

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 9 of 2017, which covers the period from 26 February to 4 March.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 225.8 to 271.1 kcfs. Daily average powerhouse forebay elevation ranged from 72.0 to 74.0' msl. Daily average project tailwater ranged from 19.1 to 21.6' msl. Secchi disk measurements ranged from 3.0 to 3.5'. Daily average water temperature ranged from 37 to 38 °F.
- b. Spill bays 01 is open 0.5' to provide attraction flow for the Cascades Is. fishway, bay 18 has been closed for the BI Erosion Repair ([16BON107](#)). Daily average spill ranged from 0.8 to 19.7 kcfs.
- c. Unit Operation. PH1 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
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
12	2007 on 14 Sep	---	Exciter ground

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

- (1) F1 went OOS for winter maintenance at 0300 on 25 November. It was returned to service at 1150 on 2 March, two days behind schedule due to indication errors upon start-up.
- (2) F2 went OOS at 0300 on 25 November. It was returned to service at 0944 on 28 Feb.
- (3) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
3/1	---	0.2
3/2	0.3	0.3
3/3	0.5	0.6
3/4	0.7	0.7

**2. MAINTENANCE ACTIVITIES:**

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0710 to 0730 on 27 February, and from 1001 to 1015 on 02 March.
- (2) FV3-7 was closed for cleaning from 0730 to 0800 on 27 February, and from 0742 to 0825 on 02 March.
- (3) FV3-9 was closed for cleaning from 0730 to 0800 on 27 February.
- (4) FV4-3 and 4-4 were taken out of service on 17 January for the BI Erosion Repair work. They were returned to service on 03 March.
- (5) FV6-9 was taken out of service on 25 November for the WA shore ladder dewatering. It was rehabbed and returned to service at 0900 on 27 Feb.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages. None.

**3. RESEARCH:**

a. Normandeu – 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 will begin on 07 March.

c. PSMFC – Smolt Monitoring. Sampling began at 0700 on 03 March. No research fish were collected this week. More details can be found on the [FPC web page](#).

**4. FISHWAYS:**

a. Project biologists inspected 27 February – 02 March, 04 March.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
3/3		No bio inspection	Staffing	None
<b>BRADFORD ISLAND</b>				
All week	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
<b>CASCADES ISLAND – See below</b>				
<b>WASHINGTON SHORE – None</b>				

- (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) Cascades Island diffusers FG6-18,-19, and -20 are closed to minimize attraction flow to blown grating and hatches in those areas (see 17BON03). Repairs have been coordinated for the week of 5 March.

c. Adult Fishways.

- (1) The WA shore ladder was returned to service at 0900 on 27 Feb. The UMT remains closed and is bulkheaded at both ends.
- (2) The Cascades Island exit was opened at ~1300 on 23 November. It will remain open until the ladder is dewatered for emergency repairs (see 17BON03).
- (3) The AFF is dewatered.
- (4) No sensor calibration occurred this week.
- (5) 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 was returned to service on 21 Feb.
- (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 in March when the spillway lines are reinstalled.

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.

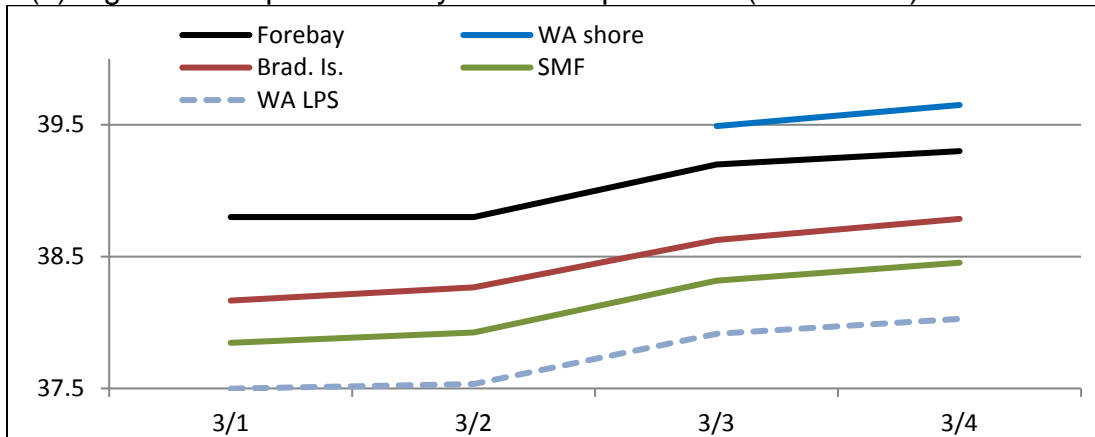
**5. WATER QUALITY MONITORING:**

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	SMF	WA LPS
3/1	38.8	38.2	37.8	OOS	37.5
3/2	38.8	38.3	37.9	---	37.5
3/3	39.2	38.6	38.3	39.5	37.9
3/4	39.3	38.8	38.5	39.7	38.0

(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. Flow control plates in the A and B gatewells at PH2 have been installed in all units except 14 as part of the FGE modifications. Unit 14 is scheduled to be completed on 17 March.
- b. WA shore upper ladder lamprey modifications were completed on 03 March.
- c. Repairs to the B-branch apron in the south spillway tailrace started 23 January

and completed on 03 March. The final hydrosurvey is scheduled for 06 March.

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

**8. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent on 24 February provides updated wintertime spill and lack of load conditions to be used from 23 February 2017 through 31 March 2017.
- b. 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.
- c. A teletype sent on 03 March states that from 0800 to 1700 on 7 March, close and apply clearance to the B2CC to install equipment as part of a PH2 FGE biological evaluation.
- d. A teletype sent on 03 March states effective immediately and until further notice, the order of spill is as follows: B2CC except on 7 March (above), then use the modified spill pattern in the provided table. This operation is to limit rock movement prior to a contract hydrosurvey of the BI Erosion Repair.
- e. A teletype sent on 03 March cancels requirements for no spill due to lack-of-load conditions due to completion of the BI Erosion Repair. Spill ops are governed by the provided spill pattern (above).
- f. A teletype sent on 03 March requests no spill from 0900 to 1400 on 06 March to allow a post rock placement hydrosurvey of the BI Erosion Repair. The B2CC may be operated. One hour notice is required if spill is imminent.

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