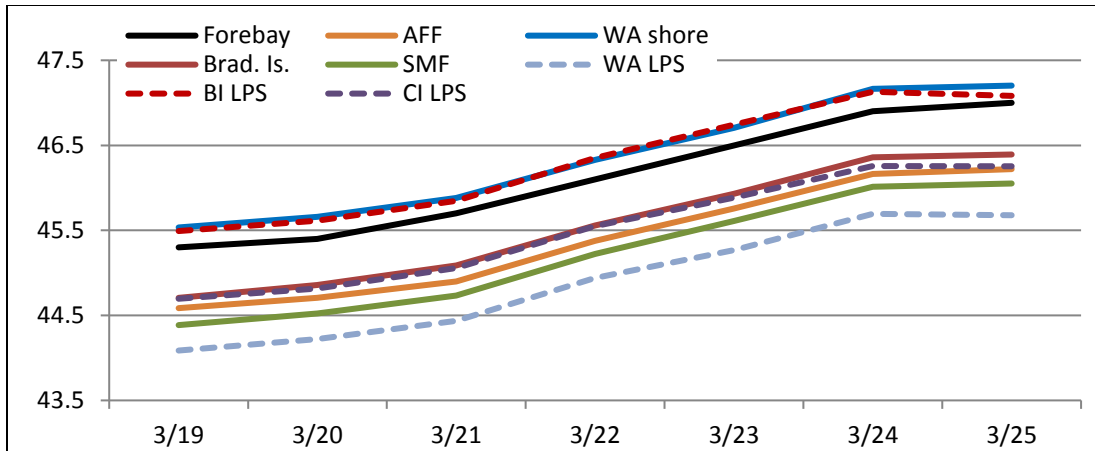
5. WATER QUALITY MONITORING:

- 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
3/19	45.3	44.7	44.4	44.6	45.5	45.5	44.1	44.7
3/20	45.4	44.9	44.5	44.7	45.7	45.6	44.2	44.8
3/21	45.7	45.1	44.7	44.9	45.9	45.8	44.4	45.1
3/22	46.1	45.6	45.2	45.4	46.3	46.4	44.9	45.5
3/23	46.5	45.9	45.6	45.8	46.7	46.7	45.3	45.9
3/24	46.9	46.4	46.0	46.2	47.2	47.1	45.7	46.3
3/25	47.0	46.4	46.1	46.2	47.2	47.1	45.7	46.3

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



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

6. CONSTRUCTION: Nothing to report.

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

8. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent on 04 Jan states that effective at 1400 on 04 Jan, minimum tailwater at Bonneville is 12.5 feet during all hours for Chum incubation.
- b. Teletypes sent on 05 and 07 April update the flood control teletype to outflows no greater than 430 kcfs effective 1500 on 05 April until further notice.
- c. A teletype sent on 06 April states that effective 2400 on 09 April, Chum incubation restrictions are ended and BON may resume normal tailwater operations.
- d. A teletype sent 06 April states effective 10 April – 31 August, operate BON pursuant to the 2017 FOP, as described within.
- e. A teletype updated on 08 April provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.

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