

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 37 of 2016, which covers the period from 04 to 10 September.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 76.7 to 96.6 kcfs. Daily average powerhouse forebay elevation ranged from 75.4' to 75.8' msl. Daily average project tailwater ranged from 7.1' to 9.3' msl. Secchi disk measurements remained at 7' or greater. Daily average water temperature ranged from 68 ° to 71° F this week.
- b. Spill bays 01 and 18 are open 0.5 ft to provide attraction flow for Cascades Is. and B-branch fishways, respectively. Daily average spill ranged from 1.3 to 1.7 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 |
|------|-----------------|----------|--|
| 7 | 0103 on 22 Feb | --- | Annual, bank 7/8 outage, main unit breaker replacement |
| 8 | 0103 on 22 Feb | --- | |
| 15 | 1013 on 06 Sept | --- | Four year maintenance, T-12 outage |
| 16 | 0001 on 07 Sept | --- | Four year maintenance, T-12 outage |
| 17 | 0001 on 07 Sept | --- | Four year maintenance, T-12 outage |
| 18 | 0657 on 06 Sept | --- | Four year maintenance, T-12 outage |

- 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 |
|------|-----|-----|
| 9/4 | 0.8 | 0.1 |
| 9/5 | 0.6 | -- |
| 9/6 | 0.1 | 0.1 |
| 9/7 | 0.8 | 0.3 |
| 9/8 | 0.7 | -- |
| 9/9 | 0.5 | -- |
| 9/10 | 0.2 | 0.4 |

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. None.
- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages.
 - (1) On 07 September, Project Biologists recovered approximately 80 White Sturgeon and 6 Pacific Lamprey from the Unit 18 draft tube. Of the Sturgeon removed, several were of lengths greater than 5-6'. All fishes were released into the forebay in good condition.
 - (2) On 07 September, Project Biologists recovered 1 White Sturgeon and 3 Pacific Lamprey from the Unit 15 draft tube. All fishes were released into the forebay in good condition.

3. RESEARCH:

- a. CRITFC – AFF. Adult sampling in the AFF continues. High temperature sampling occurred 27 July – 3 Sept.
- b. Normandeau – Fish counting. Visual counting continues.
- c. PSMFC – Smolt Monitoring Program. High temperature sampling protocols occurred 27 July – 4 September. No research fish were collected this week. GBT monitoring has concluded for the season. Truck transport releases from the Snake basin began 17 August. Fallbacks were recorded crossing the separator bars this week: three salmon. More details can be found on the [FPC web page](#).
- d. WDFW – Tule counting. Tule counting continues.
- e. USFWS – Fish Health Center. Select lamprey mortalities are being held for analysis.

4. FISHWAYS:

- a. Project biologists inspected 04 – 10 September.
- b. Fish passage plan observations.

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

| Date | Location | FPP Items | Cause | Response |
|--|----------|------------------------|-------------------------------|-----------------|
| 9/7 | | No bio inspection | Fish salvages, staff shortage | |
| BRADFORD ISLAND | | | | |
| 9/4-6,10 | A-branch | Water over weir > 1.1' | FV3-7 conduit leak suspected | None |
| 9/5-10 | FG3-3 | Diffuser open | Needs repair | See 4.b.3 below |
| CASCADES ISLAND – Nothing to report | | | | |
| WASHINGTON SHORE | | | | |
| 9/4,6,8-9 | Weir 37 | Water over weir > 1.1' | Blow-off valve out | Parts on order |
| 9/8 | Weir 38 | Water over weir > 1.1' | Unknown | None |
| ongoing | PH2 | Diffuser B5 open | 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.

(3) FG3-3 is currently open and unplugged. The diffuser cannot be repaired until the north PH1CC area is dewatered. The next opportunity will be the 2017-18 winter maintenance period. It should be closed below tailwaters of 8.2' msl.

c. Adult Fishways.

(1) The AFF remains in service.

(2) Sensor calibration check did not occur last week.

(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. Three of four PH2 SLEDS were installed on 01 September due a sea lion discovered in the PH2CC (see 16BON109). The NUE SLED was lowered on 03 September. The CI SLED remained installed due to a lack of crane availability. PH1 SLEDs were installed on 06 September.

d. Juvenile Fishways.

(1) The ITS remains in service.

(2) The hydro-cannon remains on.

(3) The B2CC was closed for the season on 2400 on 31 August. It was opened

from 0800 to 1100 on 09 Sept to flush debris.

- (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 coordinated for November 2016 (see [16BON11](#)).

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

- (1) Table 4. Counts of tailrace foraging piscivorous birds.

| Date | Gulls | Cormorants | Terns | Wh. Pelicans | Grebes |
|------|-------|------------|-------|--------------|--------|
| 9/4 | 0 | 7 | 0 | 0 | 0 |
| 9/5 | 19 | 10 | 0 | 0 | 0 |
| 9/6 | 0 | 6 | 0 | 0 | 0 |
| 9/7 | --- | --- | --- | --- | --- |
| 9/8 | 2 | 10 | 0 | 0 | 0 |
| 9/9 | 3 | 18 | 0 | 0 | 0 |
| 9/10 | 16 | 1 | 0 | 0 | 0 |

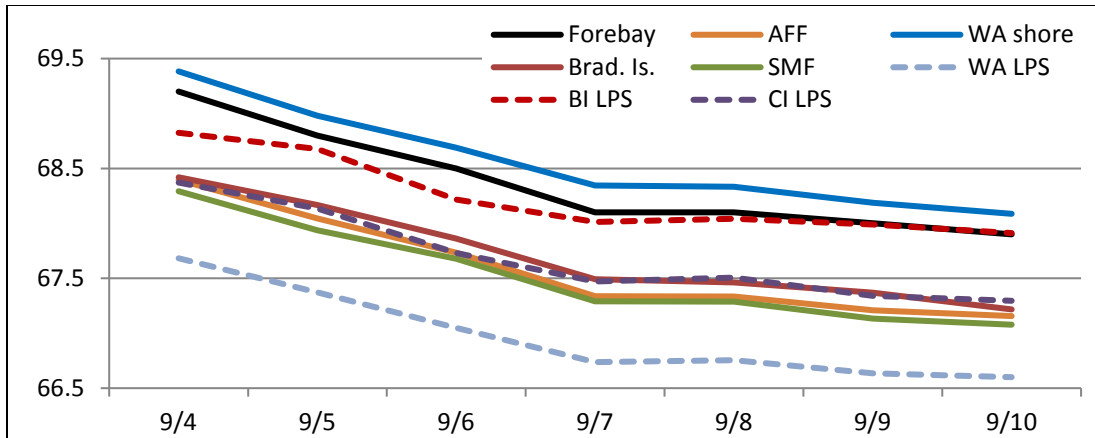
5. WATER QUALITY MONITORING:

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

- (1) Table 5. Average daily fishway water temperatures (Fahrenheit).

| Date | Forebay | Fishways | | | | Lamprey | | |
|------|---------|-----------|----------|------|------|---------|--------|--------|
| | | Brad. Is. | WA shore | AFF | SMF | BI LPS | WA LPS | CI LPS |
| 9/4 | 69.2 | 68.4 | 68.3 | 68.4 | 69.4 | 68.8 | 67.7 | 68.4 |
| 9/5 | 68.8 | 68.2 | 67.9 | 68.0 | 69.0 | 68.7 | 67.4 | 68.1 |
| 9/6 | 68.5 | 67.9 | 67.7 | 67.7 | 68.7 | 68.2 | 67.0 | 67.7 |
| 9/7 | 68.1 | 67.5 | 67.3 | 67.3 | 68.3 | 68.0 | 66.7 | 67.5 |
| 9/8 | 68.1 | 67.5 | 67.3 | 67.3 | 68.3 | 68.0 | 66.8 | 67.5 |
| 9/9 | 68.0 | 67.4 | 67.1 | 67.2 | 68.2 | 68.0 | 66.6 | 67.3 |
| 9/10 | 67.9 | 67.2 | 67.1 | 67.2 | 68.1 | 67.9 | 66.6 | 67.3 |

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



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

6. CONSTRUCTION:

- a. EAL (environmentally acceptable lubricant) install in Unit 15 will occur starting 9 Sept (see [16BON10](#)) in conjunction with the T12 outage; the unit will be dewatered. EAL monitoring equipment was installed on 1 – 5 Aug.
- b. Flow control plates as part of the FGE modifications are scheduled to be installed in units 16 – 18 during the T12 outage starting 7 Sept. VBS plates will also be installed. Installation for units 11 – 14 will occur during winter maintenance.

7. **HAZMAT, SPILLS AND CLEANUP:** Nothing to report.

8. TELETYPE CURRENTLY IN EFFECT:

- a. A teletype sent on 24 August requests that outflows from BON (and TDA) be maintained as low and constant as possible 0430- 1100 on 05 September for a cross channel swim at Hood River. Request flows not exceed 150 kcfs.
- b. A teletype sent on 26 August updates one sent on 11 August that requests that BON pool operate within a 1.5' band, hard constraint, from 22 August – 16 September for the periods and times listed within for fall treaty fishing.
- c. A teletype sent on 30 August provides wintertime spill and lack of load conditions to be used from 01 September 2016 through 31 March 2017.
- d. A teletype sent on 8 September states that from 1600 – 2000 on 8 September, BON may close spill bay 18 and FV4-3 and FV4-4 for a hydrosurvey of erosion holes at B-branch entrance.

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