

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for **Week 04** of 2023, which covers the period from **22 to 28 January 2023**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 125.6 to 139.6 kcfs. Daily average powerhouse forebay elevation ranged from 73.1’ to 74.5’ msl. Daily average project tailwater ranged from 12.1’ to 13.0’ msl. Secchi disk measurements ranged from 5.0 to 7.0+’. Daily average water temperature ranged from 38 to 39°F.
- b. Daily average spill ranged from 0.6 to 0.7 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	---
18	0743 on 25 Jan	---	P.O., FGE Gatewell Improvement	---

- 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 3-7 and 3-9 were placed into manual for cleaning from 0755 to 0805 on 23 January.
 - FV 3-9 was placed into manual for cleaning from 0731 to 0738 on 26 January.
 - FV 1-1 was placed into manual for cleaning from 0734 to 0751 on 26 January.
 - FV 3-7 and 3-9 were placed into manual for cleaning from 0823 to 0848 on 26 January.
- b. STS/VBS Inspections: All STSs are pulled and OOS for the winter maintenance period.
- c. Dewatering and Fish Salvages: Fish Biologists entered the U18 Scroll Case and Draft Tube on 26 January for fish salvage operations. No fish were discovered in either location.

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 23 to 25 January.
- b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
BON				
01/23 - 25	BON	Unit Priority	U13 F.O.	Work in Progress
PH1				
01/22 – 28	PH1 ITS	S. End Gate Inoperable and Chain Gates 1b Closed	S. End Gate Inoperable, 1b Closed for Safety Reasons	W.O.
01/22 – 28	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island				
01/23 – 25	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 24 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.
- FGE modifications in U18 gatewell slots 18A and 18B has begun.

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

9. TELETYPE 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.
- A teletype was distributed on 30 January regarding a Bonneville low pool operation. From 06 to 24 February, Bonneville is to operate its forebay below a maximum elevation of 73.0 feet, soft constraint. This low pool operation supports a request from a contractor working for ODOT to replace culverts along I-84 near Hood River, OR. Please see teletype BON R 013023 1353 for further details.

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