

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 39 of 2022, which covers the period from **18 to 24 September 2022**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 80.4 to 100.9 kcfs. Daily average powerhouse forebay elevation ranged from 75.4' to 75.6' msl. Daily average project tailwater ranged from 7.8' to 9.1' msl. Secchi disk measurements remained at 7.0+'. Daily average water temperature remained at 68°F.
- b. Daily average spill ranged from 1.3 to 1.5 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	---
16	0729 on 22 Aug	1416 on 21 Sept	P.O., Annual Overhaul/Shaft Sleeve Repair	30 days, 6 hours, 47 mins
14	0915 on 20 Sept	---	P.O., SU Panel Upgrade/Installation	---

- 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
09/18	0.2'	0.6'
09/19	1.1'	1.7'
09/20	1.2'	1.8'
09/21	0.0'	0.0'
09/22	0.2'	0.3'
09/23	0.2'	0.4'
09/24	0.1'	0.2'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures: Nothing to report.
- 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 moderate consisting mostly of aquatic macrophytes, a few sticks, terrestrial vegetation, and dead adult American shad. Four salmon fallbacks were observed this week. Higher temperature sampling protocols were initiated on 28 July (sample end-date of 29 July) when daily average river temperatures at Bonneville ascended to 70°F. Modified sampling during higher temperatures means Index/Condition sampling will take place every other day until the daily average descends to 69.5°F. Sample and bypass mode occurs on alternating 24-hour periods (0700-0700). Please note: Normal sampling operations (24-hour sampling everyday) resumed on 17 September (Sample end-date of 18 September) when average daily forebay temperatures descended to 69.5°F. 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. 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. USGS TDG Monitoring: USGS placed TDG monitoring equipment back in service on Cascades Island above and below the Main Dam on 31 March. Water-quality data collection continued through the end of spill season.
- f. 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.
- g. CRITFC – Lamprey Translocation: Adult lamprey collection concluded on September 7th.
- h. 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.
- i. 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 18 to 24 September.

b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
09/18-24	BON	Unit Priority	U13 Forced Outage	W.O.
09/19	BON	Unit Priority	U9 Ran Out of Priority Order Due to 230 kV Limits	N/A
09/24	BON	Unit Priority	U10 Ran Out of Priority Order Due to 230 kV Limits	N/A
PH1				
09/18-24	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.
09/18-24	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
09/24	PH1CC	South Ent/TW Diff <1.0'	Unknown	N/A
Bradford Island				
09/18-20, 23-24	A-Branch	A-Branch Staff Gauge High, >1.1'	Unknown	N/A
09/18	B-Branch	Ent/TW Diff Low, <1.0'	Unknown	N/A
Cascades Island				
09/18-24	Cascades Island Tailrace	1 B2CC Avian Array Line is Broken	High Tailwater Elevations	N/A
09/18-24	CI Fishway	FG 6-12 Stuck in the Open Position, Should Be Closed	Mechanically Bound	W.O.
09/23	CI Fishway	UMT Staff Gauge Low, <0.9'		
Washington Shore				
09/18-24	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 were conducted on 20 September
- (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 18 – 24 September.*

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
09/18	21	29	0	0	0
09/19	28	2	0	0	0
09/20	4	1	0	0	0
09/21	6	2	0	0	0
09/22	3	6	0	0	0
09/23	4	25	0	0	0
09/24	4	0	0	0	0

5. WATER QUALITY MONITORING:

- a. Fishway Temperatures: Fishway temperature monitoring is currently underway.

Table 6. *Fishway Temperatures for 18 to 24 September at Bonneville Lock & Dam.*

Date	A-Branch	B-Branch	BI_Exit	WA_Entrance	WA_Exit	CI_Entrance	AFF	SMF	BI LPS	CI_LPS	WA_LPS	LFS
18-Sep	68.40	68.48	68.45	68.36	68.48		68.39	68.44	67.77	68.53	68.68	OOS
19-Sep	68.30	68.37	68.39	68.25	68.37		68.29	68.31	67.89	68.44	68.60	OOS
20-Sep	68.50	68.59	68.57	68.48	68.61		68.52	68.54	68.66	68.74	68.86	OOS
21-Sep	68.39	68.45	68.43	68.37	68.49		68.40	68.42	68.48	68.51	68.68	OOS
22-Sep	68.24	68.35	68.28	68.22	68.32		68.22	68.29	68.33	68.37	68.51	OOS
23-Sep	67.78	67.87	67.85	67.68	67.83		67.73	67.78	67.91	67.92	68.03	OOS
24-Sep	67.55	67.64	67.63	67.52	67.65		67.59	67.61	67.70	67.75	67.87	OOS

** The Cascade Island Entrance probe is currently unserviceable.

** The LFS was taken out of service on 16 June.

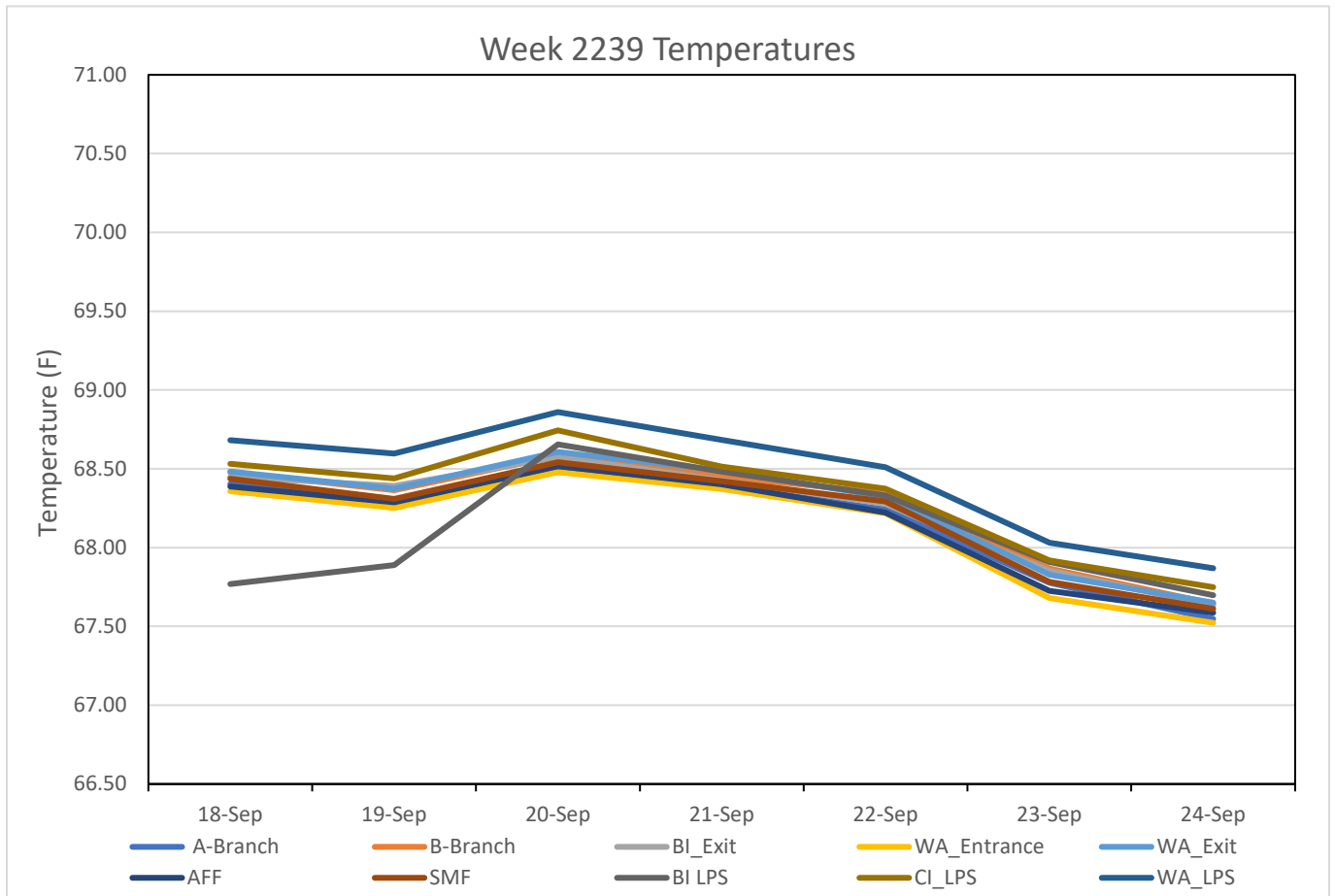


Figure 1. Average fishway temperatures for 18 to 24 September at Bonneville Lock & Dam.

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 14 September regarding Bonneville Forebay operation for fall treaty fishery. This teletype requests that Bonneville Pool operates within a 1.5-foot band, hard constraint, for the periods listed below
 - From 0600 Monday, 19 September to 1800 Thursday, 22 September 2022.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 091422 1217 for more details.

- A teletype was sent out on 21 September regarding Bonneville Forebay operation for fall treaty fishery. This teletype requests that Bonneville Pool operates within a 1.5-foot band, hard constraint, for the periods listed below:
 - From 1800 Thursday, 22 September to 1800 Friday, 23 September 2022
 - From 0600 Monday, 26 September to 1800 Thursday, 29 September 2022
 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 092122 1430 for more details.
- A teletype was sent out on 26 September regarding a spillway outage for Bonneville Lock and Dam. On Tuesday, 27 Sept 2022 from 1200 to 1700 HRS, the entire Bonneville Spillway will be tagged out and not available for spill. The purpose of this operation is to conduct a ROV inspection in the Spillway stilling basin. Spillbay 1 will remain open at 0.5 feet during the inspection for fish attraction flow (approx. 1.1 kcfs). Please see teletype BON R 092622 0900 for further details.
- A teletype was sent out on 29 September regarding a spillway outage for Bonneville Lock and Dam. On Friday, 30 September 2022, from 1130 to 1600 HRS, the entire Bonneville Spillway will be tagged out and not available for spill. The purpose of this operation is for a hydrographic survey in the Bonneville Spillway stilling bason. Surveyors will be in the spilling basin during the date and times listed above. Please see teletype BON R 092922 1300 for further details.
- A teletype was sent out on 29 September regarding Bonneville Forebay operation for fall treaty fishery. This teletype requests that Bonneville Pool operates within a 1.5-foot band, hard constraint for the period of 0600 Monday ,03 October to 1800 Thursday, 06 October 2022. 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 092922 0926 for more details.
- A teletype was sent out on 30 September describing minimum flow required from Bonneville to support a U.S. Army boat launch. On 06 October 2022, from 1200 to 2400 HRS, BON is to release a minimum outflow of at least 110 kcfs, hard constraint. Outflows higher than 110 kcfs are even better for this operation. The purpose of this operation is to provide a minimum elevation of 3 feet at the Vancouver gage between 1700 HRS on 06 October to 0400 HRS on 07 October to support a watercraft launch by the U.S. Army near Vancouver, WA. This is the maiden voyage of a new maneuver support vessel (light) built for the U.S. Army, the 1st of its kind. As soon as the watercraft is successfully launched, the U.S. Army will notify RCC and Bonneville Control Room so the minimum flow constraint can be lifted. Please see teletype BON R 093022 1118 for further details.

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 Bonneville Project