

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 40 of 2023, which covers the period from 01 to 07 October 2023.

1. ITEMS OUT OF CRITERIA (OOC):

- **Table 1.** FPP Items Out of Criteria.

Date	Location	FPP Violation	Cause	Response
PH1:				
10/01 – 07	PH1 ITS	ITS Closed	ITS End Gate Repairs	MOC
10/01 – 07	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island:				
10/01 – 07	B-Branch	B-Branch S. Ent Gate Closed	Electrical Issues	W.O.
10/06	A-Branch	A-Branch Staff Gauge High; >1.1'	Unknown	N/A
Cascades Island:				
10/01 – 07	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
10/01 – 07	CI Fishway	FG 6-12 Open, Should be Closed	Mechanically Bound	W.O.
Washington Shore: Nothing to report				

- 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.
- Cascades Island Fishway diffuser FG 6-18 was found stuck in the open position with limiter problems in the fall of 2022. A work order has been created and repairs have been attempted, but full repair requires complete dewatering of the fishway. These repairs will be made during the next full dewater of the Cascades Island Fishway.

2. OPERATION SUMMARY:

- a. Daily average river flows ranged from 80.7 to 92.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.7' to 74.5' msl. Daily average project tailwater ranged from 7.2' to 8.5' msl. Secchi disk measurements remained at 7.0+'. Daily average water temperature ranged from 64 to 65°F.
- b. Daily average spill ranged from 1.3 to 1.4 kcfs.

- c. Unit Operation: PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

• **Table 2.** Main Unit Outages

Unit	OOS	RTS	Reason	Duration
4	1631 on 29 Mar	---	F.O., Oil Leak Investigation/5-YR Overhaul	---
3	1105 on 12 Jun	---	F.O., Oil Leak Investigation	---
15	0729 on 10 Jul	---	P.O., 4-Year Overhaul	---
12	0738 on 25 Sept	---	P.O., FGE Gatewell Improvements	---

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

Fish Unit Outages: Fish Units are periodically paced into reserve service (RS) to float trash when debris differentials become excessive and trash raking is not possible. There were no Fish Unit outages this reporting week.

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

Date	F1	F2
10/01	0.2'	0.2'
10/02	0.0'	0.1'
10/03	0.1'	0.2'
10/04	0.0'	0.0'
10/05	0.0'	0.0'
10/06	0.1'	0.2'
10/07	0.2'	0.3'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures: Nothing to report.
- b. STS/VBS Inspections: The October STS inspection results can be found below. No issues to report.

• **Table 4.** October STS Inspection Report

UNIT	Previous STS HRS	Present Readings	STS-A	STS-B	STS-C	HRS RUN	REMARKS
11	72982	73288				306	
12	57169	57256				87	OOS
13	9961	10266				305	
14	25997	26236				239	
15	33040	33040				0	OOS
16	44218	44716				498	
17	14349	15040				691	
18	19734	20425				691	

- c. Dewatering and Fish Salvages: Nothing to report.

3. RESEARCH

- a. Four Peaks Environmental - Fish counting contract: Daytime visual counting (0500 to 2100 PDT) began on 01 April. Night video counting (2100 to 0500 PDT) began on 15 May. 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: Sample collections at the Smolt Monitoring Facility (SMF) began at 0700 on 02 March. Debris at the primary dewatering structure (PDS) and fish/debris separator was light to moderate consisting mostly of aquatic macrophytes, a few sticks, terrestrial vegetation, and dead adult American shad. Fallbacks observed this week: four salmon, two steelhead.
Truck releases of summer/fall out-migrants originating from Little Goose and Lower Granite Dams began at Bonneville on 02 August and occur every other day.
Gas Bubble Trauma (GBT) examinations have concluded for the season. Please follow this link <https://www.fpc.org/currentdaily/gbtsumbybatchdate.pdf> to the FPC web page for further details.
No fin clips were obtained from Pacific Lamprey macrophthalmia or ammocoetes for Columbia River Inter-Tribal Fish Commission's (CRITFC) genetic studies as no juvenile lamprey were sampled this week.
- d. USDA – Pinniped and Avian Hazing: Deck-based pinniped hazing resumed on 15 August.
- e. CRITFC – Adult Salmonid Sampling: Adult salmonid sampling in the Adult Fish Facility (AFF) began on 19 April and typically occurs 5 days per week.
- f. WDFW – Bright and Tule Chinook Stock Observation: Observation research of fall Chinook at Bonneville Dam started 02 August.
- g. State Agency Pinniped Trapping: Sea lion trapping operations are underway.

4. FISHWAYS:

- a. Project Biologists inspected 01 to 07 October.
- b. Adult Fishways:
 - (1) The AFF remains in service.
 - (2) Sensor calibration checks occurred on 03 October.
 - (3) SLEDs are installed at all locations.
 - (4) Bradford Island, Cascades Island, and Washington Shore Fishways remain in service.
- c. Juvenile Fishways:
 - (1) The ITS was taken out of service on Monday 25 September. Bulkheads were placed in all ITS gate slots throughout the week to dewater the ITS. The ITS End Gate installation began on 03 October. Please see MOC 23BON002 ITS End Gate Replacement for more details.
 - (2) The hydro-cannon remains in service.
 - (3) The B2CC was closed for the season on 01 September but remains available to flush trash or provide surface passage for fish if involuntary spill occurs outside of fish passage spill season. **(FPP BON Section 2.2.2.)**

- (4) The DSM remains in service.
- (5) STSs remain in service.
- d. Lamprey Fishways:
 - (1) BI, CI, and WA Shore LPS's remain in service.
 - (2) The Bradford Island Wetted Wall (BIWW) remains in service.
 - (3) The PH2 Lamprey Flume Structure (LFS) remains out of service.
 - (4) The 2023 lamprey trapping and translocation activities concluded for the season on 06 September.
 - (5) Avian Monitoring: Avian counts are recorded 01 April – 31 October.

Table 5. Avian Counts for 01 to 07 October.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
10/01	75	17	0	0	0
10/02	45	9	0	0	0
10/03	62	2	0	0	0
10/04	8	7	0	0	0
10/05	21	8	0	0	0
10/06	32	24	0	0	0
10/07	34	21	0	0	0

5. WATER QUALITY MONITORING:

- a. Fishway Temperatures: Fishway temperature monitoring has concluded for the 2023 season.
- b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

7. CONSTRUCTION:

- FGE modification work on the U12 gatewells is ongoing.
- The installation of the PH1 ITS End Gate is currently in process.

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

9. TELETYPEs CURRENTLY IN EFFECT:

- A teletype was distributed on 30 August detailing the 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. Please see teletype BON R 083023 1555 for further details.
- A teletype was distributed on 07 September regarding a Bonneville minimum forebay operation for fish hatchery work. From 15 October through 15 November 2023, Bonneville is to operate its forebay above a minimum of 74 ft, soft constraint. This forebay operation supports a request from the Little White Salmon Fish Hatchery to provide water levels for improved access to the ladder system at the hatchery during the peak of the fall Chinook run. Please see teletype BON R 090723 1315 for more details.
 - A revised teletype was distributed on 29 September regarding a Bonneville minimum forebay for fish hatchery. This teletype revises previous teletype BON R 090723 1325 by changing the start date. The revision states: from 20 October through 15 November 2023, operate the Bonneville

Forebay above a minimum of 74 feet, soft constraint. Please see teletype BON R 092923 1252 for further details.

- A teletype was distributed on 13 September regarding a minimum forebay operation and spillbay outages for a hydrosurvey at Bonneville. On 14 September between 0730-1200 HRS, BON is to operate the Bonneville Forebay above a minimum of 75 feet, hard constraint. Also, between 0730-1200 HRS Spillbays 2-17 will be locked out/tagged out on sill while Spillbays 1 + 18 will be locked out/tagged out at 0.5 FT. This forebay operation supports a post-spill season hydrosurvey around Cascades Island and the Main Dam. Please see teletype BON R 091323 1130 for more details.

- A teletype was distributed on 20 September regarding a Bonneville Forebay operation for the fall treaty fishery. Bonneville Pool is to be operated within a 1.5 ft band, hard constraint, for the periods listed below:
From 0600 Monday 25 September to 1800 Friday 29 September.
From 0600 Monday 02 October to 1800 Friday 06 October.
The goal of this operation is to limit pool fluctuation to avoid debris in fishing nets, reduce rapid water level drops that entangle nets, minimize boat access problems, and avoid nets being torn from their anchors. Please see teletype BON R 092023 1653 for more details.
 - A revision to this teletype was distributed on 12 October. The revision occurs in the paragraph 1 start date and now states: From 15 October through 15 November 2023, operate the Bonneville Forebay above a minimum of 74 feet, soft constraint. Please see teletype BON R 101223 0805 for more details.

- A teletype was distributed on 29 September regarding a forebay operation for the Bonneville Ice and Trash Sluiceway repairs. Effective from Monday 02 October at 0700 HRS, through Thursday 19 October at 1700 HRS, implement the following forebay operation at Bonneville Lock & Dam:
Hard Constraint: 73.0 – 74.5 FT
Soft Constraint: 73.0 – 74.0 FT
The goal of this operation is to minimize fluctuations in the Bonneville Pool to the extent possible to facilitate dewatering of the Powerhouse 1 Ice and Trash Sluiceway for repairs to the south end gate. Pool elevation changes could dislodge cinders and cause leakage into the sluiceway. This operation was coordinated with FPOM via MOC 23BON002 ITS End Gate Installation, dated 12 January 2023. Please see teletype BON R 092923 0745 for more details.
 - This forebay restriction teletype was cancelled on 11 October after the dry commissioning of the ITS End Gate took place. Please see teletype BON R 101123 1300 for more details.

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