

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 04** of 2022, which covers the period from **16 to 22 January 2022**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 191.6 to 211.7 kcfs. Daily average powerhouse forebay elevation ranged from 73.0' to 73.6' msl. Daily average project tailwater ranged from 16.6' to 18.0' 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 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 | --- |
| 1 | 0001 on 10 Jan | --- | P.O., Annual Overhaul/PT Replacement | --- |
| 2 | 0001 on 10 Jan | --- | P.O., PT Replacement | --- |
| 18 | 0812 on 18 Jan | 0858 on 18 Jan | P.O., Trash Raking | 46 mins |
| 10 | 1000 on 18 Jan | 1345 on 18 Jan | P.O., Trash Raking | 3 hours, 45 mins |
| 9 | 1351 on 18 Jan | 1631 on 18 Jan | P.O., Trash Raking | 2 hours, 40 mins |
| 9 | 0742 on 19 Jan | 0843 on 19 Jan | P.O., Trash Raking | 1 hour, 1 min |
| 3 | 0839 on 19 Jan | 1345 on 19 Jan | P.O., Trash Raking | 5 hours, 6 mins |
| 6 | 1349 on 19 Jan | 1643 on 19 Jan | P.O., Trash Raking | 2 hours, 54 mins |
| 6 | 0847 on 20 Jan | 1322 on 20 Jan | P.O., Trash Raking | 4 hours, 35 mins |
| 5 | 1324 on 20 Jan | 1627 on 20 Jan | P.O., Trash Raking | 3 hours, 3 mins |

- 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 | 0315 on 17 Jan | 0402 on 09 Jan | R.S., Float Trash | 47 mins |
| F1 | 1747 on 18 Jan | 2202 on 18 Jan | R.S., Float Trash | 4 hours, 15 mins |

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

| Date | F1 | F2 |
|-------|-------|-----|
| 01/16 | 2.2' | --- |
| 01/17 | 0.4' | --- |
| 01/18 | 18.4' | --- |
| 01/18 | 0.1' | --- |
| 01/19 | 0.2' | --- |
| 01/20 | 0.3' | --- |
| 01/21 | 0.4' | --- |
| 01/22 | 0.4' | --- |

2. MAINTENANCE ACTIVITIES:

- 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.
- STS/VBS Inspections: All STSs were removed for winter maintenance on 15-17 December.
- Dewatering and Fish Salvages: Nothing to report.

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.

4. FISHWAYS:

- Project biologists inspected 18-20 January.
- Fish Passage Plan observations:

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

| Date | Location | FPP Violation | Cause | Response |
|------------------------------------|----------|---|---|---------------------------|
| PH1 | | | | |
| 01/16-22 | 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 | | | | |
| 01/18,19,20 | PH2 | Weir 37 Staff Gauge High, >1.1' | Gear box failure | Closed and pending repair |
| 1/19 | PH2 | Weir 38 Staff Gauge High, >1.1' | N/A | N/A |
| 1/18,19,20 | PH2 | PH2 All Monolith Ent/TW Differential 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 20 January.
- (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 opened to pass debris from 0837 to 1554 on 18 January.
- (4) The DSM was taken out of service on 20 December. The PH2 Flume extending from the DSM at PH2 to the SMF was inspected by Project Biologists on 18 January. No fishway obstructions or significant changes in structure were observed.
- (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, 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 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.

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