

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 42 of 2022, which covers the period from 09 to 15 October 2022.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 76.7 to 92.8 kcfs. Daily average powerhouse forebay elevation ranged from 74.9’ to 75.6’ msl. Daily average project tailwater ranged from 7.6’ 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 1.2 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 1.** *Main Unit Outages*

Unit	OOS	RTS	Reason	Duration
13	1628 on 18 Feb	---	F.O., Generator Ground and BPA Work – Grounded Clearance	---
7	0857 on 11 July	---	P.O., 5-Year Overhaul	---
8	0002 on 25 July	---	P.O., Annual Overhaul	---
15	1810 on 28 Sept	1023 on 12 Oct	P.O., SU Panel Replacement	13 days, 16 hours, 13 mins
17	1024 on 12 Oct	---	P.O., SU Replacement	---

- 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.* Nothing to report.
- **Table 3.** *Fish Unit Drawdowns, in Feet.*

Date	F1	F2
10/09	0.5’	0.8’
10/10	0.5’	0.9’
10/11	0.5’	0.6’
10/12	0.7’	1.4’
10/13	0.1’	0.1’
10/14	0.1’	0.3’
10/15	0.1’	0.7’

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - FV 3-9 was placed into manual for cleaning from 0850 to 0857 on 13 October.
 - FV 1-1 was placed into manual for cleaning from 1500 to 1531 on 13 October.

- 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. 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 moderately heavy consisting mostly of aquatic macrophytes, a few sticks, and terrestrial vegetation. No fallbacks were observed this week.
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 more details.
No fish collections for research purposes were conducted this week.
The SMF sampling system was placed in bypass mode from 1500 on 11 October to 1500 on 13 October to conduct repairs to the rotating (sample) gate.
Truck releases of summer/fall out-migrants originating from Little Goose and Lower Granite dams began at Bonneville on 03 August and occur every other day.
- d. USDA – Pinniped and Avian Hazing: Deck-based pinniped hazing started 14 March and concluded for the Spring season on 31 May. Fall pinniped hazing started on 15 August. Avian hazing started 01 April and ended 31 July.
- e. CRITFC – Adult Salmonid Sampling: Adult salmonid sampling in the Adult Fish Facility (AFF) began on 21 April and typically occurs 5 days per week. High water temperature sampling protocols started on 28 July.
- f. ODFW – Adult Steelhead Sampling: Steelhead sampling in the AFF began on 05 July and occurs in conjunction with CRITFC Adult Salmonid Sampling. High water temperature sampling protocols started on 28 July.
- g. WDFW – Bright and Tule Chinook Stock Observation: Observation research of fall Chinook at Bonneville Dam started 01 August.

4. FISHWAYS:

- a. Project biologists inspected from 09 to 15 October.

b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
PH1				
10/09 – 15	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.
10/09 – 15	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
10/11 – 12	PH1CC	South Ent/TW Diff <1.0'	Unknown	N/A
Bradford Island				
10/13	A-Branch	A-Branch Staff Gauge High, >1.1'	Unknown	N/A
Cascades Island				
10/09 – 15	Cascades Island Tailrace	1 B2CC Avian Array Line is Broken	High Tailwater Elevations	N/A
10/09 – 15	CI Fishway	FG 6-12 Stuck in the Open Position, Should Be Closed	Mechanically Bound	W.O.
10/12	CI Fishway	UMT Staff Gauge Low, <0.9'	Unknown	Monitoring FV 5-9
Washington Shore				
10/09 – 15	PH2CC	A2 Diffuser Stuck Mid-Travel	Unknown	W.O.

- 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 remains in service.
- (2) Sensor calibrations occurred on 12 October.
- (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 remains in service.
- (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 remain in service.

(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.

Table 5. *Avian Counts for 09 – 15 October.*

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
10/09	3	32	0	0	0
10/10	35	33	0	0	0
10/11	22	23	0	0	0
10/12	8	0	0	0	0
10/13	10	15	0	0	0
10/14	10	43	0	0	0
10/15	9	39	0	0	0

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: Nothing to report.

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 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 14 October regarding a minimum forebay operation for Bonneville Lock and Dam. From 31 October through 04 November, BON is to operate its forebay above a minimum of 74 feet,

hard constraint. The purpose of this operation is for a hydrographic survey of The Dalles stilling basin, navlock, and spillway during this time. Please see teletype BON R 101422 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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