

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 02 of 2024, which covers the period from 07 to 13 January 2024.

1. ITEMS OUT OF CRITERIA (OOC):

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

Date	Location	FPP Violation	Cause	Response
01/08	BON	Unit Priority – U3, U6, & U10 F.O.	U3, U6, & U10 F.O., Oil Leak Investigation	W.O.; Next Available Unit Ran in Place
01/08 – 11	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:				
01/08 – 11	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
01/08 – 11	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
01/09	CI Fishway	FV 5-3/5-4 Trashrack High Drawdown	Debris Buildup in Main Dam Forebay	Spill @ SB1 and SB2/Trash Raking
Washington Shore:				
01/08 – 11	WA Shore Fishway	Weir 37 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.
01/08 – 11	WA Shore Fishway	Weir 38 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.
01/09	WA Shore Fishway	SUE Ent/TW Diff Low; <1.0'	Unknown	Fish Unit Adjustments
01/09	WA Shore Fishway	SDE Ent/TW Diff Low; <1.0'	Unknown	Fish Unit Adjustment

- 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.

2. OPERATION SUMMARY:

- Daily average river flows ranged from 97.1 to 129.9 kcfs. Daily average powerhouse forebay elevation ranged from 72.7' to 74.4' msl. Daily average project tailwater ranged from 11.5' to 11.9' msl. Secchi disk measurements remained at 7.0+'. Daily average water temperature ranged from 41 to 43°F.

- b. Daily average spill ranged from 0.5 to 1.1 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	---

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

Date	F1	F2
01/07	0.2'	---
01/08	0.2'	---
01/09	0.2'	---
01/10	0.3'	---
01/11	0.2'	---
01/12	0.2'	---
01/13	3.6'	---

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 6-9 was placed into manual for cleaning from 0735 to 0745 on 08 January.
 - A large drawdown was observed on the FV 5-3 and 5-4 trashracks on 09 January. FV 5-3 and 5-3 were closed to float trash from approximately 1330 to 1545 on 09 January. Spillbays 1 and 2 were opened slightly to pull trash from the trashracks while riggers attempted trash racking operations at the same time.
 - FV 6-9 was placed into manual for cleaning from 0800 to 0815 on 11 January.

- b. STS/VBS Inspections: STS's remain OOS for the winter maintenance season.
- c. Dewatering and Fish Salvages:
 - Project Biologists completed fish salvage operations in the Unit 12 Scroll Case and Draft Tube on 10 January. No fish were found. U12 was dewatered as part of a forced outage due to a stator ground.

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 08 – 11 January.
- b. Adult Fishways:
 - (1) The AFF remains out of service for the winter maintenance season.
 - (2) Sensor calibration checks occurred on 10 January.
 - (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 but was closed for safety during dive work and dredging the Bradford Island Fishway Exit from 08 to 11 January.
 - (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.**)
 - The B2CC was opened to float trash from 0715 to 1155 on 03 January.
 - (4) The DSM was taken out of service on 18 December for the winter maintenance season.
 - A Project Biologist and a Project Structural Engineer entered the DSM flume tunnel on 10 January as part of an annual inspection. Approximately ½ of the tunnel inspection was accomplished on the 10th and completion of the tunnel inspection is expected to occur in coming weeks when weather conditions allow. No issues were found in the first half of the tunnel inspection.
 - (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.
- Divers conducted weed removal at the Bradford Island Fishway Exit on 08 and 09 January. Dredging at the Bradford Island Fishway Exit occurred 10 and 11 January with a follow-up hydrosurvey occurring on 12 January.

8. HAZMAT, SPILLS AND CLEANUP:

- On Thursday 11 January at approximately 1046 Bonneville Staff observed a 2'-5' x 80' oil sheen in the tailrace of PH1 near Unit 9 during the performance station service switching operations. PH1 U9 was slowly brought on to float station service at approximately 1030 and the Unit was operated without load until 1046. U9 was shutdown immediately after the oil sheen was observed. Environmental crews were deployed at 1056, however due to inclement weather, spill response crews were unable to recover the release and the sheen dissipated in the water. U9 will remain OOS until an oil leak investigation is completed. 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 110623 1459 Tailwater Operation for Chum Spawning 3. This 4th revision to the teletype states: Effective, Sunday 31 December 2023, at 0001 HRS, until further notice, the Bonneville Dam minimum tailwater elevation is 11.5 ft during all hours. The intent of this operation is to ensure sufficient tailwater elevation to the protect chum redds in the Ives/Pierce Island area during the egg incubation period. Please see teletype BON R 122023 1131 for more 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.

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