

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 40 of 2018, which covers the period from 30 September – 06 October.

### 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 75.9 to 93.1 kcfs. Daily average powerhouse forebay elevation ranged from 74.9' to 75.3' msl. Daily average project tailwater ranged from 7.9' to 8.8' msl. Secchi disk measurements ranged from 7.0' to 7.0'+. Daily average water temperature ranged from 63°F to 64°F.
- b. Daily average spill was 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
7	0001 on 21 Sept	1909 on 04 Oct	PO, Bus Inspection for XJ7.1 & XJ9.1
8	0001 on 21 Sept	1909 on 04 Oct	PO, Bus Inspection for XJ7.1 & XJ9.1
9	0001 on 21 Sept	1700 on 04 Oct	PO, Bus Inspection for XJ7.1 & XJ9.1
10	0001 on 21 Sept	1700 on 04 Oct	PO, Bus Inspection for XJ7.1 & XJ9.1
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	0457 on 01 Oct	1437 on 01 Oct	RS
F1	1554 on 06 Oct	---	RS
F2	2359 on 28 Sept	1807 on 30 Sept	RS
F2	2109 on 01 Oct	1648 on 03 Oct	RS
F2	2352 on 03 Oct	0539 on 04 Oct	RS
F2	1025 on 04 Oct	0700 on 05 Oct	RS

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

Date	F1	F2
9/30	---	---
10/1	0.2'	0.4'
10/2	0.3'	---
10/3	0.1'	0.3'
10/4	0.2'	---
10/5	0.1'	0.1'
10/6	---	---

**2. MAINTENANCE ACTIVITIES:**

a. Auxiliary Water System Closures.

(1) FV1-1 was closed from cleaning from 0724 to 0741 on 01 October and 0710 to 0720 on 04 October.

b. STS/VBS Inspections. Inspection occurred on 01 October.

(1) Table 4. STS/VBS Inspection

UNIT #	PREVIOUS STS HRS	HRS WHEN INSPECTED	HRS RUN
11	40274	40924	650
12	30321	30829	508
13	1256	1902	646
14	3404	3921	517
15	15233	15568	335
16	27458	27677	219
17	19677	20328	651
18	58697	59346	649

c. Dewatering and Fish Salvages.

(1) A salvage occurred on 02 October for MU13's 4 year overhaul. Approximately 10 White Sturgeon were removed. One sturgeon (3-4' in length) had a large open wound on its ventral side between pectoral fins and vent. The wound appeared to be in the early stages of healing and the sturgeon did not seem burdened by the wound.

**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 30 September - 6 October.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
<b>Bradford Island</b>				
10/1-3,5-6	A-Branch	Differential > 1.1'	Unknown	NA
10/4	B-Branch	Differential < 1.0'	PLC Issues	Adjusted
10/6	B-Branch	Differential > 2.0'	PLC Issues	Adjusted
<b>Cascades Island</b>				
10/5	CI Entrance	Differential < 1.0'	Unknown	NA
<b>Washington Shore – Nothing to report.</b>				
10/4	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 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
9/30	17	55	0	0	0
10/1	0	0	0	0	0
10/2	0	30	0	0	0
10/3	18	105	0	0	0
10/4	47	127	0	0	0
10/5	30	131	0	0	0
10/6	14	124	0	0	0

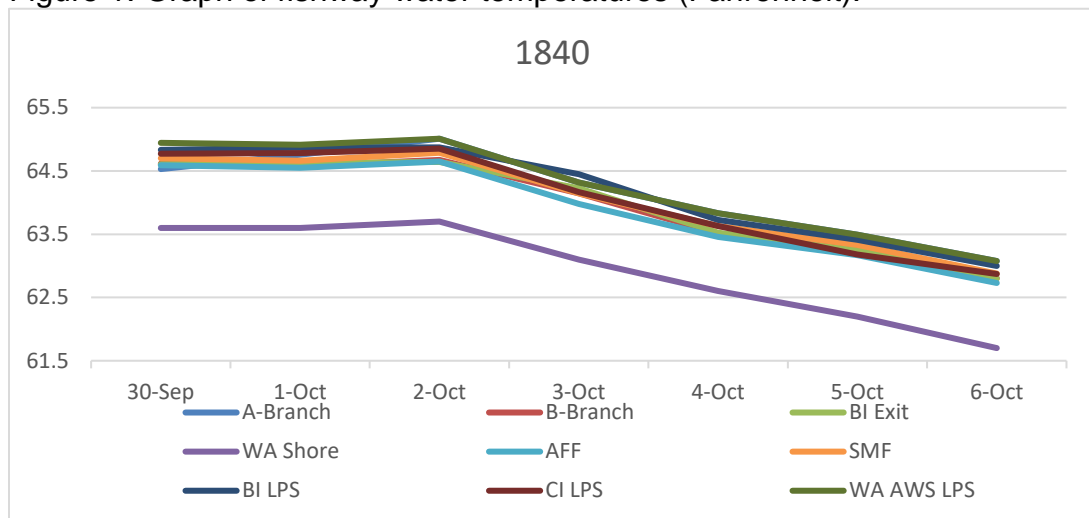
## 5. WATER QUALITY MONITORING:

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
30-Sep	64.5	64.6	64.6	63.6	64.6	64.7	64.8	64.8	64.9
1-Oct	64.8	64.6	64.6	63.6	64.5	64.7	64.9	64.8	64.9
2-Oct	65.0	64.7	64.6	63.7	64.6	64.8	64.9	64.9	65.0
3-Oct	64.3	64.1	64.2	63.1	64.0	64.1	64.4	64.2	64.3
4-Oct	63.8	63.5	63.5	62.6	63.5	63.6	63.7	63.6	63.8
5-Oct	63.5	63.3	63.2	62.2	63.2	63.3	63.4	63.2	63.5
6-Oct	63.1	62.8	62.8	61.7	62.7	62.9	63.0	62.9	63.1

(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 02 October requests a 1.5' band soft constraint between 0600 on 03 October until 1800 on 06 October for the Treaty Fishery.
- c. 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.

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