

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 36 of 2016, which covers the period from 28 August to 03 September.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 94.2 to 125.3 kcfs. Daily average powerhouse forebay elevation ranged from 75.2 to 76.1' msl. Daily average project tailwater ranged from 9.4' to 11.8' msl. Secchi disk measurements remained at 7' or greater. Daily average water temperature ranged from 71 to 72° F this week.
- b. Spill concluded at 2400 on 31 August. Daily average spill ranged from 1.3 to 81.3 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
4	0001 on 29 Aug	1642 on 1 Sep	Annual maintenance
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
13	0001 on 11 Jul	1729 on 30 Aug	Annual maintenance, shaft alignment

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

(1) Nighttime operations for lamprey concluded 31 August.

(2) Unit F2 was placed in standby from 2352 on 02 September to 0847 on 03 September in conjunction with the NUE being closed. It was reopened and F2 returned to service when the NUE SLED was installed. All other PH2 SLEDs were lowered on 01 September when a sea lion was discovered in the PH2CC; the NUE SLED was left open to allow the sea lion to leave. See 16BON109 and 4.c.4 and 4.c.5, below.

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

Date	F1	F2
8/28	0.4	0.7
8/29	0.9	0.6
8/30	0.4	1.1

8/31	---	---
9/1	0.5	0.7
9/2	0.3	0.5
9/3	0.6	0.0

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. None.
- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages.

(1) On 29 August, a Project Biologist recovered 13 sculpin spp., 1 Smallmouth Bass, and 1 Pacific Lamprey microphthalmia from the unit 13 tail logs. All fishes were returned to the forebay in good condition.

3. RESEARCH:

- a. CRITFC – AFF. Adult sampling in the AFF continues. High temperature sampling began 27 July. No sampling occurred on 29 August.
- b. Normandeau – Fish counting. Visual counting continues.
- c. PSMFC – Smolt Monitoring Program. High temperature sampling protocols were initiated on 27 July. No research fish were collected this week. GBT monitoring has concluded for the season. Truck transport releases from the Snake basin began 17 August. No fallbacks were recorded crossing the separator bars. 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 28 August – 03 September.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
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BRADFORD ISLAND – Nothing to report				
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
8/29-9/1	Weir 37	Water over weir > 1.1'	Blow-off valve out	Parts on order
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.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 31 August.
- (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) 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 after the sea lion was allowed to swim out. The PH1 and B-branch entrance SLEDs are removed. The CI SLED remains installed due to a lack of crane availability.
- (5) The NUE fish entrance was closed from 2352 on 02 September to 0847 on 03 September (see above and 1.d.2).

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon remains on.
- (3) The B2CC was closed for the season on 2400 on 31 August.
- (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
8/28	1	12	0	0	0
8/29	12	2	0	0	0
8/30	8	3	0	0	0
8/31	0	0	0	0	0
9/1	0	0	0	0	0
9/2	0	5	0	0	0
9/3	0	10	0	0	0

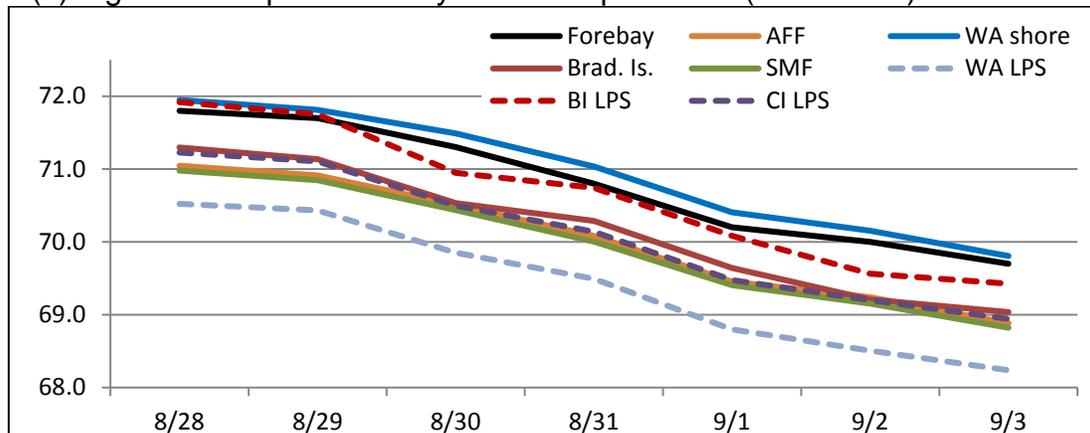
5. WATER QUALITY MONITORING:

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	Fishways					Lamprey		
	Forebay	Brad. Is.	WA shore	AFF	SMF	BI LPS	WA LPS	CI LPS
8/28	71.8	71.3	71.0	71.0	71.9	71.9	70.5	71.2
8/29	71.7	71.1	70.8	70.9	71.8	71.8	70.4	71.1
8/30	71.3	70.5	70.4	70.5	71.5	70.9	69.9	70.5
8/31	70.8	70.3	70.0	70.1	71.0	70.7	69.5	70.1
9/1	70.2	69.6	69.4	69.5	70.4	70.1	68.8	69.5
9/2	70.0	69.2	69.2	69.2	70.2	69.6	68.5	69.2
9/3	69.7	69.0	68.8	68.9	69.8	69.4	68.2	68.9

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



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

6. CONSTRUCTION:

- a. EAL (environmentally acceptable lubricant) install in Unit 15 will occur starting 9 Sept (see [16BON10](#)) in conjunction with the T12 outage; the unit will be dewatered. EAL monitoring equipment was installed on 1 – 5 Aug.
- b. Flow control plates as part of the FGE modifications are scheduled to be installed in units 16 – 18 during the T12 outage starting 7 Sept. 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 30 June stated that effective 10 April to 31 August, provide spring and summer spill per the 2015 Fish Operations Plan. A schedule and specific operations are provided. The B2CC will operate concurrent with spill.
- b. A teletype sent on 05 July updates spring and summer spill for fish passage, removing alternating spill treatments from 05 July – 31 August due to erosion at Bradford Island B-Branch.
- c. A teletype sent on 21 July stated that effective immediately through 2400 on 31 August, spill according to modified patterns provided in the given spreadsheet. Bay 18 will be open to 1.0' and bay 17 to 1.5'. Other bays will adjust automatically to maintain the scheduled spill rate. This operation is to minimize hydraulic energy and at the B-branch fish ladder erosion holes.
- d. A teletype sent on 24 August requests that outflows from BON (and TDA) be maintained as low and constant as possible 0430- 1100 on 05 September for a cross channel swim at Hood River. Request flows not exceed 150 kcfs.
- e. 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.

- f. A teletype sent on 24 August requests that BON (and the DALLES) be maintained as low and constant as possible 0430- 1100 hours on 05 September for a cross channel swim. Request flows do not exceed 150 kcfs.
- g. A teletype sent on 30 August provides the wintertime spill caps and lack of load conditions to be used from 01 September 2016 through 31 March 2017.

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