

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 38** of 2019, which covers the period from **15 – 21 September**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 72.9 to 103.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.7' to 75.6' msl. Daily average project tailwater ranged from 7.1' to 9.8' msl. Secchi disk measurements ranged from 6' to 7.0+'. Daily average water temperature ranged from 69°F to 70°F.
- b. Daily average spill ranged from 1.2 to 1.3 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 Date	RTS Date	Reason
04	0001 on 09 Sept	1154 on 18 Sept	P.O., Air Cooler Replacement
11	1024 on 16 Sept	1422 on 16 Sept	Trash Raking
11	1200 on 17 Sept	1555 on 17 Sept	BPA Line 3 Work
12	0848 on 16 Sept	1020 on 16 Sept	Trash Raking
12	1200 on 17 Sept	1555 on 17 Sept	BPA Line 3 Work
13	0012 on 16 Sept	1603 on 16 Sept	P.O. Thrust Collar Inspection
13	1200 on 17 Sept	1555 on 17 Sept	BPA Line 3 Work
14	1200 on 17 Sept	1555 on 17 Sept	BPA Line 3 Work
15	1200 on 18 Sept	1453 on 18 Sept	BPA Line Outage
16	1200 on 18 Sept	1453 on 18 Sept	BPA Line Outage
17	1200 on 18 Sept	1453 on 18 Sept	BPA Line Outage
18	0804 on 16 Sept	0840 on 16 Sept	Trash Raking
18	1200 on 18 Sept	1453 on 18 Sept	BPA Line Outage

- 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. – Nothing to report

- Table 3. Fish unit drawdowns, in feet.

Date	F1	F2
9/15	0.1'	0.1'
9/16	0.1'	0.2'
9/17	0.3'	0.1'
9/18	0.2'	0.2'
9/19	0.1'	0.1'
9/20	0.1'	0.1'
9/21	0.4'	0.5'

2. MAINTENANCE ACTIVITIES:

- Auxiliary Water System Closures. Nothing to report.
- STS/VBS Inspections. Nothing to report.
- Dewatering and Fish Salvages. Nothing to report.

3. RESEARCH:

- Four Peaks Environmental - Fish counting contract: Daytime visual counting (0500 to 2100) began on 01 April. Nighttime video counting (2100 to 0500) began on 15 May. Fish counts can be viewed [here](#).
- PSMFC – Smolt Monitoring Facility: Sample collections at the SMF began at 0700 on 02 March. Debris at the PDS and fish/debris separator was light to moderate consisting of aquatic macrophytes, a few sticks, and dead adult shad. Higher temperature sampling protocols were initiated on 26 July (sample end-date of 27 July) when water temperatures ascended to 70°F. Modified sampling during higher temperatures means index/condition sampling will take place every other day until the daily average descends to 69.5°F. Sample and bypass mode will occur on alternating 24 hour periods (0700-0700). Normal Sampling resumed on 17 September (sample end-date of 18 September) when average temperatures dropped below 69.5°F. GBT have concluded for the season. Please follow this [link](#) to the FPC web page for further details. Fallbacks observed this week: 10 salmon. No fish collections for research were conducted this week.
- CRITFC – Adult Salmonid Sampling: Adult Salmonid sampling in the AFF began on 30 April and typically occurs 5 days per week. At water temperatures of 70–72°F, sampling will be permitted as defined below for up to four days per week from 0600-1030 hours to allow for U.S. v Oregon requirements. This operation will remain in effect until daily average water temperature drops to ≤ 69.9°F.
- NOAA (Frick) – Bradford Island Lamprey Wetted Wall: Evaluation of the Bradford Island wetted wall commenced for the second year on 17 April.

- e. Whooshh Innovations: Evaluation of a proprietary fish identification system commenced in coordination with CRITFC’s adult salmonid sampling efforts in the AFF on 30 April.
- f. University of Idaho – Lamprey Evaluations: Collection and tagging in association with Corps funded research commenced with the start of the Lamprey Flume Structure (LFS) and AFF lamprey traps on 13 May.
- g. CRITFC – Adult Pacific Lamprey Translocation: Trapping efforts at the Bradford Island and Washington Shore picketleads, Cascades Island AWS, and in conjunction with University of Idaho collections began on 28 May and concluded 13 September.

4. FISHWAYS:

- a. Project biologists inspected from 15-21 September.
- b. Fish passage plan observations.

- Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
9/15,17	B-Branch	Differential > 2.0'	Faulty Sensor	WOR
Cascades Island – Nothing new to report				
Washington Shore – Nothing to report				

- On 01 May 2018, FG6-11 (Cascades Island) was found broken partially open. The diffuser shaft had broken away from the motor. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.
- On 18 August 2018, FG6-12 (Cascades Island) was found to be mechanically bound in the open position. FG6-12 should only be open with tailwaters ranging from 11.0'-33.0'. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.
- On 27 March 2019, FG6-18 (Cascades Island) was found to be mechanically bound in the closed position. FG6-18 should be open with tailwaters > 12.0'. Due to the subsidence issues at Cascades Island, repairs cannot occur until crane support is allowed in the vicinity.
- On 28 March 2019, FG3-5 (PH1 A-Branch) was reported not closing due to a torque limit issue. The diffuser was opened due to current tailwater limits and a safe clearance was issued on the equipment. Repairs can not be made until the in-water work period this winter. FG3-5 should only be open for tailwaters of $\geq 16.7'$.
- FG 3-27 (B-branch) is mechanically unsound. It has been set to manual and remains in the open position to avoid further damage meeting criteria for the majority of the year. Repairs are planned for the 2019-2020 outage.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 20 September.
- (3) SLEDs are installed at all locations.

d. Juvenile Fishways.

- (1) The ITS remains open (auto-chain gates 3B, 6C, & 10B only).
- (2) The hydro-cannon remains in service.
- (3) The B2CC closed at 0100 on 01 September.
- (4) The DSM remains in service.
- (5) STSs are installed.

e. Lamprey Fishways. All LPSs remain in service.

- (1) The Bradford Island Wetted Wall (BIWW) began operations on 17 April.
- (2) The PH2 Lamprey Flume Structure (LFS) began trapping on 13 May and ended 13 September.
- (3) The AFF Lamprey trap began trapping on 13 May and ended 13 September.

f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

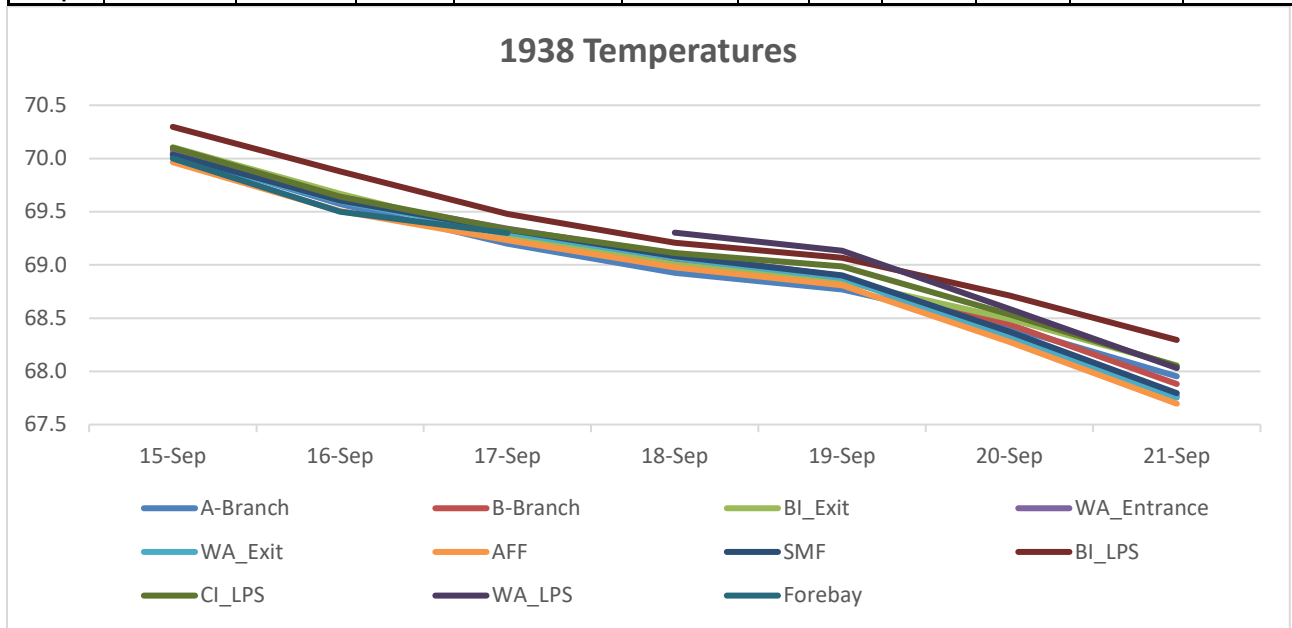
(1) Table 5. Avian Counts.

Date	Gulls	Cormorants	Terns	Pelicans	Grebes
9/15	6	10	0	0	0
9/16	6	4	0	0	0
9/17	44	72	0	0	0
9/18	21	61	0	0	0
9/19	---	---	---	---	---
9/20	10	0	0	0	0
9/21	14	3	0	0	0

5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

Date	A-Branch	B-Branch	BI_Exit	WA_Entrance	WA_Exit	AFF	SMF	BI_LPS	CI_LPS	WA_LPS	Forebay
15-Sep	70.0	70.1	70.1	70.0	70.0	70.0	70.0	70.3	70.1	---	70.0
16-Sep	69.6	69.6	69.7	69.6	69.6	69.5	69.6	69.9	69.6	---	69.5
17-Sep	69.2	69.3	69.3	69.3	69.3	69.2	69.3	69.5	69.3	---	69.3
18-Sep	68.9	69.0	69.0	69.1	69.1	69.0	69.1	69.2	69.1	69.3	---
19-Sep	68.8	68.9	68.8	68.9	68.9	68.8	68.9	69.1	69.0	69.1	---
20-Sep	68.4	68.4	68.5	68.3	68.3	68.3	68.4	68.7	68.5	68.6	---
21-Sep	68.0	67.9	68.1	67.8	67.8	67.7	67.8	68.3	68.0	68.0	---



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

6. CONSTRUCTION:

a. Construction on the new PH2 Oil Water Separator was stopped when it was determined there had been insufficient coordinated with FPOM. It has since been coordinated and construction will continue from 1700 to 0600 beginning 07 October.

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

8. TELETYPES CURRENTLY IN EFFECT:

- a. A teletype sent on 06 September requests that Bonneville total outflow be maintained as low as possible approaching the 70 kcfs project minimum, soft constraint and less than 80 kcfs, hard constraint from 0800 to 1800 on 13 September through 16 September. This operation was requested to provide safe river conditions for diving and salvage operations of the tug Diane, approx. 2 miles downstream.
- b. A teletype sent on 12 September requests that Bonneville Pool operate within a 1.5 foot band, soft constraint, from 0600 on 16 September to 1800 on 18 September to facilitate the fall treaty fishery.
- c. A teletype sent on 18 September requests that Bonneville Pool operate within a 1.5 foot band, soft constraint, from 0600 on 23 September to 1800 on 25 September to facilitate the fall treaty fishery.
- d. A teletype sent on 18 September revises the teletype sent on 12 September to extend it through 1800 on 19 September.
- e. A teletype sent on 18 September revises the first teletype sent on 18 September to change soft constraint to hard constraint.
- f. A teletype sent on 19 September states that as soon as possible, operate Bonneville forebay above a minimum of 74.5 feet, soft constraint, through 30 September. The purpose of this operation is to support navigation in the Bonneville pool during the navigation lock outage.
- g. A teletype sent on 20 September states that effective 0800 to 1700 on 24 September, operate spillbay 1 and 18 during this period so that spill will either be approximately 1.1 or 2.2 kcfs. The goal of this spill operation is to shut off spill at spillbays 1 and 18 for short periods in order to create suitable conditions for a hydrosurvey in the stilling basin.
- h. A teletype sent on 20 September states that effective 0800 to 1700 on 24 September, the entire Bonneville spillway and PH2 corner collector will be tagged out and not available for spill to support the hydrosurvey.

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Bonneville Project