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CORPS OF ENGINEERS, PORTLAND DISTRICT  
BONNEVILLE LOCK AND DAM PROJECT  
PO BOX 150  
CASCADE LOCKS OR 97014-0150

CENWP-OD-B

17 July 2014

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 28 of 2014, which covers the period from 06 – 12 July 2014

**1. OPERATION SUMMARY:**

a. Daily average river flows ranged from 216.2 to 247.2 kcfs. Daily average project tailwater ranged from 18.1' to 19.5' msl. Daily average powerhouse forebay elevation ranged from 74.0' to 74.9' msl. Daily average water temperatures ranged from 66° to 68°F. Secchi disk measurements ranged from 5.0' to 7.0'.

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 16 June. Daily spill ranged from 90.3 to 100.4 kcfs this week.

c. Unit Operation. Split flow powerhouse operations went into effect on 23 June.

(1) Table 1. Unit Outages.

Unit	OOS Date	RTS Date	Reason
1	0932 on 07 Jul	1001 on 07 July	Heat bank 1/2
2	0854 on 07 Jul	---	5-yr overhaul
7	0005 on 30 Jun	---	Bank 7/8 repairs
8	0004 on 30 Jun	---	Bank 7/8 repairs
11	0900 on 09 Sep 2012	---	High thrust bearing temps

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
7/06	0.6	0.7
7/07	0.4	0.4
7/08	0.1	0.2
7/09	0.3	0.2
7/10	0.5	0.3
7/11	0.6	0.4
7/12	0.4	0.3

**2. ACTIVITIES:**

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

(1) FV3-7 was closed for cleaning from 0730 to 0739 on 07 July, from 0702 to 0751 on 09 July, and from 1627 to 1643 on 10 July.

(2) FV3-9 was closed for cleaning from 0730 to 0739 on 07 July, and from 0702 to 0751 on 09 July.

b. STS/VBS inspections.

<i>Unit</i>	<i>Date</i>	<i>Run Hours</i>	<i>Comments</i>
11	---	---	OOS
12	7/08	823	Ok
13	7/08	823	Ok
14	7/08	818	Ok
15	7/08	---	Hour meter reset
16	7/08	792	Ok
17	7/08	816	Ok
18	7/08	820	Ok

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

(1) On 07 July, Project Biologists recovered 100 juvenile salmonids from the Unit 02 scroll case. All fish were returned to the tailrace in good condition.

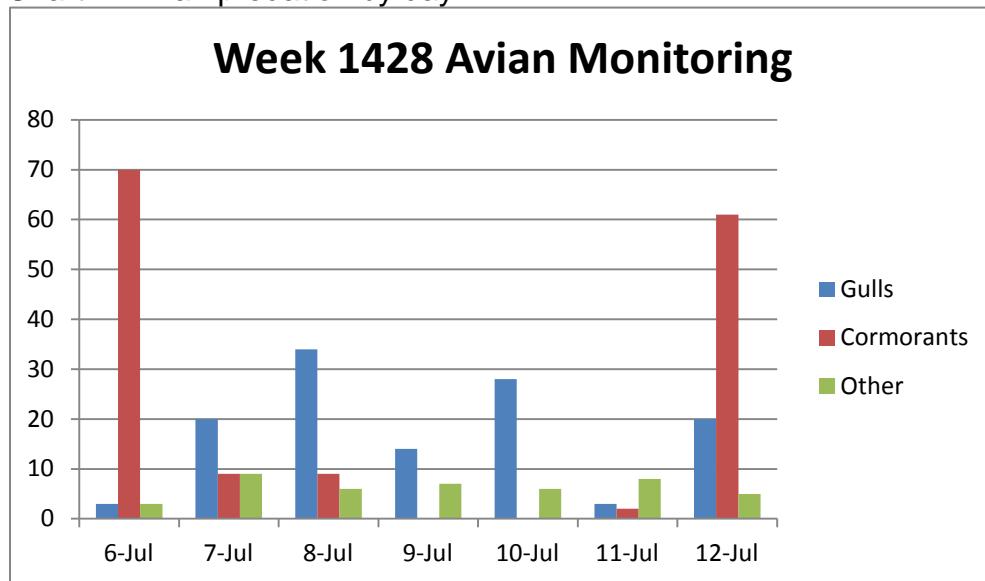
(2) On 08 July, Project Biologists recovered 30 Pacific Lamprey from the Unit 02 draft tube. All fish were returned to the forebay in good condition.

**3. RESEARCH:**

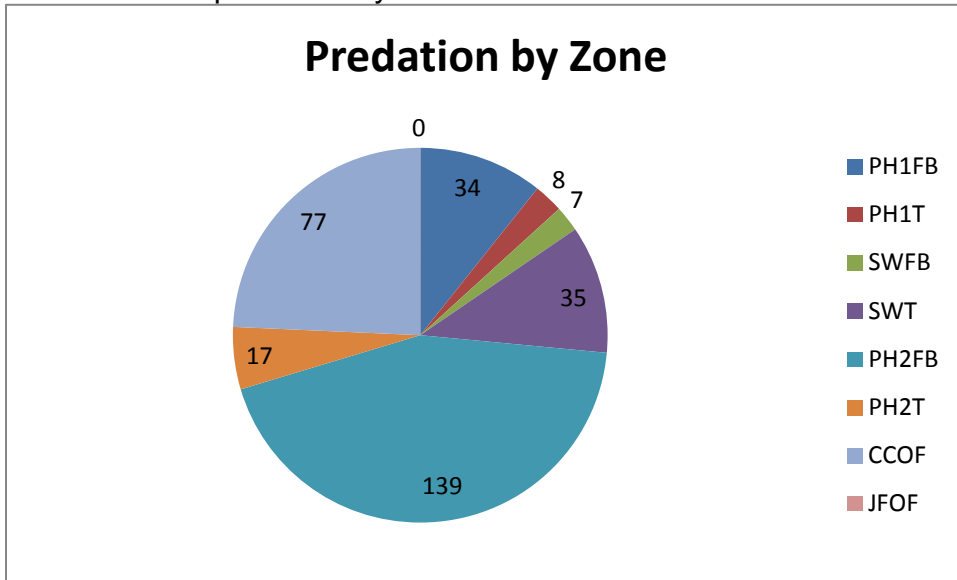
a. Avian Monitoring. Avian abundance is documented daily during fishway inspections by a Project Biologist. Due to low bird populations at the dam during winter months, bird numbers are recorded 7 days a week between the dates of 01 April and 31 October. Avian monitoring occurs as often as possible outside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

(1) Hazing Effectiveness. Avian hazers report increased numbers of gulls on project (CCOF) and flying overhead in route elsewhere. Total numbers, however, still remain minimal. There have been significant but intermittent increases of cormorant numbers observed, especially on the B2CC boom.

(2) Chart 1. Avian predation by day.



(3) Chart 2. Avian predation by zone.



(4) Table 3. Tailrace Counts of Foraging Piscivorous Birds.

Date	Time	Gulls	Cormorants	Terns
06 July	0800	2	1	0
07 July	0830	14	8	0
08 July	1230	34	2	0
09 July	1300	14	0	0
10 July	1400	26	0	0
11 July	1230	1	2	0
12 July	1100	20	0	0

(5) Figure 1. Avian Predation Map.



b. CRITFC – AFF. Sampling continues.

c. NOAA Fisheries. An impedance counter is currently being tested at the WA Shore AWS LPS. Lamprey trapping at the AFF in conjunction with University of Idaho continues. Lamprey structure design testing in the FERL is scheduled to begin on 14 July.

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. Fallbacks recorded crossing the separator bars this reporting week: no steelhead, 19 salmon, and 1 unknown salmonid. Results of this week's Gas Bubble Trauma (GBT) examinations: 200 subyearling Chinook examined, with 2 (1.0%) exhibiting GBT symptoms. More details can be found on the [FPC web page](#).

f. University of Idaho – AFF. USACE-funded adult salmonid sampling continues. Lamprey trapping at the AFF in conjunction with NOAA continues. IR camera monitoring in the Bradford Island serpentine section began on 16 July.

g. USDA - Avian Hazing. Avian hazing will conclude on 31 July.

h. USFWS - Fish Health. When possible, all fish mortalities are being held for inclusion in the National Wild Fish Health Survey. CRITFC is also testing lamprey mortalities for contaminants in conjunction with USFWS.

**4. FISHWAYS:**

- a. Project biologists inspected 06 – 12 July.
- b. Fish Passage Plan Observations.
  - (1) Table 4. FPP Out of Criteria items.

Date	Location	FPP Items	Cause	Response
<b>BRADFORD ISLAND</b>				
7/6-7	A-branch	Water level > 1.1'	Unknown	None
7/6-7	B-branch	Entrance diff > 2.0'	Faulty TW sensor	TR in place
7/6	B-branch	FG3-24 open	In auto – TW sensor	Ops adj
<b>CASCADES ISLAND – Nothing to report</b>				
<b>WASHINGTON SHORE – Nothing to report</b>				

(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](#).

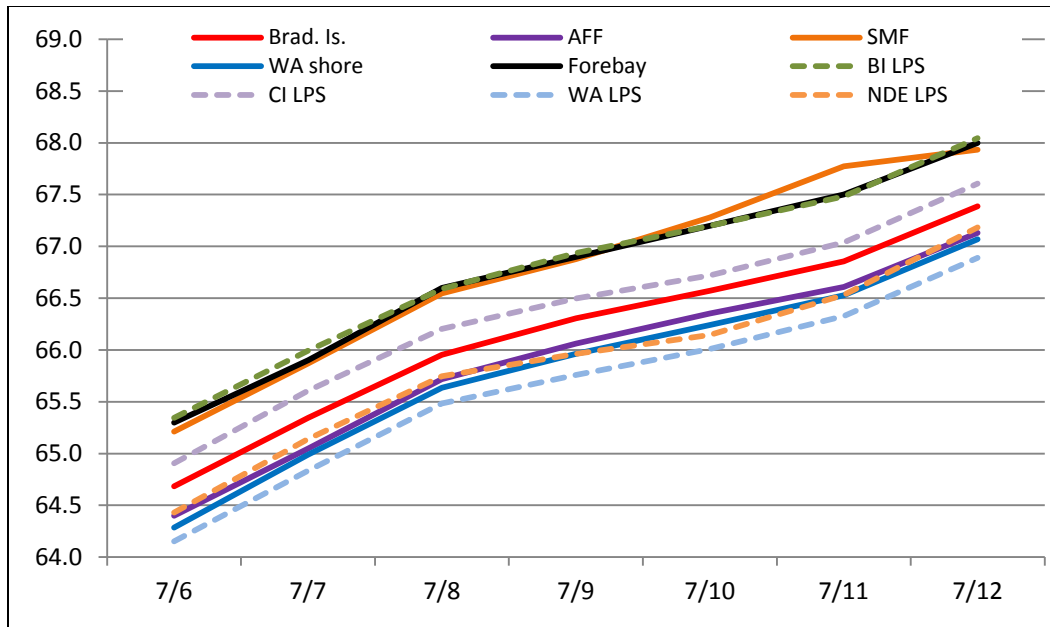
- (1) Table 5. Daily Average Temperature in Degree Fahrenheit (°F).

Date	Fishways				Forebay	Lamprey systems			
	Brad. Is.	AFF	SMF	WA shore		BI LPS	CI LPS	WA LPS	NDE LPS
7/6	64.7	64.4	65.2	64.3	65.3	65.3	64.9	64.2	64.4
7/7	65.3	65.0	65.9	65.0	65.9	66.0	65.6	64.8	65.1
7/8	66.0	65.7	66.5	65.6	66.6	66.6	66.2	65.5	65.7
7/9	66.3	66.1	66.9	66.0	66.9	66.9	66.5	65.8	66.0
7/10	66.6	66.4	67.3	66.2	67.2	67.2	66.7	66.0	66.1
7/11	66.9	66.6	67.8	66.5	67.5	67.5	67.0	66.3	66.5
7/12	67.4	67.1	67.9	67.1	68.0	68.0	67.6	66.9	67.2

- (2) Chart 3. 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 11 July.

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

(3) All SLEDs are removed.

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. A flume vent was installed on the NDE LPS on 08 July. U of I replaced a PIT antenna in rest box #1 the same day.

**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 30 June updates the spill caps and lack of load conditions to be used from 11 June through 31 August.

c. A teletype sent on 13 June requests BON forebay be maintained from 74.5' to 76.5' hard constraint and from 75.5' to 76.5' soft constraint from 1400 – 2000 on 08 August and from 1500 – 2200 on 09 August so that sailboats can be placed and removed from the water. The request may be cancelled at 1500 on 08 August if high winds occur.

d. A teletype sent on 13 June lists the BON summer spill requirements in effect from 0430 on 16 June until 2400 on 31 August.

e. A teletype sent on 24 June requests that from 0800 to 2000 on 4 July; operate BON forebay to less than 75.0', hard constraint, and to 74.5', soft constraint. From 0800 to 2000 on 5 – 6 July, operate BON forebay to less than 75.0', soft constraint.

f. A teletype sent on 12 June requests that BON forebay operate within a 1.5' band as a hard constraint from 30 June – 3 July and from 7 – 11 July for treaty fisheries.

g. A teletype sent on 08 July requests that BON forebay be maintained above 74.0', hard constraint, from 1000 to 1500 on 19 July for outrigger races near Stevenson.

h. A teletype sent on 10 July requests that from 14 – 18 July, operate BON forebay



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within a 1.5' band as a hard constraint for treaty fisheries.

i. A teletype sent on 11 July states that effective 0001 on 13 July until 2400 on 15 July, the allowed rate of change of the BON tailwater elevation over a 24-hr period is 5.0'. This operation is to assist meeting forecasted regional load demands due to high temps in the region. Outside this time period the 4.0' range remains in effect.

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