

**MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)**

**SUBJECT:** Bonneville Project, Fishway and Fish Activities for **Week 51** of 2020, which covers the period from **13-19 December**.

**1. OPERATION SUMMARY:**

a. Daily average river flows ranged from 132.8 to 147.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.2' to 73.9' msl. Daily average project tailwater ranged from 12.3' to 13.5' msl. Secchi disk measurements ranged from 6.0' to 7.0'. Daily average water temperature ranged from 44-45°F.

b. Daily average spill remained at 0.5 kcfs.

c. Unit Operation. PH1 will remain the priority powerhouse until the end of February 2021 due to winter maintenance in PH2, Cascades Island fishway, and Washington Shore fishway. Main unit drawdowns are measured every Monday and more frequently as needed.

- Table 1. Main Unit Outages.

Unit	OOS	RTS	Reason
1	0700 on 30 Nov	---	Station Service Work
2	0700 on 30 Nov	---	Station Service Work
18	1250 on 30 Nov	---	4 Yr Overhaul
17	0956 on 14 Dec	1246 on 14 Dec	STS Removal
16	1246 on 14 Dec	1606 on 14 Dec	STS Removal
15	0630 on 15 Dec	0933 on 15 Dec	STS Removal
14	0933 on 15 Dec	1311 on 15 Dec	STS Removal
13	1314 on 15 Dec	1631 on 15 Dec	STS Removal
12	0550 on 16 Dec	1018 on 16 Dec	STS Removal
11	1022 on 16 Dec	1324 on 16 Dec	STS Removal
3	1007 on 16 Dec	1216 on 16 Dec	BPA MWTT Maint.
4	1007 on 16 Dec	1222 on 16 Dec	BPA MWTT Maint.
5	0902 on 17 Dec	1103 on 17 Dec	BPA MWTT Maint.
6	0902 on 17 Dec	1113 on 17 Dec	BPA MWTT Maint.
7	0900 on 17 Dec	1107 on 17 Dec	BPA MWTT Maint.
8	0900 on 17 Dec	1107 on 17 Dec	BPA MWTT Maint.
3	1113 on 17 Dec	1135 on 17 Dec	BPA MWTT Maint.

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

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	RTS	Reason	Duration
F1	0610 on 01 Dec	---	2 yr overhaul/WA Shore Fishway outage	---
F2	0610 on 01 Dec	---	2 yr overhaul/WA Shore Fishway outage	---

- Table 3. Fish Unit Drawdowns, in Feet. Nothing to report.

**2. MAINTENANCE ACTIVITIES:**

a. Auxiliary Water System Closures.

- FV 1-1 was closed for cleaning from 0747 to 0820 on 14 December.
- FV 3-7 and 3-9 were closed for cleaning from 0920 to 0922 on 14 December.
- FV 1-1 was closed for cleaning from 0950 to 1110 on 15 December.
- FV 3-7 and 3-9 were closed for cleaning from 1125 to 1150 on 15 December.
- FV 1-1 was closed for cleaning from 0808 to 0845 on 16 December.
- FV 3-9 was closed for cleaning from 1250 to 1304 on 17 December.
- FV 1-1 was closed for cleaning from 1339 to 1400 on 17 December.
- FV 3-7 was closed for cleaning from 1546 to 1628 on 17 December.
- Cascades Island diffusers and entrance gate were placed out of service on 10 December to repair the diffusers during winter maintenance work activities.

b. STS/VBS Inspections. Nothing to report.

c. Dewatering and Fish Salvages.

- On the morning of 14 December, Project Fisheries Biologists fished the Powerhouse 2 AWS while it was being dewatered for winter maintenance. One juvenile salmonid, 2 sculpin, and 5 other fish were recovered in great condition and released above the Nav Lock.
- At 0800 on 15 December, Project Fisheries Biologists were called to the Powerhouse 2 AWS for one large adult catfish discovered by project maintenance crews while working in the area. The fish was very large and in healthy condition. It was released downstream at the Hamilton Island Boat Launch.
- At approximately 1400 on 16 December, Project Fisheries Biologists were lowered into Cascades Island Fish Ladder's diffuser pit FG6-8 to salvage fish as the pit was dewatered for winter maintenance. 1 adult lamprey, 5 pikeminnow, 2 sculpin, and 1 smallmouth bass were recovered in good condition and released above the nav lock.
- On 17 December, Project Fisheries Biologists were lowered into Cascades Island Fish Ladder's diffuser pits FG6-9, FG6-10, and FG6-11 to salvage fish as the pits were dewatered for winter maintenance. No salmonids were found, but 10 adult lamprey, 3 juvenile lamprey, 50 sculpin, 3 pikeminnow, 3 suckers, and 5 crawdads were recovered in good condition and were released above the nav lock. It can be noted that most fish were found in diffuser pit FG6-11.
- At 1430 on December 17, Project Fisheries Biologists were called to fish the PH2 DSM channel after it was dewatered for winter maintenance. No fish were found.

3. RESEARCH:

- a. Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000) began on 01 December. Fish counts can be viewed [here](#).
- b. USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite, and the work is underway.
- c. State Agency Pinniped Trapping- Sea lion trapping has concluded for the year.

4. FISHWAYS:

- a. Project biologists inspected 14-17 December.

b. Fish passage plan observations.

• Table 5. FPP Items Out of Criteria.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
12/14-17	PH1CC	S. Ent. Diff. < 1.0'	Possible Equipment Calibration issues	NA
12/14	B-Branch	Entrance/TW diff > 2.0'	NA	Control RM Notified
12/15-16	B-Branch	Ent/TW diff < 1.0'	NA	Control Rm Notified
12/14	B-Branch	FG3-23 Open	FG3-23 mechanically bound open	W.O.
12/17	A-Branch	Weir Staff Gauge > 1.1'	NA	NA
Cascades Island – Nothing to report.				
Washington Shore – Nothing to report.				

c. Adult Fishways.

- (1) The Cascades Island Fishway went out of service and into orifice flow on 01 December.
- (2) The Washington Shore Fishway went out of service and into orifice flow on 01 December.
- (3) The AFF was taken out of service for the winter on 25 Nov.
- (4) Sensor calibration occurred on 15 December.
- (5) SLEDs are installed at all locations.

d. Juvenile Fishways.

- (1) The ITS remains in service (auto-chain gates 3B, 6C, & 10B only).
- (2) The hydro-cannon remains in service.
- (3) The B2CC remains out of service.
- (4) The DSM was placed out of service for annual winter maintenance at 1017 on 17 December.
- (5) STS removal for winter maintenance was completed on 16 December.

e. Lamprey Fishways.

- (1) LPSs remain out of service.
- (2) The Bradford Island Wetted Wall (BIWW) remains out of service.
- (3) The PH2 Lamprey Flume Structure (LFS) remains out of service.
- (4) The AFF lamprey trap remains out of service.

(5) The CI Lamprey trap remains out of service.

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

**5. WATER QUALITY MONITORING:**

a. Fishway Temperatures. Temperature logs are no longer being taken this year, data collection will begin again 01 March, 2021.

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

**6. CONSTRUCTION:** Nothing to report.

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

**8. TELETYPES CURRENTLY IN EFFECT:**

- A teletype was sent out on 21 October that became effective starting 01 November at 0600 and remains in effect until further notice. The Bonneville Dam must operate at all hours with a project outflow to provide a tailwater with the elevation in the range of 11.5-13 feet. If necessary, to increase project outflow, the tailwater may be operated up to 16.5 feet during nighttime hours (1700-0600) with the highest concentrations around 2400. If necessary, after that, tailwaters may be operated to up to 18.5 feet elevation during nighttime hours to increase project outflow. Then, if the increasing river flow precludes the ability to manage the tailwater in the previous steps, Bonneville Dam may operate at 13.0-16.5 feet during daytime hours (0600-1700) and up to the maximum within project 24-hour ramp rate limits during nighttime hours (1700-0600). The reason for this operation is to improve the conditions at the Ives/Pierce Island Complex for Chum Salmon spawning.

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