

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 42** of 2019, which covers the period from **13 - 19 October**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 76.3 to 101.2 kcfs. Daily average powerhouse forebay elevation ranged from 75.1' to 75.7' msl. Daily average project tailwater ranged from 8.1' to 9.5' msl. Secchi disk measurements 6.0 to 7.0+'. Daily average water temperature ranged from 58°F to 59°F.
- b. Daily average spill ranged from 1.1 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
18	1006 on 15 Oct	1128 on 15 Oct	P.O. Trash Raking
12	0802 on 16 Oct	0901 on 16 Oct	P.O. Trash Raking
11	0904 on 16 Oct	1110 on 16 Oct	P.O. Trash Raking

- 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
10/13	1.2'	0.5'
10/14	1.3'	0.4'
10/15	0.1'	0.2'
10/16	0.2'	0.2'
10/17	0.2'	0.3'
10/18	0.4'	0.3'
10/19	0.2'	0.3'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.
 - FV 1-1 closed for cleaning from 0732 to 0749 on 15 October.
 - FV 3-7 closed for cleaning from 0957 to 1016 on 15 October.
 - FV 3-9 closed for cleaning from 0957 to 1016 on 15 October.
- b. STS/VBS Inspections. Nothing to report.
- c. Dewatering and Fish Salvages. Nothing to report.

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 ranged from light to moderate consisting of filamentous algae, aquatic macrophytes, a few sticks and dead adult shad. Spill and corner collector operations for the juvenile fish passage season concluded just after midnight on 01 September. GBT have concluded for the season. Please follow this [link](#) to the FPC web page for further details. Fallbacks observed this week: 3 salmon. 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.
- d. 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.
- e. 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. Collection and tagging efforts ended 13 September. They remain onsite collecting passage data.

4. FISHWAYS:

- a. Project biologists inspected from 13-19 October.
- b. Fish passage plan observations.

- Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
10/13-19	PH1CC (south)	Differential < 1.0'	Unknown	NA
10/18	A-Branch	Differential > 1.1'	Unknown	NA
Cascades Island – Nothing 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 did not occur this reporting week.
- (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.

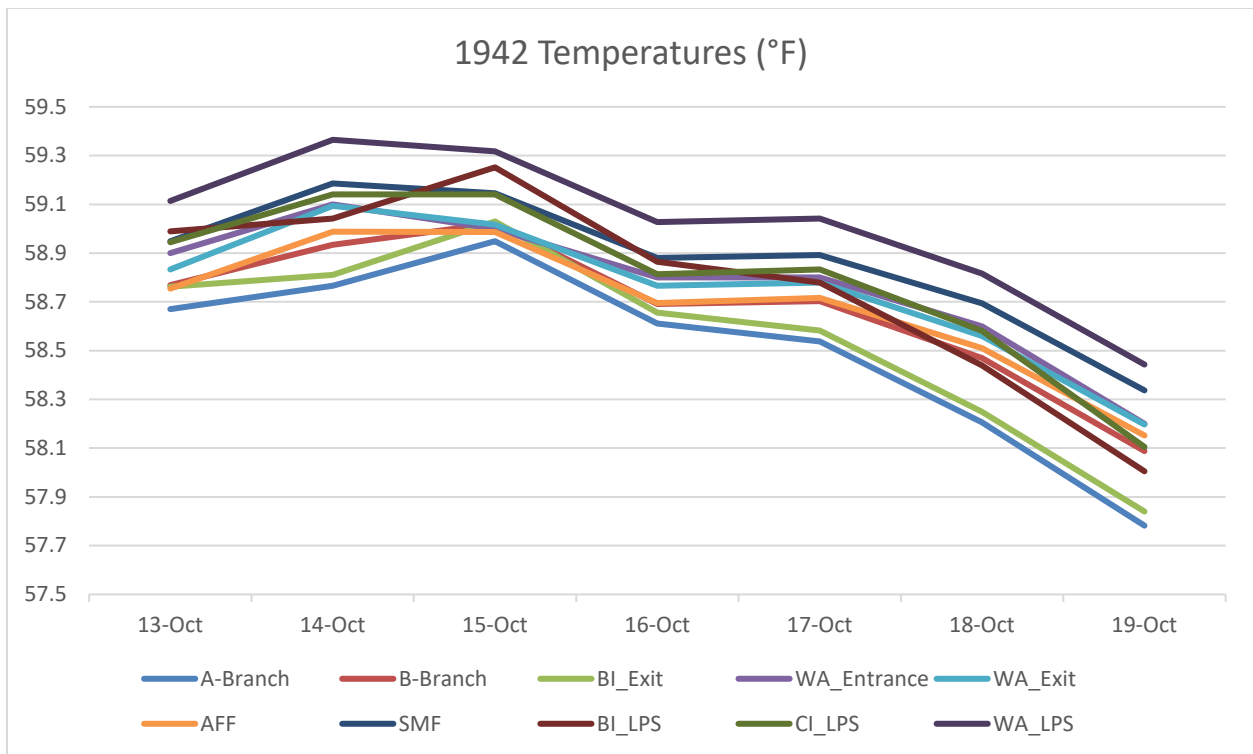
- (4) The DSM remains in service.
 - (5) STSs are installed.
- e. Lamprey Fishways. All LPSs remain in service.
- (1) The Bradford Island Wetted Wall (BIWW) is out of service.
 - (2) The PH2 Lamprey Flume Structure (LFS) is out of service.
 - (3) The AFF Lamprey trap is out of service.
- f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.
- (1) Table 5. Avian Counts.

Date	Gulls	Cormorants	Terns	Pelicans	Grebes
10/13	20	69	0	0	0
10/14	5	72	0	0	0
10/15	1	1	0	0	0
10/16	3	123	0	0	0
10/17	---	---	---	---	---
10/18	3	0	0	0	0
10/19	4	0	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
13-Oct	58.7	58.8	58.8	58.9	58.8	58.8	58.9	59.0	58.9	59.1
14-Oct	58.8	58.9	58.8	59.1	59.1	59.0	59.2	59.0	59.1	59.4
15-Oct	58.9	59.0	59.0	59.0	59.0	59.0	59.1	59.3	59.1	59.3
16-Oct	58.6	58.7	58.7	58.8	58.8	58.7	58.9	58.9	58.8	59.0
17-Oct	58.5	58.7	58.6	58.8	58.8	58.7	58.9	58.8	58.8	59.0
18-Oct	58.2	58.5	58.2	58.6	58.6	58.5	58.7	58.4	58.6	58.8
19-Oct	57.8	58.1	57.8	58.2	58.2	58.2	58.3	58.0	58.1	58.4



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

6. CONSTRUCTION:

a. Nighttime construction on the new PH2 Oil Water Separator began 14 October.

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

8. TELETYPES CURRENTLY IN EFFECT: Nothing to report.

MICHAEL ADAMS, P.E.
 Operations Project Manager
 Bonneville Project