

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 15** of 2019, which covers the period from **07 - 13 April**.

## 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 218.1' to 366.4' kcfs. Daily average powerhouse forebay elevation ranged from 74.5' to 76.0' msl. Daily average project tailwater ranged from 18.1' to 26.6' msl. Secchi disk measurements ranged from 2.0' to 6.0'. Daily average water temperature ranged from 46°F - 48°F.
- b. Daily average spill ranged from 1.4 kcfs to 140.7 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
9	0854 on 09 Apr	1543 on 09 Apr	Station Service Testing
15	0714 on 18 Mar	---	4 Year Overhaul

- 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	1847 on 11 Apr	1934 on 11 Apr	RS, Float Trash
F2	0832 on 10 Apr	1547 on 10 Apr	Station Service Testing
F2	1823 on 11 Apr	1854 on 11 Apr	RS, Float Trash
F2	1837 on 12 Apr	1926 on 12 Apr	RS, Float Trash

Table 3. Fish unit drawdowns, in feet.

Date	F1	F2
4/7	0.2'	0.2'
4/8	0.4'	0.4'
4/9	0.5'	0.5'
4/10	0.6'	0.5'
4/11	3.3'	3.0'
4/12	0.7'	4.9'
4/13	1.2'	1.7'

**2. MAINTENANCE ACTIVITIES:**

a. Auxiliary Water System Closures.

- FV1-1 was closed from 0730 to 0926 on 08 April and from 0727 to 0753 on 09 April for trash rack cleaning.

b. STS/VBS Inspections. Nothing to report.

c. Dewatering and Fish Salvages. Nothing to report.

**RESEARCH:**

a. Fisheries Field Unit - Fish counting: Daytime visual counting (0500 to 2100) began on 01 April. Fish counts can be viewed [here](#).

b. PSMFC – Smolt Monitoring: Sample collections at the SMF began at 0700 on 02 March. Debris at PDS and fish/debris separator was light to moderately heavy consisting mostly of sticks and other woody debris. The Outfall hydro-cannons are operational. Kelt observations were monitored by direct observation from Smolt Monitoring personnel and video recording by FFU and SMP until the Kelt Trigger was reached. Fallbacks observed this week: 9 Steelhead and 1 salmon. No fish collections for research purposes were conducted this week. More details can be found on the [FPC web page](#).

c. Fisheries Field Unit - Pinniped Monitoring Program: Observations for pinniped abundance and predation began on 02 Jan. The FFU observes five days each week.

d. USDA - Pinniped hazing: Deck-based hazing began 01 March.

e. CRITFC - Pinniped hazing: Hazing by boat began 01 March.

**3. FISHWAYS:**

a. Project biologists inspected from 07, 09 - 13 April.

b. Fish passage plan observations.

- Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
4/8	BON	No Inspection	Staffing Shortage	NA
Bradford Island				
4/7, 9-13	A-Branch	Differential > 1.1'	Unknown	NA
4/12	B-Branch	Differential > 1.1'	Unknown	NA
4/11	FG 3-31	Closed TW > 25.0'	In Manual	Set to Auto
4/11	FG 3-7	Closed TW > 25.2'	Unknown	NA
4/13	FG 3-7	Open TW < 25.2'	Unknown	NA
4/10-13	PH1CC	Differential > 2.0'	PLC Malfunction	NA
Cascades Island – Nothing to report.				

4/7,4/9-4/13	FG 6-18	Closed TW > 12.0'	Mechanically Bound	NA
Washington Shore– Nothing to report.				
4/11	NDE	Diff > 2.0'	Unknown	NA

- Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter and PH2 lines are still awaiting reinstallation.
- On 01 May 2018, FG6-11 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 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 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 04 April 2019, FG3-5 was found to be mechanically bound in the open position. It should be open between tailwaters of  $\geq 16.7'$ . Repairs will occur during the 2019/20 IWW period.

c. Adult Fishways.

- (1) The AFF was returned to service on 08 April.
- (2) Sensor calibration occurred on 12 April. Limited to B-Branch and CI due to PH1CC PLC malfunction.
- (3) SLEDs are installed at all locations.

d. Juvenile Fishways.

- (1) The ITS was opened (auto-chain gates 3B, 6C, & 10B only – no fixed gates 1A or 1B) per the 15 March teletype. The ITS will be open 24/7 until repairs can be made to the lower gate.
- (2) The hydro-cannon is in service.
- (3) The B2CC is in full service effective 10 April.
- (4) The DSM remains in service.
- (5) STSs are installed.

- e. Lamprey Fishways. WA Shore LPS was returned to service on 11 April. All other lamprey passage systems remain offline.
- f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

(1) Table 5. Avian Counts.

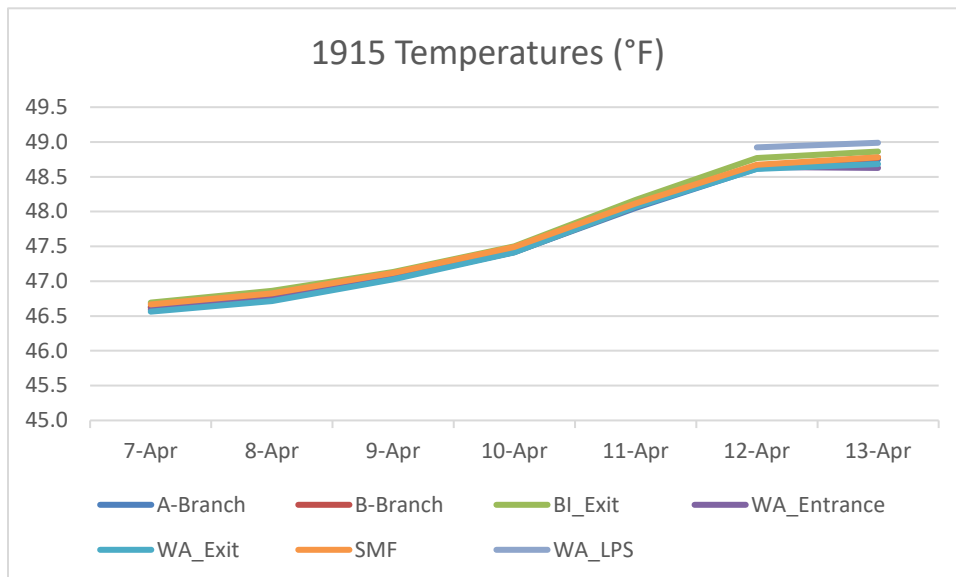
Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
4/7	0	0	0	0	0
4/8	---	---	---	---	---
4/9	---	---	---	---	---
4/10	26	2	0	0	0
4/11	15	1	0	0	0
4/12	15	1	0	0	0
4/13	25	0	0	0	0

#### 4. 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	SMF	WA LPS
7-Apr	46.6	46.6	46.7	46.6	46.6	46.7	
8-Apr	46.8	46.8	46.9	46.7	46.7	46.8	
9-Apr	47.1	47.0	47.1	47.0	47.0	47.1	
10-Apr	47.4	47.4	47.5	47.4	47.4	47.5	
11-Apr	48.1	48.1	48.2	48.1	48.1	48.1	
12-Apr	48.6	48.7	48.8	48.6	48.6	48.7	48.9
13-Apr	48.7	48.8	48.9	48.6	48.7	48.8	49.0

- b.



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

**CONSTRUCTION:** Nothing to report

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

**6. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent on 01 February states effective immediately until further notice to operate PH2 with the following unit priority: 11, 12, 13, 14, 15, 16, 17, 18. Continue operating PH1 in the order defined in the 2018 Fish Passage Plan (FPP) Table BON-13 that was revised 14 June 2018. The purpose of this operation is to prioritize units near the PH2 corner collector (B2CC), which is operating due to the outage of the ITS.
- b. A teletype sent on 07 March moved unit 6 to the first off / last on at PH1. This is due to exciter fan issues. The repairs are scheduled for 02 April.
- c. A teletype sent on 15 March revised operations of the B2CC. Effective 17 March at 0001, through 09 April at 2359 operate the B2CC from 0600 to 1800 daily. Additionally the three auto-chain gates within the PH1 ITS will be operated 24/7.
- d. A teletype sent on 04 April states effective 10 April through 15 June, operate Bonneville Dam in accordance with the 2019 FOP to provide spring spill for fish passage, spill according to patterns in the 2019 FPP, and open the B2CC at the start of spring spill.
- e. A teletype sent on 10 April states that effective 10 April between 0001 hours and 2400 hours approval was given for an exceedence of the normal summertime 24-hour tailwater fluctuation limit of 4.0 feet. Tailwater is permitted to fluctuate up to 5.0 feet during this period. The maximum rate of change is 1.5 ft/hr.

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