

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2017, which covers the period from 04 to 10 June.

**1. OPERATION SUMMARY:**

a. Daily average river flows ranged from 428.5 to 442.6 kcfs. Daily average powerhouse forebay elevation ranged from 72.4 to 73.3' msl. Daily average project tailwater ranged from 28.7 to 29.6' msl. Secchi disk measurements ranged from 2.0 to 3.0'. Daily average water temperature ranged from at 58 to 60 °F.

b. Spring spill began 10 April. Daily average spill ranged from 229.3 to 261.5 kcfs.

(1) Spill bay 12 was closed briefly at ~0800 on 10 June due to a capsized vessel entering that bay. When the boat did not resurface the bay was reopened.

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
3	0831 on 24 Feb	1714 on 08 Jun	5-year overhaul
4	0003 on 22 May	1632 on 08 Jun	Annual, bank 3/4
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
12	1531 on 06 Jun	1649 on 06 Jun	Water in turbine bearing
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. Nighttime operations for lamprey began 01 June.

(1) Unit F1 was placed in reserve service to float trash until lamprey ops took effect at 2130, starting at 1820 on 04 June and 2042 on 06 June.

(2) Unit F2 was placed in reserve service to float trash until lamprey ops took effect at 2130, starting at 1750 on 09 June and 1910 on 10 June.

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

Date	F1	F2
6/4	0.8	8.6
6/5	0.2	0.1
6/6	0.3	4.2

6/7	---	---
6/8	0.2	0.3
6/9	1.5	14
6/10	0.2	13.5

## 2. MAINTENANCE ACTIVITIES:

### a. Auxiliary Water System Closures.

- (1) FV3-7 was closed for cleaning from 0839 to 0922 on 07 June.
- (2) FV5-9 was closed for cleaning from 0730 to 0821 on 06 June.

### b. STS/VBS inspections. Table 2a.

Unit	Date	Run Hours	Comments
11	6/6	860	OK
12	6/6	857	OK
13	6/6	863	OK
14	6/6	810	OK
15	6/6	854	OK
16	6/6	---	OOS
17	6/6	853	OK
18	6/6	863	OK

### c. Dewatering and Fish Salvages.

- (1) On 08 June, Project Biologists recovered ~50 juvenile salmonids, 1 adult Chinook, 1 adult Pacific Lamprey, 1 macrophthalmia, and ~10 sculpin spp. from the Unit 03 tail logs. All fishes were returned to the forebay in good condition.

## 3. RESEARCH:

- a. CRITFC – Adult sampling. Annual adult sampling in the AFF continues.
- b. Normandeau – Fish counting. Visual counting continues.
- c. PNNL – FGE testing. A hydroacoustic study at the PH2 gatewells as part of biological testing of the FGE mods continues through 15 July.
- d. PSMFC – Smolt Monitoring. SbyC is active for NOAA. 200 yearling Chinook and steelhead were examined for GBT: nine fish (4.5%) were observed with symptoms. Fallbacks recorded crossing the separator bars: 1 steelhead, 13 salmon, and 3 unknown salmonids. More details can be found on the [FPC web page](#).

- e. USDA – Pinniped and avian hazing. Deck-based pinniped hazing began 01 March, avian hazing on 01 April.
- f. 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.
- g. UI – Video monitoring. A DIDSON camera study began in late April to monitor fish in the UMT junction area near the new LPS extension.

#### 4. FISHWAYS:

- a. Project biologists inspected 04 – 10 June.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
		No sensor calibration this week		None
<b>BRADFORD ISLAND – See below</b>				
<b>CASCADES ISLAND</b>				
6/4-5	CI entrance	Entrance diff < 1'	Conduit sensor	TR submitted
<b>WASHINGTON SHORE</b>				
6/5-9	Weir 37	Water over weir > 1.2'	Trapping in AFF	None
6/8,10	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) FG3-8 was found to be banging loudly on 11 May. It was closed until repairs can be made. It should be open above tailwaters of 28.2' msl.
- (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.
- (6) PH2 diffuser B4 was discovered to have its stem bent on 24 May. It likely occurred while trying to close and is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.

c. Adult Fishways.

- (1) The Bradford Island fish ladders went to shad mode at ~1500 on 02 June.
- (2) The AFF remains in service.
- (3) No sensor calibration occurred this week.
- (4) 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
6/4	5	0	0	0	0
6/5	5	0	0	0	0
6/6	0	0	0	0	0
6/7	---	---	---	---	---
6/8	---	---	---	---	---
6/9	18	3	0	0	0
6/10	4	0	0	0	0

**5. WATER QUALITY MONITORING:**

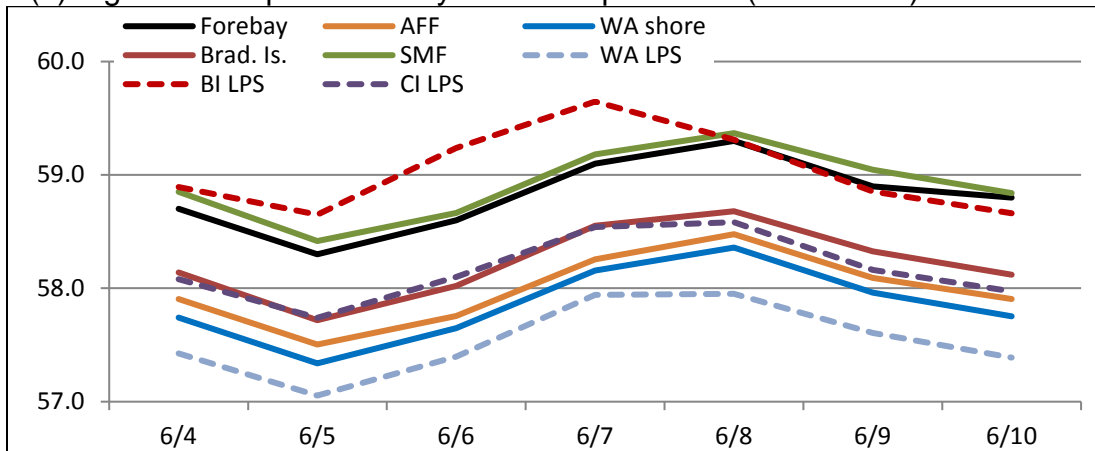
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(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

6/4	58.7	58.1	57.7	57.9	58.9	58.9	57.4	58.1
6/5	58.3	57.7	57.3	57.5	58.4	58.6	57.1	57.7
6/6	58.6	58.0	57.6	57.8	58.7	59.2	57.4	58.1
6/7	59.1	58.6	58.2	58.3	59.2	59.6	57.9	58.5
6/8	59.3	58.7	58.4	58.5	59.4	59.3	58.0	58.6
6/9	58.9	58.3	58.0	58.1	59.0	58.9	57.6	58.2
6/10	58.8	58.1	57.8	57.9	58.8	58.7	57.4	58.0

(2) Figure 1. Graph of fishway water temperatures (Fahrenheit).



b. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

**6. CONSTRUCTION:** Nothing to report.

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

**8. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent 06 April states effective 10 April – 31 August, operate BON pursuant to the 2017 FOP, as described within.
- b. A teletype updated on 03 June provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.
- c. A teletype updated on 31 May requests BON operate with an instantaneous maximum release of 480 kcfs for flood control. This was updated to 500 kcfs on 2 June.
- d. A teletype updated on 07 June requests that BON forebay be maintained between 71.5 and 73.5', soft constraint, during the times listed within. This is for

a sports festival in Hood River.

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