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

5 June 2014

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 22 of 2014, which covers the period from 25 – 31 May 2014

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 335.3 to 372.2 kcfs. Daily average project tailwater ranged from 24.6' to 26.2' msl. Daily average powerhouse forebay elevation ranged from 73.3' to 74.3' msl. Daily average water temperatures ranged from 58°F to 59°F this reporting week. Secchi disk measurements ranged from 3.5' to 5.0'.

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 135.4 to 169.6 kcfs this reporting week.

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

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
2	0910 on 28 May	0956 on 28 May	U04 rotor pick
4	0814 on 21 Apr	---	Stator cleaning
11	0900 on 09 Sep 2012	---	High thrust bearing temps
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.

(1) Table 2. Fish unit drawdowns, in feet.

Date	F1	F2
05/25	0.5	0.7
05/26	0.7	1.0

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05/27	0.4	0.6
05/28	0.1	0.8
05/29	0.6	0.6
05/30	0.5	0.6
05/31	0.6	0.6

2. ACTIVITIES:

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

(1) FV 3-9 was closed for cleaning from 1615 to 1619 on 29 May.

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

c. Dewatering and Fish Salvage. The following dewatering or salvage activities occurred this week:

(1) Starting on 19 May, Project Biologists began recovering Pacific Lamprey from the Cascade Island AWS lamprey traps. A total of 101 fish were returned to the forebay this reporting week, all in good condition.

3. RESEARCH:

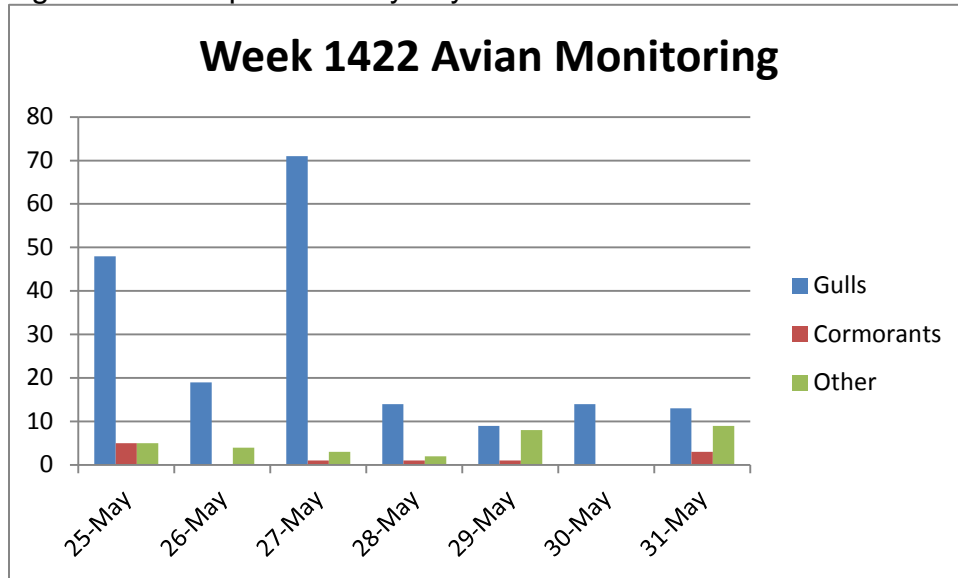
a. Avian Monitoring. Avian abundance is documented daily during fishway inspections by a Project Biologist. Due to low bird populations at the dam during winter months, bird numbers are recorded 7 days a week between the dates of 01 April and 31 October. Avian monitoring occurs as often as possible outside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

(1) Hazing Effectiveness. Observations reported from avian hazers indicate gull numbers have greatly decreased for the week of 25 May. There seems to be an increase in Great Blue Herons however. Hazing activities are working very effectively as out migrating smolt numbers have greatly decreased as well.

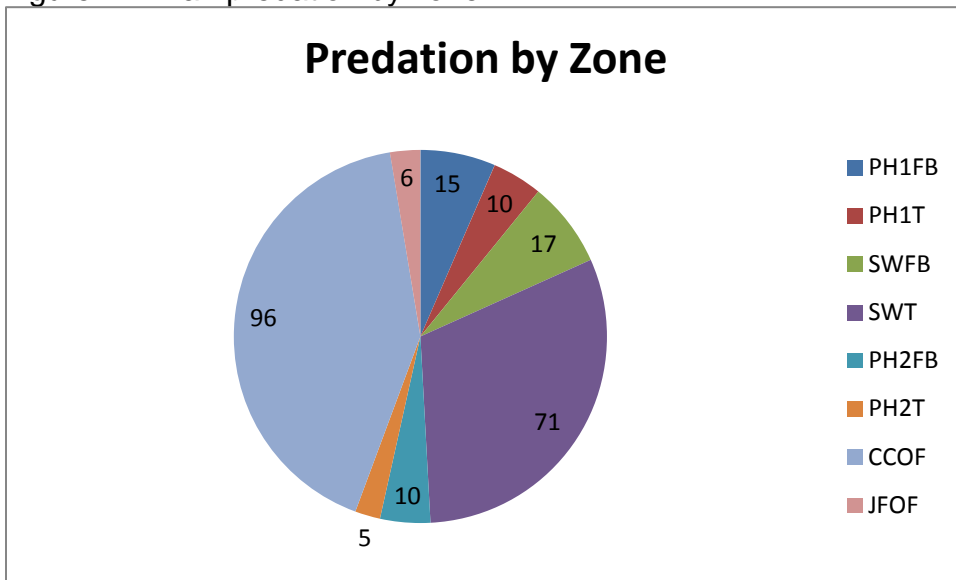
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(2) Figure 1. Avian predation by day.



(3) Figure 2. Avian predation by zone.



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(4) Figure 3. Avian Predation Map.



b. CRITFC – AFF. Sampling continues.

c. Fisheries Field Unit – Sea Lion Observations. Observations conclude on 31 May. [Bi-weekly pinniped reports](#) are available online.

d. 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. Lamprey trapping at the AFF in conjunction with University of Idaho began on 15 May.

e. Normandeau – Fish Counting. Visual counting continues.

f. PSMFC – Smolt Monitoring Program. Juvenile fish condition and index monitoring continues. No research fish were collected this week. Separation by Code is active for NOAA studies. Fallbacks recorded crossing the separator bars this reporting week: 5 steelhead, 8 salmon, and 6 unknown salmonids. Results of this week's Gas Bubble Trauma (GBT) examinations: 200 yearling Chinook and steelhead examined, no fish observed with GBT symptoms. More details can be found on the [FPC web page](#).

g. USDA - Sea Lion and Avian Hazing. Land-based hazing continues.

h. University of Idaho – AFF. USACE-funded adult salmonid sampling continues. Lamprey trapping at the AFF in conjunction with NOAA began on 15 May.

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4. FISHWAYS:

a. Project biologists inspected 25 – 31 May.

b. Fish Passage Plan Observations.

(1) Table 3. FPP Out of Criteria items.

Date	Location	FPP Items	Cause	Response
SPILLWAY				
5/25-31	SW Bay 17	Spill pattern	Hoist brake failure	Parts on order
BRADFORD ISLAND				
5/25	B-branch	Incorrect diffusers open	Faulty TW sensor - in auto	TR in place
5/26	A-branch	Water level > 1.4'	Unknown	None
5/27	B-branch	Water level > 1.4'	Unknown	None
CASCADES ISLAND – Nothing to report				
WASHINGTON SHORE – Nothing to report				

(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.

(3) Spill bay 17 experienced a hoist brake failure on 11 March. The gate is currently dogged off at 2.9 ft.

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

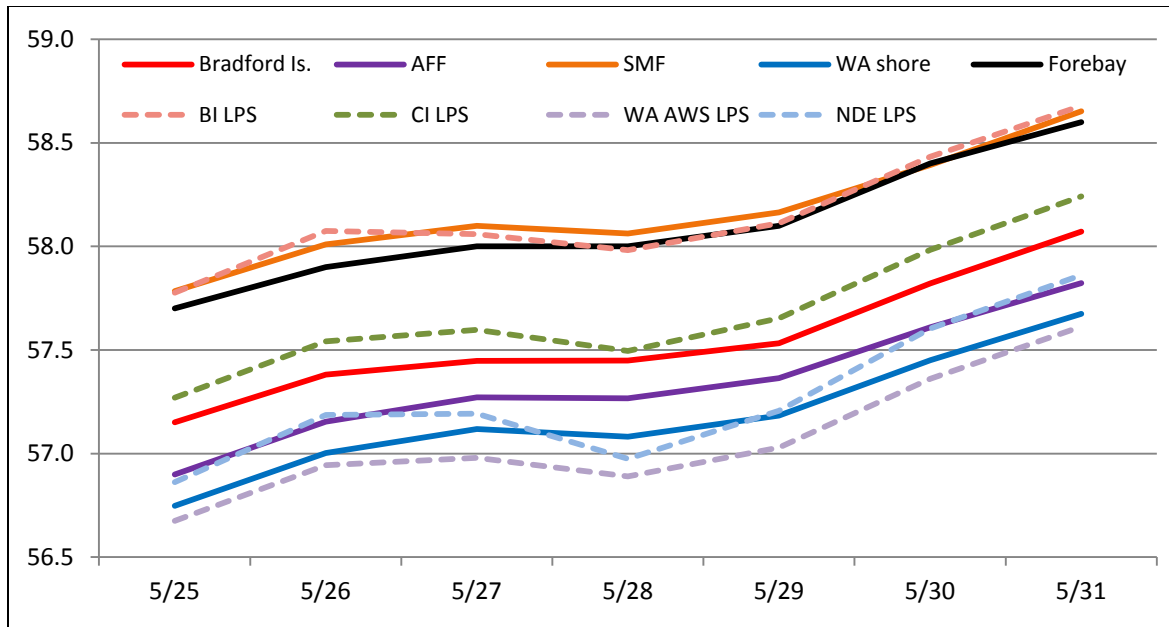
(1) Table 4. Daily Average Temperature in Degree Fahrenheit (°F).

Date	Fishways					Lamprey systems			
	Brad. Is.	AFF	SMF	WA shore	Forebay	BI LPS	CI LPS	WA LPS	NDE LPS
5/25	57.2	56.9	57.8	56.7	57.7	57.8	57.3	56.7	56.9
5/26	57.4	57.2	58.0	57.0	57.9	58.1	57.5	56.9	57.2
5/27	57.4	57.3	58.1	57.1	58	58.1	57.6	57.0	57.2
5/28	57.4	57.3	58.1	57.1	58	58.0	57.5	56.9	57.0
5/29	57.5	57.4	58.2	57.2	58.1	58.1	57.7	57.0	57.2
5/30	57.8	57.6	58.4	57.5	58.4	58.4	58.0	57.4	57.6
5/31	58.1	57.8	58.7	57.7	58.6	58.7	58.2	57.6	57.9

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

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

e. Adult Fishways.

(1) Calibration was checked on 31 May.

(2) 11 of 12 floating orifice gates (FOGs) are installed; one gate is 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.

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(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 BI LPS, CI LPS, NDE LPS, and WA Shore AWS LPS remain in service.

5. CONSTRUCTION:

- a. WA Shore LPS/LFS Installation. Minor 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:

- a. A teletype sent on 17 March states that effective 17 March at 0800 hours, operate the B2CC continuously through 31 August at 2400.
- b. 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.
- c. 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.
- d. A teletype sent on 18 May updates the spill caps and lack of load conditions to be used from 26 April to 10 June.
- e. A teletype sent on 28 May updates BON forebay operations for treaty fisheries. From 0600 on 28 May until 1800 on 31 May, operate BON pool within a 1.5' band as a hard constraint.
- f. A teletype sent on 30 May describes flow control measures to be effected immediately at upstream dams in an effort to mitigate.

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g. A teletype sent on 30 May states that effective 2 June through 10 June, operate Units 13 and 14 based on the testing schedule. This includes operating these items outside of the midpoint operations detailed in the FPP.

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Bonneville Project