

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 09 of 2022, which covers the period from 20 to 26 February 2022.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 160.4 to 196.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.4' to 74.2' msl. Daily average project tailwater ranged from 14.3' to 16.5' msl. Secchi disk measurements ranged from 5.0' to 7.0+'. Daily average water temperature ranged from 38 to 39°F.
- b. Daily average spill remained at 0.6 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	---
17	0216 on 22 Feb	1502 on 22 Feb	P.O., QTCl	12 hours, 46 mins
18	0940 on 23 Feb	1353 on 23 Feb	P.O., STS Install	4 hours, 13 mins
16	1410 on 23 Feb	1646 on 23 Feb	P.O., STS Install	2 hours, 36 mins
15	0701 on 24 Feb	0945 on 24 Feb	P.O., STS Install	2 hours, 44 mins
14	0951 on 24 Feb	1223 on 24 Feb	P.O., STS Install	2 hours, 32 mins
12	0701 on 25 Feb	0953 on 25 Feb	P.O., STS Install	2 hours, 52 mins
11	0957 on 25 Feb	1401 on 25 Feb	P.O., STS Install	4 hours, 4 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
02/20	0.2'	---
02/21	0.3'	---
02/22	0.1'	---
02/23	0.3'	---
02/24	0.3'	---
02/25	0.3'	---
02/26	0.4'	---

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures:
 - Fish Valves 4-3 and 4-4 were opened on 24 February when Bradford Island Fishway’s B-Branch was brought to tailwater elevation.
 - Fish Valves 1-1, 3-7, and 3-9 were opened and placed back into auto on 25 February when Bradford Island Fishway was returned to full service.
- b. STS/VBS Inspections: STS installation was complete on 25 February.
- c. Dewatering and Fish Salvages: Nothing to report.
- d. ROV Inspection: An ROV inspection of the Bradford Island Fishway Exit and sill apron was conducted on 24 February with Project Maintenance Crews and Project Fisheries. Suspensions were confirmed that an overabundance of silt, debris, and vegetation has accumulated in the forebay at the fishway exit. This could potentially be discouraging the continuation upstream of some migratory fish. Discussions are ongoing regarding dredging operations in closer proximity to the fishway exit.

3. RESEARCH:

- a. Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000 PDT) began on 01 December. 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 the Bonneville SMF at 0700 on Sunday, 31 October. The system was put into bypass mode at that time.

4. FISHWAYS:

- a. Project biologists inspected on 22-24 February.

b. Fish Passage Plan observations:

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

Date	Location	FPP Violation	Cause	Response
PH1				
02/20-26	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.
Bradford Island: Nothing to Report				
Cascades Island: Nothing to Report				
2/22,23,24	CI Fishway	FG 6-11 Closed, Should Be Open	Mechanically Bound	W.O.
Washington Shore				
02/22,23,24	PH2	Weir 37 Staff Gauge High, >1.1'	Gear box failure	Closed and pending repair
02/22,23,24	PH2	Weir 38 Staff Gauge High, >1.1'	N/A	N/A
02/22,23,24	PH2	PH2 SDE Ent/TW Diff Low, <1.0'	Single Fish Unit Ops	N/A
02/22,23,24	PH2	PH2 SUE Ent/TW Diff Low, <1.0'	Single Fish Unit Ops	N/A
2/22,23	PH2	PH2 NDE Ent/TW Diff 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 March 2022.

c. Adult Fishways:

- (1) The AFF was taken out of service on 21 December.
- (2) Sensor calibrations were conducted on 24 February.
- (3) SLEDs are installed at all locations.
- (4) Cascades Island and Washington Shore Fishways remain in service.
- (5) The Bradford Island Fishway was placed back in service on Friday 25 February.

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 on 01 March when the water supply line was found broken. The hydro-cannon will remain inoperable until repairs are made and the return to service date is to be determined.
- (3) The B2CC remains closed for the winter maintenance period.
- (4) The DSM returned to service and became fully functional on 25 February when the STS installations were complete.

(5) STS installation was completed on 25 February.

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 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 HRSFor 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. For further details, please see teletype BON R 030122 0834.

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