

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 21 of 2016, which covers the period from 15 to 21 May.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 237.1 to 276.9 kcfs. Daily average powerhouse forebay elevation ranged from 74.2 to 74.9' msl. Daily average project tailwater ranged from 19.1 to 21.2' msl. Secchi disk measurements ranged from 3 to 5'. Daily average water temperature ranged from 58 to 60 °F.
- b. Spring spill began on 10 April. Daily average spill ranged from 99.9 to 125.6 kcfs.
- c. Unit Operation. PH2 remains the priority powerhouse. Main unit draw downs are measured every Monday and more frequently as needed.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
5	0000 on 14 Apr	---	Cubicle measurements, 230 kV disconnect broken
6	0000 on 14 Apr	---	
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement, raking trash
8	0103 on 22 Feb	---	

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

(1) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
5/15	0.3	0.5
5/16	0.3	0.5
5/17	0.4	0.5
5/18	0.7	0.9
5/19	0.7	0.7
5/20	0.6	0.7
5/21	0.4	0.3

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures None.
- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages. None.

3. RESEARCH:

- a. CRITFC – AFF. Adult sampling in the AFF began on 15 April.
- b. CRITFC – Sea lion hazing. Hazing by boat began 07 March.
- c. Fisheries Field Unit – Pinniped observation. Observations began on 04 January.
- d. NOAA – Sort by code. Sampling as part of a NWW transportation study began the week of 24 April.
- e. Normandeau – Fish counting. Video counting ended and visual counting began on 01 April.
- f. PSMFC – Smolt Monitoring Program. SbyC is active for USFWS Fish Health Center and NOAA. 200 yearling Chinook and steelhead were examined with two (1.0%) exhibiting GBT symptoms. Fallbacks recorded crossing the separator bars: 25 steelhead, 8 salmon, and 11 unknown salmonids. More details can be found on the [FPC web page](#).
- g. USDA – Avian and pinniped hazing. Dam-based hazing for pinnipeds began on 08 March, for birds on 1 April.
- h. USFWS – Fish Health Center. Sort by code collection of juvenile hatchery fish began the week of 09 April.
- i. UW/NOAA – Fish condition. Juvenile sampling at the SMF for a study of SAR and differential delayed mortality began 27 April.

4. FISHWAYS:

- a. Project biologists inspected 15-21 May.
- b. Fish passage plan observations.
 - (1) Table 3. FPP out of criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
5/19-20	A-branch	Water over weir > 1.1'	FV3-7 conduit leak	Repair in 2017
CASCADES ISLAND				
WASHINGTON SHORE				
5/21	Weir 38	Water over weir < 0.9'	Unknown	None
ongoing	PH2	Diffuser A2 closed	See 4.b.2 below	None

(2) PH2CC diffuser A2 was unable to be repaired during winter maintenance 2014/15 and remains closed. It should be open when tailwater is above 13.0' msl. The gate for diffuser B5 was removed for repairs and therefore cannot be closed. It should be closed when tailwater is below 12.0' msl or above 28.0' msl.

c. Adult Fishways.

(1) The AFF remains in service.

(2) Fishway instrument calibration was checked on 18 May.

(3) Eight of 12 floating orifice gates (FOGs) are installed; the 4 middle slots have bulkheads in place. FOG sea lion bars are installed. Plywood sea lion barriers were installed on top of all FOGs on 11 February to prevent sea lions from jumping into the PH2CC.

(4) All SLEDs are installed.

d. Juvenile Fishways.

(1) The ITS remains in service.

(2) The hydro-cannon is on.

(3) The B2CC remains in service.

(4) The DSM remains in service.

e. Lamprey Fishways.

(1) The Bradford Island LPS, WA AWS LPS, and the Cascade Island LPS remain in service.

(2) Due to needed repairs, the NDE LFS/LPS will remain out of service for the 2016 season. Repairs are currently being coordinated.

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

(1) Table 5. Counts of tailrace foraging piscivorous birds.

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
5/15	42	0	0	0	0
5/16	89	1	0	0	0
5/17	32	2	0	0	0
5/18	43	2	0	0	0
5/19	59	6	0	0	0
5/20	69	0	0	0	0
5/21	27	11	0	0	6

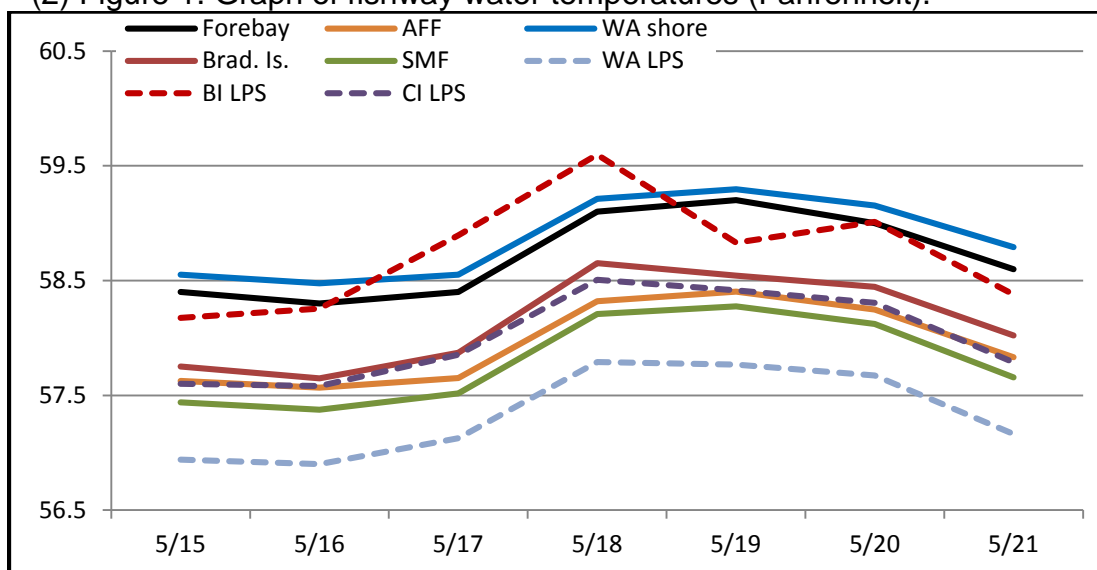
5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

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

Date	Forebay	Fishways				Lamprey		
		Brad. Is.	WA shore	AFF	SMF	BI LPS	WA LPS	CI LPS
5/15	58.4	57.8	57.4	57.6	58.6	58.2	56.9	57.6
5/16	58.3	57.6	57.4	57.6	58.5	58.3	56.9	57.6
5/17	58.4	57.9	57.5	57.7	58.6	58.9	57.1	57.9
5/18	59.1	58.7	58.2	58.3	59.2	59.6	57.8	58.5
5/19	59.2	58.5	58.3	58.4	59.3	58.8	57.8	58.4
5/20	59.0	58.4	58.1	58.2	59.2	59.0	57.7	58.3
5/21	58.6	58.0	57.7	57.8	58.8	58.4	57.2	57.8

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



b. 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 23 April updates the spill caps and lack of load conditions to be used from 0000 on 1 April until further notice.
- b. A teletype sent on 7 April states effective 10 April to 31 August, provide spring and summer spill per the 2015 Fish Operations Plan. A schedule and specific operations are provided. The B2CC will operate concurrent with spill.
- c. A teletype sent on 11 May updates Columbia River Flood Risk Management (FRM) to be used until further notice.

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