

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for **Week 28** of 2021, which covers the period from **04 to 10 July 2021**.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 129.3 to 179.4 kcfs. Daily average powerhouse forebay elevation ranged from 74.8' to 75.7' msl. Daily average project tailwater ranged from 11.8' to 15.3' msl. Secchi disk measurements remained at 7.0'. Daily average water temperature ranged from 68 to 69°F.
- b. Daily average spill ranged from 85.1 to 96.8 kcfs. Summer spill season began on 16 June and will continue through 31 August in accordance with FOP guidelines.
- c. Unit Operation. **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

- **Table 1. Main Unit Outages**

Unit	OOS	RTS	Reason
5	0911 on 14 June	---	P.O., 5-Yr Overhaul
17	0001 on 07 July	1610 on 07 July	P.O., QTCI

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

Fish Unit Outages. Fish Units are periodically placed into reserve service (RS) to float trash when debris differentials become excessive and trash raking is not possible.

- **Table 2. Fish Unit Outages.**

Unit	OOS/RS	RTS	Reason	Duration
F2	2301 on 03 July	0526 on 04 July	R.S., Nighttime Lamprey Ops	6 hours, 25 mins
F1	2257 on 04 July	0530 on 05 July	R.S., Nighttime Lamprey Ops	6 hours, 33 mins
F2	2256 on 05 July	0526 on 06 July	R.S., Nighttime Lamprey Ops	6 hours, 30 mins
F1	2320 on 06 July	0539 on 07 July	R.S., Nighttime Lamprey Ops	6 hours, 19 mins
F2	2301 on 07 July	0531 on 08 July	R.S., Nighttime Lamprey Ops	6 hours, 30 mins
F1	2300 on 08 July	0525 on 09 July	R.S., Nighttime Lamprey Ops	6 hours, 25 mins
F2	2259 on 09 July	0529 on 10 July	R.S., Nighttime Lamprey Ops	6 hours, 30 mins
F1	2259 on 10 July	---	R.S., Nighttime Lamprey Ops	---

- **Table 3. Fish Unit Drawdowns, in Feet.**

Date	F1	F2
07/04	0.6'	0.3'
07/05	0.3'	0.6'
07/06	0.4'	0.3'
07/07	0.4'	0.7'
07/08	0.3'	0.2'
07/09	0.2'	0.4'
07/10	0.5'	0.4'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.
- FV 3-7 (Bradford Island) was placed in manual and pinched down to reduce flow in the BI AWS to prevent blown diffuser grating and further damage to FG 3-3. FG 3-4, FG 3-5, and FG 3-6 are all OOS due to mechanical failure. These settings for the A-Branch AWS and diffusers will likely remain until the problems can be addressed during the 2021-2022 winter maintenance period. Please see 21BON014 MFR A-Branch FV 3-7 and FG 3-4,5,6 OOC for further explanation. <http://pweb.crohms.org/tmt/documents/FPOM/2010/>
 - FV 3-9 was closed for cleaning from 1003 to 1018 on 06 July.
 - FV 3-7 and 3-9 were placed into manual for cleaning from 1514 to 1613 on 08 July.
- b. STS/VBS Inspections. July monthly inspection report: No issues to report.

UNIT	Previous STS HRS	Present readings	STS- A	STS- B	STS- C	HRS RUN	REMARKS
11	59168	59699				531	
12	45238	45746				508	
13	5151	5572				421	
14	16243	16509				266	
15	24727	24883				156	
16	37510	37613				103	
17	5262	5738				476	
18	5326	5856				530	

- c. Dewatering and Fish Salvages. Nothing to report.

3. RESEARCH:

- a. Four Peaks Environmental - Fish counting contract: Daytime visual counting (0500 to 2100 PDT) began on 01 April. Night video (2100 to 0500 PDT) counting began 15 May. Fish counts can be viewed [here](#).
- b. USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite, and the work is underway.
- c. Pacific States Marine Fisheries Commission - 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 light-moderate consisting mostly of aquatic macrophytes, a few sticks and dead adult American shad. Higher temperature sampling protocols were initiated on 07 July (sample end-date of 08 July) when water temperatures ascended to 70°F. Modified sampling during higher temperatures means Index/Condition sampling will take place every other day until the daily average descends to 69.5°F. Sample and bypass mode will occur on alternating 24 hour periods (0700-0700). Gas Bubble Trauma (GBT) examinations began on 10 April and are typically preformed 2 days/week through the end of spill season. Results from this week’s GBT examinations: 200 subyearling Chinook examined with no GBT symptoms observed. 1 steelhead fallback was observed this week. Truck releases of summer/fall out-migrants originating from Little Goose and Lower Granite dams began at Bonneville this week and occur every other day. No fish collections for research purposes were conducted this week. More details can be found on the [FPC web page](#).
- d. USDA – Pinniped and Avian Hazing: Deck-based hazing continues.
- e. State Agency Pinniped Trapping: Sea lion trapping has concluded for the spring season.
- f. WDFW/ PSMFC – Pikeminnow Sampling: Hook and line angling activities continue for Northern Pikeminnow within the BON BRZ as a constituent of Gas Bubble Trauma (GBT) monitoring.

- g. CRITFC – Adult Salmonid Sampling: Adult Salmonid sampling in the AFF began on 20 April and typically occurs 5 days per week.

4. **FISHWAYS:**

- a. Project biologists inspected 04 to 10 July.
 b. Fish Passage Plan observations.

• **Table 4. FPP Items Out of Criteria.**

Date	Location	FPP Violation	Cause	Response
PH1				
07/04-10	PH1 ITS	S. End Gate Inoperable and Chain Gates 1a & 1b Closed	S. End Gate inoperable, 1a and 1b closed for safety reasons	W.O.
Bradford Island				
07/04-06, 08	Bradford Island Fishway	FV 3-7 in Manual and Low	Placed in manual and pinched down to reduce flow in AWS	W.O.
07/04-10	A-Branch	FG 3-4 Partially Open	FG 3-4 mechanically bound partially open/closed	W.O.
Cascades Island				
07/4-5	Cascades Island Fishway	UMT Staff Gauge Low <1.2'	Unknown	N/A
07/10	Cascades Island Fishway	FG 3-18 Open, Should Be Closed	Unknown	Addressed Following Week
Washington Shore				
07/09	WA Shore Fishway	Weir 37 High >1.1	Unknown	Ops Notified
07/04-6	WA Shore Fishway	Weir 38 Low <1.2'	Unknown	N/A

- FV 3-7 (Bradford Island) was placed in manual and pinched down to reduce flow in the BI AWS to prevent blown diffuser grating and further damage to FG 3-3. These settings for the A-Branch AWS and diffusers will likely remain until the problems can be addressed during the 2021-2022 winter maintenance period.
- FG 3-4 (A-Branch) was found mechanically bound and unable to move from the "almost closed" position in December of 2020. This diffuser will likely remain in this position until the 2021-2022 winter maintenance period.
- FG 3-5 (A-Branch) was not operating correctly on 07 June 2021 and was banging heavily underwater due to an assumed broken fish gate. To prevent further damage to the fishway and equipment, a clearance has been issued for FG 3-5 to be closed and taken out of service until the winter maintenance period.
- FG 3-6 (A-Branch) was found mechanically bound in the closed position on 07 June 2021. This diffuser will likely remain in this position until the 2021-2022 winter maintenance period.

c. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 07 July.

- (3) SLEDs are installed at all locations.
 - (4) Cascades Island Fishway and Washington Shore Fishways were taken out of “Shad Mode” and placed back into “Salmon Mode” on 07 June.
 - (5) Bradford Island Fishway was put into “Shad Mode” on 02 June.
- d. Juvenile Fishways.
- (1) The ITS remains in service (auto-chain gates 3B, 6C, & 10B only).
 - (2) The hydro-cannon remains in service.
 - (3) The B2CC remains in service.
 - (4) The DSM remains in service.
 - (5) STS’s remain in service.
- e. Lamprey Fishways.
- (1) BI, CI, and WA Shore LPS’s remain in service.
 - (2) The Bradford Island Wetted Wall (BIWW) remains out of service.
 - (3) The PH2 Lamprey Flume Structure (LFS) remains in service.
 - (4) The AFF lamprey trap remains in service.
 - (5) The CI Lamprey trap remains in service.
- f. Avian Monitoring. Avian counts are recorded 01 April – 31 October.

Table 5. *Avian Counts 04 to 10 July.*

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
07/04	15	2	0	0	0
07/05	10	3	0	0	0
07/06	8	2	0	0	0
07/07	3	0	0	0	0
07/08	3	2	0	0	1
07/09	12	3	0	0	0
07/10	49	4	0	0	0

5. WATER QUALITY MONITORING:

a. Fishway Temperatures. Temperature logs began on 28 February and will continue through 30 November.

Table 6. *Bonneville Fishway Temperatures for 04 to 10 July.*

Date	A-Branch	B-Branch	BI Exit	WA Entrance	CI Entrance	WA Exit	CI LPS	WA LPS	BI LPS	AFF	LFS	SMF	Forebay
4-Jul	69.6	69.7	69.8	69.8	69.7	69.7	69.9	70.0	70.1	69.1	69.9	69.6	68
5-Jul	70.0	70.1	70.1	70.1	70.1	70.1	70.2	70.3	70.4	69.2	70.3	70.0	68
6-Jul	70.3	70.3	70.5	70.3	70.3	70.3	70.5	70.6	70.7	70.0	70.5	70.2	69
7-Jul	70.2	70.2	70.4	70.2	70.2	70.2	70.3	70.4	70.6	69.3	70.4	70.1	69
8-Jul	70.1	70.1	70.3	70.2	70.1	70.2	70.2	70.4	70.5	69.8	70.3	70.0	69
9-Jul	70.3	70.2	70.5	70.3	70.3	70.3	70.4	70.5	70.8	69.9	70.4	70.1	69
10-Jul	70.6	70.5	70.8	70.5	70.3	70.5	70.7	70.8	71.0	70.4	70.7	70.4	69

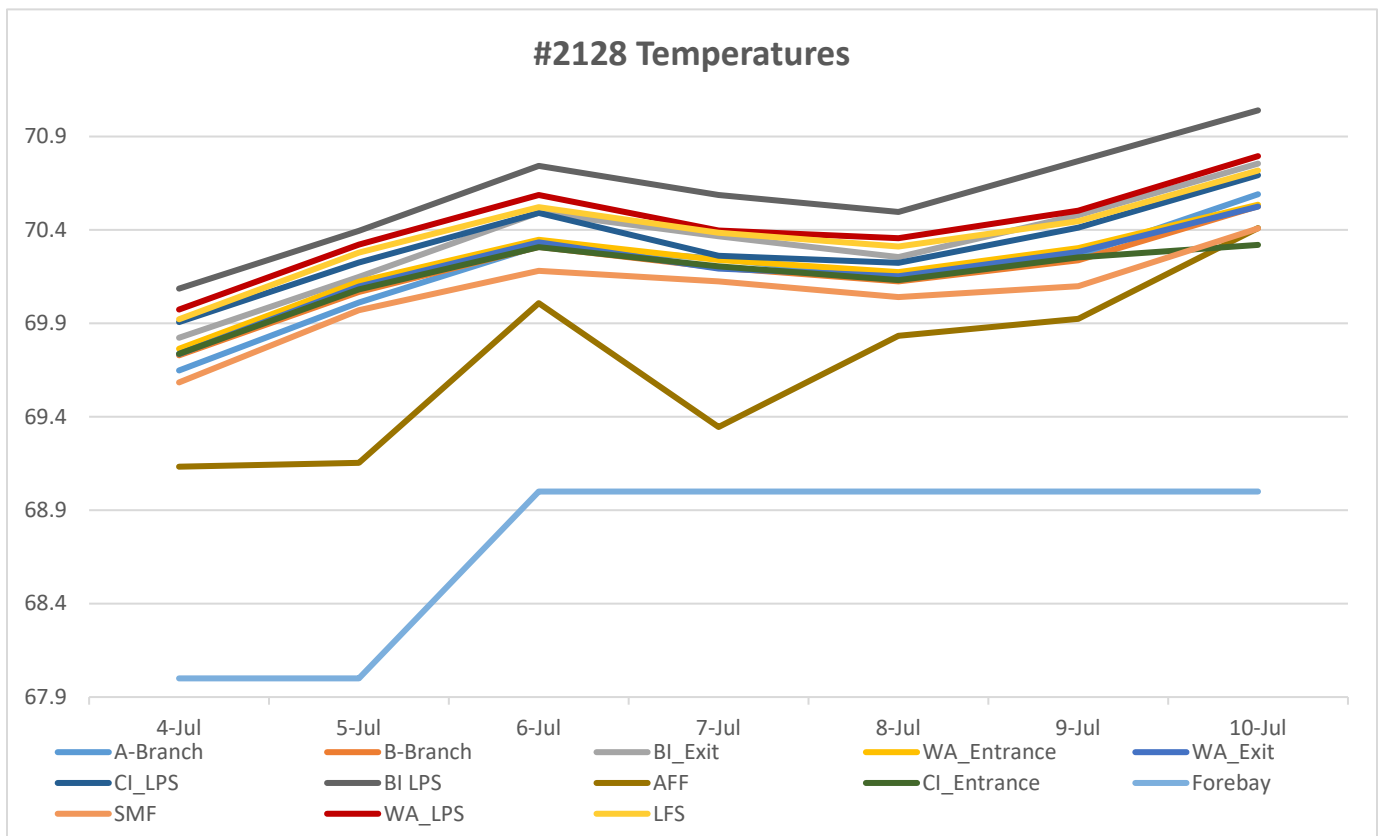


Figure 1. *Average fishway temperatures for 04 to 10 July.*

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. TELETYPE CURRENTLY IN EFFECT:

- A teletype sent out on 11 June stating effective 16 June at 0001 hours through 31 August at 2359 hours, Bonneville Dam is to operate in accordance with the 2021 Fish Operations Plan to provide summer spill for fish passage. Please see teletype BON R 061121 1732 for more details.

- A teletype sent out on 15 June provided guidance for summer spill caps for MCN, JDA, TDA, and BON starting at 0001 on 16 June and until further notice. Please see teletype BON R 061521 1307 for more details.
- A teletype sent out on 29 June requests that Bonneville pool operate within a 1.5 foot band, hard constraint from 0600 on 05 July to 1800 08 July. The purpose of this operation is to limit pool fluctuation during the fall treaty fishery to avoid debris in fishing nets, reduce rapid water level drops that entangle nets, minimize boat access problems, and avoid nets being torn from their anchors.

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