

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2018, which covers the period from 03 - 09 June.

### 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 299.2 to 370.5 kcfs. Daily average powerhouse forebay elevation ranged from 73.3' to 74.4' msl. Daily average project tailwater ranged from 22.2' to 26.1' msl. Secchi disk measurements ranged from 3.0' to 4.0'. Daily average water temperature remained at 60°F.
- b. Daily average spill ranged from 120.2 to 160.3 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
02	0017 on 29 May	1246 on 07 June	PO, Annual
03	1138 on 07 June	1217 on 07 June	Switching XJ4
04	0822 on 02 Apr	1657 on 07 June	5 Year Overhaul
07	0922 on 05 Apr	---	FO, Underrated Disconnect
08	0921 on 05 Apr	---	FO, Underrated Disconnect
10	1303 on 06 June	1618 on 06 June	PO, Trash Raking
11	1016 on 05 June	1136 on 05 June	PO, Trash Raking
11	0728 on 06 June	0905 on 06 June	PO, Trash Raking
12	0906 on 05 June	1011 on 05 June	PO, Trash Raking
18	0733 on 05 June	0904 on 05 June	PO, Trash Raking

- 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
6/3	3.5'	1.9'
6/4	0.3'	1.8'
6/5	1.0'	3.0'
6/6	---	---
6/7	0.1'	0.4'
6/8	0.2'	0.5'
6/9	0.2'	0.5'

## 2. MAINTENANCE ACTIVITIES:

f. Auxiliary Water System Closures.

(1) FV3-7 was closed from 1300 to 1330 on 07 June for cleaning.

g. STS/VBS Inspections. Nothing to report.

h. Dewatering and Fish Salvages.

(1) Project biologists salvaged (1) ~36" White Sturgeon, (1) adult Pacific Lamprey, (~15) juvenile lamprey, and (7) sculpins from MU4 tail logs on 05 June.

(2) Fisheries Field Unit biologists salvaged 10 adult Pacific Lamprey from the Cascades Island LPS on 05 June due to pump failures; [18BON14](#), [18BON15](#), & [18BON18](#).

## 2. RESEARCH:

a. Normandeau – Fish counting. Daytime visual counting (0500 to 2100) began on 01 April. Nighttime video recording (2100-0500) began on 15 May. Fish counts can be viewed [here](#).

b. PSMFC – Smolt Monitoring. Sample collections at the SMF began at 0700 on 02 March. Debris at the primary dewatering structure (PDS) and fish/debris separator was light to moderate consisting mostly of woody "mulch-like" debris and a few sticks. 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 subyearling Chinook, and steelhead examined: 2 fish (1.0%) observed with GBT symptoms. Fallbacks observed this week: 9 steelhead, 10 salmon and 1 unknown salmonid. Separation by Code is active for NOAA studies (Marsh). Please follow this [link](#) to the FPC web page for further details.

c. USDA – Avian hazing. Avian deck-based hazing began on 01 April.

d. CRITFC – Adult Salmonid Sampling. Adult salmonid sampling in the adult fish facility (AFF) began on 25 April and occurs 5 days per week.

e. University of Idaho. Evaluation of adult Pacific Lamprey passage behavior in relation to lower Columbia River dam modifications, AFEP Study Code LMP-P-17-1 began on 11 May.

f. NOAA – Northwest Fisheries Science Center (Frick). Development and evaluation of an adult lamprey wetted wall structure at Bradford Island Fishway 2017-2019 began on 08 May.

- g. NOAA – Northwest Fisheries Science Center (Marsh). Sort by Code (SbyC) recapture and collection of biological data from wild yearling Chinook Salmon, and both hatchery and wild juvenile Steelhead Trout are conducted at Bonneville’s SMF.
- a. USFWS – Lower Columbia River Fish Health Center. Adult and juvenile American Shad will be collected from the project as part of the annual National Wild Fish Health Survey. BON mortalities will also be sent to the USFWS for pathogen analysis and potential causes of death.

**3. FISHWAYS:**

- a. Bradford Island went into Shad Mode on 27 May.
- b. Washington Shore went into Shad Mode on 09 June.
- c. Project biologists inspected from 03 – 09 June.
- d. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
<b>Bradford Island</b>				
6/9	B-Branch Entrance	Differential > FPP	Unknown	NA
<b>Cascades Island - Nothing to Report.</b>				
<b>Washington Shore</b>				
6/3,5-9	Weir 38	Differential < FPP	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 check 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, Cascades Island, and WA Shore AWS LPSs remain in service.
- (2) The NDE Lamprey Flume Structure (LFS) remains in service.
- (3) The AFF lamprey trap remains in service.
- (4) The Bradford Island Lamprey Wetted Wall remains in service.

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

<b>Date</b>	<b>Gulls</b>	<b>Cormorants</b>	<b>Terns</b>	<b>Wh. Pelicans</b>	<b>Grebes</b>
6/3	2	0	0	0	0
6/4	0	1	0	0	0
6/5	0	0	0	0	0
6/6	0	0	0	0	0
6/7	0	0	0	0	0
6/8	0	0	0	0	0
6/9	0	0	0	0	0

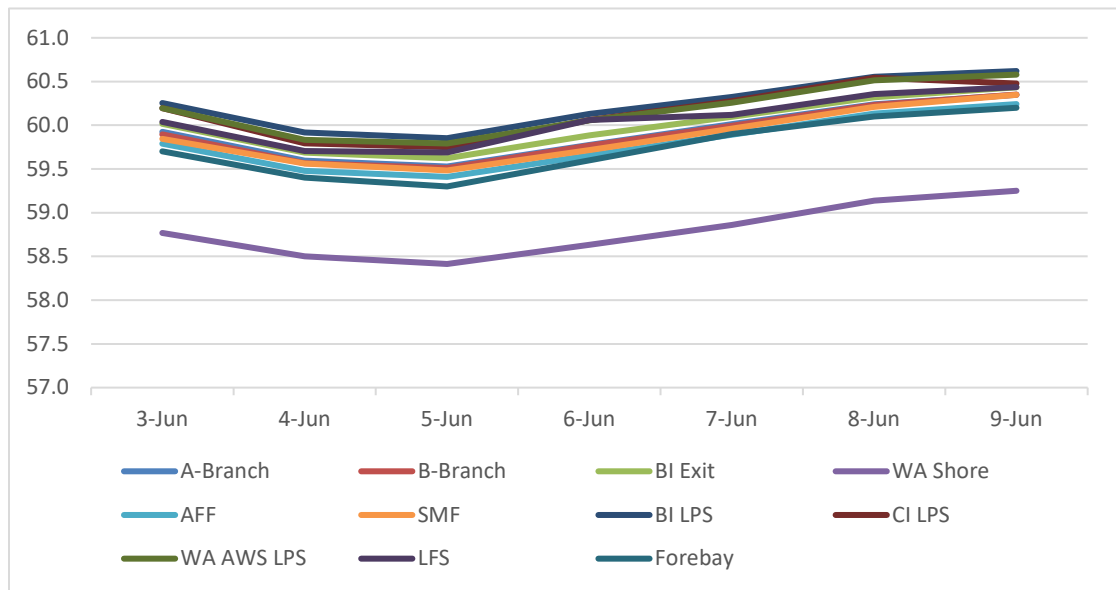
**4. WATER QUALITY MONITORING:**

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

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

Date	A-Branch	B-Branch	BI Exit	WA Shore	AFF	SMF	BI LPS	CI LPS	WA AWS LPS	LFS	Forebay
3-Jun	59.9	59.9	60.0	58.8	59.8	59.8	60.3	60.2	60.2	60.0	59.7
4-Jun	59.6	59.6	59.7	58.5	59.5	59.6	59.9	59.8	59.8	59.7	59.4
5-Jun	59.5	59.5	59.6	58.4	59.4	59.5	59.9	59.8	59.8	59.7	59.3
6-Jun	59.8	59.8	59.9	58.6	59.7	59.7	60.1	60.1	60.1	60.1	59.6
7-Jun	60.0	60.0	60.1	58.9	59.9	60.0	60.3	60.3	60.3	60.1	59.9
8-Jun	60.2	60.2	60.3	59.1	60.1	60.2	60.6	60.5	60.5	60.4	60.1
9-Jun	60.3	60.4	60.4	59.3	60.2	60.3	60.6	60.5	60.6	60.4	60.2

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



(3) Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

**6. CONSTRUCTION:** Nothing to report.

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

## **8. 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 June updated the Columbia Flood Risk Management plan affecting all projects.
- c. A teletype sent on 06 June requested from 0600 to 2200 on 09-10 June to have the Bonneville forebay at 74.0' or below as a soft constraint. The purpose of this teletype is to maximize the exposed sand bar near the mouth of the Hood River during the current high flow regime.
- d. A teletype sent on 07 June cancels the Columbia Flood Risk Management plan affecting all projects.

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