

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 40 of 2017, which covers the period from 01-07 October.

1. OPERATION SUMMARY:

- a. Daily average river flows ranged from 84.3 to 123.6 kcfs. Daily average powerhouse forebay elevation ranged from 75.1' to 75.5' msl. Daily average project tailwater ranged from 7.9' to 11.1' msl. Secchi disk measurements ranged from 6.0' to 7.0'+. Daily average water temperature ranged from 62°F to 65°F.
- b. Daily average spill ranged from 1.1 to 1.2 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
7	0103 on 22 Feb	---	Annual, bank 7/8 outage, main unit breaker replacement
8	0103 on 22 Feb	---	
11	0026 on 18 Sept	---	PO Roof Repair
12	0026 on 18 Sept	---	PO Roof Repair
13	0026 on 18 Sept	1233 on 05 Oct	PO Roof Repair
14	0026 on 18 Sept	1238 on 05 Oct	PO Roof Repair
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
10/1	0.2'	1.0'
10/2	0.3'	1.5'
10/3	0.1'	0.1'
10/4	0.1'	0.4'
10/5	0.2'	0.1'
10/6	0.3'	0.1'
10/7	0.1'	0.2'

2. MAINTENANCE ACTIVITIES:

- a. Auxiliary Water System Closures. None.
- 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. Outfall hydro-cannons are operational. Avian hazing concluded for the season on 31 July. Spill and corner collector operations for the juvenile fish passage season concluded just after midnight on 01 September. Gas Bubble Trauma (GBT) monitoring activities have concluded for the season. Please follow [this link](#) to the FPC web page for further details. Truck releases of summer/fall out-migrants originating from Snake River dams began on 16 August and occur every other day. Fallbacks observed this week: one salmon and one unknown salmonid. No fish were collected for research this week.
- d. 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.
- e. WDFW – Sein Mortality Study. Washington Dept. of Fish and Wildlife is conducting a study to evaluate post-release mortality rates associated with salmon caught in purse seines. A 'control group' target of 960 adult Chinook and Coho is being collected at Bonneville's AFF. The fish will be PIT tagged and transported to net pens near Skamania landing, where they will be held for 48 hours before release back to the river.

4. FISHWAYS:

- a. Project biologists inspected 01-07 October.

b. Fish passage plan observations.

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

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
10/6	PH1CC	N-Diff > 2.0'	Unknown	NA
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE				
10/1	Weir 37	Differential < 0.9'	Unknown	NA
10/1,7	Weir 38	Differential < 0.9'	Unknown	NA

- (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 03 October.
- (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 is out of service.
- (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
10/1	60	22	0	0	0
10/2	15	78	0	0	0
10/3	29	6	0	0	0
10/4	40	100	0	0	0
10/5	0	0	0	0	0
10/6	50	2	0	0	0
10/7	19	13	0	0	0

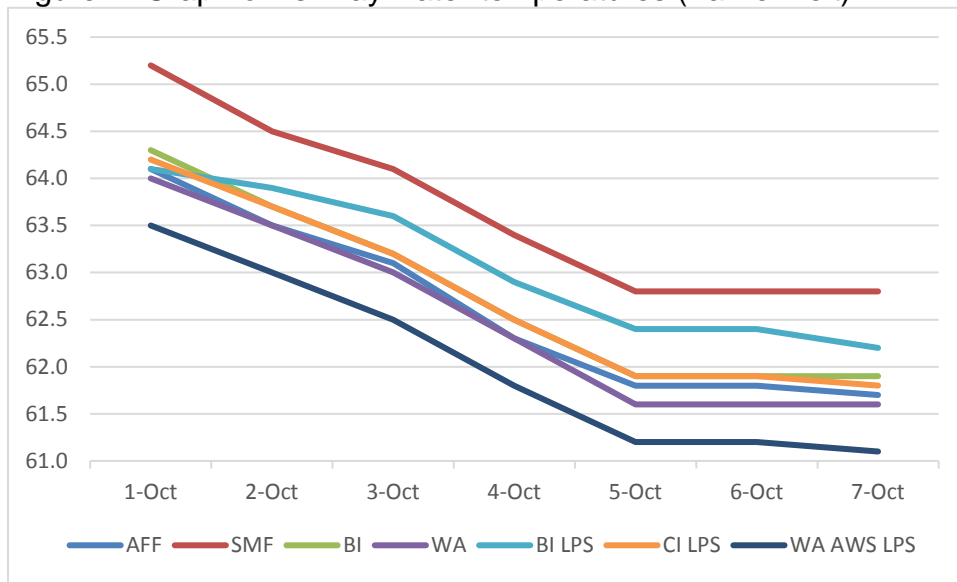
2. WATER QUALITY MONITORING:

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	WA	BI LPS	CI LPS	WA AWS LPS
1-Oct	64.1	65.2	64.3	64.0	64.1	64.2	63.5
2-Oct	63.5	64.5	63.7	63.5	63.9	63.7	63.0
3-Oct	63.1	64.1	63.2	63.0	63.6	63.2	62.5
4-Oct	62.3	63.4	62.5	62.3	62.9	62.5	61.8
5-Oct	61.8	62.8	61.9	61.6	62.4	61.9	61.2
6-Oct	61.8	62.8	61.9	61.6	62.4	61.9	61.2
7-Oct	61.7	62.8	61.9	61.6	62.2	61.8	61.1

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. TELETYPE 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 28 September sets forebay operational requests for treaty fisheries. The request that Bonneville forebay operate within a 1.5' hard constraint from 0600 on 02 October to 1800 on 05 October.

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