

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 31** of 2019, which covers the period from **28 July – 03 August**.

**1. OPERATION SUMMARY:**

a. Daily average river flows ranged from 134.4 to 170.0 kcfs. Daily average powerhouse forebay elevation ranged from 74.9’ to 76.0’ msl. Daily average project tailwater ranged from 11.6’ to 13.7’ msl. Secchi disk measurements ranged from 7.0’ to 7.0+’. Daily average water temperature ranged from 70°F - 71°F.

b. Daily average spill ranged from 90.0 to 95.8 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
06	0717 on 09 July	---	P.O., 5 Year Overhaul
07	0004 on 29 July	0954 on 01 Aug	P.O., Annual

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	2200 on 27 July	0441 on 28 July	RS, Nighttime Lamprey Ops.
F2	2228 on 28 July	0434 on 29 July	RS, Nighttime Lamprey Ops.
F1	2159 on 29 July	0430 on 30 July	RS, Nighttime Lamprey Ops.
F1	0430 on 30 July	1044 on 30 July	Repair Brake Release.
F2	2200 on 30 July	0431 on 31 July	RS, Nighttime Lamprey Ops.
F1	0708 on 31 July	1620 on 31 July	RS, PH2 ROV Inspection.
F2	0709 on 31 July	1638 on 31 July	RS, PH2 ROV Inspection.
F1	2202 on 31 July	0500 on 01 Aug	RS, Nighttime Lamprey Ops.
F1	2145 on 01 Aug	0500 on 02 Aug	RS, Nighttime Lamprey Ops.
F1	2148 on 02 Aug	0459 on 03 Aug	RS, Nighttime Lamprey Ops.
F2	2145 on 03 Aug	---	RS, Nighttime Lamprey Ops.

- Table 3. Fish unit drawdowns, in feet.

Date	F1	F2
7/28	0.1'	0.3'
7/29	---	---
7/30	0.2'	0.7'
7/31	---	---
8/1	---	---
8/2	---	---
8/3	0.1'	0.6'

## 2. MAINTENANCE ACTIVITIES:

### a. Auxiliary Water System Closures.

- FV1-1 was closed for the PH1 ROV inspection from 0700 to 1030 on 30 July.
- FV3-7 was closed for the PH1 ROV inspection from 0700 to 1030 on 30 July.
- FV4-3 was closed for the PH1 ROV inspection from 1015 to 1130 on 30 July.
- FV4-4 was closed for the PH1 ROV inspection from 1015 to 1130 on 30 July.
- FV5-3 was closed for the Cascades Island ROV inspection from 1130 to 1210 on 30 July.
- FV5-4 was closed for the Cascades Island ROV inspection from 1130 to 1210 on 30 July.
- FV5-9 was closed to ~0.5' for the Cascades Island ROV inspection from 1130 to 1210 on 30 July.

### 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 was light 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. Results of this week’s GBT examinations: 41 subyearling Chinook examined with no GBT symptoms observed. 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.
- 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 28 July through 03 August.
- b. Fish passage plan observations.

- Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
7/28-31	A-Branch	Differential >1.1’	Unknown	NA
7/28-29	PH1CC – South	Differential <1.0’	Unknown	NA
8/1	PH1 ITS	PLC in manual	Ops	Ops Adjusted
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  $\geq 16.7'$ .

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 31 July.
- (3) SLEDs are installed at all locations.
- (4) PH1, B-Branch, and Cascades Island ROV inspection occurred on 30 July. PH2 ROV inspection occurred on 31 July.

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 remains in service.
- (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.

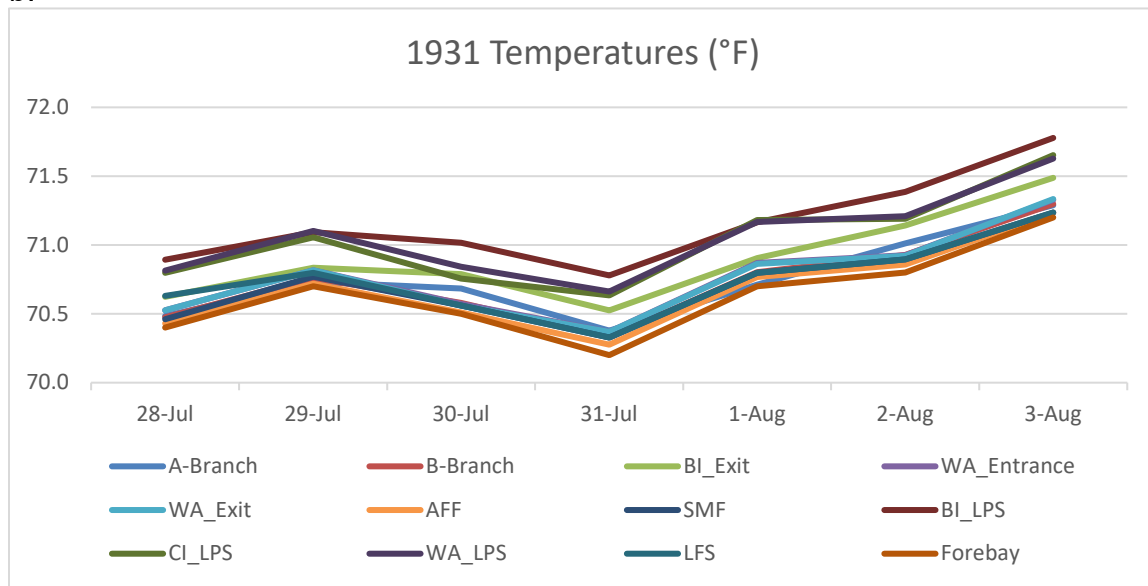
Date	Gulls	Cormorants	Terns	Pelicans	Grebes
7/28	1	0	0	0	0
7/29	1	1	0	0	0
7/30	3	2	0	0	0
7/31	4	1	0	0	0
8/1	1	0	0	0	0
8/2	0	3	0	0	0
8/3	0	3	0	0	0

## 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	LFS	Forebay
28-Jul	70.5	70.5	70.6	70.5	70.5	70.4	70.5	70.9	70.8	70.8	70.6	70.4
29-Jul	70.7	70.8	70.8	70.8	70.8	70.7	70.8	71.1	71.1	71.1	70.8	70.7
30-Jul	70.7	70.6	70.8	70.6	70.6	70.5	70.6	71.0	70.8	70.8	70.6	70.5
31-Jul	70.4	70.3	70.5	70.4	70.4	70.3	70.3	70.8	70.6	70.7	70.3	70.2
1-Aug	70.7	70.8	70.9	70.9	70.9	70.8	70.8	71.2	71.2	71.2	70.8	70.7
2-Aug	71.0	70.9	71.1	70.9	70.9	70.9	70.9	71.4	71.2	71.2	70.9	70.8
3-Aug	71.3	71.3	71.5	71.3	71.3	71.2	71.2	71.8	71.7	71.6	71.2	71.2

b.



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

**5. CONSTRUCTION:** Nothing to report

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

**7. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent on 12 June states effective 16 June through 31 August, operate Bonneville Dam in accordance with the 2019 FOP to provide summer spill for fish passage, spill according to patterns in the 2019 FPP, and keep the B2CC open until within one hour of the end of spill on 31 August.
- b. A teletype sent on 23 July states effective 29 July through 31 July, operate Bonneville Forebay above a minimum 76.0 feet, soft constraint, and above 75.5 feet, hard constraint. The forebay may be operated up to a maximum of 77.0 feet, hard constraint. This operation is to support construction activities for the BNSF railroad bridge at the mouth of the Wind River.
- c. A teletype sent on 24 July states effective 01 August through 03 August, operate Bonneville Forebay within the following range: 74.5 - 75.5 feet, soft constraint and 74.0 - 75.5 feet, hard constraint. Effective 04 August, operate forebay within 74.5 – 75.5 feet, hard constraint. Effective 05 August through 06 August, operate forebay within the following range: 74.5 - 75.5 feet, soft constraint and 74.0 - 75.5 feet, hard constraint. This operation is to support removal of the old BNSF railroad bridge at the mouth of the Wind River and installation of the new bridge.
- d. A teletype sent on 30 July cancels the 23 July teletype immediately.
- e. A teletype sent on 30 July revises a previous teletype pertaining to the BNSF bridge removal and installation. Revised to beginning date 31 July through 03 August.
- f. A teletype sent on 02 August revises a previous teletype pertaining to the BNSF bridge removal and installation. Revised to: 31 July through 03 August, 0001-2400 daily – 74.0’-75.0’ soft constraint and 74.0’-75.5’ hard constraint. On 04 August, 0001-2400 74.0’-75.0 hard constraint. From 05-06 August, 0001-2400, 74.0’-75.0’ soft constraint and 74.0’ to 75.5’ hard constraint.

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