

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 44 of 2023, which covers the period from 29 October to 04 November 2023.

1. ITEMS OUT OF CRITERIA (OOC):

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

Date	Location	FPP Violation	Cause	Response
11/01	BON	Unit Priority	U3 F.O. (Oil Leak), U6 Ran in Place	W.O.
11/04	BON	Unit Priority	T12 F.O. (Ground)	PH1 Units Ran
PH1:				
10/29 – 11/04	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
10/29,30	PH1CC	SCCH Ent/TW Diff <1.0'	Unknown	N/A
Bradford Island:				
10/29 – 31	B-Branch	B-Branch S. Ent Gate Closed	Electrical Issues	W.O.
11/02	A-Branch	A-Branch Staff Gauge High; >1.1'	S. Ent. Gate Stuck Closed	W.O./Manually Adjust FVs
Cascades Island:				
10/29 – 11/04	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
11/01 – 03	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
10/30,31	CI Fishway	UMT Staff Gauge Low; <0.9'	Unknown	Manual Adjustments at FV 5-9
Washington Shore:				
11/01	WA Shore Fishway	SUE Ent/TW Diff <1.0'	Unknown	Increased Fish Unit Output
11/01	WA Shore Fishway	SDE Ent/TW Diff <1.0'	Unknown	Increased Fish Unit Output

- 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 closed 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 75.8 to 116.3 kcfs. Daily average powerhouse forebay elevation ranged from 74.7' to 75.8' msl. Daily average project tailwater ranged from 7.0' to 10.6' msl. Secchi disk measurements ranged from 5.0 to 7.0+'. Daily average water temperature ranged from 55 to 57°F.
- b. Daily average spill ranged from 1.0 to 1.2 kcfs.
- c. **Unit Operation: PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.
 - PH1 Units were used for power generation (Out of Turbine Unit Priority Order according to **FPP Table BON-13**) several times while some PH2 Units were placed in Reserve Service (RS) due to a BPA GENCON limiting generation to 334 MW on the 230 kV system. (23 to 26 October)

• **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	---
12	0738 on 25 Sept	---	P.O., FGE Gatewell Improvements/4-YR Overhaul	---
15	1020 on 04 Nov	1234 on 04 Nov	F.O., T12 Ground	2 hours, 14 mins
16	1021 on 04 Nov	1231 on 04 Nov	F.O., T12 Ground	2 hours, 10 mins
17	1031 on 04 Nov	1230 on 04 Nov	F.O., T12 Ground	1 hour, 59 mins
18	1032 on 04 Nov	1230 on 04 Nov	F.O., T12 Ground	1 hour, 58 mins

- 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
10/29	0.2'	0.2'
10/30	0.2'	0.2'
10/31	0.1'	0.2'
11/01	0.2'	0.4'
11/02	0.1'	0.5'
11/03	0.2'	0.8'
11/04	0.4'	1.3'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 6-9 was placed into manual for cleaning from 0750 to 0800 on 30 October.
 - FV 3-9 was placed into manual for cleaning from 0830 to 0840 on 30 October.
 - FV 1-1 was closed for cleaning from 1340 to 1420 on 02 November.
 - FV 6-9 was placed into manual for cleaning from 1600 to 1615 on 02 November.
- 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 visual counting (0500 to 2100 PDT) began on 01 April. 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 SMF at 0700 on Tuesday 31 October. The system was placed in bypass mode at that time. Full flow PIT tag interrogation will remain active until the 2-mile pipe is dewatered, typically around mid-December. Debris at the primary dewatering structure (PDS) and fish/debris separator was light to heavy consisting mostly of aquatic macrophytes, a few sticks, terrestrial vegetation, and dead adult American shad. Fallbacks observed this week: five salmon and one 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 fish collections for research purposes were conducted this week.
- d. USDA – Pinniped and Avian Hazing: Deck-based pinniped hazing concluded on 31 October.
- e. State Agency Pinniped Trapping: Sea lion trapping operations are underway.

4. FISHWAYS:

- a. Project Biologists inspected 29 October to 04 November.
- b. Adult Fishways:
 - (1) The AFF remains in service.
 - (2) Sensor calibration checks occurred on 30 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 has returned to full service.
 - (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 were taken out of service for the season on Wednesday 01 November.

(2) The Bradford Island Wetted Wall (BIWW) was taken out of service for the season on Wednesday 01 November.

(3) The PH2 Lamprey Flume Structure (LFS) remains out of service.

(4) The 2023 lamprey trapping and translocation activities have concluded for the 2023 season.

(5) Avian Monitoring: Avian counts are recorded 01 April – 31 October.

Table 4. Avian Counts for 29 to 31 October.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
10/29	13	2	0	0	0
10/30	47	0	0	0	0
10/31	41	70	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 has completed.

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 25 October with instructions for Bonneville tailwater operations for chum spawning. Effective Wednesday 01 November, at 0600 HRS, and until further notice, Bonneville Dam is to operate its tailwater in the following order of operating ranges as Project outflow increases.
 - During all hours, operate Project outflow to provide a tailwater elevation in the range of 10.3 – 11.2 FT.
 - Then, if necessary to increase Project outflow, operate Project outflow to provide a tailwater elevation in the range of 11.3 – 13.0 FT. If this elevation is not achieved by Monday 13 November, at 2359 HRS, then operate Project outflow to provide a tailwater elevation in the range of 11.3 – 13.0 FT, effective, Tuesday 14 November, at 0001 HRS.
 - Then, if necessary to increase Project outflow, the tailwater may be operated up to 16.5 FT during nighttime hours (1700-0600).
 - Then, if necessary to increase Project outflow, the tailwater may be operated up to 18.5 FT during nighttime hours (1700-0600).
 - Then, if increasing river flow precludes the ability to manage the tailwater within the steps above, operate to provide a tailwater in the range of 13.0 – 16.5 FT during daytime hours (0600-1700) and up to the maximum within Project 24-HR ramp rate limits during nighttime hours (1700-0600).

The goal of this operation is to improve conditions at the Ives/Pierce Island Complex for chum salmon spawning. Please see teletype BON R 102523 1411 for more details.

A revision to this teletype was distributed on 06 November regarding a clarified end date for increasing the tailwater elevation range. The revision states: “If necessary to increase Project outflow, operate to maintain the tailwater within an elevation range of 11.3 – 13.0 FT. If the tailwater is not operated above 11.2 FT by Thursday 09 November at 0001 HRS, then transition to an operation to maintain the tailwater within an elevation range of 11.3 – 13.0 feet at all hours.”. Please see teletype BON R 110623 1449 for more details.

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