

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 45 of 2023, which covers the period from 05 November to 11 November 2023.

1. ITEMS OUT OF CRITERIA (OOC):

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

Date	Location	FPP Violation	Cause	Response
11/07 – 11/09	BON	Unit Priority	U3 F.O. (Oil Leak), U6 Ran in Place	W.O.
PH1:				
11/05 – 11/11	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island: Nothing to Report.				
Cascades Island:				
11/05 – 11/11	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
11/06 – 11/11	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
Washington Shore:				
11/06	WA Shore Fishway	SUE Ent/TW Diff <1.0'	Unknown	Increased Fish Unit Output
11/06	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 limitorque 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 108.5 to 128.9 kcfs. Daily average powerhouse forebay elevation ranged from 74.4' to 75.2' msl. Daily average project tailwater ranged from 10.6' to 11.6' msl. Secchi disk measurements ranged from 4.0 to 7.0+'. Daily average water temperature ranged from 55 to 56°F.
- b. Daily average spill ranged from 1.0 to 1.1 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	---
12	0738 on 25 Sept	---	P.O., FGE Gatewell Improvements/4-YR Overhaul	---
13	0001 on 06 Nov	2313 on 08 Nov	Annual OH/Quarterly Thrust Collar Inspection	2 days, 23 hours, 12 minutes

- 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.

• **Table 3. Fish Unit Outages**

Unit	OOS/RS	RTS	Reason	Duration
F2	0016 on 05 Nov	0119 on 05 Nov	R.S., Float Trash	1 hour, 3 mins
F1	0034 on 07 Nov	0144 on 07 Nov	R.S., Float Trash	1 hour, 10 mins

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

Date	F1	F2
11/05	0.4'	0.3'
11/05	0.5'	0.1'
11/06	0.7'	0.2'
11/07	0.1'	1.1'
11/08	0.1'	0.2'
11/09	0.2'	0.4'
11/10	0.1'	0.4'
11/11	0.3'	1.2'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:

- FV 3-9 was placed into manual for cleaning from 0822 to 0828 on 07 November.
- FV 6-9 was placed into manual for cleaning from 1535 to 1542 on 08 November.

- b. STS/VBS Inspections: STS inspections were conducted on 08 Nov. All looked good, nothing to report.

• **Table 4:** November STS Inspection Results

UNIT	Previous STS HRS	Present readings	STS-A	STS-B	STS-C	HRS RUN	REMARKS
11	73288	74074				786	
12	57256	57256				0	OOS
13	10266	11039				773	
14	26236	26950				714	
15	33040	33299				259	
16	44716	45211				495	
17	15040	15815				775	
18	20425	21108				683	

- 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. State Agency Pinniped Trapping: Sea lion trapping operations are underway.

4. FISHWAYS:

- a. Project Biologists inspected 05 November to 11 November.
- b. Adult Fishways:
- (1) The AFF remains in service.
 - (2) Sensor calibration checks occurred on 09 November. All sensors were not able to be calibrated this week due to B-branch trenching work.
 - (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.

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:

- Trenching work for the B-branch LPS install began this reporting week.

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 06 November 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 Thursday 09 November, at 0001 HRS, then operate Project outflow to provide a tailwater elevation in the range of 11.3 – 13.0 FT
 - 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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