

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 41 of 2015, which covers the period from 04 – 10 October 2015.

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 83.0 to 110.1 kcfs. Daily average powerhouse forebay elevation ranged from 75.5 to 76.0 msl. Daily average project tailwater ranged from 8.5 to 10.1 msl. Secchi disk measurements remained at 7.0' or greater. Daily average water temperature remained at 65°F this week.

b. Summer spill ended on 31 August. Daily average spill ranged from 0.6 to 1.2 kcfs.

(1) Spill bay 1 was closed at 1229 on 08 October in preparation for the Cascades Island dewatering on 13 October. See [15BON06](#) and section 4.f.4, below.

c. Unit Operation. Powerhouse two remains the priority powerhouse. Split flow operations per FPP 2.1.2.1 came into effect 1 September and ended 24 September. Main unit draw downs are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

| Unit | OOS Date | RTS Date | Reason |
|------|----------------|---------------|--------------------------------|
| 3 | 1857 on 6 Oct | 1207 on 7 Oct | Turbine bearing temp indicator |
| 11 | 1003 on 31 Aug | --- | Kaplan pipe leak, T11 outage |
| 12 | 0001 on 1 Sept | --- | T11 outage |
| 13 | 0001 on 1 Sept | --- | T11 outage |
| 14 | 0001 on 1 Sept | --- | T11 outage |
| 16 | 0653 on 7 Oct | 1140 on 7 Oct | STS repair |

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 |
|------|-----|-----|
| 10/4 | 0.2 | 0.2 |
| 10/5 | 0.2 | 0.3 |
| 10/6 | --- | --- |
| 10/7 | 0.6 | 0.7 |
| 10/8 | 0.8 | 0.8 |

| | | |
|-------|-----|-----|
| 10/9 | 1.0 | 0.9 |
| 10/10 | 1.0 | 1.0 |

2. ACTIVITIES:

a. Auxiliary Water System Closures.

(1) FV1-1 was closed for cleaning from 1455 to 1505 on 8 October.

b. STS/VBS inspections. Table 2a.

| Unit | Date | Run Hours | Comments |
|------|------|-----------|------------------------------|
| 11 | 10/5 | 7 | OK |
| 12 | 10/5 | 8 | OK |
| 13 | 10/5 | 0 | OK |
| 14 | 10/5 | 8 | OK |
| 15 | 10/5 | 636 | OK |
| 16 | 10/5 | 647 | Seams on belt repaired 7 Oct |
| 17 | 10/5 | 646 | OK |
| 18 | 10/5 | 646 | OK |

c. Dewatering and Fish Salvages. None

3. RESEARCH:

a. CRITFC – AFF. Adult salmonids sampling continues.

b. Normandeau – Fish Counting. Visual counting continues.

c. PSMFC – Smolt Monitoring Program. Juvenile fish condition and index monitoring continues. No research fish were collected this week. Gas Bubble Trauma (GBT) evaluations have concluded for the season. Fallbacks recorded crossing the separator bars this week: 3 salmon. More details can be found on the [FPC web page](#).

4. FISHWAYS:

a. Project biologists inspected 04 – 10 October.

b. Fish passage plan observations.

(1) Table 3. FPP out of criteria items.

| Date | Location | FPP Items | Cause | Response |
|------------------------------------|----------|------------------------|----------------------------|-----------|
| BRADFORD ISLAND – See below | | | | |
| 10/5,7 | A-branch | Water over weir > 1.1' | Suspected conduit leak | None |
| 10/4-5,9-10 | B-branch | N entrance gate closed | Gate motor waiting install | See 4.b.4 |
| CASCADES ISLAND – See below | | | | |

| | | | | |
|-------------------------------------|-------------|--------------------------|-----------|--------------|
| 10/5-8 | CI entrance | Entr differential < 1.0' | FV5-4 OOS | See 4.b.6 |
| WASHINGTON SHORE – See below | | | | |
| 10/5-6 | Weir 37 | Water over weir < 0.9' | Unknown | Ops adjusted |

(2) WG-1, one of the south PH1CC entrances, experienced a gate failure on 17 November. Divers recovered the gate's picking beam on 04 August. Repairs are ongoing. The gate is estimated to return to service during the 2015/16 winter maint.

(3) A-branch diffuser FG3-3 is mechanically bound. Repairs are not possible until A-branch is dewatered below tailwater during the 2015/16 winter maintenance period.

(4) B-branch gate 4N, adjacent to the fish entrance, had a bad motor. It was removed on 27 July and has been repaired. It's waiting reinstallation during the 2015/16 winter maintenance. 4N is closed and 4S is open in its place. Both gates should be open below tailwaters of 9.0 msl.

(5) PH2CC diffuser A2 was unable to be repaired during winter maintenance and remains closed. The gate for diffuser B5 was removed for repairs and therefore cannot be closed.

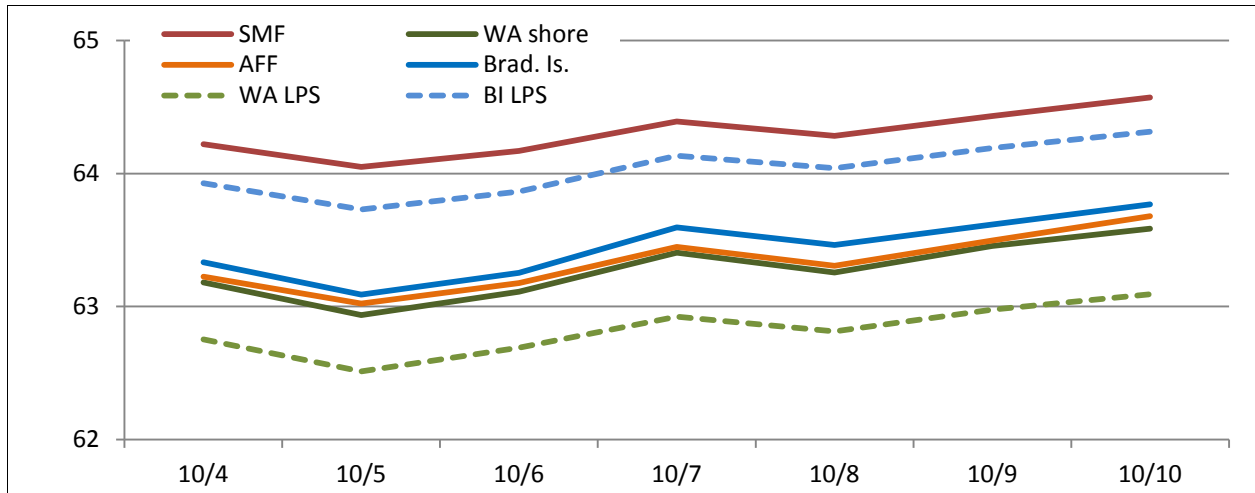
(6) FV5-4 was discovered to have mechanical problems on 21 April. It is currently closed and in manual. Diffusers FG3-9 through 15 are being manipulated in manual to compensate. Repairs have been coordinated for October. See [15BON06](#).

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

(1) Table 4. Daily Average Temperature in Degree Fahrenheit (°F).

| Date | Fishways | | | | Lamprey | |
|-------|-----------|----------|------|------|---------|--------|
| | Brad. Is. | WA shore | AFF | SMF | BI LPS | WA LPS |
| 10/4 | 63.3 | 63.2 | 63.2 | 64.2 | 63.9 | 62.8 |
| 10/5 | 63.1 | 62.9 | 63.0 | 64.0 | 63.7 | 62.5 |
| 10/6 | 63.3 | 63.1 | 63.2 | 64.2 | 63.9 | 62.7 |
| 10/7 | 63.6 | 63.4 | 63.4 | 64.4 | 64.1 | 62.9 |
| 10/8 | 63.5 | 63.3 | 63.3 | 64.3 | 64.0 | 62.8 |
| 10/9 | 63.6 | 63.5 | 63.5 | 64.4 | 64.2 | 63.0 |
| 10/10 | 63.8 | 63.6 | 63.7 | 64.6 | 64.3 | 63.1 |

(2) Chart 1. Daily Average Temperature in Degree Fahrenheit (°F).



d. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

e. 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 |
|-------|-------|------------|-------|--------------|--------|
| 10/4 | 6 | 7 | 0 | 0 | 0 |
| 10/5 | 21 | 7 | 0 | 0 | 0 |
| 10/6 | 33 | 19 | 0 | 0 | 0 |
| 10/7 | 15 | 14 | 0 | 0 | 0 |
| 10/8 | 23 | 6 | 0 | 0 | 0 |
| 10/9 | --- | --- | --- | --- | --- |
| 10/10 | 12 | 15 | 0 | 0 | 0 |

f. Adult Fishways.

(1) Calibration occurred on 9 October.

(2) 11 of 12 floating orifice gates (FOGs) are installed; one gate is out for maintenance. FOG SLEDs are installed.

(3) All SLEDs are removed.

(4) Cascades Island (CI) was placed in orifice flow on 8 October to prepare for the 13 October dewatering (see [15BON06](#)). The UMT bulkhead was placed at ~1430 on 8 October. It was removed at 1220 on 9 October due to concerns for fish holding at the top of the CI ladder. The upper ladder was restored to normal operating conditions while attraction flow at the entrance, including spill bay 1, remained OOS.

g. Juvenile Fishways.

- (1) The ITS remains open.
- (2) The hydro-cannon remains in service.
- (3) The B2CC remains closed.
- (4) The DSM remains in service.

h. Lamprey Fishways.

- (1) The NDE LPS was shut down at 0830 on 31 August due to low passage numbers.
- (2) The Cascades Island LPS was shut down on 30 September due to pump damage paired with low passage numbers.
- (3) The Bradford Island LPS and the WA shore AWS LPS remain in service.

5. CONSTRUCTION: Nothing to report.

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

7. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent on 30 March updates the spill caps and lack of load conditions to be used from 0000 on 01 April until further notice.

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