

## MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

**SUBJECT:** Bonneville Project, Fishway and Fish Activities for **Week 27** of 2021, which covers the period from **27 June to 03 July 2021**.

## 1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 189.9 to 220.9 kcfs. Daily average powerhouse forebay elevation ranged from 74.6' to 75.1' msl. Daily average project tailwater ranged from 16.0' to 17.9' msl. Secchi disk measurements remained at 7.0'. Daily average water temperature ranged from 67 to 69°F.
- b. Daily average spill ranged from 95.8 to 96.5 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
1	1528 on 27 June	0900 on 02 July	F.O., BPA Request for 115kV Support*
10	1224 on 28 June	0631 on 29 June	F.O., BPA Request for 115kV Support*
9	0629 on 29 June	0903 on 29 June	F.O., BPA Request for 115kV Support*
10	0900 on 29 June	0900 on 02 July	F.O., BPA Request for 115kV Support*

\*Please see Table 4 footnotes for further details.

- 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
F1	2231 on 26 June	0529 on 27 June	R.S., Nighttime Lamprey Ops	6 hours, 58 mins
F2	2229 on 27 June	0538 on 28 June	R.S., Nighttime Lamprey Ops	7 hours, 9 mins
F1	2230 on 28 June	0531 on 29 June	R.S., Nighttime Lamprey Ops	7 hours, 1 min
F2	2229 on 29 June	0533 on 30 June	R.S., Nighttime Lamprey Ops	7 hours, 4 mins
F1	2236 on 30 June	0528 on 01 July	R.S., Nighttime Lamprey Ops	6 hours, 52 mins
F2	2259 on 01 July	0532 on 02 July	R.S., Nighttime Lamprey Ops	6 hours, 33 mins
F1	2259 on 02 July	0536 on 03 July	R.S., Nighttime Lamprey Ops	6 hours, 37 mins
F2	2301 on 03 July	---	R.S., Nighttime Lamprey Ops	---

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

Date	F1	F2
06/27	0.3'	0.7'
06/28	0.6'	0.2'
06/29	0.1'	0.9'
06/30	0.7'	0.3'
07/01	0.2'	0.5'
07/02	0.5'	0.3'
07/03	0.8'	0.7'

## 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 1-1 was closed for cleaning from 0734 to 0829 on 29 June.
  - FV 3-7 and 3-9 were placed into manual for cleaning from 1120 to 1129 on 30 June.
- b. STS/VBS Inspections. Nothing to report.
- 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 and a few sticks. Gas Bubble Trauma (GBT) examinations began on 10 April and are typically performed 2 days/week through the end of spill season. Results from this week's GBT examinations: 200 sub-yearling Chinook examined; 1 fish (0.5%) with GBT symptoms was observed. No fallbacks were observed this week. 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 27 June to 03 July.
- b. Fish Passage Plan observations.

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

Date	Location	FPP Violation	Cause	Response
PH1				
06/27-07/03	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.
06/30	PH1	FV 1-1 Low	FV 1-1 not responding to forebay and TW indices	Symax PLC Issues W.O.
06/30-07/02	PH1CC	PH1CC North Ent/TW Diff <1.0'	PH1 Symax PLC Issues *see below	W.O.
06/30-07/02	PH1CC	PH1CC South Ent/TW Diff <1.0'	PH1 Symax PLC Issues *see below	W.O.
06/30-07/02	PH1	Unit Priority Order OOC (1+10 running)	BPA request for 115 kV grid support *see below	MFR
Bradford Island				
06/27-07/03	Bradford Island Fishway	FV 3-7 in Manual and Low	Placed in manual and pinched down to reduce flow in AWS	W.O.
06/27-07/03	A-Branch	FG 3-4 Partially Open	FG 3-4 mechanically bound partially open/closed	W.O.
Cascades Island. Nothing to Report				
Washington Shore				
06/27-28, 07/02-03	WA Shore Fishway	Weir 38 <1.2'	Unknown	N/A

- PH1 experienced significant Symax PLC failure starting on 27 June, lasting through 02 July. This failure made it so automated systems could not read water levels and other indices such as weir gate levels, causing low valve stem values at FV 1-1 and little to no entrance bay/tailwater differentials at both the North and South Collection Channel fishway entrances.
- BPA requested an extra 70 MW or greater to be provided to the 115 kV grid to support extra power usage during an extreme temperature event this week. Units 1 and 10 in PH1 were turned on in response, causing BON to be OOC for unit priority usage. Units 1 and 10 were placed back into reserve shutdown (RS) on 02 July, placing BON back into FPP compliance for unit order priority. Please see MFR 21BON025 PH1 Support for 115kV line for a more detailed explanation. <http://pweb.crohms.org/tmt/documents/FPOM/2010/>
- 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 02 July.
- (3) SLEDs are installed at all locations.
- (4) Cascades Island Fishway and Washington Shore Fishways were put into “Shad Mode” on 01 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. CI LPS Pump 2 experienced motor failure and was replaced on 28 June.
- (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 27 June to 03 July.*

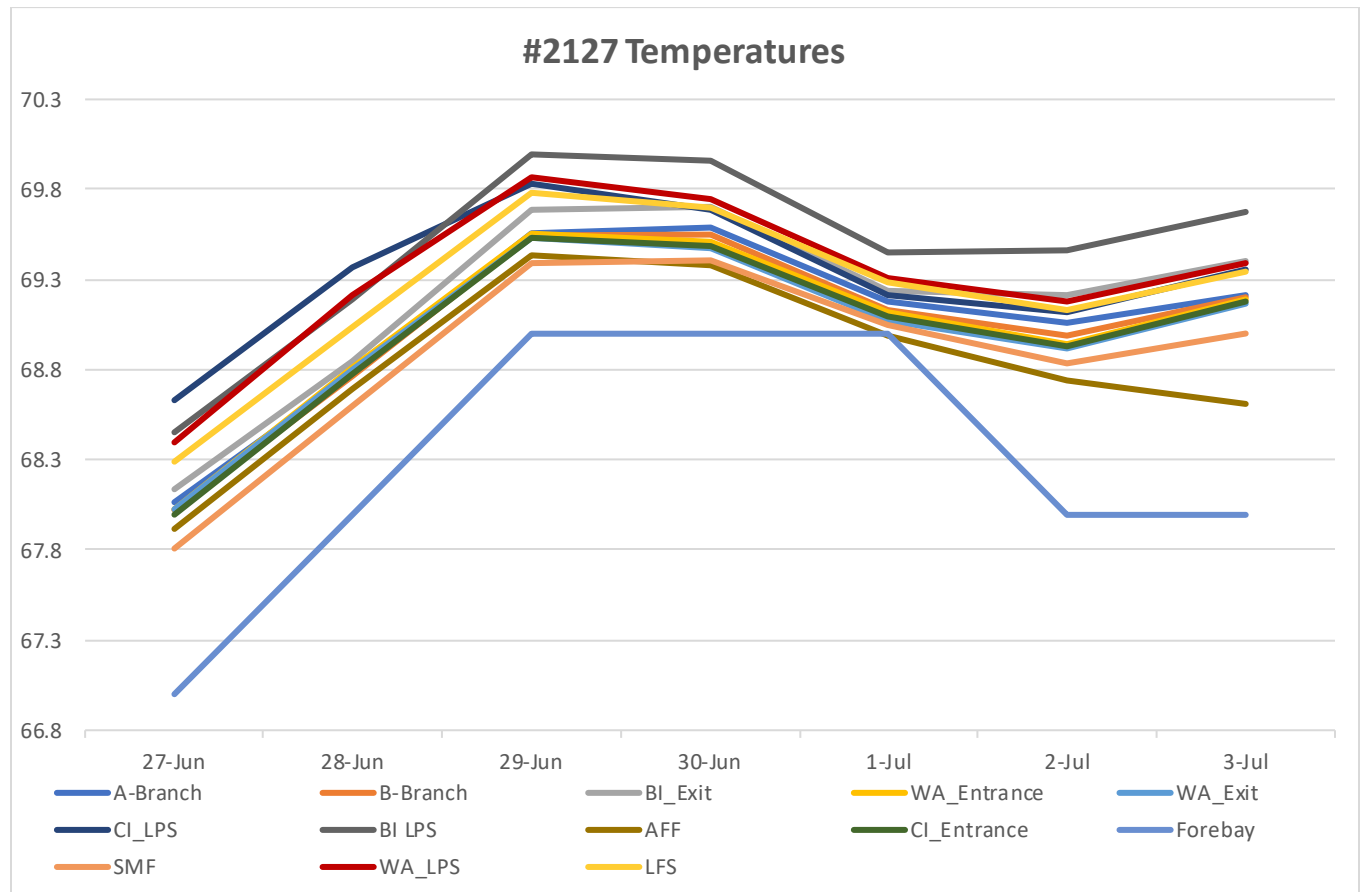
<b>Date</b>	<b>Gulls</b>	<b>Cormorants</b>	<b>Terns</b>	<b>Wh. Pelicans</b>	<b>Grebes</b>
06/27	0	7	0	0	0
06/28	2	8	0	0	0
06/29	2	2	0	0	0
06/30	4	2	0	0	0
07/01	18	4	0	0	0
07/02	6	4	0	0	0
07/03	7	4	0	0	0

**5. WATERQUALITY MONITORING:**

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

**Table 6. Bonneville Fishway Temperatures for 27 June to 03 July.**

Date	A-Branch	B-Branch	BI Exit	WA Entrance	CI Entrance	WA Exit	CI LPS	WA LPS	BI LPS	AFF	LFS	SMF	Forebay
27-Jun	68.1	68.0	68.1	68.0	68.0	68.0	68.6	68.4	68.5	67.9	68.3	67.8	67
28-Jun	68.8	68.8	68.9	68.8	68.8	68.8	69.4	69.2	69.2	68.7	69.0	68.6	68
29-Jun	69.6	69.5	69.7	69.6	69.5	69.5	69.8	69.9	70.0	69.4	69.8	69.4	69
30-Jun	69.6	69.6	69.7	69.5	69.5	69.5	69.7	69.7	70.0	69.4	69.7	69.4	69
1-Jul	69.2	69.1	69.2	69.1	69.1	69.1	69.2	69.3	69.5	69.0	69.3	69.1	69
2-Jul	69.1	69.0	69.2	68.9	68.9	68.9	69.1	69.2	69.5	68.7	69.1	68.8	68
3-Jul	69.2	69.2	69.4	69.2	69.2	69.2	69.4	69.4	69.7	68.6	69.4	69.0	68



**Figure 1. Average fishway temperatures for 27 June to 03 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. TELETYPES 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 BONR 0611211732 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 BONR 0615211307 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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