

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 45 of 2018, which covers the period from 04 - 10 November.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 124.9 to 129 kcfs. Daily average powerhouse forebay elevation ranged from 73.2' to 74.1' msl. Daily average project tailwater ranged from 11.4' to 11.7' msl. Secchi disk measurements ranged from 5.0' to above 7.0'. Daily average water temperature ranged from 54 to 57°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
0	0840 on 08 Nov	---	Bad Turbine Bearings
11	0803 on 07 Nov	1116 on 07 Nov	RC #3 Relay Testing
12	0801 on 07 Nov	1117 on 07 Nov	RC #3 Relay Testing
13	0702 on 01 Oct	---	PO, 4 year overhaul
14	0012 on 07 Nov	1615 on 07 Nov	P.O. Thrust Collar Inspection
15	0917 on 08 Nov	1252 on 08 Nov	BPA Trip Testing
16	0917 on 08 Nov	1255 on 08 Nov	BPA Trip Testing
17	0002 on 07 Nov	1652 on 08 Nov	P.O. Thrust Collar Inspection
18	0917 on 08 Nov	1255 on 08 Nov	BPA Trip Testing

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

(1) Fish Unit Outages. Nothing to report.

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

Date	F1	F2
11/04	0.3'	1.0'
11/05	0.3'	1.6'
11/06	0.2'	1.0'
11/07	0.3'	1.0'
11/08	0.3'	0.4'
11/09	0.9'	1.5'
11/10	0.9'	2.0'

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV1-1 was closed for cleaning from 1042 to 1049 on 05 November.

(2) FV3-7 was closed for cleaning from 1315 to 1415 on 05 November.

(3) FV3-9 was closed for cleaning from 1315 to 1415 on 05 November.

b. STS/VBS Inspections. A STS/VBS inspection occurred on 05 November.

Table 3. STS/VBS Inspection.

UNIT #	PREVIOUS STS HRS	HRS WHEN INSPECTED	HRS RUN	REMARKS
11	40924	41760	836	n/a
12	30829	31666	837	n/a
13	1902	---	---	OOS
14	3921	4761	840	n/a
15	15568	16166	598	n/a
16	27677	28130	453	n/a
17	20328	21167	839	n/a
18	59346	60185	839	n/a

c. Dewatering and Fish Salvages. On 07 November, project biologists salvaged thousands of American Shad, suckers, and Northern Pikeminnow, 1 juvenile salmonid, and ~10 juvenile lamprey from the AFF.

3. RESEARCH:

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

4. FISHWAYS:

a. Project biologists inspected from 04 - 10 November.

b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
Bradford Island				
11/4,9-10	A-Branch	Differential > 1.1'	Unknown	NA
Cascades Island – Nothing to report.				
Washington Shore – Nothing to report.				

- (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.
- (8) On 13 September, FG6-14 was manually closed, due to issues surrounding FG6-11 and FG6-12 (see above). Through trial and error this was found to help facilitate FPP entrance differential criteria and alleviate "boiling" from adjacent diffusers within the Cascades Island fishway. FG6-14 should be open during tailwaters of 9.0'-28.0'.

c. Adult Fishways.

- (1) The AFF was taken out of service on 07 November.
- (2) Sensor calibration did not occur this reporting week.
- (3) SLEDs are installed at all entrances.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon remains offline.
- (3) The B2CC remains offline.
- (4) The DSM remains in service.
- (5) STSs are installed.

e. Lamprey Fishways. All lamprey passages systems remain offline.

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

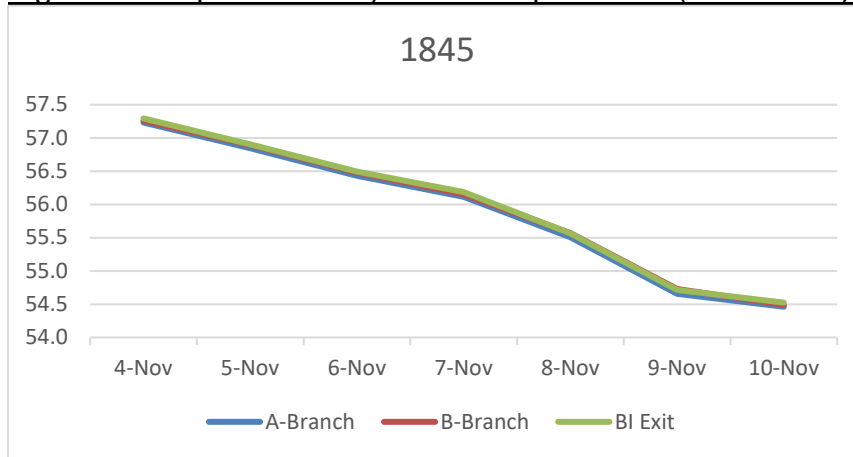
5. WATER QUALITY MONITORING:

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

(1) Table 5. Average daily fishway water temperatures (Fahrenheit).

Date	A-Branch	B-Branch	BI Exit
4-Nov	57.2	57.3	57.3
5-Nov	56.8	56.9	56.9
6-Nov	56.4	56.5	56.5
7-Nov	56.1	56.2	56.2
8-Nov	55.5	55.6	55.6
9-Nov	54.7	54.7	54.7
10-Nov	54.5	54.5	54.5

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 07 November states that from 13-15 November, 1100-1700 daily, operate BON pool above 76.0', soft constraint, 74.5', hard constraint, to support a railroad bridge replacement work near Carson, WA.

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