

**OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE**

COORDINATION TITLE- 23BON002 ITS End Gate Installation

COORDINATION DATE- 12 January 2023

PROJECT- Bonneville Lock and Dam Powerhouse 1

RESPONSE DATE- 9 February 2023

Description of the problem – originally coordinated in MOC 22BON095

The ice and trash sluiceway (ITS) at Bonneville’s Powerhouse 1 (PH1) experienced a south end gate failure on 30 December 2018. The gate cables were frayed, and the guide wheels were either sheared off or damaged. The gate was removed for repairs, the gate guide slot was plated over, and the ITS returned to service until repairs could be completed and the gate reinstalled. The end gate allows the project to close the sluiceway in the event of an emergency and to float large woody debris free of the channel when it becomes a fish passage obstacle.

Bonneville is scheduled to receive the new gate at the end of March 2023 and is planning to start install in the beginning of October 2023. Bonneville would like to start installing bulkheads the week of October 2nd and start dewatering as soon as possible afterwards. Bonn is accounting for seasonal weather delays. Water up is scheduled for November 6th

Type of outage required – ITS OOS (Out of service)

Impact on facility operation – Outage is not expected to change powerhouse or spillway operations other than the redirecting of flow.

Dates of impacts/repairs October 2nd through November 6th.

Length of time for repairs ~ 1 month

Analysis of potential impacts to fish

Expected impacts on fish passage –There would be no downstream surface passage route at PH1 for the duration of the work and reduced attraction flow in the tailrace. Juvenile fish that do make their way into the PH1 forebay could be delayed in passage and thus exposed to higher predation levels. All fishway entrances will remain open and continue to be provided attraction flow except for PH1 South entrance. This may cause adult fish otherwise using the south entrance at PH1 to use the north entrance. Adult fish that use routes other than PH1 fishway entrances are not expected to experience changes in levels of sea lion predation

BON will communicate with Reservoir Control Center (RCC) about fluctuating forebay levels during the work period. A teletype will be required to control the forebay levels during the work window.

1. 10-year average passage by run during the period of impact for adults and juvenile listed species, as appropriate for the proposed action and time of year; the 10-year average for all juvenile species shows a near 0% impact.

Table 1: 10-Year average for work period 10/02 – 11/06

Date	10/02 – 11/06 10-year avg	10 Year avg total run	Percent Run Affected
Chinook	42,003	817,285	5.1%
Steelhead	7,897	173,873	4.5%
Coho	29,595	113,422	26.1%
Lamprey	55	35,458	.16%

*Sockeye is not included in this estimate, the adult sockeye 10-year avg per day at this time is 1

2. Statement about the current year’s run (e.g., higher or lower than 10-year average);
NOAA and WDFW forecasts for Fall Chinook and Coho in 2023 are not yet available.
3. Estimated exposure to impact by species and age class (i.e., number or percentage of run exposed to an impact by the action);
This work is unlikely to impact any major fish runs. All fish entrances will still be operational. During this work window >95% of juvenile Chinook, Steelhead, Coho, and Sockeye passage will have already occurred based on 25-year historical data. **Figure 1** and **Figure 2** represent yearling, and sub-yearling Chinook passage.

Please see “Expected impacts on fish passage”, **Table 1**, and **Figure 1**.

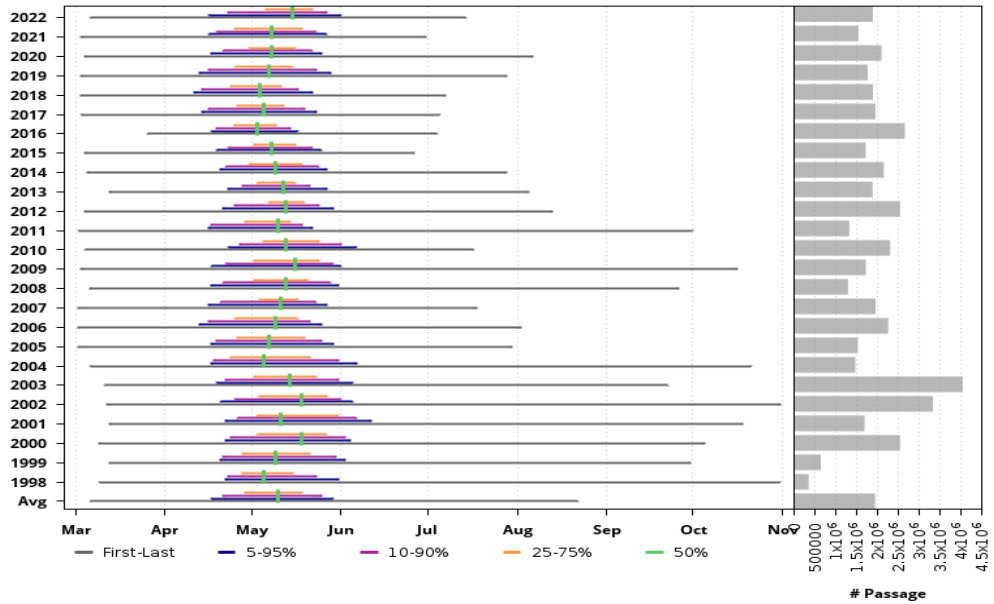
4. Type of impact by species and age class (increased delay, exposure to predation, exposure to a route of higher injury/mortality rate, exposure to higher TDG, etc.);

There will be no downstream surface passage route at PH1 for the duration of the work and reduced attraction flow in the tailrace. Without pull from the ITS, fewer juveniles than normal are expected to make their way into the PH1 forebay. Juvenile fish that do make their way into the PH1 forebay could be delayed in passage and thus exposed to higher predation levels. Adult fish that use routes other than PH1 fishway entrances (PH2) are not expected to experience higher levels of sea lion predation

Summary statement - expected impacts on:

Downstream migrants (including Lamprey) -- Downstream passage through the ITS will not be available from 02 October - 06 November. According to the historic 25-year average passage indexes for sub-yearling Chinook at Bonneville Dam (1998-2022), 95% of the run has passed by 10/06 – 11/06 (DART). With the outage occurring in

**Historical Run Timing, 1998 - 2022
Smolt Index Yearling Chinook
Bonneville Dam, 1/1 - 12/31**



www.cbr.washington.edu/dart

10 Jan 2023 13:37:39 PST

August/September, the proportion of the run impacted should theoretically be <5%. The last juvenile salmonids out-migrating generally takes place in late October according to

Fig. 1. Historical Run Timing for Yearling Chinook Smolt Index

DART. (*Figure 1, Figure 2*).

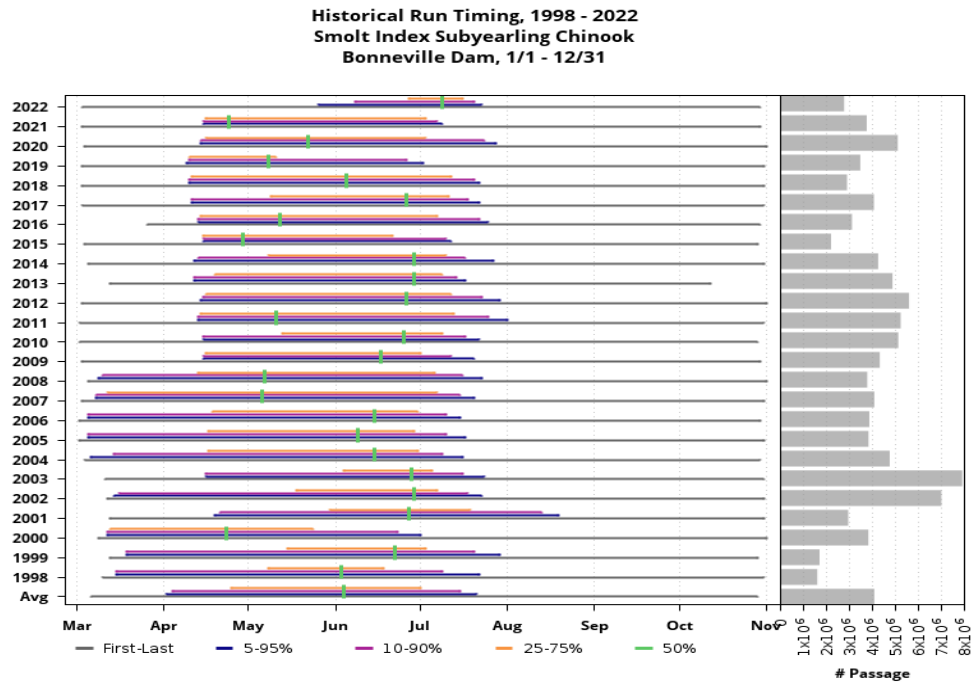


Fig. 2. Historical Run Timing for Subyearling Chinook Smolt Index

Upstream migrants (including Bull Trout) – The upstream and downstream entrances of the Powerhouse 1 Collection Channel (PH1CC) will remain open during the ITS closure. With the loss of attraction flow, some of the fish that would normally be attracted to PH1 passage routes will instead be attracted to PH2 routes. The Sea Lion predation rate is thought to be similar between tailraces, so no increase predation is expected.

Lamprey All ladder entrances and LPS systems will be operating for most of this outage until November 01 although adult lamprey passage is very low at this time of year.

Comments from agencies:

230209 FPOM –

23BON002 MOC ITS gate install. Derugin explained there is one trashrack installed in chaingate 1A. The second trashrack cannot be installed until after winter maintenance because the crane needed is on the north shore and the spare isn't located along PH1 +55' deck. In the meantime, the chaingate has been lowered as much as possible. ITS installation is schedule for October. Still waiting on materials to arrive. Conder would like some confidence that the trashrack will be installed in March.

NOAA Fisheries – -----Original Message-----

From: Trevor Conder - NOAA Federal <trevor.conder@noaa.gov>
 Sent: Monday, January 30, 2023 11:58 AM

To: Mackey, Tammy M CIV USARMY CENWP (USA)
<Tammy.M.Mackey@usace.army.mil>; Derugin, Andrew G CIV (USA)
<Andrew.G.Derugin@usace.army.mil>
Subject: [Non-DoD Source] Re: Official Coordination: FPOM 23BON002 MOC
ITS gate install

Where are we with the 1A and 1B trashrack and log boom concept and/or reprogramming the auto gates for more flow? I would like to get a feel for that before making comments on this. Thanks

-----Original Message-----

From: Derugin, Andrew G CIV (USA) <Andrew.G.Derugin@usace.army.mil>
Sent: Thursday, February 02, 2023 9:59 AM
To: Trevor Conder - NOAA Federal <trevor.conder@noaa.gov>
Cc: Mackey, Tammy M CIV USARMY CENWP (USA)
<Tammy.M.Mackey@usace.army.mil>
Subject: Re: [Non-DoD Source] Re: Official Coordination: FPOM 23BON002
MOC ITS gate install

So far mostly good on our side, the second trash rack is scheduled to go in on Feb 8th. There's been a bit of aquatic grass build up but having both in should help spread it out. The spacing is only 6", I wish it was larger but we don't have time to change that. The rack sits on top of the existing racks with the sill at ~ 70', so we don't have much depth to work with.

V/r,

Andrew Derugin

WDFW -

-----Original Message-----

From: Morrill, Charles (DFW) <Charles.Morrill@dfw.wa.gov>
Sent: Friday, January 27, 2023 12:17 PM
To: Mackey, Tammy M CIV USARMY CENWP (USA)
<Tammy.M.Mackey@usace.army.mil>
Subject: [Non-DoD Source] RE: Official Coordination: FPOM 23BON002 MOC
ITS gate install

Hi Tammy,

Speaking for WDFW I'm ok with this unless other co-managers see issues that I don't ... ;-)

Have a gr8 weekend ;-)

Charlie

Final coordination results:

Please email or call with questions or concerns.

Thank you,

Tammy Mackey

Tammy.m.mackey@usace.army.mil

503-961-5733