

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 11 of 2017, which covers the period from 12 March to 18 March.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 320.6 to 411.8 kcfs. Daily average powerhouse forebay elevation ranged from 72.5 to 74.1' msl. Daily average project tailwater ranged from 24.7 to 28.8' msl. Secchi disk measurements ranged from 2.0 to 4.0'. Daily average water temperature ranged from 40 to 42 °F.
- b. Spill bays 01 and 18 are open 0.5' during daylight hours to provide attraction flow for Cascades Island and Bradford Island fishways, respectively. Daily average spill ranged from 87.7 to 186.8 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
2	1512 on 13 Mar	1618 on 13 Mar	Raking trash
3	0742 on 14 Mar	0936 on 14 Mar	Raking trash
4	0938 on 14 Mar	1144 on 14 Mar	Raking trash
5	1235 on 14 Mar	1411 on 14 Mar	Raking trash
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
10	1453 on 14 Mar	1601 on 14 Mar	Raking trash
12	2007 on 14 Sep	---	Exciter ground
14	0701 on 06 Mar	0906 on 18 Mar	FGE mods
15	0913 on 18 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
3/12	1.5	0.2
3/13	0.3	0.3
3/14	0.3	0.4
3/15	0.5	0.8
3/16	0.7	1.3
3/17	1.2	2.3
3/18	0.2	0.4

**2. MAINTENANCE ACTIVITIES:**

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0701 to 0749 on 13 March, 0723 to 0740 on 14 March, and 0727 to 0735 on 15 March.
- (2) FV3-7 was closed for cleaning from 1240 to 1310 on 13 March.
- (3) FV3-9 was closed for cleaning from 1240 to 1310 on 13 March.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages. None.

**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. Ten Steelhead 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 12 - 18 March.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
<b>BRADFORD ISLAND</b>				
3/12-18	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
<b>CASCADES ISLAND</b>				
<b>WASHINGTON SHORE</b>				
3/13,14,17	Weir 37	Water over weir < 0.9'	Unknown	None
3/12-14,17-18	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) To make up for reduced water flow through FG3-4 and 5, FG3-6 is open in manual (above normal criteria) according to water levels.
  - (6) 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 checked on 17 March.
  - (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 is open intermittently with spill, per FPP section 2.2.7.
  - (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.

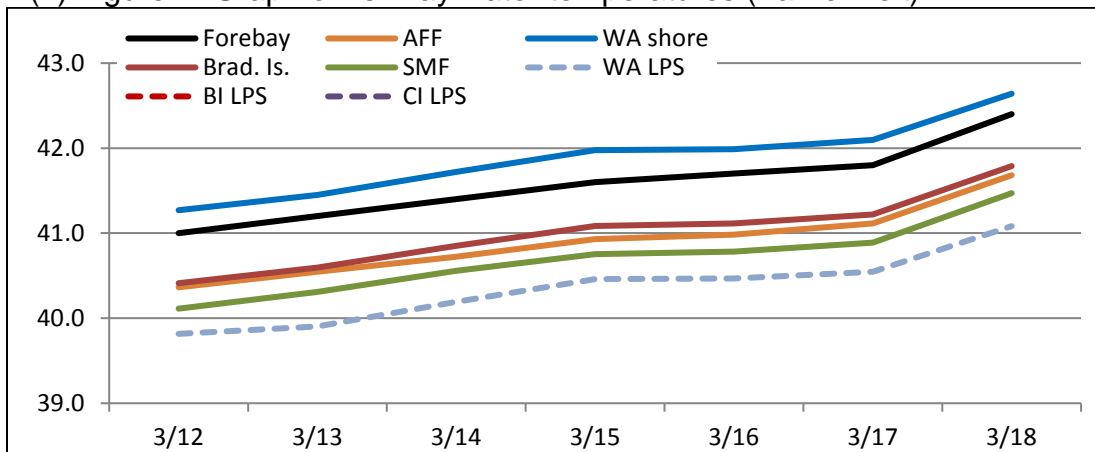
**5. WATER QUALITY MONITORING:**

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
3/12	41.0	40.4	40.1	40.4	41.3	39.8
3/13	41.2	40.6	40.3	40.5	41.5	39.9
3/14	41.4	40.9	40.6	40.7	41.7	40.2
3/15	41.6	41.1	40.8	40.9	42.0	40.5
3/16	41.7	41.1	40.8	41.0	42.0	40.5
3/17	41.8	41.2	40.9	41.1	42.1	40.5
3/18	42.4	41.8	41.5	41.7	42.6	41.1

(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 14 March updates the order that projects spill for lack of load conditions and spill caps for fish passage.
- c. A teletype sent on 14 March requests that BPA make best efforts operate JDA so BON outflow is maintained near 370 kcfs on an instantaneous basis, to control the Vancouver stage below flood level.
- d. A teletype sent on 15 March, updated 17 March, provides updated spill caps and lack of load spill conditions to be used from 0000 on 13 March through 2359 on 31 March.
- e. A teletype sent on 17 March requests effective immediately and until further notice, that BPA maintain BON outflows near 410 kcfs on an instantaneous basis for flood control.

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