

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 49 of 2018, which covers the period from 02 - 08 December.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 125.8 to 141.2 kcfs. Daily average powerhouse forebay elevation ranged from 73.2' to 74.6' msl. Daily average project tailwater ranged from 11.6' to 12.3' msl. Secchi disk measurements ranged from 6.5' to 7.0'+. Daily average water temperature ranged from 43°F - 47°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
2	0025 on 03 Dec	0101 on 03 Dec	PO, raking out XJ1 breaker
6	1006 on 29 Nov	0918 on 03 Dec	Exciter Issues

- 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 1320 to 1344 on 03 Dec for trash rack cleaning.

(2) FV3-7 was closed from 1505 to 1526 on 03 Dec and from 1330 to 1410 on 06 Dec for trash rack cleaning.

(3) FV3-9 was closed from 1505 to 1526 on 03 Dec and from 1330 to 1410 on 06 Dec for trash rack cleaning.

b. STS/VBS Inspections. Nothing to report.

c. Dewatering and Fish Salvages.

(1) 2 juvenile salmonids, 3 American Shad, ~200 Cypriniformes (suckers and Northern Pikeminnow), 4 adult Steelhead Trout, and 3 adult Chinook Salmon were salvaged on 03 December from the UMT.

(2) ~150 American Shad, ~200 Cypriniformes (suckers and Northern Northern Pikeminnow), 9 adult Steelhead Trout, ~20 juvenile salmonids, 6 adult Chinook Salmon, and 16 Pacific Lamprey were salvaged from the WA Shore exit to tailwater.

(3) 1 adult Chinook salmon was salvaged from the WA collection channel / junction pool (below tailwater) on 08 December.

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 03 & 06 December.

b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
12/4 & 5	BON	No inspection	Fishway Dewatering	NA
Bradford Island – Nothing to report.				
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) PH2 diffuser B4 was discovered to have its stem bent on 24 May 2017. This likely occurred while trying to close and the valve is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.
- (4) 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.
- (5) The South Downstream Entrance (SDE) and North Downstream Entrance (NDE) gates will not lower past 4' and 6', respectively. It is believed the gates pits are obstructed with sediment. They will be addressed during the winter maintenance period.
- (6) 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.
- (7) Weir gates 2 and 64 have been unable to maintain submergence level criteria when tailwaters are below 11.0' msl. This is due to the minimum elevations of 3.1' for WG-2 and 2.8' for WG-64.
- (8) 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 did not occur this week.
- (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 remains in service.

(5) STSs are installed.

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 04 December states from 0800-1700 on 13 December the BON spillway will be tagged out and not available for spill. The purpose of this operation is to perform an underwater ROV survey to assess the apron around spill bays 1 and 18 and to confirm the presence of rocks that have migrated upstream requiring future removal.

c. A teletype sent on 07 December outlines Chum Salmon spawning tailwater requirements until further notice.

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