

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 01 of 2022, which covers the period from 26 December 2021 to 01 January 2022.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 165.4 to 200.6 kcfs. Daily average powerhouse forebay elevation ranged from 73.2' to 74.2' msl. Daily average project tailwater ranged from 15.5' to 17.1' msl. Secchi disk measurements ranged from 5.0 to 6.0'. Daily average water temperature ranged from 40 to 43°F.
- b. Daily average spill ranged from 0.5 to 0.6 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
11	0713 on 06 Dec	---	P.O., 4-Year Overhaul	---

- 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	0010 on 13 Dec	---	P.O., Bi-annual maintenance	---
F1	0003 on 01 Jan	0044 on 01 Jan	R.S., Float Trash	41 mins

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

Date	F1	F2
12/26	0.6'	---
12/27	1.0'	---
12/28	1.4'	---
12/29	3.6'	---
12/30	3.6'	---
12/31	4.8'	---
01/01	0.4'	---
01/01	0.6'	---

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - Fish Valves 1-1, 3-7, 3-9, 4-3 and 4-4 were closed on 06 December to facilitate the dewatering of the Bradford Island Fishway for the 2021/2022 winter maintenance season.
- b. STS/VBS Inspections: All STSs were removed for winter maintenance on 15-17 December. See 21BON097 MOC Early STS Removal for details.

c. Dewatering and Fish Salvages:

- **Table 4. Fish Removals from Dewatering and Salvages.**

Date	Location	Fish Salvaged	Release Site
28 Dec	DSM	No fish present.	N/A

3. RESEARCH:

- Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000 PDT) began on 01 December. Fish counts can be viewed [here](#).
- USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite, and the work is underway.
- Pacific States Marine Fisheries Commission - Smolt Monitoring: Smolt monitoring operations concluded for the season at the Bonneville SMF at 0700 on Sunday, 31 October. The system was put into bypass mode at that time. Full flow PIT tag interrogation will remain active until the 2-mile pipe is dewatered for winter.

4. FISHWAYS:

- Project biologists inspected 27-29 December.
- Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
PH1				
12/26-1/1	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.
Bradford Island, nothing to report				
Cascades Island, nothing to report				
Washington Shore				
12/27-29	PH2	Weir 37 staff gauge high, >1.1'	Gear box failure	Closed and pending repair
12/27-29	PH2	PH2 South Monolith Ent/TW Difference Low <1.0'	Single Fish Unit Ops	N/A

- 5 avian lines were cut from the B2CC avian line array on 02 September. Avian lines are installed by 10 April every year and normally remain up as a form of avian abatement through the start of winter when they may be taken down if winter maintenance activities require. These 5 lines were damaged and hanging extremely low to the water, creating a hazard for a survey vessel entering BON BRZ for a hydrosurvey on 03 Sept. These avian arrays are slated to be re-installed during the 1st or 2nd week of March 2022.

c. Adult Fishways:

- (1) The AFF was taken out of service on 21 December.
- (2) Sensor calibrations were conducted on 28 December.
- (3) SLEDs are installed at all locations.

- (4) Cascades Island and Washington Shore Fishways remain in service.
- (5) The Bradford Island Fishway was dewatered on 06 December as part of winter maintenance operations.

d. Juvenile Fishways:

- (1) The ITS remains in service (auto-chain gates 3B, 6C, & 10B only).
- (2) The hydro-cannon remains out of service.
- (3) The B2CC was closed for the season 01 September when spill season ended.
- (4) The DSM was taken out of service on 20 December.
- (5) All STSs were removed for winter maintenance on 15-17 December.

e. Lamprey Fishways:

- (1) BI, CI, and WA Shore LPS's remain out of service.
- (2) The Bradford Island Wetted Wall (BIWW) remains out of service.
- (3) The PH2 Lamprey Flume Structure (LFS) remains out of service.
- (4) The AFF lamprey trap and CI lamprey trap remains out of service.

f. Avian Monitoring: Avian counts are recorded 01 April – 31 October.

5. WATER QUALITY MONITORING:

- a. Fishway Temperatures: Temperature monitoring began on 28 February and concluded on 09 October.
- b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

6. CONSTRUCTION: Nothing to report.

7. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

8. TELETYPEs CURRENTLY IN EFFECT:

- A teletype sent out on 01 September with revisions to fall/winter spill priority list and fall/winter spill caps provided the order that projects spill for lack of load conditions. This order is to be used until further notice. Please see teletype BON R 090121 1544 for details.
- A teletype was sent out on 22 December outlining BON tailwater operations for chum spawning. This teletype replaces BON R 102721 1011 for Chum Spawning 1. Please see teletype BON R 121521 1449 for further details.
 1. Effective Friday, December 24, 2021, at 0001 hours, until further notice, the Bonneville Dam minimum tailwater elevation is 13.0 feet during all hours.
 2. The intent of this operation is to ensure sufficient tailwater elevation to protect chum redds in the Ives/Pierce Island area during the egg incubation period.
 3. The official project tailwater elevation gauge is located on the Oregon shore at river mile 144.5, 0.9 miles downstream of Powerhouse 1 and 50 feet upstream of Tanner Creek.
- A teletype was sent out on 20 December outlining Bonneville Forebay operation to support marine construction in the Bonneville Pool near the mouth of Rock Creek on the Columbia River, RM 150. The

teletype requests BPA to operate the Bonneville Forebay below a maximum of 74', soft constraint, during the following dates and times:

1. 03 Jan – 07 Jan, 0600-1800 HRS
2. 10 Jan – 14 Jan, 0600-1800 HRS
3. 17 Jan – 21 Jan, 0600-1800 HRS
4. 24 Jan – 28 Jan, 0600-1800 HRS
5. 31 Jan – 04 Feb, 0600-1800 HRS

For more details, please see teletype BON R 122021 1335.

MICHAEL ADAMS, P.E.
Operations Project Manager
Bonneville Project