

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for **Week 08** of 2023, which covers the period from **19 to 25 February 2023**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 125.2 to 137.6 kcfs. Daily average powerhouse forebay elevation ranged from 72.1' to 72.7' msl. Daily average project tailwater ranged from 12.0' to 12.5' msl. Secchi disk measurements ranged from 5.0 to 7.0+'. Daily average water temperature ranged from 37 to 39°F.
- b. Daily average spill ranged from 0.0 to 1.1 kcfs.
 - Spillbay 1 was opened for attraction flow on 22 February after Cascades Island Fishway was returned to service. Spillbay 18 is tagged out and closed for B-Branch erosion work.
- 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
11	0740 on 30 Nov 2022	---	P.O., FGE Gatewell Improvement / Annual Overhaul / Extended for Bull Ring Wear	---
10	1004 on 03 Jan	---	P.O., 5-Yr Overhaul	---
18	0743 on 25 Jan	---	P.O., FGE Gatewell Improvement	---
13	1102 on 09 Feb	0718 on 22 Feb	F.O., Kaplan Leakage Investigation	12 days, 20 hours, 16 mins
17	0020 on 22 Feb	2041 on 22 Feb	P.O., QTCI	20 hours, 21 mins
16	0645 on 22 Feb	1422 on 22 Feb	P.O., STS Install	7 hours, 37 mins
15	1425 on 22 Feb	1637 on 22 Feb	P.O., STS Install	2 hours, 12 mins
14	0650 on 23 Feb	1014 on 23 Feb	P.O., STS Install	3 hours, 24 mins
13	1025 on 23 Feb	1316 on 23 Feb	P.O., STS Install	2 hours, 51 mins
12	1324 on 23 Feb	1730 on 23 Feb	P.O., STS Install	4 hours, 6 mins
13	0752 on 24 Feb	---	F.O., High STS Amps	---

- 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 1244 to 1254 on 20 February.
 - FV 1-1 was placed into manual for cleaning from 1235 to 1255 on 23 February.

- b. STS/VBS Inspections: Nothing to report.
- 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 21 to 23 February.
- b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
BON				
02/21	BON	Unit Priority	U13 F.O.	Work in Progress
02/21 – 25	BON	Spillbay 18 OOS	Erosion Repair in Progress in Spillway Tailrace	MOC/Teletype Created
PH1				
02/19 – 25	PH1 ITS	S. End Gate Inoperable and Chain Gates 1b Closed	S. End Gate Inoperable, 1b Closed for Safety Reasons	W.O.
02/12 – 18	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island				
02/21 – 22	A-Branch	A-Branch Staff Gauge High >1.1'	Unknown	N/A
02/21 – 25	B-Branch	Ent/TW Diff <1.0	No Aux Water Supply Running Due to Erosion Repair	MOC Created
Cascades Island: Nothing to Report				
Washington Shore				
02/23	WA Shore	All Fishway Entrances Ent/TW Diff <1'	No Fish Units Operating	Work in Progress

- 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 16 February.
- (3) SLEDs are installed at all locations.
- (4) Bradford Island Fishway remains in service. Washington Shore Fishway and Cascades Island Fishway were watered up for the 2023 Fish Passage Season on Wednesday 22 February.

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 was watered up Wednesday 22 February.
- (5) STSs were installed 22 to 23 February.

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.

f. 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 U18 gatewell slots 18A and 18B is in progress.
- B-Branch erosion repairs began on 21 February in the Main Dam Tailrace. Work is scheduled to be complete on (or by) 14 March.

8. HAZMAT, SPILLS AND CLEANUP:

- At approximately 1000 on 21 February, USACE Contractor J.E. McAmis onsite for B-Branch erosion repair, spilled approximately 5 gallons of red diesel fuel into the Columbia River below the Navigation Lock. The spill was contained and oil booms were deployed into the water. No fish mortalities were observed. Please see 23BON008 MFR BON Navigation Lock Diesel Fuel Spill for more information.
- At approximately 1200 on 24 February, USACE Contractor J.E. McAmis spilled less than 1 gallon of Cat Bio HYDRO Advanced (HEES), a biodegradable hydraulic fluid, into the Columbia River. The crew assessed the area for hazards, contained the spill with oil booms, placed a containment bucket under the leak, cleaned up residual fluid, and removed the saturated oil booms. No fish mortalities were observed. Please see 23BON009 MFR BON Hydraulic Fluid Spill for more details.

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 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.
- A teletype was distributed on 09 February detailing a Bonneville Spillway outage for B-Branch repairs. The entire Bonneville Spillway, with the exception of Spillbay 1, will be tagged out and not available for spill during the following dates and times:
0700 HRS 20 February through 1700 28 February, continuous
The purpose of this operation is to support repair work being conducted in the area near the B-Branch Fish Ladder. The teletype requests that Bonneville Spillway Outage for B-Branch Repairs be given priority over the Bonneville Low Pool Operation described in CBT BON R 013023 1353, if necessary. Spillbay 1 will remain open at 0.5 feet during the repair work for attraction flow (approximately 1.1 kcfs). Spillbays may be returned to service with 1.5-hour notification, if necessary. If BPA forecasts the need to spill, BPA will contact the Project Control Room to provide 1.5-hour notice. Please see teletype BON R 020923 1311 for further details.
- A teletype was distributed on 15 February detailing new FPOM / FPP approved Bonneville Powerhouse Two Corner Collector (B2CC) operations from 01 March to 31 August. Effective during the dates defined below, BON is to open the B2CC:

- 01 – 08 March, daily from 0600 – 1000 HRS. Open the B2CC within 30 mins of the start time and shift the end time as needed to achieve a continuous 4-HR block.
- 09 – 25 March, daily from 0600 – 1000 HRS and 1600 – 2000 HRS. Open the B2CC within 30 mins of the start time and shift the end time as needed to achieve a continuous 4-HR block.
- Starting 26 March at 0600 HRS, open the B2CC continuously (24 HRS/day) through the end of Summer Spill on 31 August. Close the B2CC within 1 hour of the end of Summer Spill.

This operation is pursuant to new criteria in the 2023 Fish Passage Plan (FPP) that was coordinated in the FPP change form “23BON002” and approved on 03 February 2023. The change form is available online at: <https://pweb.crohms.org/tmt/documents/fpp/2023/changes/> . This operation will be included in the Final 2023 FPP in Section 2.3.2.5.v on page BON-20. <https://pweb.crohms.org/tmt/documents/fpp/2023/> .

- A teletype was distributed on 24 February detailing a Bonneville Dam Low Pool Operation. Beginning 27 February at 0800 HRS through 03 March at 1700 HRS, Bonneville Lock and Dam 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 022423 1150 for more information.
- A teletype was distributed on 28 February regarding the Bonneville Spillway Outage for B-Branch Repairs. This teletype revises and replaces BON R 020923 1311, with an extension of the outage to 14 March. The entire Bonneville Spillway, with the exception of Spillbay 1, will be tagged out and not available for spill during the following dates and times:
0700 HRS 20 February through 1700 HRS 14 March, continuous.
The purpose of this operation is to support repair work being done in the area near the B-Branch Fish Ladder. The teletype also requests the Bonneville Spillway Outage for B-Branch Repairs be given priority over the Bonneville Low Pool operation from CBT message BON R 022423 1150, if necessary. Please see teletype BON R 022823 1255 for more details.
- A teletype was distributed on 01 March providing guidance for tailwater operations at Bonneville for chum spawning. This teletype replaces CBT message BON R 121422 1154 Tailwater Operation for Chum Spawning 2. Effective Thursday 02 March at 0001 HRS, and until further notice, the Bonneville Dam minimum tailwater elevation is 10.2 feet during all hours. If unable to maintain a minimum tailwater of 10.2 feet with the available water on any day, BON is to operate the highest flat discharge possible. The intent of this operation is to maximize a stable tailwater elevation with the available water for egress of emerging chum salmon and to maximize the protection for the chum redds in the Ives/Pierce Island area during the egg incubation period. Please see teletype BON R 030123 1119 for further details.

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