

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 04 of 2024, which covers the period from 21 to 27 January 2024.

1. ITEMS OUT OF CRITERIA (OOC):

- **Table 1.** FPP Items Out of Criteria.

Date	Location	FPP Violation	Cause	Response
01/24 – 25	BON	Unit Priority – U3, U6, U9 & U10 F.O.	U3, U6, & U10 F.O., Oil Leak Investigation	W.O.; Next Available Unit Ran in Place
01/21 – 27	BON	Unit Priority – U12 F.O.	U12 F.O., Stator Ground	W.O., Next Available Unit Ran in Place
Bradford Island: Nothing to Report.				
Cascades Island:				
01/23 – 25	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
01/23	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
Washington Shore:				
01/23 – 25	WA Shore Fishway	Weir 37 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.
01/23 – 25	WA Shore Fishway	Weir 38 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.

- The Cascades Island Fishway diffuser FG 6-11 is mechanically bound in the closed position due to stripped shaft threads. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.
- Cascades Island Fishway diffuser FG 6-12 is mechanically bound in the closed position for unknown reasons. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.
- Cascades Island Fishway diffuser FG 6-18 was found stuck in the open position with limitorque problems in the fall of 2022. A work order has been created and repairs have been attempted, but full repair requires complete dewatering of the fishway. These repairs will be made during the next full dewater of the Cascades Island Fishway.
- PH1 Unit Priority: Multiple oil sheens have been observed in the PH1 tailrace by Bonneville Staff on several occurrences over the past year. Please refer to MFRs 24BON001, 24BON003, 24BON004, and 24BON005 for details. Consequently, Units 3, 4, 6, 9, and 10 have been forced out of service and will remain OOS until a full dewater, inspection, and investigation of each Unit has been completed.

2. OPERATION SUMMARY:

- Daily average river flows ranged from 93.6 to 131.3 kcfs. Daily average powerhouse forebay elevation ranged from 72.9' to 75.7' msl. Daily average project tailwater ranged from 11.6' to 14.1' msl. Secchi disk measurements ranged from unreadable, due to debris buildup, to 7.0'. Daily average water temperature ranged from 37 to 38°F.

- b. Daily average spill ranged from 0.5 to 0.6 kcfs.
 - Spillbay 18 remains closed for the duration of IWWP and winter maintenance activities in the Bradford Island Fishway.
- c. Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

• **Table 2.** Main Unit Outages

Unit	OOS	RTS	Reason	Duration
4	1631 on 29 Mar 2023	---	F.O., Oil Leak Investigation/5-YR Overhaul	---
3	1105 on 12 Jun 2023	---	F.O., Oil Leak Investigation	---
6	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
10	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
12	0731 on 05 Jan	---	F.O., Stator Ground	---
9	1220 on 11 Jan	---	F.O., Oil Leak Investigation	---

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

Fish Unit Outages: Fish Units are periodically paced into reserve shutdown (RS) to float trash when debris differentials become excessive and trash raking is not possible. Single Fish Unit Operations (**FPP Table BON-12**) began on 04 December when F2 was placed OOS for a 2-YR OH.

Table 3. Fish Unit Outages

Unit	OOS/RS	RTS	Reason	Duration
F2	0001 on 04 Dec	---	P.O., 2-YR Overhaul	---
F1	1907 on 27 Jan	2113 on 27 Jan	R.S., Float Trash	2 hours, 6 mins

• **Table 4.** Fish Unit Drawdowns, in Feet.

Date	F1	F2
01/21	N/A	---
01/22	0.6'	---
01/23	0.9'	---
01/24	0.9'	---
01/25	1.3'	---
01/26	2.1'	---
01/27	3.7'	---

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 6-9 was taken into manual for cleaning from 0854 to 0916 on 22 January.
 - FV 6-9 was taken into manual for cleaning from 1600 to 1605 on 25 January.
- b. STS/VBS Inspections: STS's remain OOS for the winter maintenance season.
- c. Dewatering and Fish Salvages:
 - Fish Biologists assisted in fish salvage operations in the scroll case and draft tube of U10 on 24

January. 1 juvenile lamprey was salvaged from the scroll case. This fish was in good condition and was released downstream. U10 is OOS for an oil leak investigation.

3. RESEARCH

- a. Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000 PDT) 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.

4. FISHWAYS:

- a. Project Biologists inspected on 24 January.
- b. Adult Fishways:
 - (1) The AFF remains out of service for the winter maintenance season.
 - (2) Sensor calibration checks were unable to occur this week.
 - (3) SLEDs are installed at all locations.
 - (4) The Cascades Island and Washington Shore Fishways remain in service. The Bradford Island Fishway was taken out of service for the winter maintenance season on 05 December.
- c. Juvenile Fishways:
 - (1) The ITS remains in service.
 - (2) The hydro-cannon remains out of service for the season.
 - (3) The B2CC was closed for the season on 01 September but remains available to flush trash or provide surface passage for fish if involuntary spill occurs outside of fish passage spill season. (**FPP BON Section 2.2.2.**)
 - (4) The DSM was taken out of service on 18 December for the winter maintenance season.
 - (5) STSs remain out of service for the winter maintenance season.
- d. Lamprey Fishways:
 - (1) BI, CI, and WA Shore LPS's 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 2023 lamprey trapping and translocation activities have concluded for the 2023 season.
 - (5) Avian Monitoring: Avian counts are recorded 01 April – 31 October.

5. WATER QUALITY MONITORING:

- a. Fishway Temperatures: Fishway temperature monitoring has concluded for the 2023 season.

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

7. CONSTRUCTION:

- Installation of the B-Branch LPS in the B-Branch Entrance Bay is underway.

8. HAZMAT, SPILLS AND CLEANUP:

- On 23 January, Bonneville Operations began to slow roll Unit 10 as part of FPP required dewatering procedures to encourage fish to exit the draft tube prior to placing tail logs and dewatering U10. Upon shutdown at approximately 1037, very small string-like globs were noticed to be surfacing in the PH1 tailrace. The globs fanned out upon making contact with the surface and dissipated within 30 seconds. Tail logs were placed and the unit has been taken out of service for investigation and inspections.

Also on 23 January, Unit 3 was slowly brought under load with the intent to return the unit to service after an oil leak investigation determined no loss. No indication of oil loss was observed in the tailrace as the unit was brought online or during unit operation. As the unit was brought back down to standby mode, it was observed that some sporadic, very small strings of oil were surfacing. The globs fanned out upon making contact with the surface and dissipated within 30 seconds. Due to limited resources, Bonneville crews were unable to place tail logs, but the unit has been removed from service for future investigation. The leak has been isolated and no further sheen has been observed. At this time, Units 3, 4, 6, 9, and 10 all remain OOS due to concurrent oil leak investigations.

9. TELETYPES CURRENTLY IN EFFECT:

- A teletype was distributed on 30 August detailing the fall/winter spill priority list and fall/winter spill caps. This teletype provides the order that projects spill for lack of load conditions and is to be used until further notice. Please see teletype BON R 083023 1555 for further details.
- A teletype was distributed on 20 December replacing the previous teletype BON R 122023 1131 Tailwater Operation for Chum Incubation 4. This 5th revision to the teletype states: Effective, Sunday 31 December 2023, at 0001 HRS, until further notice, Bonneville Dam minimum tailwater elevation is 11.3 ft during all hours. The intent of this operation is to ensure sufficient tailwater elevation to protect chum redds in the Ives/Pierce Island area during the egg incubation period. This 5th revision's updated minimum tailwater elevation was based on an updated WDFW chum salmon survey data that occurred on 20 December. Please see teletype BON R 122023 1340 for more details.

MICHAEL ADAMS, P.E.
Operations Project Manager
Bonneville Project