

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for **Week 11** of 2023, which covers the period from **12 to 18 March 2023**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 111.0 to 121.2 kcfs. Daily average powerhouse forebay elevation ranged from 73.0’ to 75.0’ msl. Daily average project tailwater ranged from 10.8 to 11.5’ msl. Secchi disk measurements ranged from 6.0 to 7.0+’. Daily average water temperature ranged from 39 to 40°F.
- b. Daily average spill remained at 1.4 kcfs.
- c. Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed
- d. Nav Lock Outage: The Nav Lock was returned to service on 16 March.

• **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	---
18	0743 on 25 Jan	---	P.O., FGE Gatewell Improvement	---
10	1321 on 13 Mar	1626 on 13 Mar	P.O., Trash Raking	3 hours, 5 mins
3	0731 on 14 Mar	0908 on 14 Mar	P.O., Trash Raking	1 hour, 37 mins
16	0751 on 15 Mar	---	P.O., FGE Gatewell Improvement	---

- e. 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	1345 on 08 Mar	P.O., 2-Year Overhaul	97 days, 0 hours, 15 mins

• **Table 3. Fish Unit Drawdowns, in Feet.**

Date	F1	F2
03/12	0.3’	1.3’
03/13	0.4’	1.6’
03/14	0.8’	2.0’
03/15	0.3’	0.4’
03/16	0.2’	0.3’
03/17	0.1’	0.2’
03/18	0.1’	0.1’

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 1-1 was closed for cleaning at 1535 on 16 March.

- b. STS/VBS Inspections: Nothing to report.
- c. Dewatering and Fish Salvages:
 - Fish Biologists assisted in fish salvage operations for the U18 taillogs on 13 March. No fish were recovered. U18 was out of service for FGE gatewell improvement.
 - Fish Biologists assisted in fish salvage operations in the U16 scroll case and draft tube on the morning of 16 March. No fish were present. U16 was taken out of service for FGE gatewell improvement.

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 began at 0700 on 02 March. Debris at the primary dewatering structure (PDS) and fish/debris separator was light consisting mostly of sticks. Fallbacks observed this week: 2 steelhead and 1 salmon. A total of 64 fin clips were obtained from Pacific Lamprey macrophthalmia for Columbia River Inter-Tribal Fish Commission’s genetic studies this week.

4. FISHWAYS:

- a. Project biologists inspected 12 to 18 March.
- b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
PH1				
03/12 – 18	PH1 ITS	S. End Gate Inoperable and Chain Gates 1b Closed	S. End Gate Inoperable, 1b Closed for Safety Reasons	W.O.
03/12 – 18	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island				
03/12 – 15, 18	A-Branch	A-Branch Staff Gauge High >1.1’	Unknown	N/A
Cascades Island				
03/12 – 18	Cascades Island	FG 6-18 Open, Should Be Closed	Unknown	WOR Created
Washington Shore				
03/15,18	WA Shore Fishway	SDE Ent/TW Diff <1.0’	Unknown	N/A

- 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 15 March.
- (3) SLEDs are installed at all locations.
- (4) Bradford Island, Cascades Island, and Washington Shore Fishways remain in service.

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 remains in service.
- (3) The B2CC was placed into service for 2 4-HR blocks each day starting 08 March from 0600 to 1000 and 1600 to 2000. This operation will continue operating according to guidance found in CBT Message BON R 021523 0920. Please see this teletype for more details.
- (4) The DSM remains in service.
- (5) STSs remain in service.

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.
- (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 modification prep work in U16 gatewell slots 16A and 16B began on 15 March.
- B-Branch erosion repairs began on 21 February in the Main Dam Tailrace. Work was put on hold this week.

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

9. TELETYPES CURRENTLY IN EFFECT:

- 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 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.
- A teletype was distributed on 15 March detailing a Bonneville Dam low pool operation. Beginning 15 March at 1700 HRS through 31 March at 2359 HRS, Bonneville is to operate its forebay below a maximum elevation of 74.0 feet, soft constraint. This low pool operation is intended to reduce TDG downstream of Project by reducing flow through the B2CC, Spill Bays 1 and 18, and the Ice and Trash Sluiceway. This operation is needed to meet the Oregon’s TDG Standard for shallow water of 105%. Please see teletype BON R 03152023 1353 for more details.
- A teletype was distributed on 21 March detailing a Bonneville Spillway outage for an ROV inspection. On 21 March 2023, from 0900-1400 HRS the entire Bonneville Spillway with the exception of Spillbay 1 will be tagged out and not available for spill. The purpose of this operation is to facilitate an ROV inspection in

the Bonneville Spillway tailrace. Spillbay 1 will be open 0.5 foot to provide fish attraction flow. Please see teletype BON R 032123 0914 for more details.

- A teletype was distributed on 24 March detailing a Bonneville Spillway outage for B-Branch repairs. The entire Bonneville Spillway, with the exception of Spillbay, will be tagged out and not available for spill during the following times:

0500 HRS 27 March through 1700 HRS 21 March, continuous.

The purpose of this operation is to support repair work being done in the area near the B-Branch Fish Ladder. Spillbay 1 will remain open 0.5' continuously during the repair work (approximately 1.1 kcfs). Please see teletype BON R 032323 1246 for more details.

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