

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 41 of 2018, which covers the period from 07 - 13 October.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 72.4 to 95.8 kcfs. Daily average powerhouse forebay elevation ranged from 75.5' to 76.0' msl. Daily average project tailwater ranged from 7.5' to 9.2' msl. Secchi disk measurements exceeded 7.0' all week. Daily average water temperature ranged from 61°F to 63°F.
- b. Daily average spill ranged from 1.1 to 1.2 kcfs.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Main Unit Outages.

Unit	OOS Date	RTS Date	Reason
13	0702 on 01 Oct	---	PO, 4 year overhaul

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

(1) Table 2. Fish Unit Outages.

Unit	RS / OOS Date	RTS Date	Reason
F1	1554 on 06 Oct	0602 on 07 Oct	RS
F2	1502 on 07 Oct	1346 on 09 Oct	RS

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

Date	F1	F2
10/7	---	---
10/8	---	---
10/9	---	---
10/10	0.1'	0.2'
10/11	0.1'	0.2'
10/12	0.1'	0.2'
10/13	0.1'	0.3'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.

(1) FV1-1 was closed for cleaning from 1458 until 1527 on 11 October.

(2) FV3-7 was closed for cleaning from 1458 until 1527 on 11 October.

- 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. Sample collections at the Smolt Monitoring Facility began at 0700 on 02 March. Debris at the PDS and fish/debris separator was light to moderate consisting mostly of filamentous algae, aquatic macrophytes, sticks, and dead adult shad. Truck releases of summer/fall out-migrants originating from Snake River dams began on 16 August and are scheduled to occur every other day. No fallbacks were observed this week. 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 07 - 13 October.
- b. Fish passage plan observations.

(1) Table 5. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
10/7-8, 10-13	A-Branch	Differential > 1.1'	Unknown	NA
10/11	B-Branch	Entrance Diff > 2.0'	Unknown	NA
Cascades Island				
10/11-12	CI Entrance	Differential < 1.0'	Unknown	NA
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.

c. Adult Fishways.

- (1) The AFF remains in service.
- (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 in service.
- (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 remain in service.
- (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 6. Avian Counts.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
10/7	0	0	0	0	0
10/8	4	12	0	0	0
10/9	0	25	0	0	0
10/10	23	111	0	0	0
10/11	29	65	0	0	0
10/12	25	129	0	0	0
10/13	13	74	0	0	0

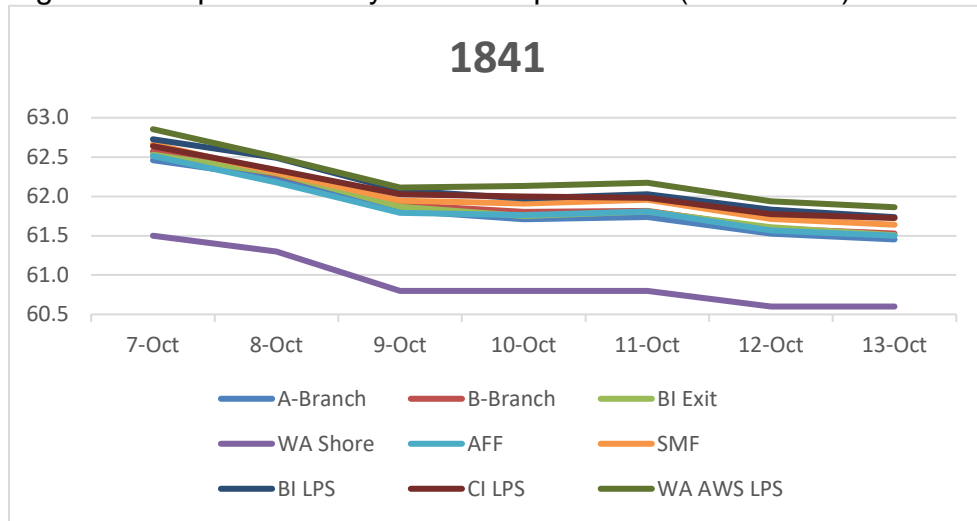
5. WATER QUALITY MONITORING:

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

(1) Table 7. Average daily fishway water temperatures (Fahrenheit)

Date	A-Branch	B-Branch	BI Exit	WA Shore	AFF	SMF	BI LPS	CI LPS	WA AWS LPS
7-Oct	62.5	62.6	62.5	61.5	62.5	62.7	62.7	62.6	62.9
8-Oct	62.2	62.3	62.3	61.3	62.2	62.3	62.5	62.3	62.5
9-Oct	61.8	61.9	61.9	60.8	61.8	61.9	62.1	62.0	62.1
10-Oct	61.7	61.8	61.8	60.8	61.8	61.9	62.0	62.0	62.1
11-Oct	61.7	61.8	61.8	60.8	61.8	62.0	62.0	62.0	62.2
12-Oct	61.5	61.6	61.6	60.6	61.6	61.7	61.8	61.8	61.9
13-Oct	61.5	61.5	61.5	60.6	61.5	61.6	61.7	61.7	61.9

(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 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 04 October requests forebay operation above 76.0' soft constraint between 0800 to 1300 on 09 October to support a survey of channel conditions near the BNSF railroad bridge at the mouth of the Wind River.

MICHAEL ADAMS, P.E.
Operations Manager
Bonneville Project