

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 16 of 2018, which covers the period from 15-21 April.

### 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 282.1 to 322.3 kcfs. Daily average powerhouse forebay elevation ranged from 72.9' to 74.4' msl. Daily average project tailwater ranged from 22.2' to 23.7" msl. Secchi disk measurements ranged from 3.0' to 5.0'. Daily average water temperature remained at 47°F.
- b. Daily average spill ranged from 119.6 to 123.7 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
04	0822 on 02 Apr	---	5 year overhaul
07	0922 on 05 Apr	---	FO, Underrated disconnect
08	0921 on 05 Apr	---	FO, Underrated disconnect
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
4/15	0.4'	0.7'
4/16	0.5'	0.7'
4/17	0.2'	0.3'
4/18	0.4'	0.4'
4/19	0.1'	0.2'
4/20	0.1'	0.2'
4/21	0.2'	0.2'

## 2. MAINTENANCE ACTIVITIES:

- f. Auxiliary Water System Closures.
  - (1) FV1-1 was closed from 0700 to 0715 on 19 April to clean trash rakes.
- 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: 181 yearling Chinook and steelhead examined: three fish (1.7%) were observed with GBT symptoms. Please follow this [link](#) to the FPC web page for further details. Fallbacks observed this week: 10 steelhead, 1 salmon and 1 unknown salmonid. Separation by Code is active for Lower Columbia River Fish Health Center collections.
- 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.

**3. FISHWAYS:**

- a. Project biologists inspected 15, 16, 19-21 April.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
4/17	BON	No Inspection	Lack of Personnel	NA
<b>Bradford Island</b>				
4/15-16, 19-21	A-Branch	Differential > 1.1'	Unknown	NA
<b>Cascades Island</b>				
4/15, 18	CI	Entrance Diff < 1.0'	Unknown	NA
<b>Washington Shore - Nothing to report</b>				

(2) 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.

(3) 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 was dewatered on 15 November.
- (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 is in service.
- (3) The B2CC is in service.
- (4) The DSM is in service.
- (5) STSs are installed.

e. Lamprey Fishways.

- (1) The Bradford Island LPS was returned to service for the season on 06 March.
- (2) The Bradford Island Lamprey Wetted Wall was commissioned on 17 March.
- (3) 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.
- (4) The Cascades Island LPS was returned to service on 16 April.
- (5) The Washington Shore AWS LPS remains OOS.

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

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
4/15	28	0	0	0	0
4/16	7	0	0	0	0
4/17	---	---	---	---	---
4/18	16	0	0	0	0
4/19	25	0	0	0	0
4/20	12	0	0	0	0
4/21	5	6	0	0	0

**4. WATER QUALITY MONITORING:**

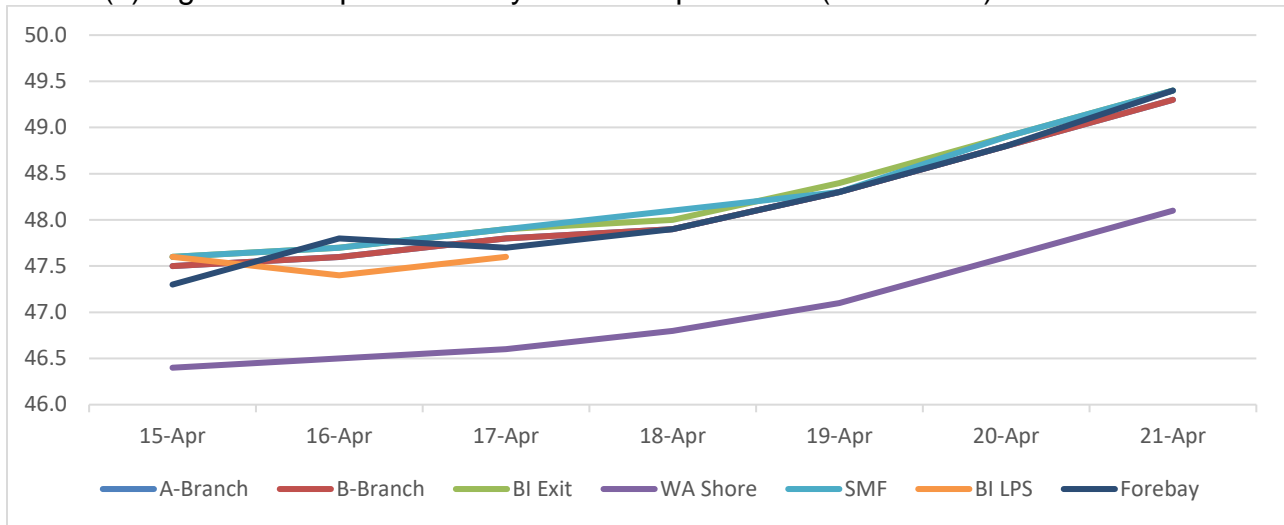
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

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

Date	A-Branch	B-Branch	BI Exit	WA Shore	SMF	BI LPS	Forebay
<b>15-Apr</b>	47.5	47.5	47.6	46.4	47.6	47.6	47.3
<b>16-Apr</b>	47.6	47.6	47.7	46.5	47.7	47.4	47.8
<b>17-Apr</b>	47.8	47.8	47.9	46.6	47.9	47.6	47.7
<b>18-Apr</b>	47.9	47.9	48.0	46.8	48.1	---	47.9
<b>19-Apr</b>	48.3	48.3	48.4	47.1	48.3	---	48.3
<b>20-Apr</b>	48.8	48.8	48.9	47.6	48.9	---	48.8
<b>21-Apr</b>	49.3	49.3	49.4	48.1	49.4	---	49.4

\*Unknown issues arose with the BI LPS temperature probe. Personnel are looking into the issue.

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



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

**5. CONSTRUCTION:** The Adult Fish Facility (AFF) lamprey trap was installed on 20-21 April.

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

**7. TELETYPES CURRENTLY IN EFFECT:**

a. A teletype sent on 20 provides updates on spill and gas cap standards that should be followed until further notice.

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