



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
BONNEVILLE LOCK AND DAM PROJECT
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CENWP-OD-B

30 April 2014

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 17 of 2014, which covers the period from 20 – 26 April 2014

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 255.9 to 272.9 kcfs. Daily average project tailwater ranged from 20.1' to 21.4' msl. Daily average powerhouse forebay elevation ranged from 74.0' to 75.7' msl. Daily average water temperatures stayed consistent at 50°F this reporting week. Secchi disk measurements ranged from 3.0' to 4.5'.

b. Spill Bays 01 and 18 are open 6" during daylight hours to provide attraction flow for Cascades Island and B-branch, respectively. Summer spill operations congruent with FPP section 2.2.3 took effect on 10 April. Daily spill ranged from 100.4 to 101.2 kcfs this reporting week.

(1) Spill bay 17 experienced a hoist brake failure on 11 March. The gate was on sill until 09 April, when it was dogged off at 2.9 ft.

c. Unit Operation. Powerhouse Two remains the priority powerhouse.

(1) Unit Outages. Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
1	0632 on 21 Apr	1522 on 21 Apr	Gov oil pump leak
2	1029 on 21 Apr	1259 on 21 Apr	Low gov oil
4	0814 on 21 Apr	---	Stator cleaning
6	1046 on 17 Mar	---	5 yr overhaul
11	0900 on 09 Sep 2012	---	High thrust bearing temps
13	0719 on 14 Apr	---	Digital Governor & 4 yr Overhaul
15	1320 on 22 Apr	---	Ground on stator

d. Fish Units. Second Powerhouse fish units provide attraction flow for the Washington Shore (WS) fish ladder. The units may be placed on standby, as necessary, during nighttime hours to float debris. Gatewell drawdowns are measured on Tuesdays and more frequently as needed.

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2. ACTIVITIES:

a. Auxiliary Water System Closures. The following closures occurred this week:

(1) FV3-7 was closed for cleaning from 0708 until 0736 on 24 April.

b. STS/VBS inspections. No STS or VBS inspections occurred this week.

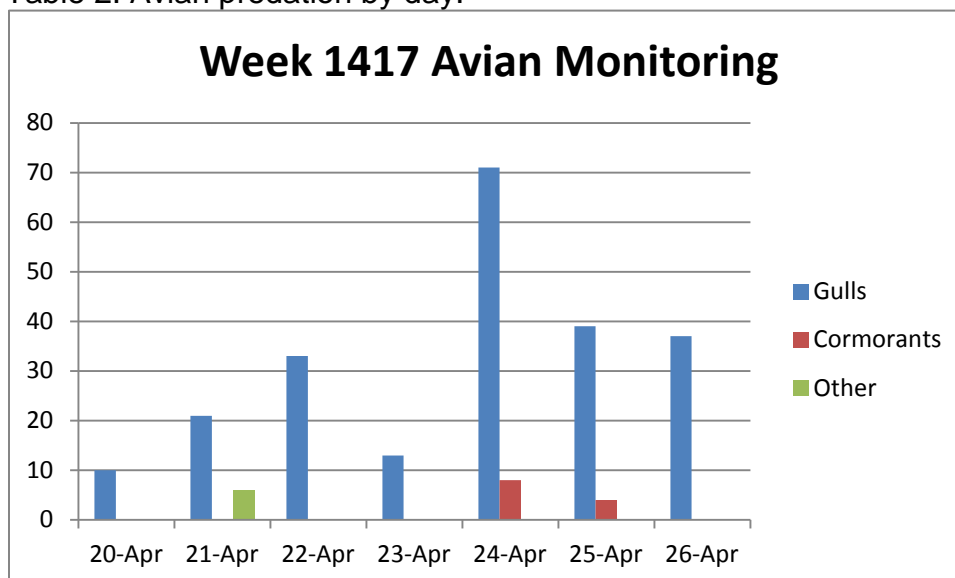
c. Dewatering and Fish Salvage.

(1) On 22 April, Project Biologists recovered approximately 50 juvenile salmonids, and 1 adult salmonid from the Unit 4 scroll case and 12 juvenile salmonids, 2 adult Chinook, 1 crayfish, 1 sucker, and 20 juvenile lamprey from the draft tube. Fishes from the scroll case were released into the tailrace and fishes from the draft tube were released into the forebay.

3. RESEARCH:

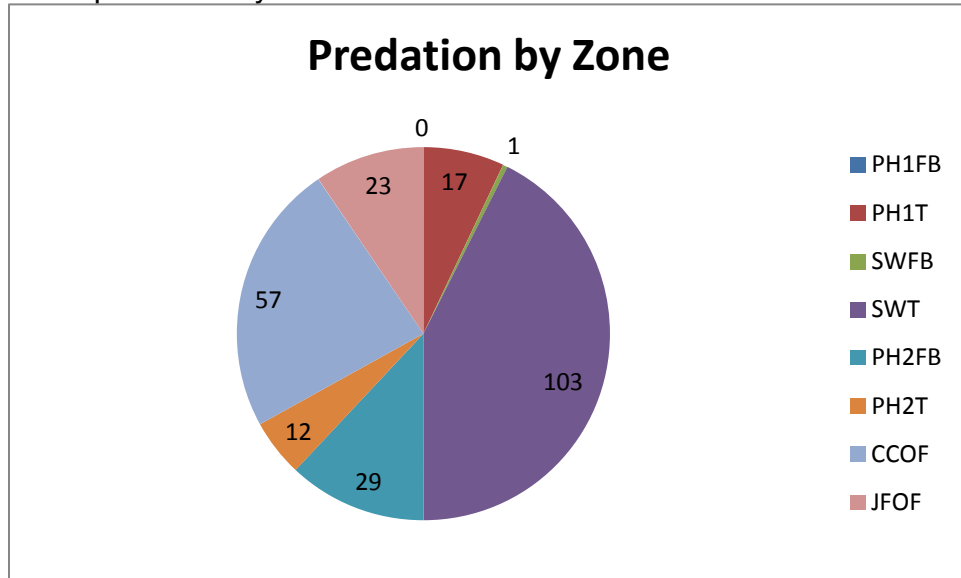
a. Avian Monitoring. Avian abundance is documented daily during fishway inspections by a Project Biologist. Due to low bird populations at the dam during winter months, bird numbers are recorded 7 days a week between the dates of 01 April and 31 October. Avian monitoring occurs as often as possible outside of these dates and during the non-fish passage season.

(1) Table 2. Avian predation by day.



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(2) Avian predation by zone.



(3) Avian Predation Map.



b. Battelle/PNNL – Surgical Training. Surgical training at the SMF concluded the week of 13 April.

c. CRITFC – AFF. Sampling continues.

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- d. CRITFC – Sea Lion Hazing. Boat-based hazing continues.
- e. Fisheries Field Unit – Kelt Video Monitoring. Video recording of the separator bars ended on 10 April.
- f. Fisheries Field Unit – Sea Lion Observations. Observations commenced on 09 January and will continue until the end of May. Bi-weekly pinniped reports can be found at: http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2014/sea_lion_hazing_2014.html.
- g. NOAA Fisheries. LPS count network improvements are ongoing. An impedance counter is currently being tested at the Bradford Island LPS and WA Shore AWS LPS.
- h. Normandeau – Fish Counting. Visual counting continues.
- i. PSMFC – Smolt Monitoring Program. Juvenile fish condition and index monitoring commenced on 04 March. No research fish were collected this week. Fallbacks recorded crossing the separator bars this reporting week: 30 steelhead, 7 salmon, and 17 unknown salmonids. Gas Bubble Trauma (GBT) examinations began on 20 April and are typically performed two days per week through the end of spill. Results of this week’s Gas Bubble Trauma (GBT) examinations: 200 yearling Chinook and steelhead examined with no GBT symptoms observed. Please follow this link <http://www.fpc.org/CurrentDaily/Gbtsum.txt>) to the FPC web page for further details.
- j. USDA - Sea Lion and Avian Hazing. Land based hazing continues.
- k. University of Idaho – AFF. USACE-funded adult salmonid sampling continues.

4. FISHWAYS:

- a. Project biologists inspected 20 – 26 April.
- b. Fish Passage Plan Observations.
 - (1) Table 3. FPP Out of Criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND (BI)				
4/22	A-Branch	Water level > 1.1'	Unknown	None
CASCADES ISLAND (CI) – No Violations				
WASHINGTON SHORE (WS) – No Violations				

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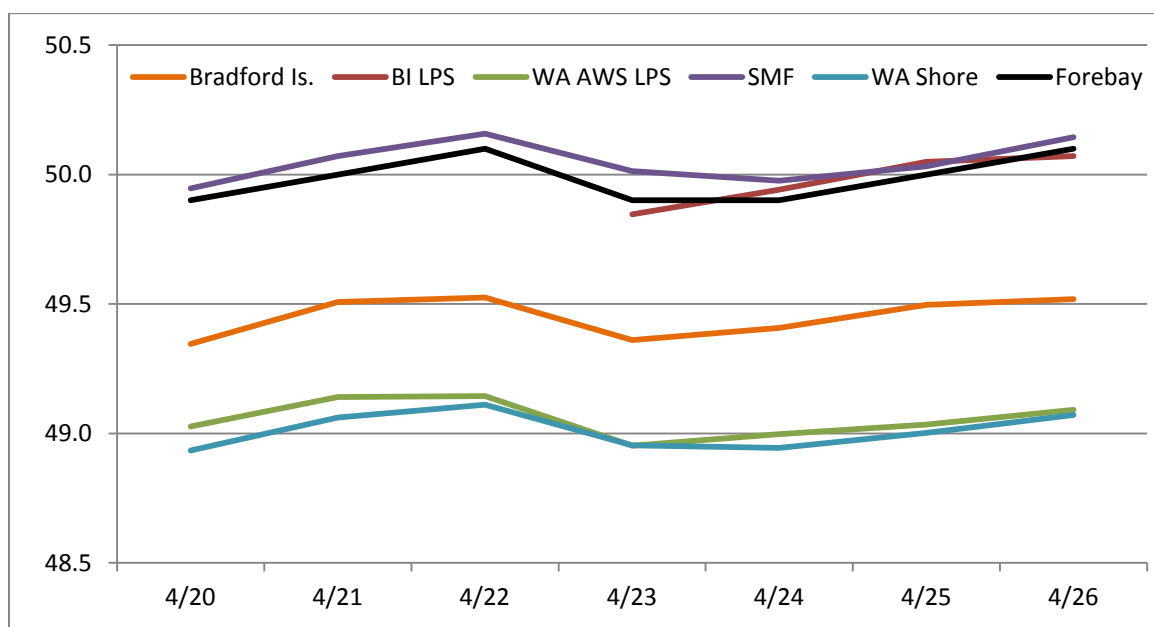
(2) PH2CC diffuser A2 is stuck closed, and the gate to B3 has been removed for repairs. Diffusers B7 and B8 have been closed until repairs to their diffuser motors can be performed. The next possible time period will be 2014/15 winter maintenance.

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

(1) Table 4. Daily Average Temperature in Degree Fahrenheit (°F).

Date	Bradford Is.	WA shore	SMF	Forebay	BI LPS	WA AWS LPS
4/20	49.3	48.9	49.9	49.9		49.0
4/21	49.5	49.1	50.1	50		49.1
4/22	49.5	49.1	50.2	50.1		49.1
4/23	49.4	49.0	50.0	49.9	49.8	49.0
4/24	49.4	48.9	50.0	49.9	49.9	49.0
4/25	49.5	49.0	50.0	50	50.0	49.0
4/26	49.5	49.1	50.1	50.1	50.1	49.1

(2) Graph 1. Daily Average Temperature in Degree Fahrenheit (°F).



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

e. Adult Fishways.

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(1) Calibration was checked on 26 April.

(2) 11 of 12 floating orifice gates (FOGs) are installed. A repaired FOG was reinstalled in 16B – N (slot 12) on 22 April. One gate remains out for maintenance. FOG SLEDs are installed.

(3) SLEDs are currently installed at all fishway entrances.

f. Juvenile Fishways.

(1) The south end gate of the Ice and Trash Sluiceway (ITS) remains removed for ongoing repairs. Plating has been placed over the bottom of the guide slot to minimize fish impacts. The ITS will need to be closed for reinstallation once repairs are complete.

(2) The DSM remains in service.

(3) The hydro-cannon remains in service.

(4) The B2CC remains open.

(5) The B2CC avian array was removed on 09 – 10 October 2013 to facilitate the WA Shore LFS repairs. The anchor line was replaced on 27 March, and the array will be reinstalled after spill season. The PH1, PH2, and spillway avian arrays remain intact.

g. Lamprey Fishways.

(1) The WA Shore AWS LPS was returned to service on 01 April.

(2) The BI LPS was returned to service on 23 April.

(3) All other LPSs remain dewatered.

5. CONSTRUCTION:

a. WA Shore LPS/LFS Installation. Repairs and modifications to the LPS continue.

b. FGE Gatewell Flow Control. Contractors installed a flow control plate in the Unit 15A gatewell in preparation for flow testing in spring and summer.

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

7. TELETYPES CURRENTLY IN EFFECT:

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- a. A teletype sent on 15 January states that effective immediately operate Unit 04 in a last-on/first-off basis due to required maintenance.
- b. A teletype sent on 17 March states that effective 17 March at 0800 hours, operate the B2CC continuously through 31 August at 2400.
- c. A teletype sent on 09 April lists the spring spill requirements for the spillway and B2CC, effective from 0001 on 10 April until 2400 on 15 June.
- d. A teletype sent on 22 April clarified FPP language regarding PH2 unit operation. The intent of the operation is to maintain PH2 units no higher than the 1% mid-range to reduce gatewell turbulence for fish passage. In order to achieve this, PH1 units may be operated above the 1% upper limit up to BOP.
- e. A teletype sent on 25 April updates the spill caps and lack of load conditions to be used from 26 April 10 June.

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Bonneville Project