

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 25 of 2017, which covers the period from 18 to 24 June.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 307.6 to 347.3 kcfs. Daily average powerhouse forebay elevation ranged from 73.6 to 74.8' msl. Daily average project tailwater ranged from 22.8 to 24.7' msl. Secchi disk measurements remained at 3.0' all week. Daily average water temperature ranged from 60 to 62 °F.
- b. Summer spill began 16 June. Daily average spill ranged from 96.8 to 152.2 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
5	0000 on 12 Jun	---	Annual maintenance
6	0001 on 12 Jun	---	Annual maintenance
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
16	0709 on 27 Mar	1152 on 22 Jun	4-year overhaul
17	1501 on 22 Jun	1532 on 22 Jun	Broken VBS lifting beam rope

- 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 debris from 1849 to 1922 on 24 June.
- (2) Unit F2 was placed in reserve service to float debris from 2003 until nighttime lamprey ops took effect on 23 June, and from 1926 to 2003 on 24 June.
- (3) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
6/18	0.5	---
6/19	0.4	0.4
6/20	0.4	0.2
6/21	0.3	0.2
6/22	0.2	0.2
6/23	0.8	7.0

6/24	1.8	2.0
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## 2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. None.
- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages.

(1) On 20 June, Project Biologists recovered 13 adult Pacific Lamprey and 1 macrophthalmia, along with 3 sculpin from the unit 16 tail logs. All fishes were released 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, subyearling Chinook, and steelhead were examined for GBT: two fish (1.0%) were observed with symptoms. Fallbacks recorded crossing the separator bars: 6 steelhead, 23 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 18 – 24 June.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
<b>BRADFORD ISLAND – See below</b>				
<b>CASCADES ISLAND – Nothing to report</b>				
<b>WASHINGTON SHORE</b>				
6/20-21	Weir 37	Water over weir > 1.2'	Trapping in AFF	None
6/23	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) Sensor calibration occurred on 22 June.
- (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 was returned to service at ~1500 on 21 June.

f. Avian Monitoring. Bird counts are made between 01 April and 31 October.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
6/18	---	---	---	---	---
6/19	0	0	0	0	0
6/20	---	---	---	---	---
6/21	0	2	0	0	0
6/22	0	0	0	0	0
6/23	0	5	0	0	0
6/24	0	3	0	0	0

**5. WATER QUALITY MONITORING:**

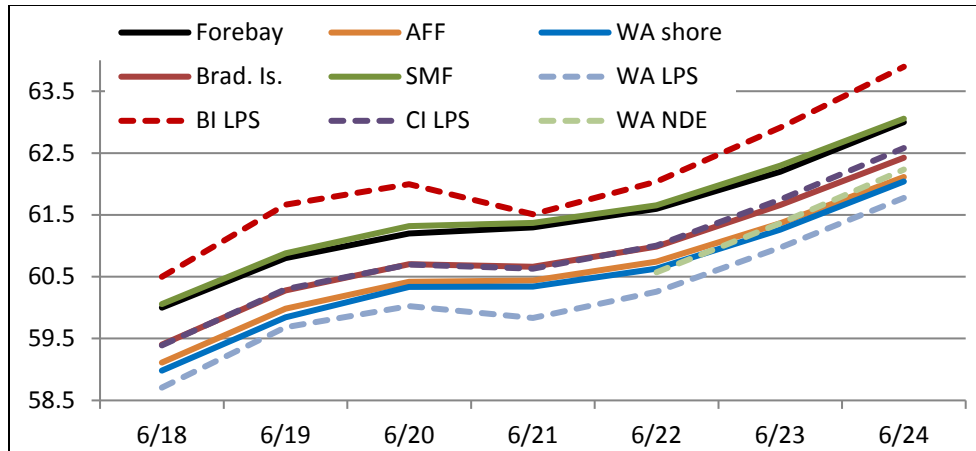
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(1) Table 4. Average daily fishway water temperatures (Fahrenheit).

Date	Fishways					Lamprey			
	Forebay	Brad. Is.	WA shore	AFF	SMF	BI LPS	WA LPS	CI LPS	WA NDE*
6/18	60.0	59.4	59.0	59.1	60.1	60.5	58.7	59.4	OOS
6/19	60.8	60.3	59.8	60.0	60.9	61.7	59.7	60.3	---
6/20	61.2	60.7	60.3	60.4	61.3	62.0	60.0	60.7	---
6/21	61.3	60.7	60.3	60.4	61.4	61.5	59.8	60.6	RTS
6/22	61.6	61.0	60.6	60.7	61.7	62.0	60.3	61.0	60.6
6/23	62.2	61.7	61.3	61.4	62.3	62.9	61.0	61.7	61.4
6/24	63.0	62.4	62.0	62.1	63.1	63.9	61.8	62.6	62.2

\*The WA shore North Downstream Entrance (NDE) LPS/LFS was returned to service on 21 June.

(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 21 June provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.
- c. A teletype sent on 15 June requests that BON pool operate within a 1.5' band, hard constraint, between from 0600 on 19 June to 1800 on 22 June and again from 0600 on 26 June to 1800 on 29 June for treaty fishing.

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