

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)  
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 20 of 2018, which covers the period from 13-19 May.

### 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 465.7 to 495.6 kcfs. Daily average powerhouse forebay elevation ranged from 72.8' to 74.4' msl. Daily average project tailwater ranged from 30.5' to 31.6' msl. Secchi disk measurements ranged from 2.0' to 3.0'. Daily average water temperature ranged from 54°F - 56°F.
- b. Daily average spill ranged from 269.5 to 310.6 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
13	0003 on 14 May	---	PO, Annual
15	0035 on 16 Apr	---	FGE work
18	0702 on 15 May	---	PO, STS inspection
18	1700 on 15 May	1434 on 16 May	Forced OOS, STS gearbox

- 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
5/13	0.9'	5.8'
5/14	0.4'	3.4'
5/15	0.6'	1.3'
5/16	5.0'	7.4'
5/17	0.5'	6.8'
5/18	7.1'	9.9'
5/19	0.5'	1.7'

**2. MAINTENANCE ACTIVITIES:**

f. Auxiliary Water System Closures.

(1) FV3-7 was closed for cleaning from 1239 to 1315 on 15 May.

(2) FV3-9 was closed for cleaning from 0715 to 0721 on 16 May, and 0659 to 0720 on 17 May.

g. STS/VBS Inspections. STS/VBS inspection ocured on 14 May.

UNIT #	PREVIOUS STS HRS	HRS WHEN INSPECTED	STS-A	STS-B	STS-C	VBS A,B,C	HRS RUN	REMARKS
11	36787	37831	Ok	Ok	Ok	Ok	1044	n/a
12	27355	28152	OK	OK	OK	OK	797	n/a
13	98850	99843	OK	OK	OK	OK	993	n/a
14	00911	01961	OK	OK	OK	OK	1050	n/a
15	13570	14073	OK	OK	OK	OK	503	n/a
16	25208	26257	OK	OK	Ok	OK	1049	n/a
17	16984	18014	OK	OK	OK	OK	1030	n/a
18	55458	56477	OK	OK	OK	OK	1019	n/a

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. Nighttime video recording (2100-0500) began on 15 May. 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 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: 100 yearling Chinook and steelhead examined: zero were observed with GBT symptoms. Please follow this [link](#) to the FPC web page for further details. Fallbacks observed this week: 30 steelhead, 5 salmon and 2 unknown salmonid. Separation by Code is active for NOAA studies (Marsh).

d. USDA – Pinniped / Avian hazing. Deck-based hazing began 01 March for pinnipeds and 01 April for birds.

- e. CRITFC – Sea lion hazing. Hazing by boat began 05 March.
- f. PNNL – FGE testing. This years’s B2FGE testing data collection has been delayed until 2019 due to equipment faults.
- g. CRITFC – Adult Salmonid Sampling. Adult Salmonid sampling in the adult fish facility (AFF) began on 25 April and occurs 5 days per week.
- h. 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.
- i. 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.
- j. NOAA – Northwest Fisheries Science Center (Marsh).
- k. 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. Project biologists inspected from 13 to 19 May.
- b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
<b>Bradford Island</b>				
5/13-19	A&B-branches	Differential > 1.1’	Tailwater	NA
<b>Cascades Island</b>				
5/13-15,17	UMT	Differential > 1.1’	FV5-9	Ops adjusted
5/18	UMT	Differential < 0.9’	CI fishway exit	Ops adjusted
<b>Washington Shore</b>				
5/13	Weir 37	Differential < 0.9’	Unknown	NA
5/14,18-19	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 was conducted on 17 May.
- (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
5/13	8	0	0	0	0
5/14	1	0	0	0	0
5/15	1	0	0	0	0
5/16	8	0	0	0	0
5/17	9	0	0	0	0
5/18	0	0	0	0	0
5/19	0	0	0	0	0

#### 4. WATER QUALITY MONITORING:

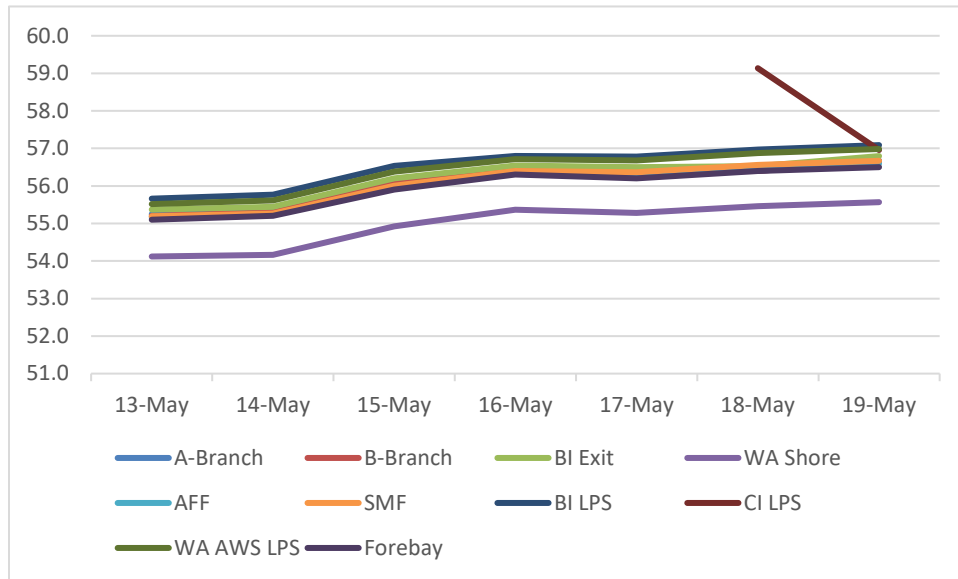
- a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

(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	Forebay
13-May	55.3	55.2	55.4	54.1	55.2	55.2	55.7	---	55.5	55.1
14-May	55.3	55.3	55.4	54.2	55.2	55.3	55.8	---	55.6	55.2
15-May	56.1	56.1	56.2	54.9	56.0	56.0	56.5	---	56.4	55.9
16-May	56.4	56.4	56.5	55.4	56.4	56.4	56.8	---	56.7	56.3
17-May	56.4	56.4	56.5	55.3	56.3	56.4	56.8	---	56.7	56.2
18-May	56.4	56.4	56.5	55.5	56.5	56.6	57.0	59.1	56.9	56.4
19-May	56.7	56.7	56.8	55.6	56.6	56.7	57.1	57.0	57.0	56.5

\*Cascades Island LPS temperature probe was accidently lost to the river. Missing data no longer exists.

(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:**

- a. During an STS Inspection on 15 May, a problem with the gearbox on the STS in Unit 18C was discovered. The unit was taken out of service and upon opening the gear box, approximately 2 cups of oil discharged beyond containment and into the gatewell. An oil sheen (~ 1 cup) was also noticed in gatewell 18B. The STS was pulled out of the water for inspection. Oil has been cleaned up from both 18C and 18B slots. A spill report was filed.

**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.

TONY R. KIRK  
Operations Manager  
Bonneville Project