

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 10** of 2022, which covers the period from **27 February to 05 March 2022.**

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 163.6 to 210.4 kcfs. Daily average powerhouse forebay elevation ranged from 73.3' to 75.1' msl. Daily average project tailwater ranged from 14.4' to 18.4' msl. Secchi disk measurements ranged from 4.0' to 7.0+'. Daily average water temperature ranged from 38 to 39°F.
- b. Daily average spill ranged from 0.6 to 23.2 kcfs.
- c. Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.
- d. Navlock 2: BON Navlock 2 was taken out of service at 0600 on 13 February for annual winter maintenance. NL2 is scheduled to return to service on 12 March.

- **Table 1. Main Unit Outages**

Unit	OOS	RTS	Reason	Duration
13	1628 on 18 Feb	---	F.O., Generator Ground	---
16	0802 on 28 Feb	---	P.O., BPA Work, RC #4 Relay Replacement	---
15	0802 on 28 Feb	---	P.O., BPA Work, RC #4 Relay Replacement	---
17	0803 on 28 Feb	---	P.O., BPA Work, RC #4 Relay Replacement	---
18	0803 on 28 Feb	---	P.O., BPA Work, RC #4 Relay Replacement	---
14	1343 on 28 Feb	0835 on 01 March	F.O., BPA Forced Unload of Line #3 Due to Open CT Circuit on Line #3	18 hours, 52 mins
11	1344 on 28 Feb	0833 on 01 March	F.O., BPA Forced Unload of Line #3 Due to Open CT Circuit on Line #3	18 hours, 49 mins
12	1344 on 28 Feb	0833 on 01 March	F.O., BPA Forced Unload of Line #3 Due to Open CT Circuit on Line #3	18 hours, 49 mins
11	2129 on 02 March	1001 on 03 March	F.O., STS 11C Overamp Alarm/Breaker Trip	12 hours, 29 mins

- e. 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/Extended Outage	---

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

Date	F1	F2
02/27	0.8'	---
02/28	0.1'	---
03/01	0.8'	---
03/02	0.8'	---
03/03	0.9'	---
03/04	1.0'	---
03/05	1.0'	---

2. MAINTENANCE ACTIVITIES:

- Auxiliary Water System Closures: Nothing to report.
- STS/VBS Inspections: Nothing to report.
- Dewatering and Fish Salvages: On 01 March, Project Biologists entered the U13 Scroll Case and Draft Tube for fish salvage as part of dewatering operations. No fish were found in either area. U13 was Forced OOS due to a generator ground on 18 February.

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: Sample collections at the 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 sticks. Kelt observations will be monitored by direct observation from Smolt Monitoring Personnel and video recording by the Fisheries Field Unit (FFU) and SMP at least until the Kelt Trigger (20 total steelhead kelt including two kelt on two consecutive days) is reached. No fallbacks were observed this week. No fish collections for research purposes were conducted this week. More details can be found on the [FPC web page](#).

4. FISHWAYS:

- Project biologists inspected on 27 February to 05 March.

b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
02/27 – 03/05	BON	Unit Priority	U13 F.O., Generator Ground	Repairs in Process
03/03	BON	Unit Priority	U11 F.O., STS Failure	Repairs Made, Unit RTS on 03/03
02/28	BON	Unit Priority	U11,12,14 F.O. Due to Open CT Circuit on Line #3	Line #3 Unloaded Until Repairs Made
PH1				
02/27 – 03/05	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.
02/27 – 03/05	PH1CC	FG 2-19 Stuck in the Mostly Closed Position, Should Be Open	Mechanically Bound	W.O.
02/27	PH1CC	S. Ent. Diff. <1.0'	Unknown	N/A
03/01,03-05	PH1CC	N. Ent. Diff. >2.0'	PLC Sensor Malfunction	Ops/Electricians Notified
Bradford Island				
02/27,28	BI Fishway	FV 3-7 Low	Unknown	Ops Notified
02/28	B-Branch Entrance	North Entrance Gate Closed, Should Be Open	Unknown	Ops Notified
02/28	B-Branch	FG 3-21 Open, Should Be Closed	Limiterorque Settings	Ops Notified
02/28	B-Branch	FG 3-31 Open, Should Be Closed	Limiterorque Settings	Ops Notified
02/28	B-Branch	FG 3-32 Open, Should Be Closed	Limiterorque Settings	Ops Notified
03/24	B-Branch	FG 3-24 Closed, Should Be Open	Unknown	Ops Notified
03/02	A-Branch	Weir Staff Gauge >1.1'	Unknown	N/A
Cascades Island				
02/27 – 03/05	CI Fishway	FG 6-11 Mechanically Bound in the Closed Position, Should Be Open	Mechanically Bound	W.O.
Washington Shore				
02/27 – 03/05	PH2	Weir 37 Staff Gauge High, >1.1'	Gear box failure	Closed and pending repair
03/05	PH2	Weir 38 Staff Gauge High, >1.1'	N/A	N/A
02/27 – 03/03	PH2	PH2 SUE Ent/TW Diff Low, <1.0'	Single Fish Unit Ops	N/A
02/28 – 03/05	PH2	PH2 SDE Ent/TW Diff Low, <1.0'	Single Fish Unit Ops	N/A
02/27,28	PH2	PH2 NUE Ent/TW Diff Low, <1.0'	Single Fish Unit Ops	N/A
02/27	PH2	PH2 NDE Ent/TW Diff Low, <1.0'	Single Fish Unit Ops	N/A
03/01-03	WA Shore	SMF Outfall Hydro-Cannon OOS	Broken Water Supply Line	W.O.

- 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, 2021. These avian arrays are slated to be re-installed during March 2022.
- PH1 Collection Channel diffuser FG 2-19 was found mechanically bound in the mostly closed position on 02/24 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).
- Please see 22BON003 Unit 11 Outage and STS Failure for further details on the U11 F.O. <http://pweb.crohms.org/tmt/documents/FPOM/2010/>
- Please see 22BON001 MFR U11, 12, and 14 Outage for further details on the BPA forced unload of Line #3. <http://pweb.crohms.org/tmt/documents/FPOM/2010/>

c. Adult Fishways:

- (1) The AFF was taken out of service on 21 December.
- (2) Sensor calibrations were conducted on 02 March.
- (3) SLEDs are installed at all locations.
- (4) Bradford Island, Cascades Island, and Washington Shore Fishways are in service.

d. Juvenile Fishways:

- (1) The ITS remains in service (auto-chain gates 3B, 6C, & 10B only).
- (2) The hydro-cannon was placed out of service at 1523 on 01 March when the water supply line was found broken. It returned to service at 1517 on 03 March.
- (3) The B2CC was opened on 28 February through the morning of 01 March during spill operations while all units at PH2 were OOS. The B2CC was opened again at 2300 on 01 March until 0600 on 05 March due to spill operations requested by BPA.
- (4) The DSM remains in service.
- (5) STSs remain in service.

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 concluded for the season on 09 October 2021.

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 was 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 03 February 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 74.0', soft constraint, during the following dates and times:
 1. 07 Feb – 11 Feb, 0600-1800 HRS
 2. 14 Feb – 18 Feb, 0600-1800 HRS
 3. 21 Feb – 25 Feb, 0600-1800 HRS

For more details, please see teletype BON R 020322 1120.

- A teletype was distributed on 01 March detailing a “no spill operation” for Bonneville Lock & Dam. This teletype requests BPA to not spill at Bonneville for the following dates and times:
 1. 14 March – 17 March, 0600 – 1900 HRS
 2. 21 March – 24 March, 0600 – 1900 HRS
 3. 28 March – 31 March, 0600 – 1900 HRS
 4. 04 April – 07 April, 0600 – 1900 HRS

If spill is necessary during these times, the Corps requests that BPA makes best efforts to shape spill outside the dates and times above. This request is to provide safe working conditions for USGS conducting fish tissue sample study in the Main Dam Forebay BRZ. The PH2 Corner Collector (B2CC) will continue to operate as described in the 2021 Fish Passage Plan, see section 2.3.2.5.V. For further details, please see teletype BON R 030122 0834.

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