

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 33 of 2018, which covers the period from 12-18 August.

## 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 119.0 to 148.4 kcfs. Daily average powerhouse forebay elevation ranged from 74.3' 75.7' msl. Daily average project tailwater ranged from 10.7' to 13.2' msl. Secchi disk measurements ranged from 5.0' to 7.0'. Daily average water temperature ranged from 72°F to 74°F.
- b. Daily average spill ranged from 76.0 to 99.5 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
05	1654 on 23 July	---	Forced out, ZM278 failure
06	1654 on 23 July	---	Forced out, ZM278 failure
07	0922 on 05 Apr	---	FO, Underrated Disconnect
08	0921 on 05 Apr	---	FO, Underrated Disconnect
11	0746 on 13 Aug	0916 on 13 Aug	Line 3 Trip Test
12	0824 on 13 Aug	0916 on 13 Aug	Line 3 Trip Test
13	0824 on 13 Aug	0916 on 13 Aug	Line 3 Trip Test
14	0745 on 13 Aug	1404 on 14 Aug	Line 3 Trip Test/Station Service Test
15	0009 on 06 Aug	1713 on 16 Aug	T12 Outage, PH2 Roof Repairs
16	0009 on 06 Aug	1713 on 16 Aug	T12 Outage, PH2 Roof Repairs
17	0009 on 06 Aug	1713 on 16 Aug	T12 Outage, PH2 Roof Repairs
18	0009 on 06 Aug	1856 on 17 Aug	T12 Outage, PH2 Roof Repairs

- d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder.
  - (1) F2 goes into RS nightly from 2200-0400 for regular spill season PH2 Lamprey ops (per FPP 2.4.2.13.c.).
  - (2) F2 was out of service from 0730 on 06 August until 0747 on 13 August originally as part of the T11/T12 outage coordinated by [18BON05 MOC](#). Upon bringing the unit back into service, complications arose prolonging it's RTS date. Please reference [18BON54 MFR PH2 F2 OOS](#) for more information.

e. Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
8/12	---	---
8/13	0.2'	0.2'
8/14	---	---
8/15	0.4'	0.4'
8/16	0.3'	0.2'
8/17	0.4'	0.4'
8/18	0.2'	0.2'

**2. MAINTENANCE ACTIVITIES:**

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0745 until 0818 on 15 August.
- (2) FV4-3 and FV4-4 were closed for the Bradford Island B-branch entrance ROV inspection from 1300 until 1500 on 16 August.
- (3) FV5-3 and FV5-4 were closed for the Cascades Island entrance ROV inspection from 1500 until 1600 on 16 August.

b. STS/VBS Inspections. Inspection occurred on 13 August.

Unit #	Previous STS Hours	HRS When Inspected	STS-A	STS-B	STS-C	VBS A,B,C	HRS Run
11	39020	39776	Ok	Ok	Ok	Ok	756
12	29454	30090	OK	OK	OK	OK	636
13	858	1148	OK	OK	OK	OK	290
14	3026	3316	OK	OK	OK	OK	290
15	15123	15167	OK	OK	OK	OK	44
16	27365	27441	OK	Ok	Ok	OK	76
17	19265	19563	OK	OK	OK	OK	298
18	57788	58275	OK	OK	OK	OK	487

c. Dewatering and Fish Salvages. Nothing to report.

### 3. RESEARCH:

- a. Normandeau – Fish counting. Daytime visual counting (0500 to 2100) began on 01 April. Nighttime video recording (2100-0500) began on 15 May. Fish counts can be viewed [here](#).
- b. PSMFC – Smolt Monitoring. Debris at the primary dewatering structure and fish/debris separator was light consisting mostly of algae, aquatic macrophytes, a few sticks and dead adult shad. Avian hazing concluded for the season on 31 July. Higher temperature sampling protocols were initiated on 25 July (sample end-date of 26 July) when water temperatures ascended to 70°F. Modified sampling during higher temperatures means index/condition sampling will take place every other day until the daily average descends to 69.5°F. Sample and bypass mode will occur on alternating 24 hour periods (0700-0700). Gas Bubble Trauma (GBT) examinations began on 15 April and are typically performed two days per week through the end of spill. However, due to higher water temperatures and decreased TDG levels, GBT exam effort has been reduced to one day per week. Due to extremely low fish numbers present during our GBT collection effort, GBT exams were not attempted this week. Please follow this [link](#) to the FPC web page for further details. Truck releases of summer/fall out-migrants originating from Snake River dams began on 16 August and occur every other day. No fallbacks were observed this week. No fish were collected for research this week.
- c. CRITFC – Adult Salmonid Sampling. Adult salmonid sampling in the adult fish facility (AFF) began on 25 April and typically occur 5 days per week. At water temperatures of 70–72°F, sampling will be permitted for up to four days per week from 0600-1030 to allow for U.S. v Oregon requirements. This operation will remain in effect until daily average water temperature drops to ≤ 69.9°F. High temperature sampling protocols went into effect on 24 July. Sampling did not occur this reporting week.
- a. University of Idaho. Evaluation of adult Pacific Lamprey passage behavior in relation to lower Columbia River dam modifications, AFEP Study Code LMP-P-17-1 began on 11 May.
- b. NOAA – Northwest Fisheries Science Center (Frick). Development and evaluation of an adult lamprey wetted wall structure at Bradford Island Fishway 2017-2019 began on 08 May.
- c. USFWS – Lower Columbia River Fish Health Center. Adult and juvenile American Shad will be collected from the project as part of the annual National Wild Fish Health Survey. BON mortalities will also be sent to the USFWS for pathogen analysis and potential causes of death.

**4. FISHWAYS:**

- a. Project biologists inspected from 12-18 August.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
<b>Bradford Island- Nothing to Report.</b>				
8/15	FG3-18	Open, shouldn't be	Left open from flushing	Ops closed
8/15	B-branch	Differential < 0.9'	FG3-18 ?	Ops adjusted
<b>Cascades Island – Nothing to Report.</b>				
<b>Washington Shore</b>				
8/13	Weir 38	Differential <0.9'	Unknown	NA

- (2) On 01 May, FG6-11 was found broken partially open. The diffuser shaft had broken away from the motor. Due to the subsidence issues at Cascades Island, repairs can not occur until crane support is allowed in the vicinity.
- (3) Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter. All zones had been installed besides PH2. PH2 lines are awaiting installation. Numerous lines have since been broken again by high flows and debris at CI and Spillway locations.
- (4) PH2 diffuser B4 was discovered to have its stem bent on 24 May 2017. This likely occurred while trying to close and the valve is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.
- (5) The South Downstream Entrance (SDE) and North Downstream Entrance (NDE) gates will not lower past 4' and 6', respectively. It is believed the gates pits are obstructed with sediment. They will be addressed during the winter maintenance period.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 17 August.
- (3) SLEDs are installed at all entrances.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon remains in service.

- (3) The B2CC remains in service.
- (4) The DSM remains in service.
- (5) STSs are installed.

e. Lamprey Fishways.

- (1) The Bradford Island, Cascades Island, and WA Shore AWS LPSs remain in service.
- (2) The NDE Lamprey Flume Structure (LFS) remains in service.
- (3) The AFF lamprey trap remains in service.
- (4) The Bradford Island Lamprey Wetted Wall remains in service.

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

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
8/12	0	0	0	0	0
8/13	6	8	0	0	0
8/14	2	20	0	0	0
8/15	0	0	0	0	0
8/16	0	0	0	0	0
8/17	9	22	0	0	0
8/18	41	4	0	0	0

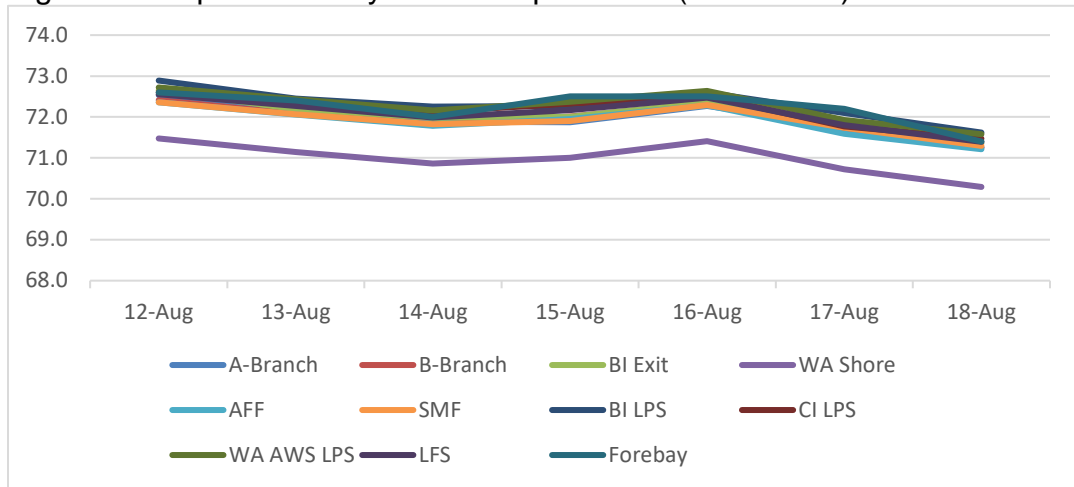
**5. WATER QUALITY MONITORING:**

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

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

Date	A-Branch	B-Branch	BI Exit	WA Shore	AFF	SMF	BI LPS	CI LPS	WA AWS LPS	LFS	Forebay
12-Aug	72.5	72.4	72.7	71.5	72.4	72.4	72.9	72.6	72.7	72.6	72.6
13-Aug	72.1	72.1	72.2	71.1	72.1	72.1	72.5	72.4	72.4	72.3	72.4
14-Aug	71.9	71.8	72.0	70.9	71.8	71.8	72.3	72.1	72.2	72.0	72.0
15-Aug	71.9	72.0	72.0	71.0	72.0	71.9	72.3	72.3	72.4	72.2	72.5
16-Aug	72.3	72.3	72.4	71.4	72.3	72.3	72.6	72.5	72.6	72.5	72.5
17-Aug	71.8	71.7	71.8	70.7	71.6	71.7	72.1	71.8	71.9	71.8	72.2
18-Aug	71.3	71.2	71.4	70.3	71.2	71.3	71.6	71.5	71.6	71.4	71.4

(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. The PH2 roofing project continues.

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

**8. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent on 13 June outlines the summer spill schedule related to fish passage. Effective 0001 on 16 June until 2359 on 31 August, operate Bonneville dam in accordance with the 2018 summer fish operations plan to provide spill for fish passage.
- b. A teletype sent on 19 July updating Bonneville spill caps.
- c. A teletype sent on 26 July states that Bonneville forebay will be operated above 74 feet from 1400 to 2200 on 09 and 12 August for sailboat races.
- d. A teletype sent on 07 August requests the forebay operate between 75.0' to 76.5' as a soft constraint on 15-18 August from 0900 – 1700 daily. The intended purpose of this request is to accommodate water levels at Hood River near 76.5' for a wind sport trade show.

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