

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)
 SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 19 of 2018, which covers the period from 06-12 May.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 368.0 to 474.0 kcfs. Daily average powerhouse forebay elevation ranged from 72.6' to 74.8' msl. Daily average project tailwater ranged from 25.6' to 30.3' msl. Secchi disk measurements ranged from 3.0' to 4.0'. Daily average water temperature ranged from 54°F - 55°F.
- b. Daily average spill ranged from 161.6 to 257.3 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
04	0822 on 02 Apr	---	5 year overhaul
07	0922 on 05 Apr	---	FO, Underrated disconnect
08	0921 on 05 Apr	---	FO, Underrated disconnect
10	0950 on 10 May	1407 on 10 May	PO, Trash Raking
11	1522 on 09 May	1612 on 09 May	PO, Trash Raking
12	1358 on 09 May	1519 on 09 May	PO, Trash Raking
15	0035 on 16 Apr	1808 on 08 May	FGE work
17	0014 on 07 May	1636 on 07 May	Quarterly thrust collar inspection, PO
17	1129 on 09 May	1316 on 09 May	PO, Trash Raking
18	1017 on 09 May	1126 on 09 May	PO, Trash Raking

- d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder.

(1) F2 was placed in reserve service to float trash from 2159 on 12 May until 0301 on 13 May due to high draw downs (4.8').

e. Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
5/6	0.9	2.0
5/7	0.1	0.4
5/8	0.6	1.6
5/9	0.3	0.4
5/10	0.2	0.2
5/11	1.2	2.0
5/12	0.7	4.8

2. MAINTENANCE ACTIVITIES:

f. Auxiliary Water System Closures.

(1) FV3-7 was closed from 1030 to 1130 on 07 May for trash rack cleaning.

(2) FV3-9 was closed from 1238 to 1300 on 07 May for trash rack 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 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. A hydroacoustic study at the PH2 gatewells as part of biological testing of the FGE mods began on 10 April and concluded on 08 May at the recommendation from PNNL and USACE, Portland District. The second year will be postponed due to the plate anchors backing out and cables associated with the transducers needing a rolling outage to remedy.
- 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 06 - 12 May.

b. Fish passage plan observations.

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

Date	Location	FPP Violation	Cause	Response
Bradford Island				
5/9	B-Branch	Entrance Diff > 2.0'	Unknown	NA
Cascades Island – Nothing to report.				
Washington Shore				
5/6	Weir 37	Differential < 0.9'	Unknown	NA
5/8	Weir 37	Differential > 1.1'	Unknown	NA
5/10-12	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 and safe river conditions.

(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 occurred on 07 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.

(a) At 1150 on 10 May the DSM emergency release gate was tripped due to a malfunction with the screen cleaners.

(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 (Sunday evenings through Friday mornings only) on 10 April. Once FFU, U of I, and CRITFC personnel are available, operations will continue through the weekend.
- (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 Sunday evenings through Friday mornings 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
5/6	8	0	0	0	0
5/7	5	0	0	0	0
5/8	7	2	0	0	0
5/9	0	0	0	0	0
5/10	0	0	0	0	0
5/11	2	0	0	0	0
5/12	16	0	0	0	0

4. WATER QUALITY MONITORING:

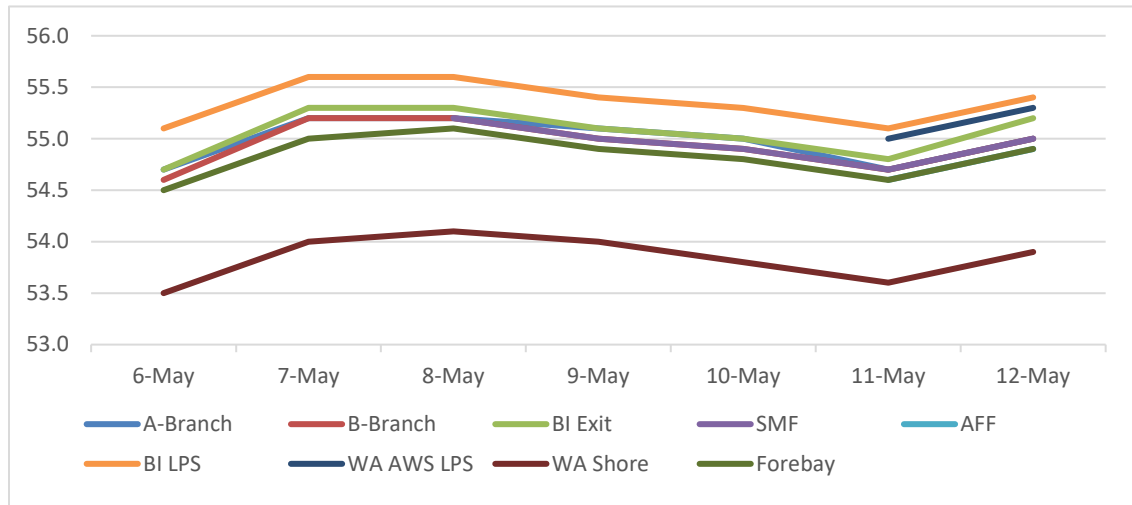
a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November.

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

Date	A-Branch	B-Branch	BI Exit	SMF	AFF	BI LPS	WA AWS LPS	WA Shore	Forebay
6-May	54.7	54.6	54.7	---	---	55.1	---	53.5	54.5
7-May	55.2	55.2	55.3	---	---	55.6	---	54.0	55
8-May	55.2	55.2	55.3	55.2	---	55.6	---	54.1	55.1
9-May	55.1	55.0	55.1	55.0	---	55.4	---	54.0	54.9
10-May	55.0	54.9	55.0	54.9	---	55.3	---	53.8	54.8
11-May	54.7	54.7	54.8	54.7	54.6	55.1	55.0	53.6	54.6
12-May	55.0	55.0	55.2	55.0	54.9	55.4	55.3	53.9	54.9

*Missing temperatures are due to change overs from the previous recording equipment to HOBO loggers.

(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 08 May modified until priority for unit 15 due to the plate anchors related to the FGE mod study by PNNL. Unit 15 has been changed to last in unit priority and it should be operated in the 1% mid-range when spill is greater than or equal to 150 kcfs until 31 July at 2359.
- b. A teletype sent on 11 May updated the Columbia Flood Risk Management plan affecting all projects.
- c. A teletype sent on 12 May updated the spill caps and lack of load spill levels to be used from 0000 on 01 April until further notice.

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