

**MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)**

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 36** of 2019, which covers the period from **1 – 7 September**.

**1. OPERATION SUMMARY:**

- a. Daily average river flows ranged from 100.5 to 110.0 kcfs. Daily average powerhouse forebay elevation ranged from 74.9’ to 76.2’ msl. Daily average project tailwater ranged from 9.4’ to 10.6’ msl. Secchi disk measurements ranged from 6’ to 7.0+’. Daily average water temperature remained 72°F.
- b. Daily average spill ranged from 1.3 to 1.8 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
01	0749 on 03 Sept	1605 on 03 Sept	P.O., SQ Bus Work
01	0800 on 04 Sept	1500 on 04 Sept	P.O., SQ Bus Work
02	0749 on 03 Sept	1605 on 03 Sept	P.O., SQ Bus Work
02	0800 on 04 Sept	1500 on 04 Sept	P.O., SQ Bus Work
15	0002 on 03 Sept	1442 on 04 Sept	P.O., Thrust Collar Inspection

- 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 Date	RTS Date	Reason
F1	2031 on 31 Aug	0556 on 01 Sept	RS, Nighttime Lamprey Ops.

- Table 3. Fish unit drawdowns, in feet.

Date	F1	F2
9/1	0.3’	0.2’
9/2	0.3’	0.5’
9/3	0.6’	0.1’
9/4	0.7’	0’
9/5	0.8’	0.2’
9/6	0.8’	0.2’
9/7	---	---

## 2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. Nothing to report.
- b. STS/VBS Inspections. A STS/VBS inspection occurred on 03 Sept.

STS-VBS INSPECTION			
UNIT #	PREVIOUS STS HRS	HRS WHEN INSPECTED	HRS RUN
11	46438	47081	643
12	35697	35840	143
13	05033	05093	60
14	08030	08094	64
15	18067	18100	33
16	31104	31144	40
17	25038	25166	128
18	65004	65674	670

- c. Dewatering and Fish Salvages.
  - Project biologists recovered 25 Salmonid mortalities from Nav Lock 2 on 07 September. See [MFR 19BON55](#).
  - Project biologist salvaged ~24 Salmon from tainter valves 1-4 (Nav Lock 2) on 07 September. The fish were released into the forebay upstream of the Nav Lock.

## 3. RESEARCH:

- a. 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](#).
- b. PSMFC – Smolt Monitoring Facility: Sample collections at the SMF began at 0700 on 02 March. Debris at the PDS and fish/debris separator was wide-ranging from light to moderately heavy 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). GBT examinations began on 13 April and are typically performed two days per week through the end of spill. Due to low fish numbers present during GBT collection effort, GBT exams were not attempted this week and GBT sampling concluded for the season as of 31 August. Please follow this [link](#) to the FPC web page for further details. No fallbacks were observed this week. No fish collections for research were conducted this week.
- c. 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  $\leq 69.9^{\circ}\text{F}$ . Water temperatures remained  $\geq 70.0^{\circ}\text{F}$  this reporting week.

- d. 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.

**4. FISHWAYS:**

- a. Project biologists inspected from 1-3, 5-6 September.
- b. Fish passage plan observations.

- Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
9/4,7	BON	No inspection	No Bio/Lock Salvage	NA
Bradford Island				
9/1-2	A-Branch	Differential >1.1’	Unknown	NA
9/1	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 05 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.
  - (3) The AFF Lamprey trap began trapping on 13 May.
- f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

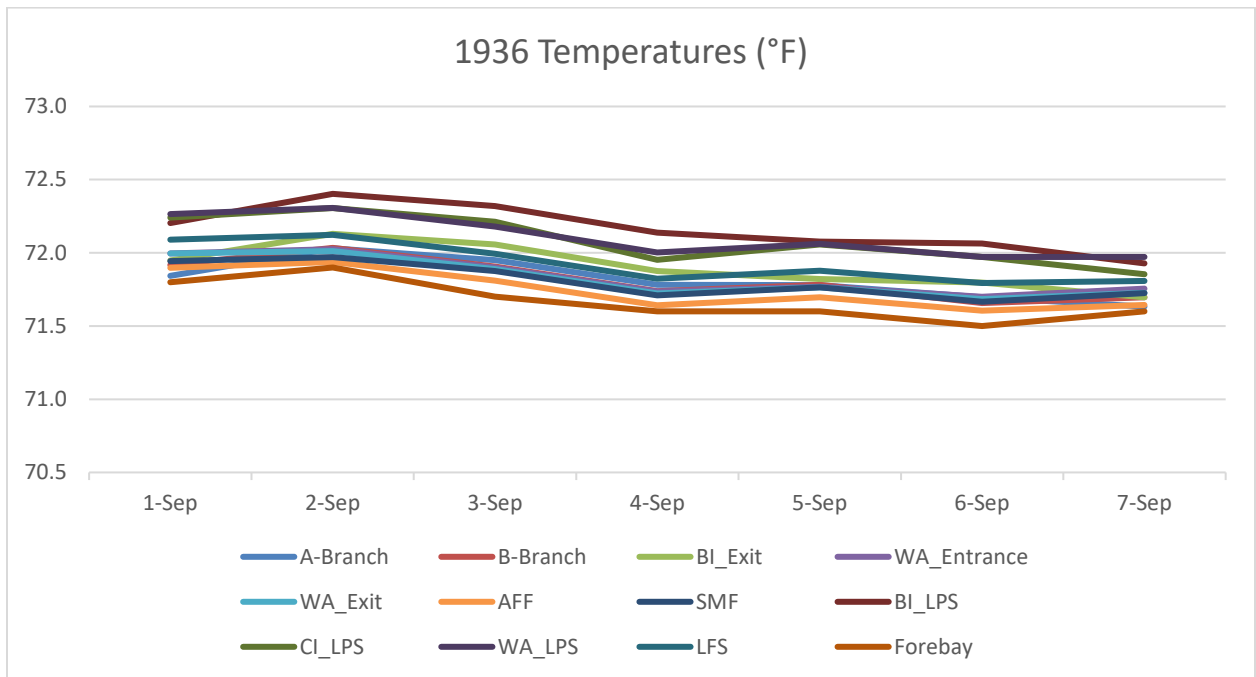
(1) Table 5. Avian Counts.

Date	Gulls	Cormorants	Terns	Pelicans	Grebes
9/1	24	90	0	0	0
9/2	25	76	0	0	0
9/3	20	11	0	0	0
9/4	---	---	---	---	---
9/5	21	16	0	0	0
9/6	0	0	0	0	0
9/7	---	---	---	---	---

**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	LFS	Forebay
1-Sep	71.8	71.9	71.9	72.0	72.0	71.9	71.9	72.2	72.2	72.3	72.1	71.8
2-Sep	72.0	72.0	72.1	72.0	72.0	71.9	72.0	72.4	72.3	72.3	72.1	71.9
3-Sep	72.0	71.9	72.1	71.9	71.9	71.8	71.9	72.3	72.2	72.2	72.0	71.7
4-Sep	71.8	71.7	71.9	71.7	71.7	71.6	71.7	72.1	72.0	72.0	71.8	71.6
5-Sep	71.8	71.8	71.8	71.8	71.8	71.7	71.8	72.1	72.1	72.1	71.9	71.6
6-Sep	71.7	71.7	71.8	71.7	71.7	71.6	71.7	72.1	72.0	72.0	71.8	71.5
7-Sep	71.6	71.7	71.7	71.8	71.7	71.6	71.7	71.9	71.9	72.0	71.8	71.6



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

5. **CONSTRUCTION:** Construction on the new PH2 Oil Water Separator was stopped when it was determined there had been insufficient coordinated with FPOM. Coordination is currently ongoing.
6. **HAZMAT, SPILLS AND CLEANUP:** Nothing to report.
7. **TELETYPES CURRENTLY IN EFFECT:**
  - a. A teletype sent on 14 August requests that Bonneville Dam pool operate within a 1.5 foot band, hard constraint, from 0600 on 26 August to 1800 on 28 August and from 0600 on 02 September to 1800 on 05 September to facilitate the fall treaty fishery.
  - b. A teletype sent on 14 August requests outflow from Bonneville Dam be maintained as low and as constant as possible from 0430 to 1200 hours on 02 September and for flows to not exceed 150 KCFS, hard constraint. This operation was requested to reduce currents in the Bonneville pool for the Roy Webster Cross Channel Swim.
  - c. A teletype sent on 06 September requests that Bonneville Pool operate within a 1.5 foot band, hard constraint, from 0600 on 09 September to 1800 on 12 September to facilitate the fall treaty fishery.
  - d. 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.

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