

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 44 of 2016, which covers the period from 23 to 29 October.

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 120.8 to 150.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.9' to 75.6' msl. Daily average project tailwater ranged from 12.0' to 13.8' msl. Secchi disk measurements ranged from 6' to 7' or greater all week. Daily average water temperature ranged from 58 to 59 °F.

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 0.9 to 1.1 kcfs.

(1) Spill bay 18 was placed on sill from 1200 – 1610 on 26 October for a hydrosurvey of the B-branch erosion hole. See [16BON118](#).

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
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 ground
15	1013 on 06 Sep	---	T-12 outage
16	0001 on 07 Sep	---	T-12 outage, FGE mods
17	0001 on 07 Sep	---	T-12 outage
18	0657 on 06 Sep	---	T-12 outage, 4 year maintenance

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

(1) F1 and F2 were placed on standby from 2031 on 24 October to 1200 on 25 October when trash raking was completed.

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

Date	F1	F2
10/23	0.9	1.6
10/24	4.8	4.2
10/25	0.3	0.4

10/26	0.5	0.6
10/27	0.1	0.3
10/28	0.3	0.7
10/29	0.7	1.4

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0758 to 0813 on 24 October and from 1301 to 1320 on 25 October.
(2) FV3-9 was closed for cleaning from 0744 to 0750 on 27 October.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages.

- (1) On 25 October, Project Biologists recovered ~15 crayfish, 12 sculpin spp., 1 smallmouth bass, 1 bluegill, and 1 sucker from the unit 15 tail logs. All fishes were returned to the forebay in good condition.

3. RESEARCH:

a. Normandeau – Fish counting. Visual counting continues.

- b. 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: 3 salmon and 1 unknown salmonid. More details can be found on the [FPC web page](#). SMF sampling will conclude on 31 October.

4. FISHWAYS:

a. Project biologists inspected 23 – 29 October.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
10/23-25	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE – Nothing to report				

- (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. It's scheduled to be dewatered on 1 November.
- (2) Sensor calibration occurred on 27 October.
- (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 remain installed.

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 were taken out of service for the winter on 27 October.
- (2) Due to needed repairs, the NDE LFS/LPS was out of service for the 2016 season. Repairs are coordinated for 14 – 23 November (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
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10/23	---	---	---	---	---
10/24	0	50	0	0	0
10/25	0	50	0	0	0
10/26	0	16	0	0	0
10/27	---	---	---	---	---
10/28	6	17	0	0	0
10/29	4	19	0	0	0

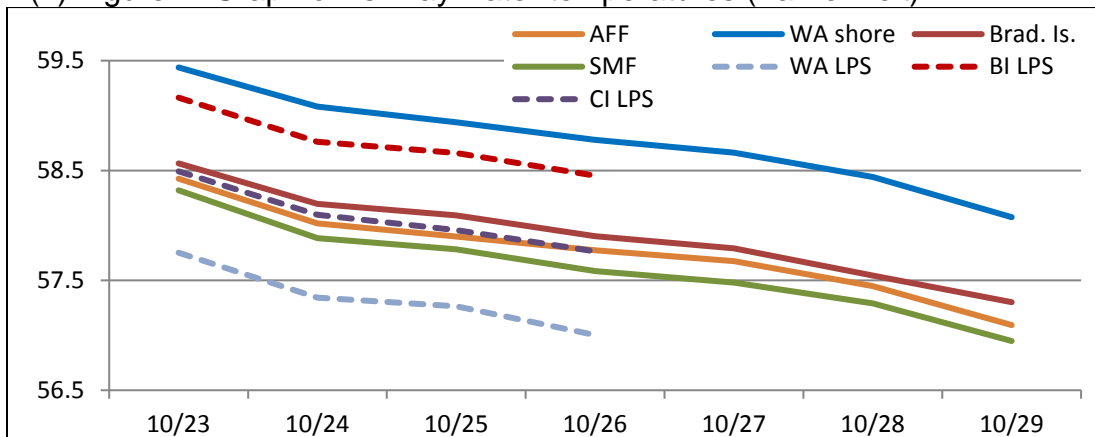
5. WATER QUALITY MONITORING:

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	Fishways				Lamprey		
	Brad. Is.	WA shore	AFF	SMF	BI LPS	WA LPS	CI LPS
10/23	58.6	58.3	58.4	59.4	59.2	57.8	58.5
10/24	58.2	57.9	58.0	59.1	58.8	57.3	58.1
10/25	58.1	57.8	57.9	58.9	58.7	57.3	58.0
10/26	57.9	57.6	57.8	58.8	58.5	57.0	57.8
10/27	57.8	57.5	57.7	58.7			
10/28	57.5	57.3	57.4	58.4			
10/29	57.3	56.9	57.1	58.1			

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



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

6. CONSTRUCTION:

a. 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 30 August provides wintertime spill and lack of load conditions to be used from 01 September 2016 through 31 March 2017.
- b. A teletype sent 13 October states effective immediately until further notice do not spill at BON for lack-of-load conditions. If spill becomes necessary, implement the modified spill patterns provided to the BON control room. This operation is to minimize erosion in the spillway tailrace at B-branch ladder.
- c. A teletype sent on 14 October requests that BON pool be maintained at 75.5 – 76.5 msl, hard constraint, from 1100 – 1300 on 24 October to pull sail boats at Hood River.
- d. A teletype sent on 18 October requests that BON take spillbays 2 through 18 out of service from 1200 -1700 on 26 October. The goal is to provide safe conditions for a hydrosurvey of erosion holes at the Bradford Island B-Branch entrance.
- e. A teletype sent on 25 October and updated 26 October states effective immediately until further notice, make best efforts to not exceed a 13' tailwater during daytime hours (0600 – 1700) to improve conditions for Chum spawning.
- f. A teletype sent on 27 October states effective 0600 on 1 November, operate BON tailwater in the following order for Chum spawning: at all hours, 11.5 – 13.0'. If necessary, then up to 16.5' at night (1700 – 0600) with highest elevations at ~2400 hours. Then, if necessary up to 18.5' at night. Then, if necessary 13.0 – 16.5' during during the day (0600 – 1700) and up to max project 24-hour ramp rate limits during night.
- g. A teletype sent on 28 October states the during the official Chum spawning period but no later than 15 January, project outflows may be decreased to 58 kcfs, hard constraint, as long as the Vancouver gauge is maintained at 3.0' or higher. When outflows are reduced due to high water, there is no daily minimum outflow if the 3.0' requirement at the Vancouver gauge is met.

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