

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 34 of 2016, which covers the period from 14 to 20 August.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 114.2 to 149.0 kcfs. Daily average powerhouse forebay elevation ranged from 74.0 to 75.1' msl. Daily average project tailwater ranged from 10.8' to 13.5' msl. Secchi disk measurements remained at 7' or greater. Daily average water temperature ranged from 71 ° to 72° F this week.
- b. Summer spill began 15 June. Daily average spill ranged from 70.7 to 94.7 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
1	1542 on 18 Aug	1605 on 18 Aug	Breaker racking
2	0001 on 15 Aug	1605 on 18 Aug	Annual maintenance
5	0000 on 14 Apr	1400 on 15 Aug	230 kV disconnect broken
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
13	0001 on 11 Jul	---	Annual maintenance, shaft alignment
16	0800 on 15 Aug	1550 on 15 Aug	STS gearbox repair – oil leak

- 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
8/14	0.1	1.1
8/15	0.2	0.4
8/16	0.1	1.0
8/17	0.6	1.7
8/18	0.6	0.2
8/19	0.7	1.0
8/20	2.0	0.2

2. MAINTENANCE ACTIVITIES:

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

3. RESEARCH:

- a. CRITFC – AFF. Adult sampling in the AFF continues. High temperature sampling began 27 July.
- 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. USFWS – Fish Health Center. Select lamprey mortalities are being held for analysis.

4. FISHWAYS:

- a. Project biologists inspected 14 – 20 August.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
8/14-16,18-20	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
8/16-18	Weir 37	Water over weir > 1.1'	Unknown	None
8/14-18	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 18 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) The PH1, PH2, and B-branch entrance SLEDs are removed. The CI SLED remains installed due to a lack of crane availability.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon remains on.
- (3) The B2CC remains in service.
- (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
8/14	0	22	0	0	0
8/15	100	20	0	0	0
8/16	0	0	0	0	0
8/17	0	0	0	0	0
8/18	0	10	0	0	0
8/19	0	0	0	0	0
8/20	0	0	0	0	0

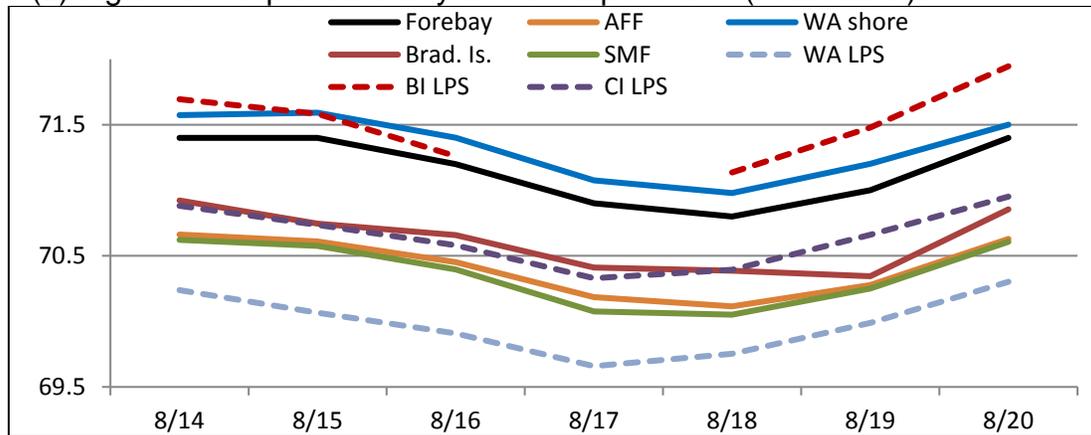
5. WATER QUALITY MONITORING:

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
8/14	71.4	70.9	70.6	70.7	71.6	71.7	70.2	70.9
8/15	71.4	70.7	70.6	70.6	71.6	71.6	70.1	70.7
8/16	71.2	70.7	70.4	70.5	71.4	71.3	69.9	70.6
8/17	70.9	70.4	70.1	70.2	71.1	N/A	69.7	70.3
8/18	70.8	70.4	70.1	70.1	71.0	71.1	69.8	70.4
8/19	71.0	70.3	70.3	70.3	71.2	71.5	70.0	70.7
8/20	71.4	70.9	70.6	70.6	71.5	71.9	70.3	71.0

(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. 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 11 August 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.

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