

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 17 of 2016, which covers the period from 24 to 30 April.

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 296.1 to 350.8 kcfs. Daily average powerhouse forebay elevation ranged from 73.6 to 75.1' msl. Daily average project tailwater ranged from 22.1 to 25.4' msl. Secchi disk measurements ranged from ~3.5 to 5' all week. Daily average water temperature remained at 53 °F.

b. Spring spill began on 10 April. Daily average spill ranged from 111.3 to 164.5 kcfs.

c. Unit Operation. PH2 remains the priority powerhouse. Main unit draw downs are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

| Unit | OOS Date | RTS Date | Reason |
|------|------------------|----------|--|
| 5 | 0000 on 14 Apr | --- | Cubicle measurements, 230 kV disconnect broken |
| 6 | 0000 on 14 Apr | --- | |
| 7 | 0103 on 22 Feb | --- | Annual, bank 7/8 outage, main unit breaker replacement, raking trash |
| 8 | 0103 on 22 Feb | --- | |
| 12 | 0700 on 04 April | --- | Wicket Gate seal replacement |

d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder.

(1) Table 2. Fish unit drawdowns, in feet.

| Date | F1 | F2 |
|------|-----|-----|
| 4/24 | 0.4 | 0.2 |
| 4/25 | 1.4 | 1.4 |
| 4/26 | 0.3 | 0.4 |
| 4/27 | 0.1 | 0.1 |
| 4/28 | 0.4 | 0.6 |
| 4/29 | 0.5 | 0.6 |
| 4/30 | 0.7 | 0.8 |

2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures

(1) FV3-7 was closed for cleaning from 1012 to 1130 on 25 April.

- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages. None.

3. RESEARCH:

- a. CRITFC – AFF. Adult sampling in the AFF began on 15 April.
- b. CRITFC – Sea lion hazing. Hazing by boat began 07 March.
- c. Fisheries Field Unit – Pinniped observation. Observations began on 04 January.
- d. NOAA – Sort by code. Sampling as part of a NWW transportation study began the week of 24 April.
- e. Normandeau – Fish counting. Video counting ended and visual counting began on 01 April.
- f. PSMFC – Smolt Monitoring Program. SbyC is active for USFWS Fish Health Center and NOAA. 200 yearling Chinook and steelhead were examined for GBT with no symptoms found. Fallbacks recorded crossing the separator bars: 34 steelhead, 2 salmon, and 7 unknown salmonids. More details can be found on the [FPC web page](#).
- g. USDA – Avian and pinniped hazing. Dam-based hazing for pinnipeds began on 08 March, for birds on 1 April.
- h. USFWS – Fish Health Center. Sort by code collection of juvenile hatchery fish began the week of 09 April.
- i. UW/NOAA – Fish condition. Juvenile sampling at the SMF for a study of SAR and delayed mortality began 27 April.

4. FISHWAYS:

- a. Project biologists inspected 24 – 30 April.
- b. Fish passage plan observations.
 - (1) Table 3. FPP out of criteria items.

| Date | Location | FPP Items | Cause | Response |
|--|----------|------------------------|--------------------|----------------|
| BRADFORD ISLAND | | | | |
| 4/27,29-30 | A-branch | Water over weir > 1.1' | FV3-7 conduit leak | Repair in 2017 |
| CASCADES ISLAND – Nothing to report | | | | |
| WASHINGTON SHORE | | | | |
| 4/25 | Weir 38 | Water over weir < 0.9' | Unknown | None |
| 4/24-30 | PH2 | Diffuser A2 closed | See 4.b.2 below | None |

(2) PH2CC diffuser A2 was unable to be repaired during winter maintenance 2014/15 and remains closed. It should be open when tailwater is above 13.0' msl. The gate for diffuser B5 was removed for repairs and therefore cannot be closed. It should be closed when tailwater is below 12.0' msl or above 28.0' msl.

c. Adult Fishways.

(1) The AFF remains in service.

(2) Fishway instrument calibration was checked on 28 April.

(3) Eight of 12 floating orifice gates (FOGs) are installed; the 4 middle slots have bulkheads in place. FOG sea lion bars are installed. Plywood sea lion barriers were installed on top of all FOGs on 11 February to prevent sea lions from jumping into the PH2CC.

(4) All SLEDs are installed.

d. Juvenile Fishways.

(1) The ITS remains in service.

(2) The hydro-cannon is on.

(3) The B2CC remains in service.

(4) The DSM remains in service.

e. Lamprey Fishways.

(1) The Bradford Island LPS, WA AWS LPS, and the Cascade Island LPS remain in service.

(2) Due to needed repairs, the NDE LFS/LPS will remain out of service for the 2016 season. Repairs are currently being coordinated.

f. Avian Monitoring. Bird counts are made between 01 April and 31 October.

(1) Table 5. Counts of tailrace foraging piscivorous birds.

| Date | Gulls | Cormorants | Terns | Wh. Pelicans | Grebes |
|------|-------|------------|-------|--------------|--------|
| 4/24 | 16 | 0 | 0 | 0 | 0 |
| 4/25 | 27 | 0 | 0 | 0 | 0 |
| 4/26 | 24 | 0 | 0 | 0 | 0 |
| 4/27 | 35 | 0 | 0 | 0 | 0 |
| 4/28 | 26 | 0 | 0 | 0 | 0 |
| 4/29 | 10 | 0 | 0 | 0 | 0 |
| 4/30 | 11 | 0 | 0 | 0 | 0 |

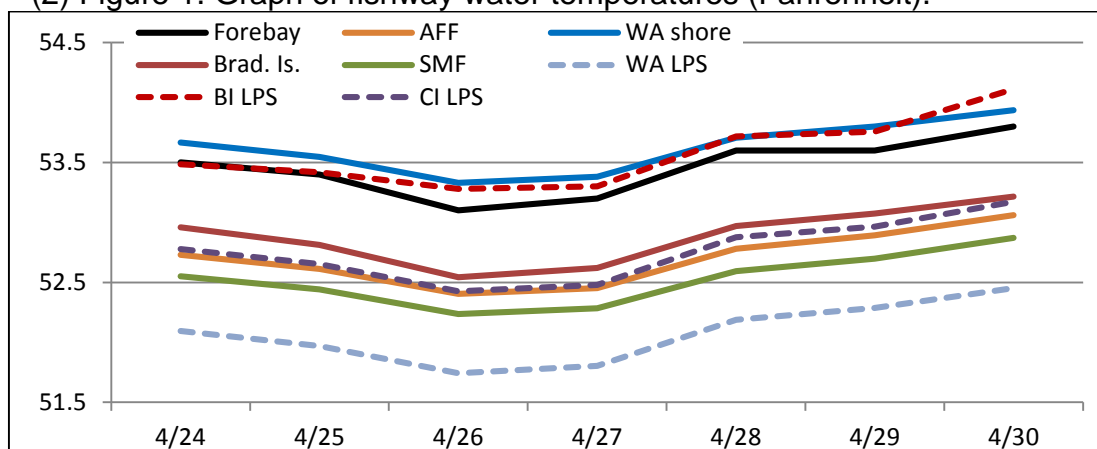
5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

(1) Table 4. Average daily fishway water temperatures (Fahrenheit).

| Date | Fishways | | | | | Lamprey | | |
|------|----------|-----------|----------|------|------|---------|--------|--------|
| | Forebay | Brad. Is. | WA shore | AFF | SMF | BI LPS | WA LPS | CI LPS |
| 4/24 | 53.5 | 53.0 | 52.6 | 52.7 | 53.7 | 53.5 | 52.1 | 52.8 |
| 4/25 | 53.4 | 52.8 | 52.4 | 52.6 | 53.5 | 53.4 | 52.0 | 52.7 |
| 4/26 | 53.1 | 52.5 | 52.2 | 52.4 | 53.3 | 53.3 | 51.7 | 52.4 |
| 4/27 | 53.2 | 52.6 | 52.3 | 52.5 | 53.4 | 53.3 | 51.8 | 52.5 |
| 4/28 | 53.6 | 53.0 | 52.6 | 52.8 | 53.7 | 53.7 | 52.2 | 52.9 |
| 4/29 | 53.6 | 53.1 | 52.7 | 52.9 | 53.8 | 53.8 | 52.3 | 53.0 |
| 4/30 | 53.8 | 53.2 | 52.9 | 53.1 | 53.9 | 54.1 | 52.5 | 53.2 |

(2) Figure 1. Graph of fishway water temperatures (Fahrenheit).



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. A teletype sent on 23 April updates the spill caps and lack of load conditions to be used from 0000 on 1 April until further notice.
- b. A teletype sent on 21 April updates Columbia River Flood Risk Management (FRM) through the end of April.
- c. A teletype sent on 7 April states effective 10 April to 31 August, provide spring and summer spill per the 2015 Fish Operations Plan. A schedule and specific operations are provided. The B2CC will operate concurrent with spill.
- d. A teletype sent on 26 April requests that from 1400 to 1800 on 05 May, operate BON forebay from 73.0 – 75.5', hard constraint, and 74.0 to 75.5', soft constraint. This operation is so the Hood River Yacht Club can remove boats.

JERRY A. CARROLL
Operations Manager
Bonneville Project