

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 48 of 2022, which covers the period from **20 to 26 November 2022**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 122.6 to 135.9 kcfs. Daily average powerhouse forebay elevation ranged from 73.8' to 74.9' msl. Daily average project tailwater ranged from 11.6' to 11.8' msl. Secchi disk measurements ranged from 6.0 to 7.0'. Daily average water temperature ranged from 46 to 47°F.
- b. Daily average spill remained at 1.1 kcfs.
- c. Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

- **Table 1. Main Unit Outages**

Unit	OOS	RTS	Reason	Duration
13	1628 on 18 Feb	---	F.O., Generator Ground and BPA Work – Grounded Clearance	---
5	0623 on 01 Nov	1217 on 23 Nov	P.O., Generation Lineup	22 days, 5 hours, 54 mins
4	0646 on 03 Nov	1216 on 23 Nov	P.O., Generation Lineup	20 days, 5 hours, 30 mins
6	1120 on 23 Nov	---	F.O., Oil Sheen Investigation	---
9	0214 on 24 Nov	---	F.O., Gate Feedback/Position Indication	---

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

Fish Unit Outages: Fish Units are periodically placed into reserve service (RS) to float trash when debris differentials become excessive and trash raking is not possible.

- **Table 2. Fish Unit Outages.**

Unit	OOS/RS	RTS	Reason	Duration
F2	0530 on 20 Nov	0605 on 20 Nov	R.S., Float Trash	35 mins
F1	0610 on 20 Nov	0641 on 20 Nov	R.S., Float Trash	31 mins
F2	1927 on 20 Nov	2012 on 20 Nov	R.S., Float Trash	45 mins
F1	1951 on 20 Nov	2010 on 20 Nov	R.S., Float Trash	19 mins
F1	2157 on 26 Nov	2247 on 26 Nov	R.S., Float Trash	50 mins
F2	2158 on 26 Nov	2252 on 26 Nov	R.S., Float Trash	54 mins

Table 3. Fish Unit Drawdowns, in Feet.

Date	F1	F2
11/20	0.2'	6.6'
11/20	0.2'	0.3'
11/21	0.4'	0.4'
11/22	1.0'	1.4'
11/23	0.2'	0.3'
11/24	0.2'	0.6'
11/25	0.3'	1.9'
11/26	0.7'	3.4'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 1-1 was placed into manual from cleaning from 0805 to 0825 on 21 November.
 - FV 3-9 was closed for cleaning from 0840 to 0845 on 21 November.
 - FV 3-9 was closed for cleaning from 1028 to 1035 on 23 November.
 - FV 1-1 was closed for cleaning from 1240 to 1310 on 23 November.
 - FV 1-1 was closed for cleaning from 0708 to 0730 on 26 November.
 - FV 6-9 was closed for cleaning from 0803 to 0825 on 26 November.
- b. STS/VBS Inspections: Nothing to report.
- c. Dewatering and Fish Salvages:
 - The Adult Fish Facility (AFF) was dewatered and placed out of service for the winter maintenance period on the morning of Monday, 21 November. Fish salvaged included: 1 steelhead, 1 juvenile salmonid, and an estimated 7,500 more fish consisting of shad, peamouth, sucker, walleye, carp, sunfish, and bass. All fish were found in good condition and were released into the Washington Shore Fish Ladder.

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: Smolt monitoring operations concluded for the season at Bonneville Juvenile Fish Monitoring Facility at 0700 on Monday, 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.

4. FISHWAYS:

- a. Project biologists inspected from 20 to 26 November
- b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
PH1				
11/21	BON	Unit Priority	U10 in RS for Maint	MFR Created
11/23 – 25	BON	Unit Priority	U6 Forced OOS	Investigate
11/24 – 25	BON	Unit Priority	U9 Forced OOS	W.O.
11/20 – 26	PH1 ITS	S. End Gate Inoperable and Chain Gates 1a & 1b Closed	S. End Gate Inoperable, 1a and 1b Closed for Safety Reasons	W.O.
11/20 – 26	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
Bradford Island				
11/23	A-Branch	A-Branch Staff Gauge High, >1.1'	Unknown	N/A
Cascades Island				
11/20 – 26	Cascades Island Tailrace	1 B2CC Avian Array Line is Broken	High Tailwater Elevations	N/A
Washington Shore				
11/20 – 26	PH2CC	A2 Diffuser Stuck Mid-Travel	Unknown	W.O.
11/20,25	PH2CC	SUE Ent/TW Diff <1.0'	Unknown	N/A
11/25	WA Shore	Weir 37 High, >1.1'	Unknown	N/A
11/25	WA Shore	Weir 38 High, >1.1'	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 Washington Shore/Cascades Island Fishway Winter Maintenance Period (winter 2022/2023).

c. Adult Fishways:

- (1) The AFF was taken out of service on Monday, 21 November for the winter maintenance period.
- (2) Sensor calibrations occurred on 22 November.
- (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 only).

- (2) The hydro-cannon is out of service for the year.
- (3) The B2CC was closed for the season 01 September when spill season ended but remains available to reopen for passing trash or to provide surface passage for fish if spill occurs outside fish passage spill season.
- (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 for the year.
- (4) The 2022 lamprey trapping and translocation activities have concluded for the year.
- (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 2022 season.
- b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

7. CONSTRUCTION:

- Contractors for FGE work have started moving equipment onsite.
- U11 outage begins on 30 November and Northbank contractors will begin work in the U11 gatewells on 05 December.

8. HAZMAT, SPILLS AND CLEANUP:

- On 23 November, an oil sheen was discovered in the PH1 tailrace around U10/North Fishway Entrance and U6. Operations and the Environmental section were both notified immediately. The sheen was deemed unrecoverable, but Unit 6 was forced OOS to investigate the possible source of the oil. Maintenance crews could not determine the source of the oil other than the possibility of oil being washed into the tailrace from the PH1 55' Deck with current rainstorms.

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 sent out on 07 October regarding Bonneville minimum forebay level for operations being conducted with the White Salmon Fish Hatchery. This teletype states from 15 October through 15 November 2022, the BON forebay is to remain above a minimum for 74 feet, soft constraint. This operation is to support the Hatchery in providing 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 100722 1000 for more details.

- A teletype was distributed on 19 October regarding Bonneville tailwater operation for chum spawning. Effective Tuesday, 1 November at 0600 HRS, and until further notice, Bonneville Lock and 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 11.3 ft to 12.0 ft.
 - Then, if necessary to increase project outflow, the tailwater may be operated up to 16.5 ft during nighttime hours (1700-0600), with concentrating the highest elevations around 2400 HRS.
 - Then, if necessary to increase project outflow, the tailwater may be operated up to 18.5 feet 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 101922 1348 for more details.

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