

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 36 of 2018, which covers the period from 02 - 08 September.

## 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 88.4 to 108.7 kcfs. Daily average powerhouse forebay elevation ranged from 74.7' to 75.6' msl. Daily average project tailwater ranged from 9.1' to 10.3' msl. Secchi disk measurements ranged from 5.5' to 7.0'+. Daily average water temperature ranged from 68°F to 69°F.
- b. Daily average spill ranged from 1.3 to 1.5 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.

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

(1) Table 2. Fish Unit Outages.

Unit	OOS Date	RTS Date	Reason
F1	20217 on 02 Sept	1329 on 03 Sept	RS, Float Trash
F2	0005 on 07 Sept	0341 on 07 Sept	RS, Float Trash

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

Date	F1	F2
9/2	0.9'	0.3'
9/3	0.2'	0.4'
9/4	0.1'	1.6'
9/5	0.2'	2.2'
9/6	0.2'	3.0'
9/7	0.3'	0.4'
9/8	0.2'	0.2'

## 2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.

(1) FV1-1 was closed from cleaning from 0710 to 0727 on 06 September.

b. Table 4. STS/VBS Inspections.

Unit #	Previous STS Hours	Hours when inspected	Hours Ran
11	39776	40274	498
12	30090	30321	231
13	1148	1256	108
14	3316	3404	88
15	15167	15233	66
16	27441	27458	17
17	19563	19677	114
18	58275	58697	422

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 1st, 2018.
- a. 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 light-moderate consisting mostly of filamentous algae, aquatic macrophytes, a few sticks and dead adult shad. 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: 14 salmon and one unknown salmonid. No fish were collected for research this week.
- b. 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.

- 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.
- 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 02-08 September.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
<b>Bradford Island</b>				
9/4	A-Branch	Differential > 1.1'	Unknown	NA
9/2-8	B-Branch	FG3-27 Open (shouldn't be)	Caution Card	NA
<b>Cascades Island – Nothing to report.</b>				
<b>Washington Shore</b>				
9/2	Weir 38	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 CI 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.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 07 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 offline.
- (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) remains in service.
- (3) AFF lamprey trap remains in service.
- (4) The Bradford Island Lamprey Wetted Wall remains in service.

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

(1) Table 6. Avian Counts.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
2-Sep	31	110	0	0	0
3-Sep	41	77	0	0	0
4-Sep	11	16	0	0	0
5-Sep	5	0	0	0	0
6-Sep	12	86	0	0	0
7-Sep	15	90	0	0	0
8-Sep	40	62	0	0	0

## 5. WATER QUALITY MONITORING:

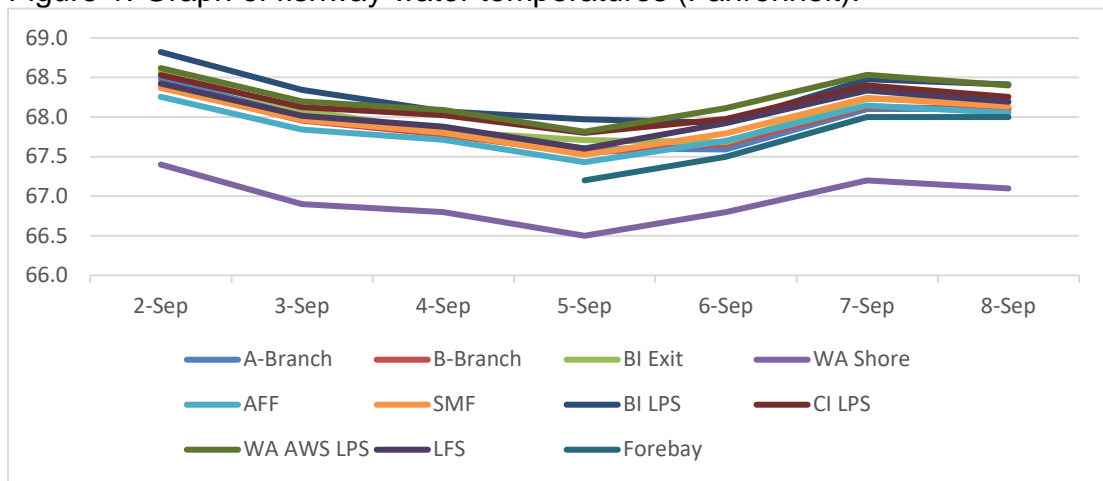
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

(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	LFS	Forebay
9/2	68.5	68.4	68.6	67.4	68.3	68.4	68.8	68.5	68.6	68.4	---
9/3	68.0	68.0	68.1	66.9	67.8	68.0	68.3	68.1	68.2	68.0	---
9/4	67.8	67.8	67.8	66.8	67.7	67.8	68.1	68.0	68.1	67.9	---
9/5	67.6	67.5	67.7	66.5	67.4	67.5	68.0	67.8	67.8	67.6	67.2
9/6	67.6	67.7	67.7	66.8	67.7	67.8	67.9	68.0	68.1	67.9	67.5
9/7	68.1	68.1	68.2	67.2	68.1	68.2	68.5	68.4	68.5	68.3	68.0
9/8	68.1	68.1	68.2	67.1	68.1	68.1	68.4	68.3	68.4	68.2	68.0

\*Forebay temperature data provided by USGS occurred an equipment malfunction (software update).

(2) Figure 1. Graph of fishway water temperatures (Fahrenheit).



b. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

## 6. CONSTRUCTION:

a. The PH2 roofing project continues.

**7. HAZMAT, SPILLS AND CLEANUP:** Nothing to report.

**8. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent on 21 August requests that Bonneville operate within a 1.5' band, hard constraint for the Treaty Fishery during the periods of 0600-1800 continuously from 27-30 August and 0600-1800 continuously from 03-07 September.
- b. A teletype sent on 22 August states that Bonneville spill gates 5-12 will be out of service from 0600 – 1800 daily from 05-07 September. This outage will facilitate climbing inspections on spill gates 7-10. Gates 5-12 will be taken OOS for safety reasons.
- c. A teletype sent on 24 August requests that Bonneville outflows be maintained as low and as constant as possible from 0430 – 1200 on 03 September. Request flows not to exceed 150 kcfs, hard constraint. Low flows are requested to reduce currents in the river during the Roy Webster cross channel swim near Hood River.
- d. A teletype sent on 30 August outlines the wintertime spill priority list and wintertime spill caps for all Columbia Basin projects and BPA.
- e. A teletype sent on 05 September updates the previous sent on 22 August pertaining to spill gate closures. The revised teletype specifies continuous, rather daily outages of gates 5-12.
- f. A teletype sent on 05 September requests Bonneville operate the forebay between 75.6'-76.5', soft constraint for the "Aluminum Man" triathlon at The Dalles on 08 September.
- g. A teletype sent on 07 September requests that Bonneville operate within a 1.5' band, hard constraint for the Treaty Fishery during the periods of 0600-1800 continuously from 10-14 September.

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