

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for **Week 10** of 2023, which covers the period from **05 to 11 March 2023**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 106.4 to 114.0 kcfs. Daily average powerhouse forebay elevation ranged from 72.8’ to 75.6’ msl. Daily average project tailwater ranged from 10.4 to 10.6’ 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 1.1 to 1.3 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: **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 removed from service for annual maintenance on 04 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	---
10	1004 on 03 Jan	1135 on 08 Mar	P.O., 5-Yr Overhaul	64 days, 1 hour, 31 mins
18	0743 on 25 Jan	---	P.O., FGE Gatewell Improvement	---
16	0205 on 03 Mar	1402 on 06 Mar	F.O., Water in Turbine Bearing	3 days, 11 hours, 57 mins
16	0634 on 07 Mar	1141 on 07 Mar	F.O., Water in Turbine Bearing	5 hours, 7 mins

- 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
03/05	---	1.7’
03/06	---	0.0’
03/07	---	0.2’
03/08	0.1’	0.2’
03/09	0.4’	0.7’
03/10	0.4’	1.2’
03/11	0.6’	1.7’

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures: Nothing to report.
- b. STS/VBS Inspections: Nothing to report.
- c. Dewatering and Fish Salvages:
 - Project Biologists assisted in fish salvage operations during the removal of U10’s tail logs on the morning of 07 March. 5 sculpin were recovered in good condition and released downstream. U10 was out of service for a planned 5-year overhaul.
 - On 08 March, Project Biologists assisted in fish salvage operations of the Nav Lock upper sill during its annual maintenance. 0 fish were discovered.

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. No fall backs were observed this week.
A total of 58 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 05 to 11 March.
- b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
BON				
03/05 – 07	BON	Unit Priority	U16 F.O.	Work Complete
03/05 – 11	BON	Spillbay 18 OOS	Erosion Repair in Progress in Spillway Tailrace	MOC/Teletype Created
PH1				
03/04 – 11	PH1 ITS	S. End Gate Inoperable and Chain Gates 1b Closed	S. End Gate Inoperable, 1b Closed for Safety Reasons	W.O.
03/05 – 11	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island				
03/06 – 08, 11	A-Branch	A-Branch Staff Gauge High >1.1’	Unknown	N/A
03/05 – 11	B-Branch	Ent/TW Diff <1.0	No Aux Water Supply Running Due to Erosion Repair	MOC Created
Cascades Island				
03/05 – 11	Cascades Island	FG 6-18 Open, Should Be Closed	Unknown	WOR Created

Washington Shore				
03/06 - 08	WA Shore	All Fishway Ent/TW Diff Low; <1'	F1 OOS	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 27 February.
- (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 modifications in U18 gateway slots 18A and 18B is in progress.
- B-Branch erosion repairs began on 21 February in the Main Dam Tailrace. Work is ongoing.

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 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 09 March detailing a Bonneville Dam minimum forebay operation for a hydrosurvey. On 11 March between 0800 and 1600 HRS, BON is to operate the forebay above a minimum of 75 feet, hard constraint. This forebay operation supports a pre-spill season hydrosurvey of the eastern shore of Bradford Island and Goose Island. Please see teletype BON R 030923 1354 for more 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.

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