

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 49 of 2016, which covers the period from 27 November to 03 December.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 141.5 to 152.8 kcfs. Daily average powerhouse forebay elevation ranged from 73.1 to 74.2' msl. Daily average project tailwater ranged from 13.9 to 14.6' msl. Secchi disk measurements remained above 7' all week. Daily average water temperature ranged from 50 to 52 °F.
- b. Spill bays 01 and 18 are open 0.5' to provide attraction flow for Cascades Is. and B-branch fishways, respectively. Daily average spill ranged from 1.0 to 5.3 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
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 & 16BON11

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

(1) F1 and F2 went OOS for winter maintenance at 0300 on 25 November.

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.

(1) FV3-9 was closed from 0723 to 0740 on 29 November for trash rack cleaning.

- b. STS/VBS inspections. Table 2a.

Unit	Date	Run Hours	Comments
11	12/6	374	OK
12	12/6	---	OOS
13	12/6	274	OK

14	12/6	222	OK
15	12/6	115	OK
16	12/6	82	OK
17	12/6	298	OK
18	12/6	326	OK

c. Dewatering and Fish Salvages.

(1) On 28 November, Project Biologists recovered ~20 steelhead, 4 Chinook adults, 1 White Sturgeon, 50 Pacific Lamprey, and several hundred suckers and minnows from the WA shore ladder down to tailwater. All fishes were returned to the forebay in fair to good condition.

(2) On 30 November, Project Biologists recovered ~6 sculpin spp. from the south monolith. In addition, ~6 Steelhead, 4 salmon, and hundreds of suckers and minnows were recovered from the UMT (upstream migration tunnel). All fishes were returned to forebay in fair to good condition.

(3) On 01 December, Project Biologists recovered an additional Pacific Lamprey and dozens of suckers and minnows from areas of the WA shore ladder that continued to hold water. All fishes were returned to the forebay. The lamprey was in poor condition.

3. RESEARCH:

a. Normandeau – Fish counting. Visual counting concluded on 30 November when video counting began.

4. FISHWAYS:

- a. Project biologists inspected 29 November – 01 December.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
11/27,28		No bio inspection	Staffing, Dewatering	None
BRADFORD ISLAND – Nothing to report				
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE – Nothing to report				

(2) 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 WA shore ladder was dewatered to tailwater on 28 November with the UMT bulkheaded at both ends to retain water. The exit channel (serpentine to river exit) was dewatered on 29 November with no fish found. The UMT, as well as the south monolith (bulkhead placed south of unit 11) was dewatered on 30 November. The north monolith (bulkhead placed north of unit 12) remained watered up until the following week.
- (2) The Cascades Island exit was opened at ~1300 on 23 November. A bulkhead is placed at the south end of the UMT to separate it from WA shore.
- (3) The AFF is dewatered.
- (4) Sensor calibration occurred on 01 December.
- (5) SLEDS remain installed in the operating fishways (CI, B-branch, PH1).

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is off.
- (3) The B2CC was opened from 0715 to 0823 on 28 November, and from 1951 to 2100 on 29 November.
- (4) The DSM remains in service.

e. Lamprey Fishways.

- (1) All LPSs are out of service.

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

5. WATER QUALITY MONITORING:

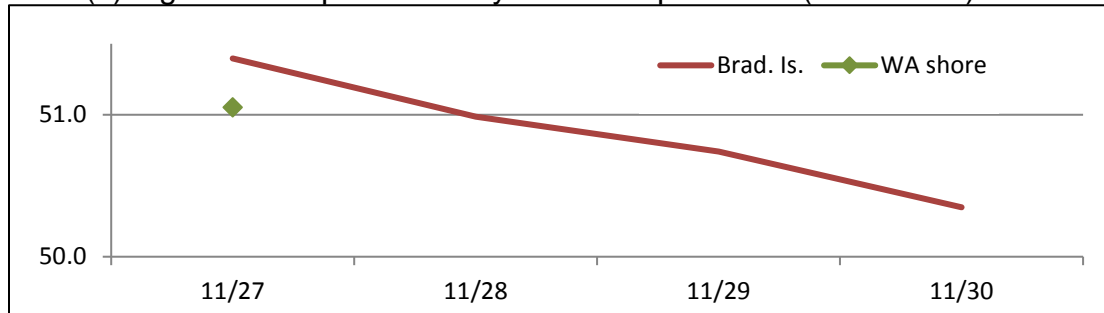
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

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

Date	Fishways	
	Brad. Is.	WA shore

11/27	51.4	51.1
11/28	51.0	OOS
11/29	50.7	---
11/30	50.3	---

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



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

6. CONSTRUCTION:

- Flow control plates as part of the FGE modifications continue to be installed at PH2, in units 11 – 14 during winter maintenance. VBS plates will also be installed.
- Lamprey flume extensions and modifications are occurring in the upper WA shore ladder during winter maintenance. Orifice plating will be installed in the lower fishway.
- The Navigation Lock will be out of service 12 Dec – 9 Feb for extended maintenance as part of an extended winter maintenance coordinated for the Columbia River system.

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

8. TELETYPES CURRENTLY IN EFFECT:

- 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.
- 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.
- 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.

- d. A teletype sent on 22 November states effective 1200 on 22 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 (1500 – 0900) with highest elevations at ~2400 hours. Then, if necessary up to 18.5' at night. Then, if necessary 13.0 – 16.5' during the day (0900 – 1500) and up to max project 24-hour ramp rate limits during night. If spill is necessary, spill according to modified spill patterns referenced in the CBT.

JERRY A. CARROLL
Operations Manager
Bonneville Project