



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

CENWP-OD-B

06 July 2014

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Project, Fishway and Fish Activities for Week 27 of 2014, which covers the period from 29 June – 05 July 2014

1. OPERATION SUMMARY:

a. Daily average river flows ranged from 259.9 to 296.2 kcfs. Daily average project tailwater ranged from 20.3' to 22.3' msl. Daily average powerhouse forebay elevation ranged from 73.8' to 74.2' msl. Daily average water temperatures ranged from 64° to 66°F. Secchi disk measurements ranged from 4.0' to 6.0'.

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 86.6 to 102.6 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
3	0655 on 01 Jul	1244 on 01 Jul	U04 switching
4	0814 on 21 Apr	1547 on 01 Jul	Stator cleaning
5	0008 on 30 Jun	0048 on 30 Jun	Switching
6	0007 on 30 Jun	0049 on 30 Jun	Switching
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.

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

Date	F1	F2
6/29	0.6	0.6
6/30	0.3	0.2
7/01	0.3	0.4
7/02	0.5	0.3
7/03	0.2	0.9
7/04	0.5	0.3
7/05	0.3	0.3

2. ACTIVITIES:

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

- (1) FV 3-7 was closed for cleaning from 0701 to 0715 on 30 June.
- (2) FV 3-9 was closed for cleaning from 0701 to 0715 on 30 June.
- (3) FV 3-9 was closed for cleaning from 0726 to 0736 on 02 July.

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

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

(1) Since 19 May, Project Biologists have been recovering Pacific Lamprey from the Cascade Island AWS lamprey traps. The Corps effort concluded on 02 July with a total of 21 fish returned to the forebay this week for a total of 451 fish this season. NOAA researchers picked up trapping efforts on 03 July.

(2) On 01 July, Project Biologists recovered 1 Sockeye Salmon, 1 Steelhead Trout, 50 Pacific Lamprey, 2 carp, and numerous peamouth from above the picket leads in the Cascade Island exit. All fish were returned to the forebay in good condition.

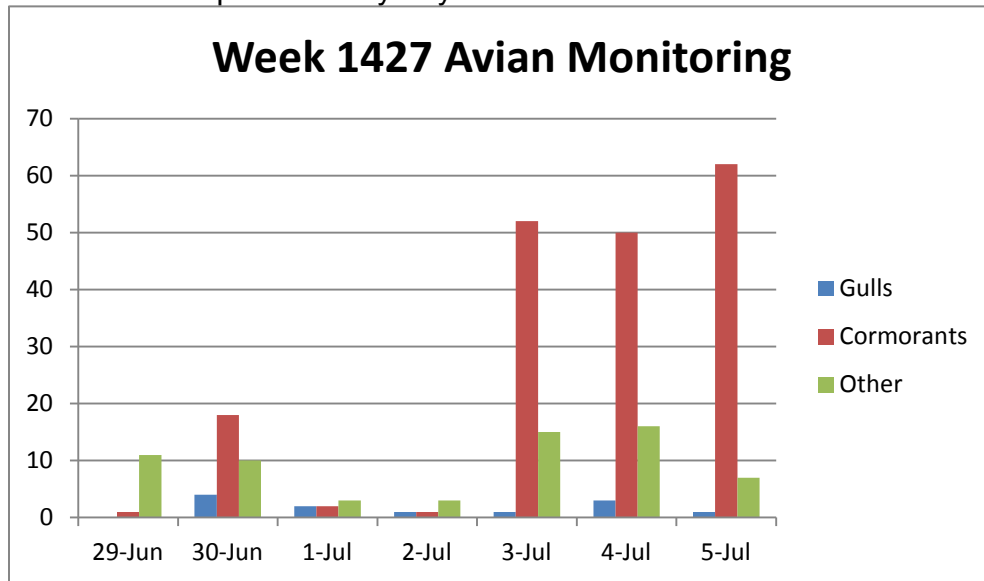
3. RESEARCH:

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.

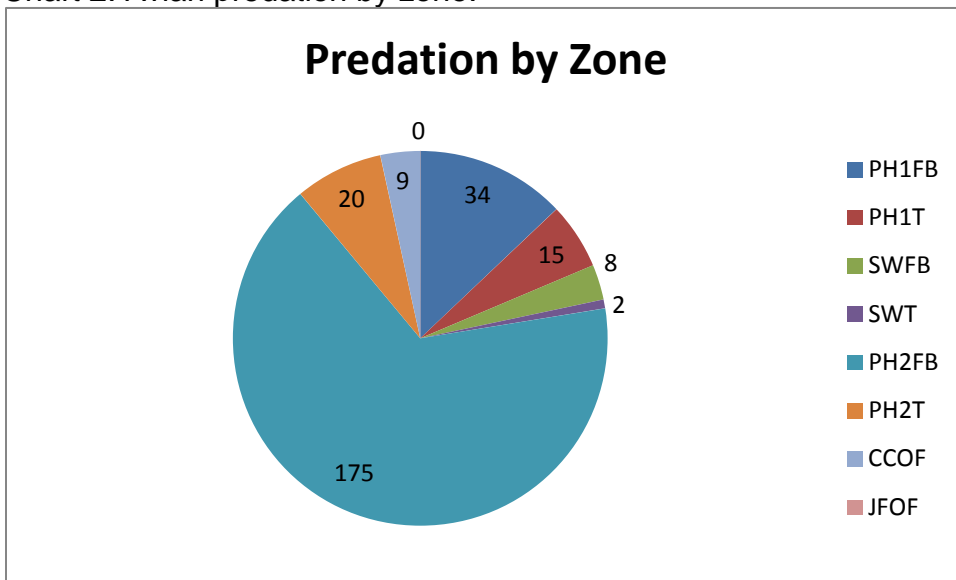
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(1) Hazing Effectiveness. Double-Crested Cormorant observations continue to increase in the tailrace but more noticeably in the PH2FB. These birds are mostly resting on the B2CC debris boom. Gull numbers remain low throughout the project. Not much else to report. Hazing continues Monday through Friday and only occurs in the tailrace areas of the project. With low numbers of tailrace occupying birds, it is very effective this time of year.

(2) Chart 1. Avian predation by day.



(3) Chart 2. Avian predation by zone.



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

Date	Time	Gulls	Cormorants	Terns
29 June	0845	0	0	0
30 June	0930	4	4	0
01 July	1200	0	1	0
02 July	1200	0	1	0
03 July	1200	1	0	0
04 July	0900	2	4	0
05 July	1200	1	3	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. Separation by Code concluded for NOAA studies. Fallbacks recorded crossing the separator bars this reporting week: 2 steelhead, 22 salmon, and 2 unknown salmonids. Results of this week's Gas Bubble Trauma (GBT) examinations: 200 subyearling Chinook examined, with no GBT symptoms observed. Subyearling Chinook with Ichthyophthirius-like

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symptoms appeared at BON beginning on the afternoon of 30 June (sample end-date 1 July). Only clipped fish exhibited symptoms. The percentage of subyearling Chinook with visible evidence of the disease in the daily sample was highest on 1 July with 9.4%, diminishing to 0.9% by 4 July. 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 is scheduled to begin 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 29 June – 05 July.

b. Fish Passage Plan Observations.

(1) Table 4. FPP Out of Criteria items.

Date	Location	FPP Items	Cause	Response
BRADFORD ISLAND				
6/30	A-branch	Water level > 1.4'	Unknown	None
CASCADES ISLAND				
7/5	UMT	Water level > 1.1'	Unknown	None
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](#).

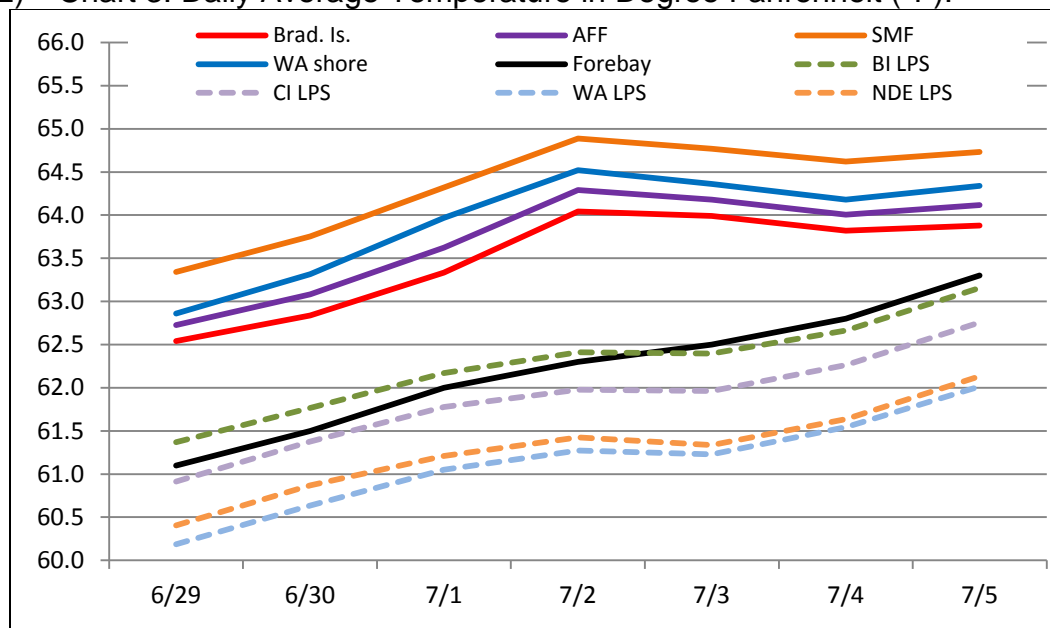
(1) Table 5. Daily Average Temperature in Degree Fahrenheit (°F).

Date	Fishways				Forebay	Lamprey systems			
	Brad. Is.	AFF	SMF	WA shore		BI LPS	CI LPS	WA LPS	NDE LPS

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6/29	62.5	62.7	63.3	62.9	61.1	61.4	60.9	60.2	60.4
6/30	62.8	63.1	63.8	63.3	61.5	61.8	61.4	60.6	60.9
7/1	63.3	63.6	64.3	64.0	62.0	62.2	61.8	61.0	61.2
7/2	64.0	64.3	64.9	64.5	62.3	62.4	62.0	61.3	61.4
7/3	64.0	64.2	64.8	64.4	62.5	62.4	62.0	61.2	61.3
7/4	63.8	64.0	64.6	64.2	62.8	62.7	62.3	61.5	61.6
7/5	63.9	64.1	64.7	64.3	63.3	63.2	62.8	62.0	62.1

(2) Chart 3. 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 04 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.

(4) The Cascades Island exit was opened 26 – 30 June to allow several salmonids to exit from upstream of the downstream picket leads. They are thought to have jumped over one of the leads, which have since been netted.

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(5) The WA shore fishway returned to salmon mode on 30 June, the BI fishway on 04 July. They had been in shad mode since 24 and 21 May, respectively.

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

5. CONSTRUCTION:

a. WA Shore LPS/LFS Installation. Installation of a flume vent on the NDE LPS is scheduled for 08 July.

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

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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 01 July cancels all previous teletypes associated with flood risk management.

h. A teletype sent on 02 July cancels a previous teletype modifying PH1 unit priority; Unit 04 has since returned to service.

JERRY A. CARROLL
Operations Manager
Bonneville Project