

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 37 of 2017, which covers the period from 10-16 September.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 102.8 to 129.5 kcfs. Daily average powerhouse forebay elevation ranged from 74.4' to 75.2' msl. Daily average project tailwater ranged from 9.9' to 11.6' msl. Secchi disk measurements ranged from 6.0' to 7.0'. Daily average water temperature ranged from 69° to 71°F.
- b. Daily average spill remained at 1.3 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
2	1420 on 12 Sept	---	Governor CAC issues
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
11	1527 on 14 Sept	1608 on 14 Sept	PO Rake Trash
12	1447 on 14 Sept	1525 on 14 Sept	PO Rake Trash
13	0023 on 12 Sept	1603 on 14 Sept	Annual Maintenance
18	0930 on 21 Aug	---	Exciter trip

- 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
9/10	2.3'	1.8'
9/11	2.5'	1.8'
9/12	2.7'	2.3'
9/13	3.4'	1.5'
9/14	0.2'	0.2'
9/15	0.6'	0.4'
9/16	1.5'	0.9'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures.
 - (1) FV 3-9 was closed for cleaning from 0700 to 0755 on 11 Sept and from 0835 to 0845 on 13 Sept.
 - (2) FV 3-7 was closed for cleaning from 0700 to 0755 on 11 Sept.
 - (3) FV 1-1 was closed for cleaning from 0825 to 0845 on 11 Sept.
- b. STS/VBS inspections. None.
- c. Dewatering and Fish Salvages. None.

3. RESEARCH:

- a. CRITFC – Adult sampling. Annual adult sampling in the AFF continues Monday through Friday.
- b. Normandeau – Fish counting. Visual counting continues.
- c. PSMFC – Smolt Monitoring. Higher temperature sampling protocols were initiated on 23 July (sample end-date of 24 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) monitoring activities have concluded for the season. [For further information.](#) Truck releases of summer/fall out-migrants originating from Snake River dams began on 16 August and occur every other day. However, no truck releases occurred this week due to wildfires. Fallbacks observed this week: one salmon.
- d. USFWS – Fish Health Survey. Juvenile & adult shad, and juvenile hatchery Chinook will be collected from the fish facilities as part of the annual survey. BON mortalities will also be sent to the USFWS for pathogen analysis.
- e. University of Idaho – Video monitoring. A DIDSON camera study began in late April to monitor fish in the UMT junction area near the new LPS extension.

4. FISHWAYS:

- a. Project biologists inspected 10-16 September.
- b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND – Nothing to report				
9/10-12,14-16	WG-02	Submergence < 8.0'	Unknown	Monitor
9/10-12,14-16	WG-64	Submergence < 8.0'	Unknown	Monitor
9/15	A-branch	Elevation >1.1'	Unknown	NA
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
9/11,15	Weir 37	Water over weir < 0.9'	Unknown	Monitor
9/10	Weir 38	Water over weir < 0.9'	Unknown	Monitor

- (1) FG3-3 is currently open and unplugged. The diffuser cannot be repaired until the north PH1CC area is dewatered. The next opportunity will be the 2017-18 winter maintenance period. It should be closed below tailwaters of 8.2' msl.
- (2) The FG3-4 diffuser shaft was found to be vibrating unusually. The diffuser was closed on 29 Dec 2016 to prevent further damage to the gate. The next opportunity for repair is the 2017-18 winter maintenance period.
- (3) FG3-8 was found to be banging loudly on 11 May. It was closed until repairs can be made. It should be open above tailwaters of 28.2' msl.
- (4) Bonneville had the majority of its avian lines broken due to ice storms during the 2016/17 winter. Avian lines will be replaced after the new FY & pending results from hydro surveys scheduled to occur 25-26 September.
- (5) PH2 diffuser B4 was discovered to have its stem bent on 24 May. It likely occurred while trying to close and is believed to be open. It should be closed at tailwaters above 31.0' and below 11.0' msl.
- (6) The NDE cannot open past 5' putting the entrance into FPP violation for submergence (>13.0'). It is believed to be full of sand. The NDE gate will have to be removed at a future date and the sand sucked in order for this entrance be in compliance.

b. Adult Fishways.

- (1) The AFF remains in service.
- (2) Sensor calibration occurred on 14 September.
- (3) SLEDs are installed in all fishway entrances.

c. Juvenile Fishways.

- (1) The ITS remains in service.
- (2) The hydro-cannon is on.
- (3) The B2CC was opened from 1447 to 1610 on 14 Sept. to flush trash.
- (4) The DSM remains in service.

d. Lamprey Fishways.

- (1) The WA AWS, CI, and BI LPS all remain in service. The NDE LFS/LPS went out of service for the season at approximately 1030 on 24 August due to extremely low fish counts.

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

Date	Gulls	Cormorants	Terns	Wh. Pelicans	Grebes
9/10	0	0	0	0	0
9/11	0	0	0	0	0
9/12	14	2	0	0	0
9/13	50+	50+	0	0	0
9/14	40	100	0	0	0
9/15	50	7	0	0	0
9/16	42	11	0	0	0

2. WATER QUALITY MONITORING:

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

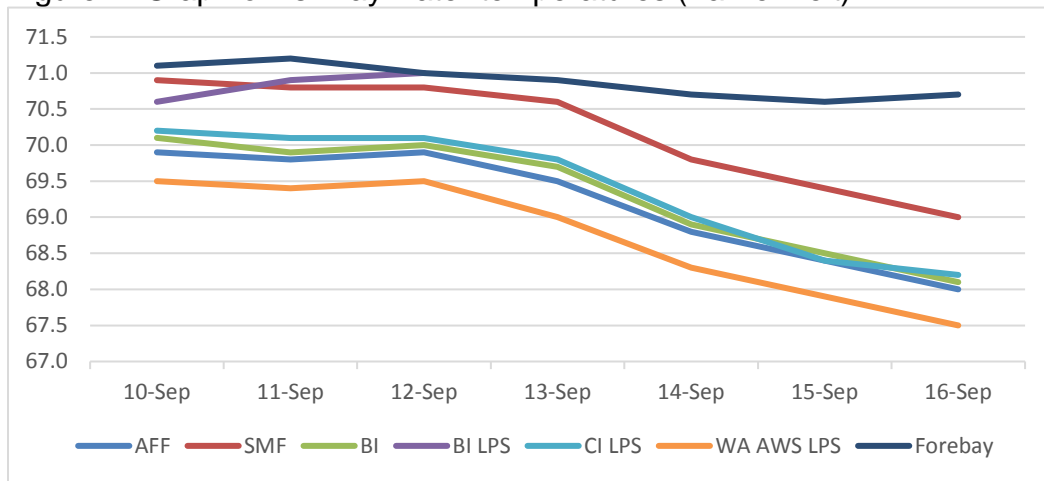
(1) Table 4. Average daily fishway water temperatures (Fahrenheit)

Date	AFF	SMF	BI	BI LPS	CI LPS	WA AWS LPS	Forebay
10-Sep	69.9	70.9	70.1	70.6	70.2	69.5	71.1
11-Sep	69.8	70.8	69.9	70.9	70.1	69.4	71.2
12-Sep	69.9	70.8	70.0	71.0	70.1	69.5	71.0
13-Sep	69.5	70.6	69.7		69.8	69.0	70.9
14-Sep	68.8	69.8	68.9		69.0	68.3	70.7
15-Sep	68.4	69.4	68.5		68.4	67.9	70.6
16-Sep	68.0	69.0	68.1		68.2	67.5	70.7

*Washington Shore Fish Ladder temperature logger went out of service at 1400 on 28 Aug.

*Bradford Island LPS temperature logger went out of service at 1100 on 13 Sept.

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



c. Zebra Mussel Monitoring. No signs of colonization were observed this reporting week.

3. CONSTRUCTION:

a. Powerhouse 2 roof repairs continue.

4. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

5. TELETYPES CURRENTLY IN EFFECT:

a. A teletype updated on 21 June provides spill caps and lack of load spill conditions to be used from 0000 on 01 April until further notice.

b. A teletype sent on 11 August states that effective immediately and continuing

until further notice operate in accordance with an adjusted turbine unit operating priority order. Unit 15 will be operated as last on, first off. This is to minimize operation due to loose bolts on the flow restrictor plate until repairs can be made.

- c. A teletype sent on 08 September sets forebay operational requests for treaty fisheries. The request that Bonneville forebay operate within a 1.5' hard constraint from 0600 on 11 September to 1800 on 15 September.
- d. A teletype sent on 08 September requests that from 1400 to 1800 on 25 September the Bonneville forebay be 75.5' to 76.5', soft constraint to facilitate moving sailboats near the Hood River.
- e. A teletype sent on 15 September requests Bonneville maintain a 1.5' forebay, as a hard constraint, from 0600 on 18 September until 1800 on 22 September to facilitate treaty fisheries.

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