

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 44 of 2018, which covers the period from 28 October – 03 November.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 89.4 to 128.4 kcfs. Daily average powerhouse forebay elevation ranged from 73.3' to 74.9' msl. Daily average project tailwater ranged from 9.1' to 11.7' msl. Secchi disk measurements ranged from 6.0' to above 7.0'. Daily average water temperature ranged from 57 - 58°F.
- b. Daily average spill ranged from 1.0 to 1.1 kcfs.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Main Unit Outages.

Unit	OOS Date	RTS Date	Reason
13	0702 on 01 Oct	---	PO, 4 year overhaul
15	0008 on 29 Oct	1856 on 29 Oct	Quarterly Thrust Inspection

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

(1) Fish Unit Outages. Table 2.

Unit	OOS Date	RTS Date	Reason
F2	1132 on 31 Oct	1427 on 31 Oct	RS

- e. Table 3. Fish unit drawdowns, in feet.

Date	F1	F2
10/28	0.2'	0.9'
10/29	0.7'	1.1'
10/30	0.4'	1.5'
10/31	0.7'	0.6'
11/1	0.1'	0.5'
11/2	0.3'	0.7'
11/3	0.3'	0.8'

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV1-1 was closed for cleaning from 1251 to 1303 on 30 October

(2) FV3-7 & FV3-9 were closed for cleaning from 1320 to 1343 on 30 October and from 1620 to 1630 on 1 November.

b. STS/VBS Inspections. Nothing to report.

c. Dewatering and Fish Salvages. Nothing to report.

3. RESEARCH:

a. Normandeau – Fish counting. Daytime visual counting (0500 to 2100) began on 01 April. Fish counts can be viewed [here](#).

b. PSMFC – Smolt Monitoring. Smolt monitoring operations concluded for the season at Bonneville Juvenile Fish Monitoring Facility at 0700 on 31 October. The system was placed in bypass mode at that time. Full flow PIT tag interrogation will remain active until the 2-mile pipe is dewatered, typically around mid-December. Debris at the PDS and fish/debris separator was light to moderate consisting mostly of aquatic macrophytes, sticks and other woody debris. Spill and corner collector operations for the juvenile fish passage season concluded just after midnight on 01 September. GBT monitoring activities have concluded for the season. 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 are scheduled to occur every other day. Fallbacks observed this week: 6 salmon and 3 unknown salmonids. No fish were collected for research this week.

c. 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. Tagging operations concluded on 14 September.

4. FISHWAYS:

- a. Project biologists inspected from 28 October – 03 November.
- b. Fish passage plan observations.

(1) Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
10/29-31, 11/3	A-Branch	Differential > 1.1'	Unknown	NA
10/29-30	B-Branch Ent.	Differential > 2'	Unknown	NA
Cascades Island				
Washington Shore				

- (2) 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 Cascades Island and Spillway locations.
- (3) 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.
- (4) 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 cannot occur until crane support is allowed in the vicinity.
- (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.
- (6) On 18 August, FG6-12 was found to be mechanically bound in the open position. FG6-12 should only be open with tailwaters ranging from 11.0'-33.0'. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.
- (7) Weir gates 2 and 64 have been unable to maintain submergence level criteria when tailwaters are below 11.0' msl. This is due to the minimum elevations of 3.1' for WG-2 and 2.8' for WG-64.

c. Adult Fishways.

- (1) The AFF was taken out of service on 07 November.
- (2) Sensor calibration occurred on 02 November.
- (3) SLEDs are installed at all entrances.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon was taken out of service on 01 November.
- (3) The B2CC remains closed.
- (4) The DSM remains in service.
- (5) STSs are installed.

e. Lamprey Fishways.

- (1) The Bradford Island, Cascades Island, and WA Shore AWS LPSs were taken out of service for the season on 31 October.
- (2) The NDE Lamprey Flume Structure (LFS) was taken out of service on 14 September.
- (3) AFF lamprey trap was taken out of service on 14 September.
- (4) The Bradford Island Lamprey Wetted Wall taken out of service on 10 September.

f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

(1) Table 5. Avian Counts.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
10/28	---	---	---	---	---
10/29	12	6	0	0	0
10/30	22	8	0	0	0
10/31	15	167	0	0	0
11/1	32	221	0	0	0
11/2	36	250	0	0	0
11/3	64	273	0	0	0

5. WATER QUALITY MONITORING:

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

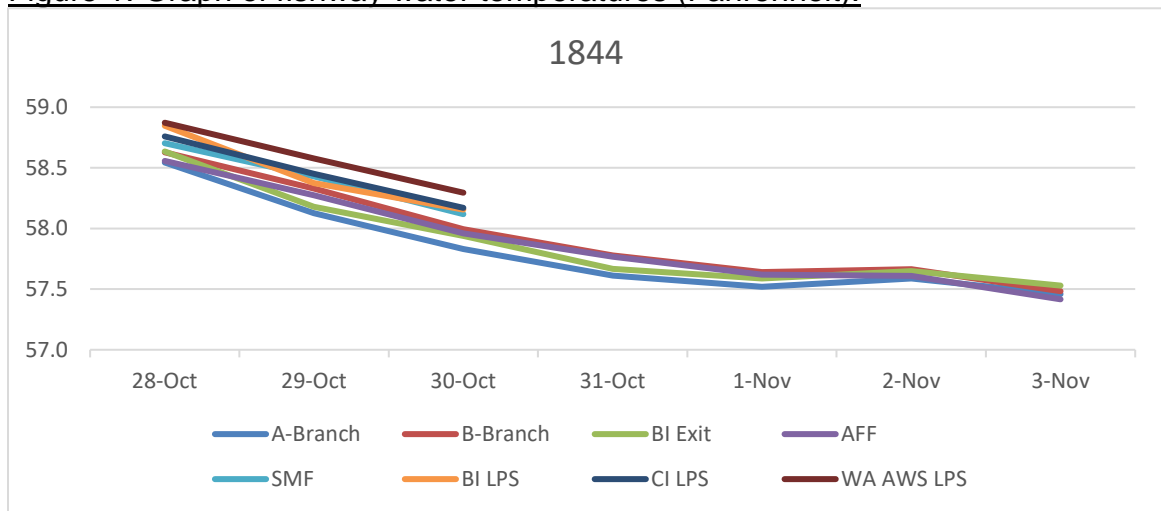
(1) Table 6. Average daily fishway water temperatures (Fahrenheit).

Date	A-Branch	B-Branch	BI Exit	AFF	SMF	BI LPS	CI LPS	WA AWS LPS
28-Oct	58.5	58.6	58.6	58.6	58.7	58.8	58.8	58.9
29-Oct	58.1	58.3	58.2	58.3	58.4	58.4	58.5	58.6
30-Oct	57.8	58.0	57.9	58.0	58.1	58.2	58.2	58.3
31-Oct	57.6	57.8	57.7	57.8	---	---	---	---
1-Nov	57.5	57.6	57.6	57.6	---	---	---	---
2-Nov	57.6	57.7	57.6	57.6	---	---	---	---
3-Nov	57.5	57.5	57.5	57.4	---	---	---	---

*Lamprey Passage Structures went offline on 31-October.

*Technical issues with the WA Shore temperature probe prevented data collection. This probe will be absent for the remainder of the temperature reporting season.

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 on 30 August outlines the wintertime spill priority list and wintertime spill caps for all Columbia Basin projects and BPA.
- b. A teletype sent on 29 October outlines Chum Salmon spawning tailwater requirements until further notice.
- c. A teletype sent on 30 October requests low flows (low as possible, approaching 70 kcfs if possible) soft constraint from 0800 until 1700 on 31 October. The purpose is to provide calm conditions for pile driving tests at the Tug Diane wreck site approximately 2 miles downstream of BON.
- d. A teletype sent on 31 October requests from 0700 to 1700 on 02 November, BON operate the forebay below 73.5' soft constraint. The purpose is to facilitate fish screen installation on irrigation pipes situated in the BON pool.

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