

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 15 of 2017, which covers the period from 09 to 15 April.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 385.0 to 423.0 kcfs. Daily average powerhouse forebay elevation ranged from 72.0 to 73.2' msl. Daily average project tailwater ranged from 26.8 to 28.3' msl. Secchi disk measurements ranged from 2.0' to 3.0'. Daily average water temperature remained at 47 °F all week.
- 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 172.7 to 204.9 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
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
15	0701 on 12 Apr	1720 on 12 Apr	Servo replacement
15	1059 on 13 Apr	1300 on 13 Apr	EAL testing ( <a href="#">16BON93</a> )
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) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
4/9	0.2	0.3
4/10	---	---
4/11	0.2	0.2
4/12	0.2	0.3
4/13	0.2	0.2
4/14	0.3	0.9
4/15	0.8	2.3

## 2. MAINTENANCE ACTIVITIES:

### a. Auxiliary Water System Closures.

- (1) FV3-7 was closed for cleaning from 0745 to 0810 on 10 Apr.
- (2) FV3-9 was closed for cleaning from 0745 to 0810 on 10 Apr.

### b. STS/VBS inspections. None.

### c. Dewatering and Fish Salvages. None.

## 3. RESEARCH:

### a. CRITFC – Adult sampling. Annual adult sampling in the AFF may begin next week.

### b. NOAA – PIT evaluation. A biological study of the B2CC PIT antenna will occur 24-28 April.

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

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

### e. PSMFC – Smolt Monitoring. No research fish were collected this week. SbyC is active for USFWS. Fallbacks recorded crossing the separator bars: 6 steelhead and 1 salmon. More details can be found on the [FPC web page](#).

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

### g. USFWS – Fish Health Survey. Juvenile and adult shad, and juvenile hatchery Chinook will be collected from the fish facilities as part of the annual survey. BON mortalities will also be sent to the USFWS for pathogen analysis.

### h. UI – Video monitoring. A DIDSON camera study is schedule to commence late April to monitor fish in the UMT junction area near the new LPS extension.

## 4. FISHWAYS:

### a. Project biologists inspected 09 – 15 April.

### b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
<b>BRADFORD ISLAND</b>				
4/11	PH1CC	Velocity < 1.5 fps	Unknown	None
<b>CASCADES ISLAND – Nothing to report</b>				
<b>WASHINGTON SHORE</b>				
4/9	Weir 37	Water over weir < 0.9'	Unknown	None
4/9-11,13	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 was dewatered from ~0800 to 1400 on 12 April for lamprey trap removal and measurements.
- (2) Sensor calibration was checked on 13 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 remains open.
- (4) The DSM remains in service.

e. Lamprey Fishways.

- (1) The Bradford Is, Cascades Is, and WA shore AWS LPSs remain in service.
- (2) 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
4/9	11	1	0	0	0
4/10	0	0	0	0	0
4/11	9	0	0	0	0
4/12	20	0	0	0	0
4/13	11	0	0	0	0
4/14	-	-	-	-	-
4/15	10	0	0	0	0

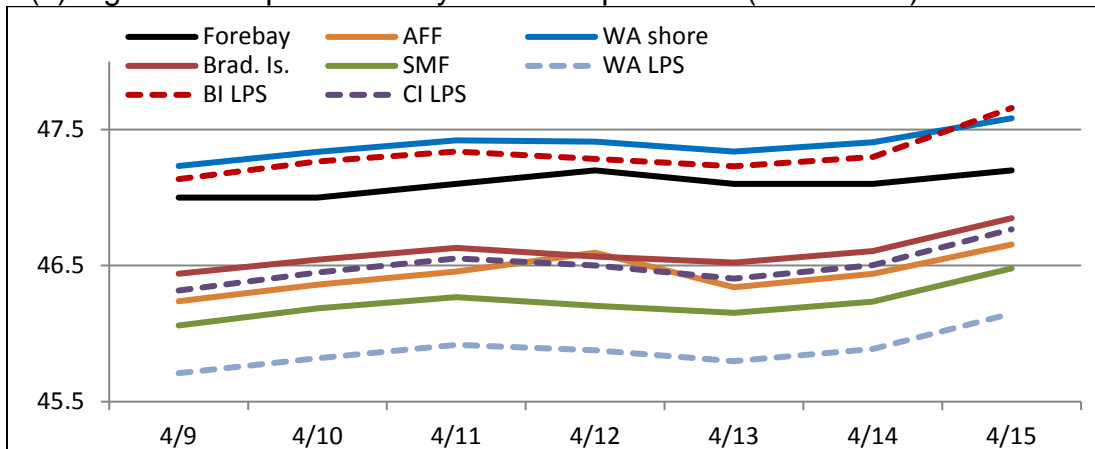
## 5. WATER QUALITY MONITORING:

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
4/9	47.0	46.4	46.1	46.2	47.2	47.1	45.7	46.3
4/10	47.0	46.5	46.2	46.4	47.3	47.3	45.8	46.4
4/11	47.1	46.6	46.3	46.5	47.4	47.3	45.9	46.6
4/12	47.2	46.6	46.2	46.6	47.4	47.3	45.9	46.5
4/13	47.1	46.5	46.2	46.3	47.3	47.2	45.8	46.4
4/14	47.1	46.6	46.2	46.4	47.4	47.3	45.9	46.5
4/15	47.2	46.8	46.5	46.7	47.6	47.7	46.1	46.8

(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 will continue through 10 May.

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

**8. TELETYPES CURRENTLY IN EFFECT:**

a. 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.

b. A teletype sent 06 April states effective 10 April – 31 August, operate BON pursuant to the 2017 FOP, as described within.

c. A teletype updated on 11 April provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.

d. A teletype sent on 11 April states effective 12 and 13 April, operate unit 15 as requested as part of performance testing of environmentally acceptable lubricants. The unit should be run continuously the evening of 12 April, with testing to commence 0900 on 13 April.

e. A teletype sent 13 April updates operations for flood control. Maintain outflows no more than 450 kcfs. Effective 1800 on 14 April to 0600 on 17 April, maintain forebay no higher than 73', soft constraint, 73.5', hard constraint.

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