

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 38 of 2018, which covers the period from 16 - 22 September.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 76.6 to 109.3 kcfs. Daily average powerhouse forebay elevation ranged from 75.0' to 75.7' msl. Daily average project tailwater ranged from 7.3' to 9.9' msl. Secchi disk measurements ranged from 6' to 7.0'+. Daily average water temperature ranged from 65°F to 67°F.
- b. Daily average spill ranged from 1.2 to 1.3 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. Nothing to report.

Unit	OOS Date	RTS Date	Reason
7	0001 on 21 Sept	---	PO, Bus Inspection for XJ7.1 & XJ9.1
8	0001 on 21 Sept	---	PO, Bus Inspection for XJ7.1 & XJ9.1
9	0001 on 21 Sept	---	PO, Bus Inspection for XJ7.1 & XJ9.1
10	0001 on 21 Sept	---	PO, Bus Inspection for XJ7.1 & XJ9.1

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

(1) Table 2. Fish Unit Outages. None

Unit	RS / OOS Date	RTS Date	Reason
F2	1238 on 20 Sept	1604 on 21 Sept	RS, Low tailwater

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

Date	F1	F2
9/16	0.2'	0.2'
9/17	0.4'	0.8'
9/18	0.1'	0.2'
9/19	0.1'	0.3'
9/20	0.2'	---
9/21	0.1'	0.2'
9/22	---	0.6'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. Nothing to report.
- 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. Nighttime video recording (2100-0500) began on 15 May. Fish counts can be viewed [here](#).
 - b. WDFW (Jackman) – Fall Chinook Observations. WDFW personnel will observe passage in the count stations and observe CITFC's sampling of salmonids in the AFF. These observations will be conducted in order to determine stock components of the fall Chinook run between early August and October.
 - c. 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, a few sticks, and dead adult shad. Avian hazing concluded for the season on 31 July. Spill and B2CC 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: 8 salmon. No fish were collected for research this week.
- a. CRITFC – Adult Salmonid Sampling. Adult salmonid sampling in the adult fish facility (AFF) began on 25 April and typically occur 5 days per 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. Tagging operations concluded on 14 September. Personnel will be on project through the end of September.
 - 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 and concluded on 10 September.
 - 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 16 - 22 September.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
Bradford Island				
9/16-20	A-Branch	Differential > 1.1'	Unknown	NA
9/16, 9/22	B-Branch	FG3-27 Open (shouldn't be)	Caution Card	NA
9/19-21	B-Branch Entrance	Differential > 2.0'	Unknown	NA
Cascades Island				
9/19-20	CI Entrance	Differential > 2.0'	Unknown	NA
Washington Shore				
9/16	Weir 38 SG	Differential < 0.9'	Unknown	NA

- (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 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 Sept.

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

(1) Table 5. Avian Counts.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
9/16	4	1	0	0	0
9/17	---	---	0	0	0
9/18	37	129	0	0	0
9/19	30	126	0	0	0
9/20	34	110	0	0	0
9/21	33	102	0	0	0
9/22	46	118	0	0	0

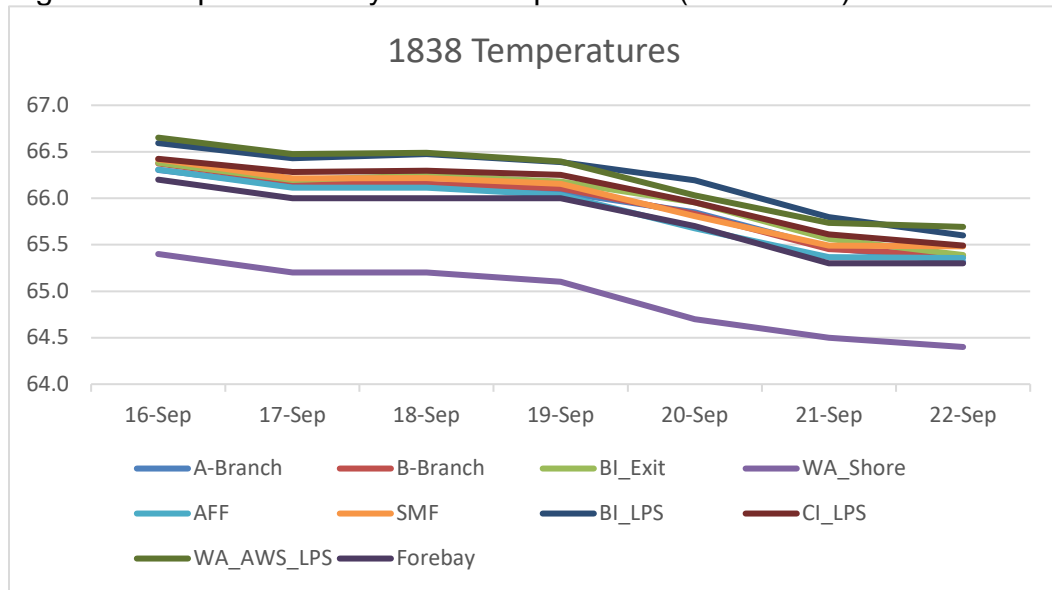
5. WATER QUALITY MONITORING:

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	WA_Shore	AFF	SMF	BI_LPS	CI_LPS	WA_AWS_LPS	Forebay
16-Sep	66.3	66.4	66.4	65.4	66.3	66.4	66.6	66.4	66.7	66.2
17-Sep	66.1	66.2	66.2	65.2	66.1	66.2	66.4	66.3	66.5	66.0
18-Sep	66.1	66.2	66.2	65.2	66.1	66.2	66.5	66.3	66.5	66.0
19-Sep	66.1	66.1	66.2	65.1	66.0	66.2	66.4	66.3	66.4	66.0
20-Sep	65.8	65.8	66.0	64.7	65.7	65.8	66.2	66.0	66.0	65.7
21-Sep	65.5	65.5	65.6	64.5	65.4	65.5	65.8	65.6	65.7	65.3
22-Sep	65.3	65.4	65.4	64.4	65.4	65.5	65.6	65.5	65.7	65.3

(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 19 September requests a 1.5' band hard constraint between 0600 to 1800 continuously from 19-22 September for the Treaty Fishery.
- c. A teletype sent on 20 September outlines the plan for a debris spillway operation from 1300-1600 on 24 September. During that time, individual spillbays will be open for up to approximately 30 minutes to flush debris that may have accumulated behind each spillbay. Only one spillbay will be opened at a time. This operation is occurring to help facilitate an inspection of the spillway bridge by boat that is occurring from 0800-1500 on 25 September. During that time, the spillway will be under a safe clearance with attraction bays 01 and 18 kept at 0.5' for attraction flows.

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Bonneville Project