

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 18 of 2018, which covers the period from 29 April – 05 May.

### 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 324.7 to 356.1 kcfs. Daily average powerhouse forebay elevation ranged from 73.7' to 74.4' msl. Daily average project tailwater ranged from 23.5' to 25.1' msl. Secchi disk measurements ranged from 3.0' to 5.0'. Daily average water temperature ranged from 51°F - 53°F.
- b. Daily average spill ranged from 130.0 to 167.7 kcfs.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
03	0002 on 23 Apr	1425 on 03 May	Annual
04	0822 on 02 Apr	---	5 year overhaul
07	0922 on 05 Apr	---	FO, Underrated disconnect
08	0921 on 05 Apr	---	FO, Underrated disconnect
12	0001 on 23 Apr	1153 on 03 May	Annual
15	0035 on 16 Apr	---	FGE work

- d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder.
- e. Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
4/29	0.9'	1.2'
4/30	0.9'	1.9'
5/1	0.1'	0.1'
5/2	0.3'	0.3'
5/3	0.4'	0.7'
5/4	0.4'	0.9'
5/5	0.3'	1.3'

## 2. MAINTENANCE ACTIVITIES:

- f. Auxiliary Water System Closures.
  - (1) FV1-1 was closed from 0709 to 0719 on 30 May for cleaning.
  - (2) FV1-1 was closed from 1611 to 1621 on 02 May for cleaning.
- g. STS/VBS Inspections. Nothing to report.
- h. Dewatering and Fish Salvages. Nothing to report.

## 2. RESEARCH:

- a. USACE - Fisheries Field Unit (FFU) Pinniped Monitoring Program. Observations for pinniped abundance and predation began on 02 Jan. The FFU observes five days each week. The bi-weekly pinniped monitoring update is available [here](#).
- b. Normandeau – Fish counting. Daytime visual counting (0500 to 2100) began on 01 April. Fish counts can be viewed [here](#).
- c. PSMFC – Smolt Monitoring. Sample collections at the SMF began at 0700 on 02 March. Debris at the PDS and fish/debris separator was light to light-moderate consisting mostly of sticks and other woody debris. Gas Bubble Trauma (GBT) examinations began on 15 April and are typically performed two days per week through the end of spill. Results of this week's Gas Bubble Trauma (GBT) examinations: 200 yearling Chinook and steelhead examined: one fish (0.5%) were observed with GBT symptoms. Please follow this [link](#) to the FPC web page for further details. Fallbacks observed this week: 29 steelhead, 1 salmon and 1 unknown salmonid. Separation by Code is active for NOAA studies (Marsh).
- d. USDA – Pinniped hazing. Deck-based hazing began 01 March.
- e. CRITFC – Sea lion hazing. Hazing by boat began 05 March.
- f. PNNL – FGE testing. A hydroacoustic study at the PH2 gatewells as part of biological testing of the FGE mods began on 10 April. Equipment installation began on 22 February.
- g. CRITFC – Adult Salmonid Sampling. Adult Salmonid sampling in the adult fish facility (AFF) began on 25 April.

**3. FISHWAYS:**

- a. Project biologists inspected from 29 April to 05 May.
- b. Fish passage plan observations.

(1) Table 3. FPP out of criteria items.

Date	Location	FPP Violation	Cause	Response
<b>Bradford Island</b>				
4/29, 5/2-5	A-Branch	Differential > 1.1'	Unknown	NA
<b>Cascades Island</b>				
4/29, 5/2-5	UMT	Differential > 1.1'	Unknown	NA
<b>Washington Shore</b>				
5/3	Weir 37	Differential > 1.1'	Unknown	NA
4/29 5/1-5	Weir 38	Differential < 0.9'	Unknown	NA

- (2) On 01 May, 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 can not occur until crane support is allowed in the vicinity.
- (3) Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter. Avian lines began replacement on 19 March. All zones are in FPP compliance besides PH2. PH2 lines are awaiting installation pending material procurement.
- (4) PH2 diffuser B4 was discovered to have its stem bent on 24 May 2017. This likely occurred while trying to close and the valve is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration checking did not occur this week.
- (3) SLEDs are installed at all entrances.

d. Juvenile Fishways.

- (1) The ITS remains in service.
- (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.

- (1) The Bradford Island Lamprey Wetted Wall remains in service.
- (2) The NDE Lamprey Flume Structure (LFS) was returned to service (M-Th only) on 10 April. Once FFU, U of I, and CRITFC personnel are available, operations will continue throughout the week.
- (3) The Bradford Island, Cascades Island, and WA Shore AWS LPSs remain in service.
- (4) The AFF lamprey trap was commissioned on 21 April. It will be ran M-Th only until U of I and CRITFC personnel are available for daily tagging.

f. Avian Monitoring. Bird counts are recorded between 01 April and 31 October.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
4/29	27	0	0	0	0
4/30	19	0	0	0	0
5/1	1	0	0	0	0
5/2	15	0	0	0	0
5/3	7	0	0	0	0
5/4	20	0	0	0	0
5/5	6	0	0	0	0

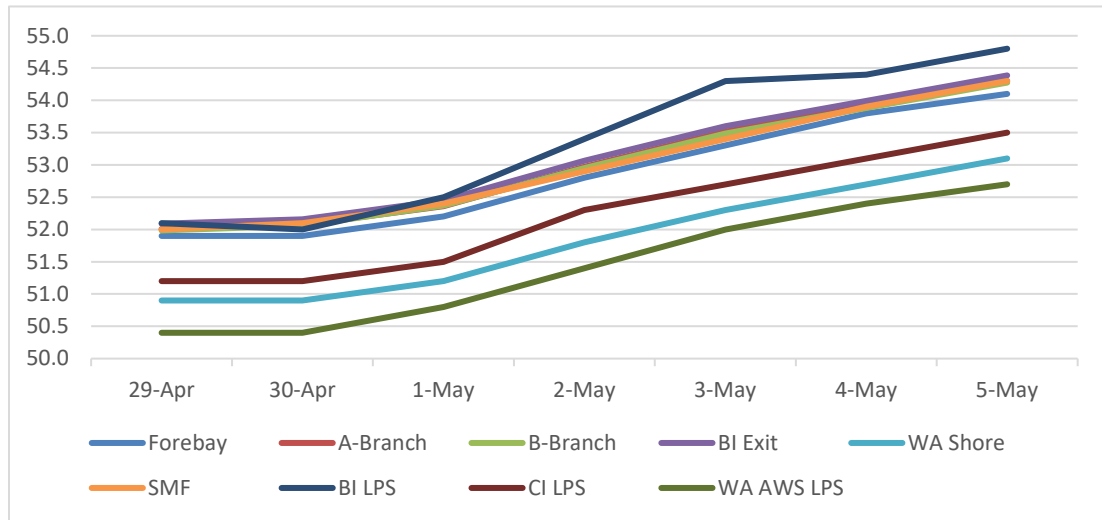
**4. WATER QUALITY MONITORING:**

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

- (1) Table 4. Average daily fishway water temperatures (Fahrenheit).

Date	Forebay	A-Branch	B-Branch	BI Exit	WA Shore	SMF	BI LPS	CI LPS	WA AWS LPS
29-Apr	51.9	52.0	52.0	52.1	50.9	52.0	52.1	51.2	50.4
30-Apr	51.9	52.1	52.1	52.2	50.9	52.1	52.0	51.2	50.4
1-May	52.2	52.4	52.4	52.5	51.2	52.4	52.5	51.5	50.8
2-May	52.8	53.0	52.9	53.1	51.8	52.9	53.4	52.3	51.4
3-May	53.3	53.5	53.5	53.6	52.3	53.4	54.3	52.7	52.0
4-May	53.8	53.9	53.9	54.0	52.7	53.9	54.4	53.1	52.4
5-May	54.1	54.3	54.3	54.4	53.1	54.3	54.8	53.5	52.7

(2) Figure 1. Graph of fishway water temperatures (Fahrenheit).



(3) 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 30 April provides updates on spill and gas cap standards that should be followed until further notice.
- b. A teletype sent on 04 May outlined the Columbia Flood Risk Management plan affecting all projects.

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