

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 51 of 2018, which covers the period from 16 - 22 December.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 116.6 to 128.4 kcfs. Daily average powerhouse forebay elevation ranged from 73.1' to 74.5' msl. Daily average project tailwater ranged from 11.6' to 12.5' msl. Secchi disk measurements ranged from 6.0' to 7.0'+. Daily average water temperature ranged from 44°F - 45°F.
- b. Daily average spill remained at 1.0 kcfs.
- c. Unit Operation. PH1 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Main Unit Outages.

Unit	OOS Date	RTS Date	Reason
0	0840 on 08 Nov	---	Bad Turbine Bearings
1	0028 on 03 Dec	---	5 Year Overhaul
11	1134 on 18 Dec	1442 on 18 Dec	STS Removal
12	1436 on 18 Dec	1646 on 18 Dec	STS Removal
13	0753 on 19 Dec	1026 on 19 Dec	STS Removal
14	0736 on 17 Dec	1013 on 17 Dec	STS Removal
15	1013 on 17 Dec	1126 on 17 Dec	STS Removal
16	1126 on 17 Dec	1417 on 17 Dec	STS Removal
17	1417 on 17 Dec	1644 on 17 Dec	STS Removal
18	0633 on 18 Dec	1139 on 18 Dec	STS Removal

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

(1) Fish Unit Outages. Fish Units are periodically placed into reserve service (RS) to float trash when debris differentials become excessive and trash raking is not possible.

Table 2. Fish Unit Outages

Unit	OOS Date	RTS Date	Reason
F2	0835 on 01 Dec	---	Winter Maint.
F1	0936 on 01 Dec	---	Winter Maint.

- e. Table 3. Fish unit drawdowns, in feet. Nothing to report.

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures.

- (1) FV1-1 was closed from 0840 to 0914 on 17 Dec, 1008 to 1040 on 19 Dec, and from 0839 to 0901 on 20 Dec for trash rack cleaning.
- (2) FV3-7 was closed from 1255 to 1340 on 17 Dec and from 1240 to 1300 on 19 Dec trash rack cleaning.
- (3) FV3-9 was closed from 1255 to 1340 on 17 Dec and from 1240 to 1300 on 19 Dec trash rack cleaning.

b. STS/VBS Inspections. Nothing to report.

c. Dewatering and Fish Salvages. Nothing to report.

3. RESEARCH:

a. Normandeau – Fish counting.

- (1) Daytime video (0400 to 2000) began on 01 December. Fish counts can be viewed [here](#).

4. FISHWAYS:

- a. Project biologists inspected from 17, 18, & 19 December.
- b. Fish passage plan observations.

(1) Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
12/17-19	A-Branch	Differential > 1.1'	Unknown	NA
Cascades Island – Nothing to report.				
Washington Shore - Dewatered!				

- (2) Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter. All zones had been installed besides PH2. PH2 lines are awaiting installation. Numerous lines have since been broken again by high flows and debris at Cascades Island and Spillway locations.
- (3) On 01 May, FG6-11 was found broken partially open. The diffuser shaft had broken away from the motor. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.

- (4) On 18 August, FG6-12 was found to be mechanically bound in the open position. FG6-12 should only be open with tailwaters ranging from 11.0'-33.0'. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.
- (5) On 13 September, FG6-14 was manually closed, due to issues surrounding FG6-11 and FG6-12 (see above). Through trial and error this was found to help facilitate FPP entrance differential criteria and alleviate "boiling" from adjacent diffusers within the Cascades Island fishway. FG6-14 should be open during tailwaters of 9.0'-28.0'.

c. Adult Fishways.

- (1) The AFF was taken out of service on 07 November.
- (2) Sensor calibration occurred on 19 Dec.
- (3) SLEDs are installed at Bradford and Cascades Island entrances.
 - (a) PH2 SLEDs were removed on 03 December.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon remains offline.
- (3) The B2CC remains offline.
- (4) The DSM was taken out of service at 1115 on 19 Dec after the final STS (MU13) was removed.
- (5) STSs were removed between 17-19 December.

e. Lamprey Fishways. All lamprey passages systems remain offline.

f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

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

5. CONSTRUCTION: Nothing to report.

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

7. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent on 30 August outlines the wintertime spill priority list and wintertime spill caps for all Columbia Basin projects and BPA.
- b. A teletype sent on 21 December updates the Chum Salmon spawning tailwater requirements until further notice.
- c. A teletype sent on 12 December requests a high pool for a railroad bridge construction near the Wind River (Carson, WA). During the dates and times listed, operate the BON forebay 76.0' soft constraint and above 75.5' hard constraint up to a maximum of 77.0' hard constraint: 27 December 1200-1600, 03 January 1200-1600, and 10 January 1200-1600.

MICHAEL ADAMS, P.E.
Operations Manager
Bonneville Project