

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 12 of 2017, which covers the period from 19 March to 25 March.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 409.6 to 459.6 kcfs. Daily average powerhouse forebay elevation ranged from 72.3 to 73.5' msl. Daily average project tailwater ranged from 28.8 to 30.7' msl. Secchi disk measurements ranged from 1.0 to 2.0'. Daily average water temperature ranged from 42 to 45 °F.
- b. Spill bays 01 and 18 are open at least 6" during daylight hours to provide attraction flow for Cascades Island and Bradford Island fishways, respectively. Daily average spill ranged from 190.1 to 240.2 kcfs.
- c. Unit Operation. PH2 became the priority powerhouse on 01 March. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
11	1153 on 21 Mar	1218 on 21 Mar	Transmission maint. Error, BPA tripping
11	0601 on 24 Mar	1356 on 24 Mar	FGE Mods
12	2007 on 14 Sep	1628 on 21 Mar	Exciter ground
13	0701 on 06 Mar	1226 on 21 Mar	Transmission maint. Error, BPA tripping
14	0701 on 06 Mar	1219 on 21 Mar	Transmission maint. Error, BPA tripping
15	0913 on 18 Mar	1217 on 21 Mar	FGE mods

- 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
3/19	0.8	2.8
3/20	0.6	0.5
3/21	1.5	3.8
3/22	1.3	1.7
3/23	0.2	0.5
3/24	0.9	5
3/25	3.0	0.5

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0712 to 0757 on 20 March, 0702 to 0732 on 21 March, and 0715 to 0745 on 23 March.
- (2) FV3-7 was closed for cleaning from 0817 to 0841 on 20 March, 0743 to 0756 on 21 March, and 0808 to 1044 on 23 March.
- (3) FV3-9 was closed for cleaning from 0836 to 0850 on 20 March, 0756 to 0814 on 21 March and 0808 to 1044 on 23 March.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages. On 22 March, project biologists salvaged 3 sculpin and 1 channel catfish from unit 16 tail logs.

3. RESEARCH:

a. Normandeau – Fish counting. Video counting continues. Visual counting will begin 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. Sampling began at 0700 on 03 March. Two Steelhead and one Salmon fallbacks were observed this week. No research fish were collected this week. More details can be found on the [FPC web page](#).

d. USDA – Pinniped hazing. Deck-based hazing began 01 March.

4. FISHWAYS:

a. Project biologists inspected 19 - 25 March.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
CASCADES ISLAND				
WASHINGTON SHORE				
3/19,20	Weir 37	Water over weir < 0.9'	Unknown	None

3/19,20,22,25	Weir 38	Water over weir < 0.9'	Unknown	None
3/21	Collection Channel	Water velocity < 1.5'	High tailwater	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 returned to service on 05 March.
- (2) Sensor calibration was not checked 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 kelt trigger was reached as of 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) All other LPSs remain OOS.

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

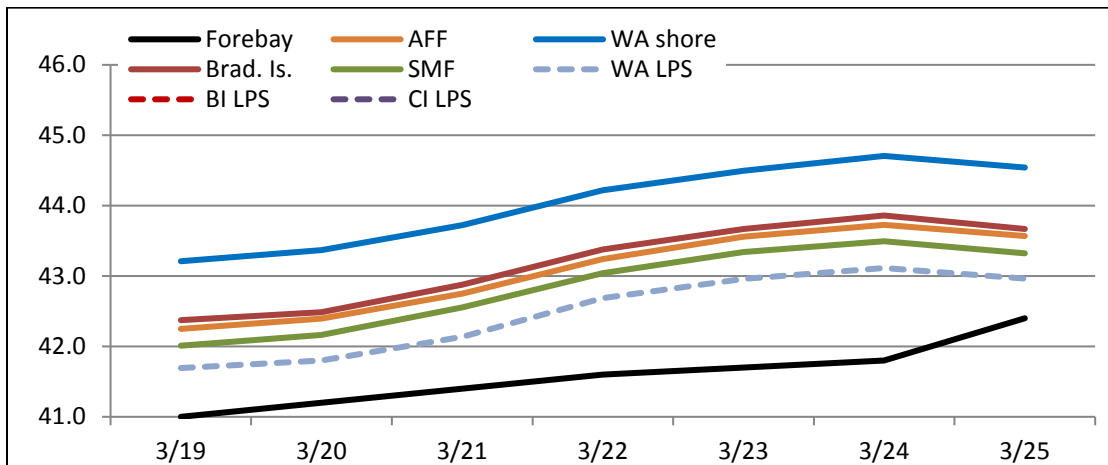
5. WATER QUALITY MONITORING:

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	WA LPS
3/19	41.0	42.4	42.0	42.2	43.2	41.7
3/20	41.2	42.5	42.2	42.4	43.4	41.8
3/21	41.4	42.9	42.6	42.8	43.7	42.1
3/22	41.6	43.4	43.0	43.2	44.2	42.7
3/23	41.7	43.7	43.3	43.6	44.5	43.0
3/24	41.8	43.9	43.5	43.7	44.7	43.1
3/25	42.4	43.7	43.3	43.6	44.5	43.0

(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. Installation of flow control plates in the A and B gatewells at PH2 were completed on 17 March.
- b. An equipment barge for a biological FGE study was installed near the B2CC on 07 March.

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. A teletype sent on 15 March, updated 22 March, provides updated spill caps and lack of load spill conditions to be used from 0000 on 23 March through 2359 on 31 March.
- c. Teletypes sent on 20, 21, and 22 March request effective immediately and until further notice, that BPA maintain BON outflows near 440, 450, and 460 kcfs (respectively) on an instantaneous basis for flood control.

JERRY A. CARROLL
Operations Manager
Bonneville Project