

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 13 of 2017, which covers the period from 26 March to 01 April.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 439.7 to 453.6 kcfs. Daily average powerhouse forebay elevation ranged from 72.8 to 74.0' msl. Daily average project tailwater ranged from 30.1 to 30.4' msl. Secchi disk measurements remained at 1.0' all week. Daily average water temperature ranged from 44 to 45 °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 221.1 to 247.7 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
1	0748 on 28 Mar	0936 on 28 Mar	Rake trash
2	0959 on 28 Mar	1154 on 28 Mar	Rake trash
3	1242 on 28 Mar	1513 on 28 Mar	Rake trash
6	1233 on 30 Mar	1407 on 30 Mar	Rake trash
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
10	1449 on 30 Mar	1615 on 30 Mar	Rake trash
13	0001 on 29 Mar	1612 on 29 Mar	FGE install, thrust collar
16	0709 on 27 Mar	---	4-year overhaul
17	0102 on 30 Mar	1644 on 30 Mar	FGE install, thrust collar
18	0001 on 28 Mar	1535 on 28 Mar	FGE install, thrust collar

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

- (1) F1 was placed in reserve service from 0010 – 0137 on 26 Mar, and from 1930 – 1945 on 31 Mar to float trash (drawdown 10.0').
- (2) F2 was placed in reserve service from 1930 – 1945 on 31 Mar, and from 1104 – 1219 on 1 April (drawdown 3.0') to float trash.

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

Date	F1	F2
3/26	3.0	0.5
3/27	0.6	0.6
3/28	0.4	0.9
3/29	0.1	0.3
3/30	0.6	0.6
4/1	0.5	10.0
4/2	0.2	3.0

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 0735 – 0803 on 27 Mar, and 0706 to 0755 on 30 Mar.
- (3) FV3-9 was closed for cleaning from 0735 – 0803 on 27 Mar, and 0706 to 0755 on 30 Mar.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages.

- (1) On 28 March, Project Biologists inspected the unit 16 draft tube. No fish were found.

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: 1 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 26 March – 01 April.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
3/27	Weir 37	Water over weir < 0.9'	Unknown	None
3/27,29-30	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 30 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 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
4/1	0	0	0	0	0

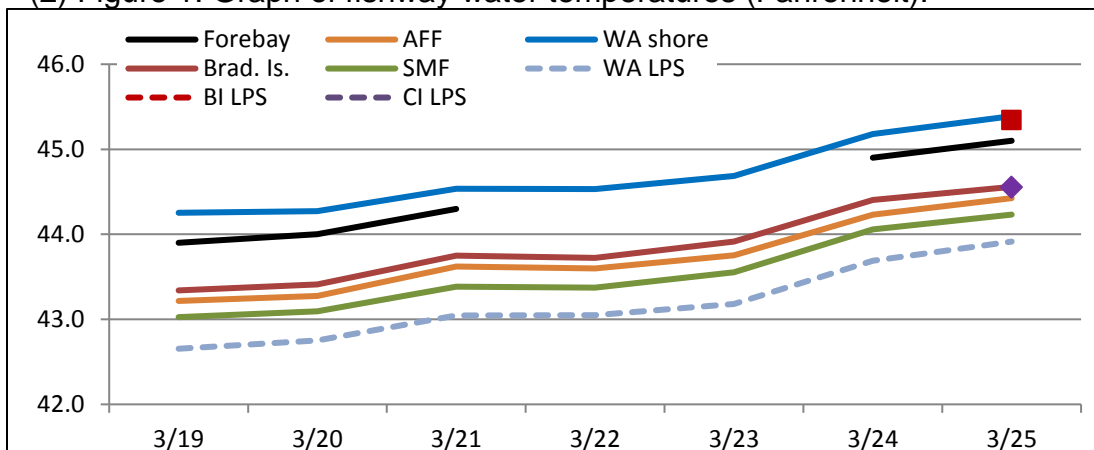
5. WATER QUALITY MONITORING:

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
3/19	43.9	43.3	43.0	43.2	44.3	OOS	42.7	OOS
3/20	44.0	43.4	43.1	43.3	44.3	---	42.8	---
3/21	44.3	43.7	43.4	43.6	44.5	---	43.0	---
3/22	N/A	43.7	43.4	43.6	44.5	---	43.1	---
3/23	N/A	43.9	43.6	43.8	44.7	---	43.2	---
3/24	44.9	44.4	44.1	44.2	45.2	---	43.7	---
3/25	45.1	44.6	44.2	44.4	45.4	45.3	43.9	44.6

(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 continues.

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 updated on 23 March provides spill caps and lack of load spill conditions to be used from 0000 on 23 March through 2359 on 31 March.
- c. A teletype updated on 26 March request effective immediately and until further notice, that BPA maintain BON outflows at 450 kcfs on an instantaneous basis for flood control.
- d. A teletype sent on 28 March requests that BPA maintain outflows at BON near 450 kcfs on an instantaneous basis until ~0559 on 29 Mar, then at 0600 decrease outflows to near 440 kcfs until ~1759 on 01 April. Effective 1800 on 1 April and until further notice, maintain ouflows near 450 kcfs for flood control.

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