

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 47 of 2015, which covers the period from 15 – 21 November 2015.

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 115.2 to 161.7 kcfs. Daily average powerhouse forebay elevation ranged from 72.3 to 74.0 msl. Daily average project tailwater ranged from 11.8 to 15.1 msl. Secchi disk measurements ranged from 3.0 to 7.0' or greater all week. Daily average water temperature ranged from 52 to 55°F.

b. Summer spill ended on 31 August. Daily average spill ranged from 0.5 to 18.2 kcfs.

(1) Spill bay 1 was closed at 1229 on 08 October in preparation for the Cascades Island dewatering on 13 October. See [15BON06](#), 15BON84, and section 4.f.4, below.

c. Unit Operation. Powerhouse two 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
9	1053 on 17 Nov	---	5-year overhaul, bank 9/10 maint
10	1015 on 16 Nov	---	Annual maintenance and air gap
11	1003 on 31 Aug	---	Kaplan pipe leak, T11 outage
12	0001 on 1 Sep	---	T11 outage
13	0001 on 1 Sep	---	T11 outage
14	0001 on 1 Sep	---	T11 outage

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

No fish units were drawn down this week.

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

Date	F1	F2
11/15	0.4	0.5
11/16	1.1	1.1
11/17	0.7	1.4
11/18	1.1	4.0*

11/19	2.6	2.6
11/20	2.6	6.1*
11/21	3.5*	0.6

* Denotes that a reduction in load was enacted, reducing PH2CC velocity.

2. ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed for cleaning from 0709 to 0742 on 19 November, from 0656 to 0739 and from 1313 to 1443 on 20 November, and from 0704 to 0757 and from 1353 to 1541 on 21 November.
- (2) FV3-7 was closed for cleaning from 0752 to 0814 on 19 November, and from 0746 to 0812 on 20 November.
- (3) FV3-9 was closed for cleaning from 0731 to 0743 on 16 November, from 0753 to 0810 on 18 November, from 0752 to 0814 on 19 November, from 0746 to 0812 on 20 November, and from 0803 to 0827 on 21 November.

b. STS/VBS inspections. None.

c. Dewatering and Fish Salvages.

- (1) On 18 November, Project Biologists recovered 4 Pacific Lamprey from the unit 9 draft tube. All fish were returned to the forebay in good condition.
- (2) On 21 November, Project Biologists recovered 1 White Sturgeon that was removed from the FU trash racks during raking operations. The fish was in poor condition upon discovery and was returned to the tailrace.

3. RESEARCH:

a. Normandeau – Fish Counting. Visual counting continues.

4. FISHWAYS:

a. Project biologists inspected 15 – 21 November.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND – See below				
11/15	PH1CC	South entrance diff < 1.0'	WG1-1 failure	See 4.b.2
CASCADES ISLAND – OOS. See 4.f.4				
WASHINGTON SHORE – See below				
11/15-16	PH2CC	Diff gate B5 open	Removed for repair	See 4.b.5

11/18-20	PH2CC	Entrance diffs < 1.0'	Raking FU trash racks	None
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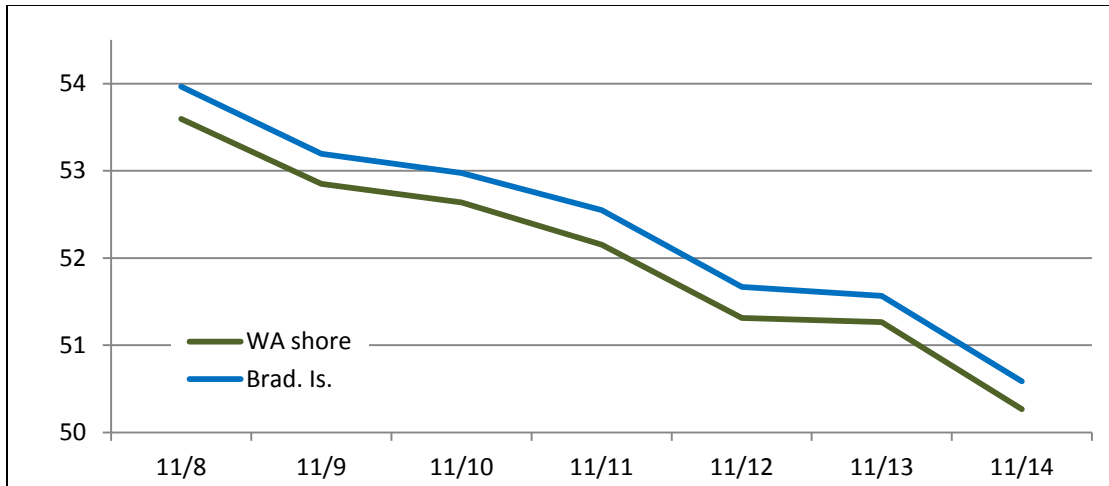
- (2) WG-1, one of the south PH1CC entrances, experienced a gate failure on 17 November. Divers recovered the gate's picking beam on 04 August. Repairs are ongoing. The gate is estimated to return to service during the 2015/16 winter maint.
- (3) A-branch diffuser FG3-3 is mechanically bound. Repairs are not possible until A-branch is dewatered below tailwater during the 2015/16 winter maintenance period.
- (4) B-branch gate 4N, adjacent to the fish entrance, had a bad motor. It was removed on 27 July and has been repaired. It's waiting reinstallation during the 2015/16 winter maintenance. 4N is closed and 4S is open in its place. Both gates should be open below tailwaters of 9.0 msl.
- (5) PH2CC diffuser A2 was unable to be repaired during winter maintenance 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 below tailwaters of 12.0 msl.

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

- (1) Table 4. Daily Average Temperature in Degree Fahrenheit (°F).

Date	Fishways	
	Brad. Is.	WA shore
11/15	54.0	53.6
11/16	53.2	52.9
11/17	53.0	52.6
11/18	52.5	52.2
11/19	51.7	51.3
11/20	51.6	51.3
11/21	50.6	50.3

- (2) Chart 1. Daily Average Temperature in Degree Fahrenheit (°F).



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

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

f. Adult Fishways.

(1) Calibration occurred on 20 November.

(2) 11 of 12 floating orifice gates (FOGs) are installed; one gate is out for maintenance. FOG SLEDs are installed.

(3) SLEDs were installed in the PH2 entrances on 26 October. The PH1 SLEDs are removed.

(4) Cascades Island (CI) was placed in orifice flow on 15 October. The ladder was dewatered to tailwater on 19 October and below tailwater on 20 October in order to repair fish valves FV5-3 and FV5-4. The ladder is scheduled to be out of service through November. See [15BON06](#) and [15BON84](#).

g. Juvenile Fishways.

(1) The ITS remains open.

(2) The hydro-cannon remains in service.

(3) The B2CC remains closed.

(4) The DSM remains in service.

h. Lamprey Fishways.

(1) All LPSs remain out of service.

5. CONSTRUCTION: Nothing to report.

6. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

7. TELETYPES CURRENTLY IN EFFECT:

a. A teletype sent on 30 March updates the spill caps and lack of load conditions to be used from 0000 on 01 April until further notice.

b. A teletype sent on 15 October states that effective 1600 on 15 October through 1600 on 30 November, operate BON forebay between 71.5 and 73.5 msl, hard constraint. This operation is to keep the WA shore fishway within operating criteria during valve repairs that require the Cascades Island ladder to be OOS.

c. A teletype sent on 6 November states that effective 0600 on 7 November until further notice, operate BON tailwater in the range of 11.5 – 12.5'. If necessary due to outflows, tailwater may be operated up to 13.0' at any time, returning to the target range whenever possible. Then if necessary, tailwater may be operated in the following order: up to 18.5' from the hours 1700 – 0600, then in the range of 13.0 – 16.5' during daytime hours (0600 – 1700) and up to the maximum within ramp rate limits at night. This operation is for Chum spawning below BON at the Ives/Pierce Island complex.

d. A teletype sent on 16 November states that effective 0001 on 17 November until further notice, the BON forebay operational maximum is 74.5', hard constraint. From 1000 – 1100 on 17 November, target a forebay elevation of 74.5' as a test so that BON Fisheries may monitor the WA shore fishway for flooding or other adverse effects.

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