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

8 June 2014

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 313.5 to 357.9 kcfs. Daily average project tailwater ranged from 23.3' to 25.3' msl. Daily average powerhouse forebay elevation ranged from 73.9' to 74.9' msl. Daily average water temperatures ranged from 58°F to 60°F this reporting week. Secchi disk measurements ranged from 3.0' to 4.5'.

b. Spill Bays 01 and 18 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 100.7 to 147.4 kcfs this week.

c. Unit Operation. Powerhouse Two remains the priority powerhouse. The adult trigger for PH2 upper 1% turbine operations per FPP section 5.2.1.1.d.3 took effect on 2 June.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
4	0814 on 21 Apr	---	Stator cleaning
11	0900 on 09 Sep 2012	---	High thrust bearing temps
15	1320 on 22 Apr	0824 on 05 Jun	Ground on stator
15	1615 on 05 Jun	1641 on 05 Jun	Turbine bearing oil pump
17	0703 on 05 Jun	1413 on 05 Jun	STS repair
18	1813 on 03 Jun	1832 on 03 Jun	Turbine bearing oil pump
18	1507 on 05 Jun	1700 on 05 Jun	STS repair

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.

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

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

Date	F1	F2
06/01	0.6	0.8
06/02	0.8	1.0
06/03	0.5	0.7
06/04	0.8	1.1
06/05	0.2	0.5
06/06	0.3	0.5
06/07	0.4	0.3

2. ACTIVITIES:

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

(1) FV 3-7 was closed for cleaning from 0658 to 0717 on 07 June.

b. STS/VBS inspections.

<i>Unit</i>	<i>Date</i>	<i>Run Hours</i>	<i>Comments</i>
11	---	---	OOS
12	5/05	693	Ok
13	5/05	294	Ok
14	5/05	694	Ok
15	---	---	OOS
16	5/05	693	Ok
17	5/05	693	Ok
18	5/05	694	Ok

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 63 fish were returned to the forebay this reporting week, all in good condition.

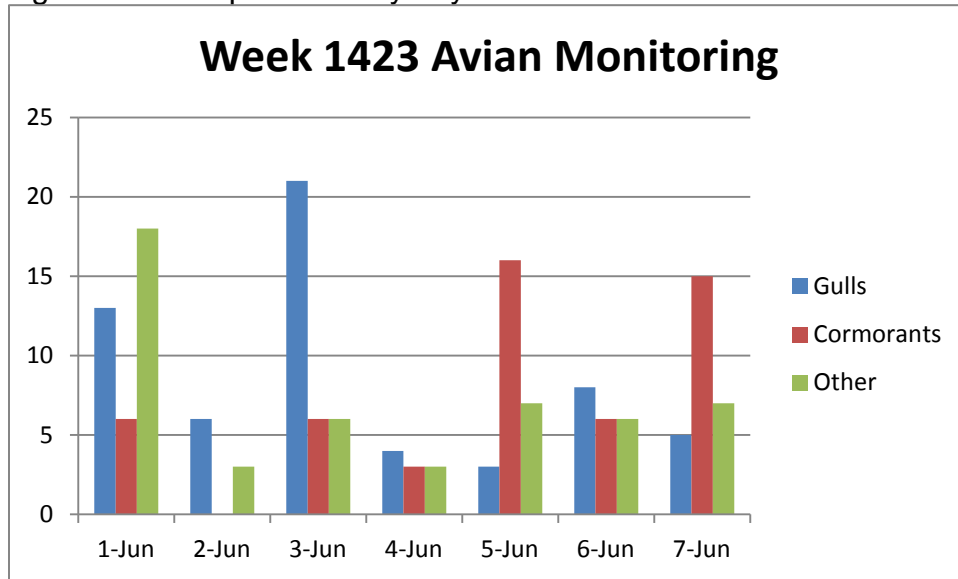
3. RESEARCH:

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.

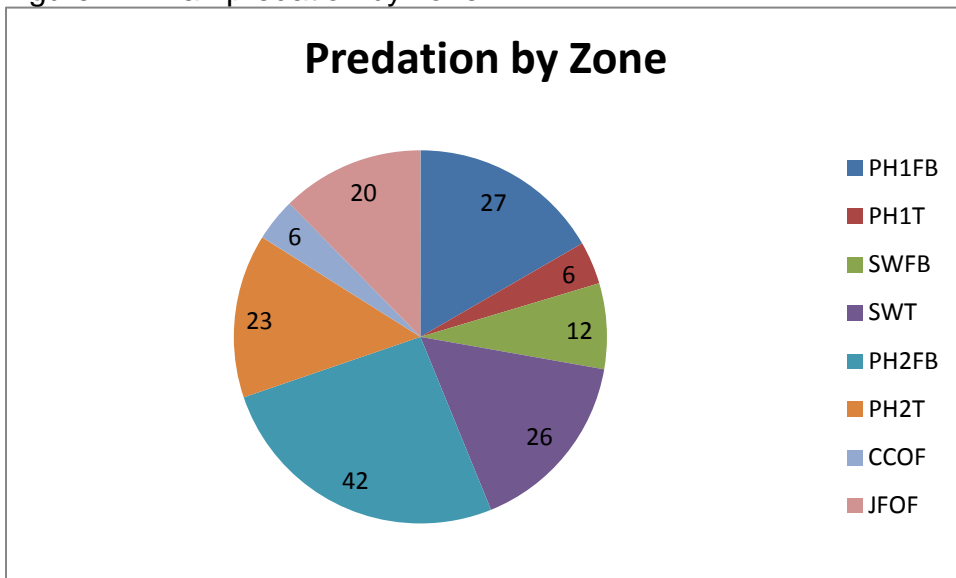
SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

(1) Hazing Effectiveness. Bird numbers have greatly decreased throughout the week. Avian hazers are reporting that hazing is very effective.

(2) Figure 1. Avian predation by day.



(3) Figure 2. Avian predation by zone.



SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

(4) Figure 3. Avian Predation Map.



b. CRITFC – AFF. Sampling continues.

c. NOAA Fisheries. LPS count network improvements are ongoing. An impedance counter is currently being tested at the WA Shore AWS LPS. Lamprey trapping at the AFF in conjunction with University of Idaho began on 15 May.

d. Normandeau – Fish Counting. Visual counting continues.

e. 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: 2 steelhead, 6 salmon, and 2 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](#).

f. USDA - Avian Hazing. Avian hazing continues.

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

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

4. FISHWAYS:

a. Project biologists inspected 01– 07 June.

b. Fish Passage Plan Observations.

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

Date	Location	FPP Items	Cause	Response
SPILLWAY				
6/1-5	SW Bay 17	Spill pattern	Hoist brake failure	Parts on order
BRADFORD ISLAND				
6/1	B-branch	Incorrect diffusers open	Faulty TW sensor - in auto	TR in place
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.

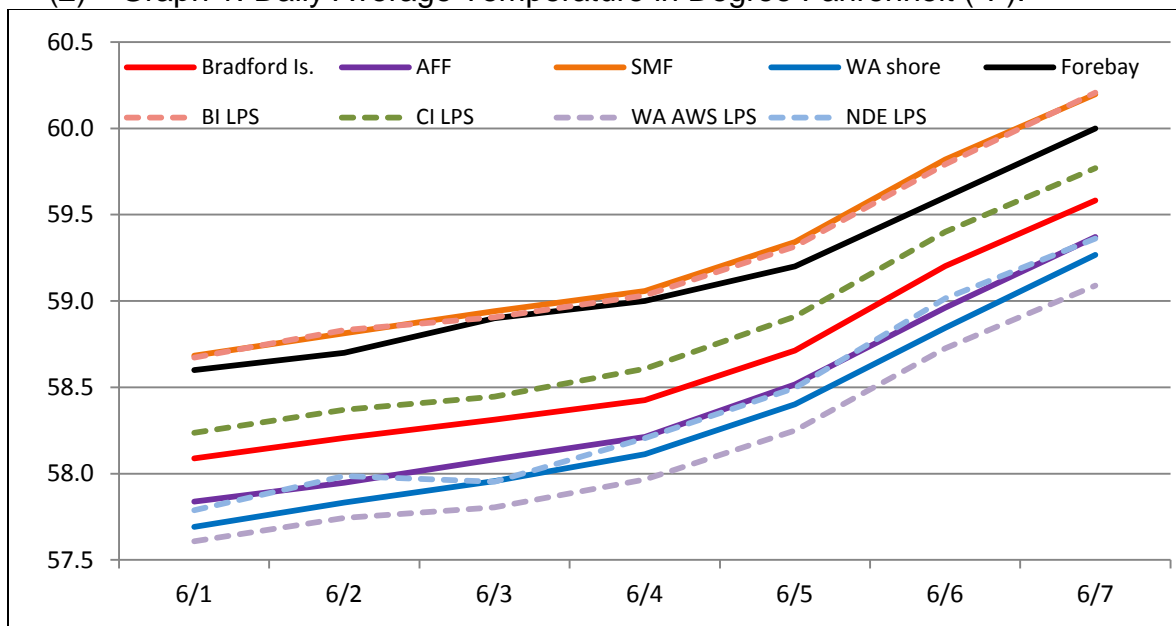
c. Fishway Temperatures. Temperatures are taken from 01 March through 30 November. Forebay temperatures can be found [online](#).

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

Date	Fishways					Forebay	Lamprey systems			
	Brad. Is.	AFF	SMF	WA shore	BI LPS		CI LPS	WA LPS	NDE LPS	
6/1	58.1	57.8	58.7	57.7	58.6	58.7	58.2	57.6	57.8	
6/2	58.2	57.9	58.8	57.8	58.7	58.8	58.4	57.7	58.0	
6/3	58.3	58.1	58.9	58.0	58.9	58.9	58.4	57.8	58.0	
6/4	58.4	58.2	59.1	58.1	59	59.0	58.6	58.0	58.2	
6/5	58.7	58.5	59.3	58.4	59.2	59.3	58.9	58.2	58.5	
6/6	59.2	59.0	59.8	58.8	59.6	59.8	59.4	58.7	59.0	
6/7	59.6	59.4	60.2	59.3	60	60.2	59.8	59.1	59.4	

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

(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.

(1) Calibration was checked on 07 June.

(2) 11 of 12 floating orifice gates (FOGs) are installed; one gate is out for maintenance. FOG SLEDs are installed.

(3) SLEDs were removed from Cascades Island and PH2 entrances on 02 June and from PH1 entrances on 04 June. The B-branch entrance SLED will be removed the week of 16 June.

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.

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

- (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 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. Flow testing is underway.

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 05 June updates the spill caps and lack of load conditions to be used from 26 April to 10 June.

e. A teletype sent on 2 June updates BON forebay operations for treaty fisheries. From 0600 on 03 June until 1800 on 06 June, operate BON pool within a 1.5' band as a hard constraint.

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 23 of 2014, which covers the period from 01 – 07 June 2014

f. A teletype sent on 30 May describes flow control measures to be effected immediately at upstream dams in an effort to mitigate for basin-wide flood risk.

g. A teletype sent on 05 June revises a previous teletype for gatewell testing in units 13, 14, and 15. Effective 2 June through 12 June, operate units 13, 14, and 15 based on the revised testing schedule. This includes operating these units outside of the mid-point operations detailed in the FPP.

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