

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for **Week 03** of 2023, which covers the period from **15 to 21 January 2023**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 124.4 to 147.4 kcfs. Daily average powerhouse forebay elevation ranged from 74.1’ to 74.9’ msl. Daily average project tailwater ranged from 12.3’ to 13.6’ msl. Secchi disk measurements ranged from 6.0 to 7.0+’. Daily average water temperature ranged from 38 to 39°F.
- b. Daily average spill ranged from 0.5 to 0.6 kcfs.
 - Spillbay 1 is closed for the 2022-2023 Winter Maintenance Period while Cascades Island Fishway is OOS. Spillbay 18 continues to operate during daytime hours for attraction flow.
- c. Unit Operation: **PH1** became the priority powerhouse on 01 December when Washington Shore and Cascades Island Fish Ladders were dewatered for the 2022-2023 winter maintenance period. Main unit drawdowns are measured every Monday and more frequently as needed.

• **Table 1. Main Unit Outages**

| Unit | OOS | RTS | Reason | Duration |
|------|---------------------|----------------|--|------------------|
| 13 | 1628 on 18 Feb 2022 | --- | F.O., Generator Ground and BPA Work – Grounded Clearance / P.O., 4 Yr Overhaul | --- |
| 11 | 0740 on 30 Nov 2022 | --- | P.O., FGE Gatewell Improvement/Annual Overhaul | --- |
| 10 | 1004 on 03 Jan | --- | P.O., 5 Yr Overhaul | --- |
| 1 | 0831 on 17 Jan | 1553 on 17 Jan | P.O., Trash Raking | 7 hours, 22 mins |
| 3 | 1040 on 18 Jan | 1435 on 18 Jan | P.O., Trash Raking | 3 hours, 55 mins |
| 4 | 1104 on 19 Jan | 1410 on 19 Jan | P.O., Trash Raking | 3 hours, 6 mins |

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

• **Table 2. Fish Unit Outages.**

| Unit | OOS/RS | RTS | Reason | Duration |
|------|----------------|-----|-----------------------|----------|
| F1 | 1330 on 01 Dec | --- | P.O., 2-Year Overhaul | --- |
| F2 | 1330 on 01 Dec | --- | P.O., Annual Overhaul | --- |

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 1-1 was placed into manual for cleaning from 1500 to 1525 on 18 January.
 - FV 3-7 and 3-9 were closed for cleaning momentarily at 1010 on 19 January.
- b. STS/VBS Inspections: All STSs are pulled and OOS for the winter maintenance period.
- c. Dewatering and Fish Salvages: Nothing to report.

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.
- c. Pacific States Marine Fisheries Commission - Smolt Monitoring: Smolt monitoring operations concluded for the season at Bonneville Juvenile Fish Monitoring Facility at 0700 on Monday, 31 October. The system was placed in bypass mode at that time.

4. FISHWAYS:

- a. Project biologists inspected 17 to 19 January.
- b. Fish Passage Plan observations:

• **Table 4. FPP Items Out of Criteria.**

| Date | Location | FPP Violation | Cause | Response |
|--|----------|---|--|----------|
| PH1 | | | | |
| 01/15 – 21 | PH1 ITS | S. End Gate Inoperable and Chain Gates 1b Closed | S. End Gate Inoperable, 1b Closed for Safety Reasons | W.O. |
| 01/15 – 21 | PH1CC | FG 2-19 Stuck in the Mostly Closed Position, Should Be Open | Mechanically Bound | W.O. |
| Bradford Island | | | | |
| 01/17 – 19 | A-Branch | A-Branch Staff Gauge High >1.1' | Unknown | N/A |
| Cascades Island: Nothing to Report | | | | |
| Washington Shore: Winter Maintenance Period | | | | |

- PH1 Collection Channel diffuser FG 2-19 was found mechanically bound in the mostly closed position on 02/24/22 by PH1 Mechanics. No repairs can be made until the PH1CC can be dewatered in the next Oregon Fishway Winter Maintenance Period (winter 2023/2024).
 - 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 open 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.
- c. Adult Fishways:
- (1) The AFF was taken out of service on Monday, 21 November for the winter maintenance period.
 - (2) Sensor calibration checks occurred on 19 January.
 - (3) SLEDs are installed at all locations.
 - (4) Bradford Island Fishway remains in service. Washington Shore Fishway was dewatered to tailwater elevation on 05 December and Cascades Island Fishway was dewatered to tailwater elevation on 06 December.

d. Juvenile Fishways:

- (1) The ITS remains in service.
 - Auto-chain gates 3B, 6C, & 10B remain operational.
 - Mechanical-chain gate 1A was opened on 10 January 2023 to increase downstream surface passage and reduce trash raking workloads on the FV 1-1 trash racks. For safety measures, an additional (7th) trash rack was installed in the 1A gate slot, extending the height of stacked trash racks to approx. +80' el. Without the 7th trash rack, the existing 6 trash racks extend from the river floor (approx. -2' el) to +68' el. This additional trash rack provides a safety barrier to block accidental sluiceway entry of a person, vessel, or other undesirable object floating uncontrollably downstream.
- (2) The hydro-cannon is out of service for the winter.
- (3) The B2CC was closed for the season 01 September when spill season concluded but remains available to reopen for passing trash or to provide surface passage for fish if spill occurs outside fish passage spill season.
- (4) The DSM dewatered on 21 December.
- (5) STSs are pulled and OOS for the winter maintenance period.

e. Lamprey Fishways:

- (1) BI, CI, and WA Shore LPS's were taken out of service for the season on 01 November.
- (2) The Bradford Island Wetted Wall (BIWW) remains out of service.
- (3) The PH2 Lamprey Flume Structure (LFS) remains out of service for the year.
- (4) The 2022 lamprey trapping and translocation activities have concluded for the year.
- (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 2022-2023 cool weather season.
- b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

7. CONSTRUCTION:

- FGE modifications in U11 gatewell slots 11A and 11B are complete.
- Prep work for FGE modifications in U18 gatewell slots 18A and 18B has begun.

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

9. TELETYPES CURRENTLY IN EFFECT:

- A teletype was distributed on 31 August regarding the Snake and Columbia River Projects 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. Outside of the fish passage season, all state TDG standards are 110%. The lack of load spill level and the order in which to spill from top to bottom and other details can be found in the teletype BON R 082122 1615.

- A teletype was distributed on 14 December outlining tailwater operations for chum spawning. Effective Saturday, 31 December 2022 at 0001 HRS, until further notice, the Bonneville Dam minimum tailwater elevation will remain at 11.8 ft at 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. The official project tailwater elevation gauge is located on the Oregon Shore at River Mile 144.5, 0.9 miles downstream of PH1 and 50 ft upstream of Tanner Creek. This teletype replaces BON R 101922 1348 Tailwater Operation for Chum Spawning 1. Please see teletype BON R 121422 1154 for more details.
- A teletype was distributed on 16 December outlining the Bonneville Dam maximum forebay operation during high flow. Effective immediately and until further notice, when inflows at Bonneville Dam are 376 kcfs or greater, the maximum forebay elevation is 75.5 feet. This limit applies until flows become so great that it is no longer possible to hold the forebay below 75.5 feet which is expected to occur at a flow rate of roughly 950 kcfs, the approximate spillway capacity. When inflows at Bonneville Dam are less than 376 kcfs, operate within the normal forebay range from 71.5-76.5 feet. The purpose of this operation is to minimize impacts to areas upstream of the natural channel restriction near the Bridge of the Gods. Please see teletype BON R 121622 1143 for more details.

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