

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 38 of 2016, which covers the period from 11 to 17 September.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 77.6 to 104.8 kcfs. Daily average powerhouse forebay elevation ranged from 75.2' to 75.9' msl. Daily average project tailwater ranged from 7.8' to 10.3' msl. Secchi disk measurements remained at 7' or greater. Daily average water temperature ranged from 67 to 78° F this week.
- b. Spill bays 01 and 18 are open 0.5 ft to provide attraction flow for Cascades Is. and B-branch fishways, respectively. Daily average spill ranged from 1.3 to 1.4 kcfs.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit draw downs are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
6	0001 on 12 Sep	0844 on 12 Sep	Thrust bearing strains drain valve
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
12	2007 on 14 Sep	---	Exciter high temp alarm
15	1013 on 06 Sep	---	Four year maintenance, T-12 outage
16	0001 on 07 Sep	---	Four year maintenance, T-12 outage
17	0001 on 07 Sep	---	Four year maintenance, T-12 outage
18	0657 on 06 Sep	---	Four year maintenance, T-12 outage

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

(1) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
9/11	0.5	---
9/12	---	---
9/13	---	---
9/14	0.2	0.2
9/15	0.8	0.2
9/16	0.0	0.4
9/17	0.0	0.4

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV1-1 was closed for cleaning from 0710 – 0730 on 12 Sept and from 0715 – 0725 on 15 Sept.

b. STS/VBS inspections. Table 2a.

Unit	Date	Run Hours	Comments
11	9/12	1030	OK
12	9/12	384	OK
13	9/12	331	OK
14	9/12	255	OK
15	9/12	---	OOS
16	9/12	---	OOS
17	9/12	---	OOS
18	9/12	---	OOS

c. Dewatering and Fish Salvages. None.

3. RESEARCH:

a. CRITFC – AFF. Adult sampling in the AFF continues.

b. Normandeau – Fish counting. Visual counting continues.

c. PSMFC – Smolt Monitoring Program. No research fish were collected this week. GBT monitoring has concluded for the season. Truck transport releases from the Snake basin began 17 August. Fallbacks recorded crossing the separator bars this week: 5 salmon and 2 salmonids. More details can be found on the [FPC web page](#).

d. WDFW – Tule counting. Tule counting continues.

e. USFWS – Fish Health Center. Select lamprey mortalities are being held for analysis.

4. FISHWAYS:

a. Project biologists inspected 11 – 17 September.

b. Fish passage plan observations.

(1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
9/11-13	FG3-3	Diffuser open	Needs repair	See 4.b.3 below
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
9/12-14	Weir 37	Water over weir > 1.1'	Blow-off valve out	Being repaired
Ongoing	PH2	Diffuser B5 open	See 4.b.2 below	None

- (2) PH2CC diffuser A2 was unable to be repaired during winter maintenance 2014/15 and remains closed. It should be open when tailwater is above 13.0' msl. The gate for diffuser B5 was removed for repairs and therefore cannot be closed. It should be closed when tailwater is below 12.0' msl or above 28.0' msl.
- (3) FG3-3 is currently open and unplugged. The diffuser cannot be repaired until the north PH1CC area is dewatered. The next opportunity will be the 2017-18 winter maintenance period. It should be closed below tailwaters of 8.2' msl.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 15 September.
- (3) Eight of 12 floating orifice gates (FOGs) are installed; the 4 middle slots have bulkheads in place. FOG sea lion bars are installed. Plywood sea lion barriers were installed on top of all FOGs on 11 February to prevent sea lions from jumping into the PH2CC.
- (4) All SLEDS are installed. Three of four PH2 SLEDS were installed on 01 September due a sea lion discovered in the PH2CC (see 16BON109). The NUE SLED was lowered on 03 September. The CI SLED remained installed due to a lack of crane availability. PH1 SLEDs were installed on 06 September.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon remains on.
- (3) The B2CC remains closed.
- (4) The DSM remains in service.

e. Lamprey Fishways.

- (1) The Bradford Island LPS, WA AWS LPS, and the Cascade Island LPS remain in service.
- (2) Due to needed repairs, the NDE LFS/LPS will remain out of service for the 2016 season. Repairs are coordinated for November 2016 (see [16BON11](#)).

f. Avian Monitoring. Bird counts are made between 01 April and 31 October.

(1) Table 4. Counts of tailrace foraging piscivorous birds.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
9/11	0	0	0	0	0
9/12	20	10	0	0	0
9/13	12	0	0	0	0
9/14	10	16	0	0	0
9/15	19	31	0	0	0
9/16	12	30	0	0	0
9/17	8	19	0	0	0

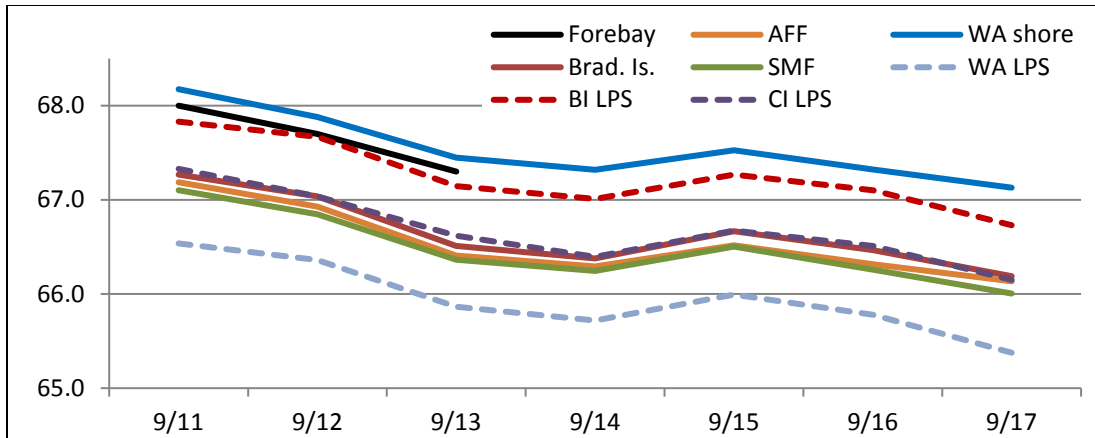
5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(1) Table 5. Average daily fishway water temperatures (Fahrenheit).

Date	Forebay	Fishways				Lamprey		
		Brad. Is.	WA shore	AFF	SMF	BI LPS	WA LPS	CI LPS
9/11	68.0	67.3	67.1	67.2	68.2	67.8	66.5	67.3
9/12	67.7	67.0	66.8	66.9	67.9	67.7	66.4	67.0
9/13	67.3	66.5	66.4	66.4	67.4	67.1	65.9	66.6
9/14	Removed	66.4	66.2	66.3	67.3	67.0	65.7	66.4
9/15	---	66.7	66.5	66.5	67.5	67.3	66.0	66.7
9/16	---	66.5	66.3	66.3	67.3	67.1	65.8	66.5
9/17	---	66.2	66.0	66.1	67.1	66.7	65.4	66.2

(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. EAL (environmentally acceptable lubricant) install in Unit 15 began starting 9 Sept (see [16BON10](#)) in conjunction with the T12 outage; the unit was dewatered. EAL monitoring equipment was installed on 1 – 5 Aug.
- b. Flow control plates as part of the FGE modifications are being installed in units 16 – 18 during the T12 outage. VBS plates will also be installed. Installation for units 11 – 14 will occur during winter maintenance.

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

8. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent on 26 August updates one sent on 11 August that requests that BON pool operate within a 1.5' band, hard constraint, from 22 August – 16 September for the periods and times listed within for fall treaty fishing.
- b. A teletype sent on 30 August provides wintertime spill and lack of load conditions to be used from 01 September 2016 through 31 March 2017.
- c. A teletype sent on 15 September requests that BON pool operate within a 1.5' band, hard constraint, from 19 – 23 September for the periods and times listed within for fall treaty fishing.

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 Bonneville Project