

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 39 of 2018, which covers the period from 23 - 29 September.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 72 to 120.3 kcfs. Daily average powerhouse forebay elevation ranged from 72.6' to 75.6' msl. Daily average project tailwater ranged from 7.2' to 10.6' msl. Secchi disk measurements ranged from 6.0' to 7.0'+. Daily average water temperature ranged from 64°F to 65°F.
- b. Daily average spill ranged from 1.2 to 4.2 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. Nothing to report.

Unit	OOS Date	RTS Date	Reason
6	0233 on 27 Sept	0750 on 27 Sept	Exciter Voltage Error
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.

Unit	RS / OOS Date	RTS Date	Reason
F1	0156 on 22 Sept	1001 on 24 Sept	RS
F1	1512 on 27 Sept	1523 on 27 Sept	RS
F2	2014 on 26 Sept	1503 on 27 Sept	RS
F2	0430 on 28 Sept	1636 on 28 Sept	RS
F2	2359 on 28 Sept	---	RS

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

Date	F1	F2
9/23	--	0.6'
9/24	0.1'	0.3'
9/25	0.2'	0.6'
9/26	--	--
9/27	--	--
9/28	--	--
9/29	0.2'	--

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV 1-1 was closed for cleaning from 0720 to 0732 on 28 September.

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. 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: 1 steelhead, 2 salmon and 1 unknown salmonid. No fish were collected for research this week.

d. CRITFC – Adult Salmonid Sampling. Adult salmonid sampling in the adult fish facility (AFF) began on 25 April and typically occur 5 days per week.

- e. 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.
- f. 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 23 - 29 September.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
Bradford Island				
9/23-25,28-29	A-Branch	Differential > 1.1'	Unknown	NA
9/24,26	FG3-3	Open & Shouldn't be	Unknown	Ops Adjusted
9/26	BI Entrance	Entrance Diff > 2.0'	FV4-4 High	Ops Adjusted
Cascades Island				
9/25,27	CI Entrance	Entrance Diff < 1.0'	FV5-4 / FV5-3	Adjusted
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 occurred on 28 September.
 - (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 5. Avian Counts.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
9/23	---	---	0	0	0
9/24	17	0	0	0	0
9/25	4	0	0	0	0
9/26	33	119	0	0	0
9/27	33	95	0	0	0
9/28	38	103	0	0	0
9/29	34	115	0	0	0

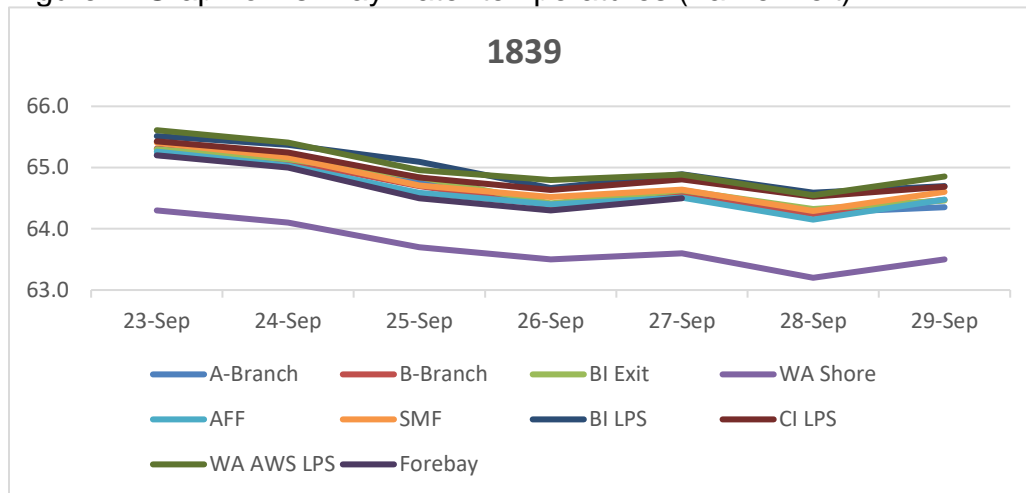
5. WATER QUALITY MONITORING:

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
23-Sep	65.2	65.3	65.3	64.3	65.3	65.4	65.5	65.4	65.6	65.2
24-Sep	65.1	65.1	65.1	64.1	65.0	65.2	65.4	65.2	65.4	65.0
25-Sep	64.8	64.7	64.8	63.7	64.6	64.7	65.1	64.8	65.0	64.5
26-Sep	64.4	64.4	64.4	63.5	64.4	64.5	64.7	64.6	64.8	64.3
27-Sep	64.6	64.6	64.6	63.6	64.5	64.6	64.9	64.8	64.9	64.5
28-Sep	64.3	64.2	64.3	63.2	64.2	64.3	64.6	64.5	64.5	---
29-Sep	64.4	64.5	64.5	63.5	64.5	64.6	64.7	64.7	64.9	---

(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 25 September requests a 1.5' band soft constraint between 0600 on 26 September to 1800 on 28 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