

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 12** of 2019, which covers the period from **17 - 23 March**.

## 1. OPERATION SUMMARY:

a. Daily average river flows ranged from 129.7' to 189.6' kcfs. Daily average powerhouse forebay elevation ranged from 73.3' to 75.4' msl. Daily average project tailwater ranged from 11.4' to 16.5' msl. Secchi disk measurements ranged from 5.0' to 7.0'+. Daily average water temperature ranged from 38°F - 41°F.

b. Daily average spill ranged from 1.0 kcfs to 1.4 kcfs.

- Spillbays 1 and 18 were placed on sill (no attraction flows) for avian line installation between 1305 to 1624 on 18 March and from 0732 to 0859 on 20 March.

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
0	0840 on 08 Nov	---	Bad Turbine Bearings
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
F2	1610 on 20 Mar	1620 on 20 Mar	Emergency Shutdown, model validation testing.

Table 3. Fish unit drawdowns, in feet.

Date	F1	F2
3/17	0.1'	0.6'
3/18	0.6'	1.5'
3/19	0.2'	0.5'
3/20	0.2'	0.3'
3/21	0.3'	0.2'
3/22	0.2'	0.4'
3/23	0.2'	0.1'

## 2. MAINTENANCE ACTIVITIES:

### a. Auxiliary Water System Closures.

- FV1-1 was closed from 0712 to 0725 on 18 March and from 0703 to 0734 on 21 March for trash rack cleaning.

### b. STS/VBS Inspections. Nothing to report.

### c. Dewatering and Fish Salvages.

- Unit 15 scroll case and draft tube were salvaged on 21 March. No fish were encountered.

## RESEARCH:

### a. Fisheries Field Unit - Fish counting: Daytime video (0400 to 2000) began on 01 March. 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 light-moderate consisting mostly of sticks. The Outfall hydro-cannons were not operational this week due to weather-related issues. Kelt observations will be monitored by direct observation from Smolt Monitoring personnel and video recording by FFU and SMP at least until the Kelt Trigger is reached. Fallbacks observed this week: 4 Steelhead. For “kelt trigger” purposes, the season-to-date total as of this report date is 5. 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 17-23 March.

b. Fish passage plan observations.

• Table 4. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
Bradford Island				
3/7/23	A-Branch	Differential > 1.1'	Unknown	NA
3/18	PHICC – South	Differential <1.0'	Unknown	NA
3/21-23	FG3-26	Open 50%	Unknown	WO
Cascades Island – Nothing to report.				
Washington Shore– Nothing to report.				
3/21-23	NDE	Sub < 13.0'	Unknown	NA
3/21-23	NEU	Sub < 13.0'	Unknown	NA
3/23	SDE	Sub < 13.0'	Unknown	NA
3/23	SUE	Sub < 13.0'	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 30 Jan, Spillway and Corner Collector (B2CC) avian lines were removed to facilitate rock removal from the Spillway apron. **Bonneville installed avian lines the week of 17 March. All avian lines are currently deployed.**
- 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. **Tailwater was  $\geq 11.0'$  this reporting week. No violations occurred.**
- FG3-4 was found to be open 50% on 28 February. FG3-4 should be open at tailwaters  $\geq 13.7'$ . Ice buildup caused the threads to become detached from the coupling. Repairs will commence once the ice has thawed.

c. Adult Fishways.

- (1) The AFF was taken out of service on 07 November 2018.
- (2) Sensor calibration occurred on 22 March.
- (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 remains offline due to weather related issues.
- (3) The B2CC is operating from 0600 – 1800 daily per 15 March teletype.
  - The B2CC was closed from 0900-1100 on 20 March for avian wire installation.
- (4) The DSM remains in service.
- (5) STSs are installed.

e. Lamprey Fishways. All lamprey passage systems remain offline.

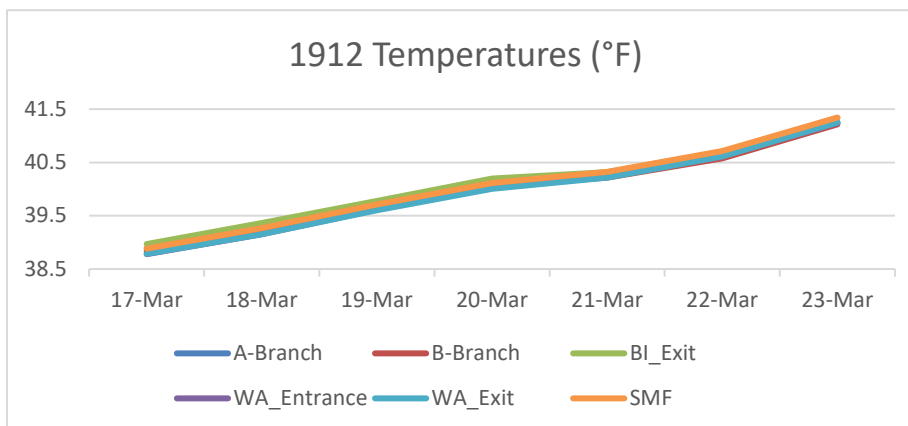
f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

**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
17-Mar	38.9	38.8	39.0	38.8	38.8	38.9
18-Mar	39.3	39.2	39.4	39.2	39.2	39.3
19-Mar	39.7	39.7	39.8	39.6	39.6	39.7
20-Mar	40.1	40.1	40.2	40.0	40.0	40.1
21-Mar	40.3	40.2	40.3	40.2	40.2	40.3
22-Mar	40.6	40.6	40.7	40.6	40.6	40.7
23-Mar	41.3	41.2	41.3	41.2	41.2	41.3

b.



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

**5. CONSTRUCTION:**

- a. Whooshh Innovations was onsite during this reporting week installing their scanning system in the AFF. Additional information can be obtained by request or found [here](#).

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

**7. TELETYPES CURRENTLY IN EFFECT:**

- a. A teletype sent on 21 December updates the Chum Salmon spawning tailwater requirements until further notice.
- b. 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.
- c. 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.
- d. 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.
- e. A teletype sent on 22 March provides spill and lack of load conditions to be used from 23-31 March.

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