OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE - 18 LWG 11 – LGR JBS Bypass – Sensor Fish Testing
COORDINATION DATE – 25 October 2018
PROJECT - Lower Granite Lock and Dam
RESPONSE DATE – 07 Nov 2018

Description of the problem – As part of the post-construction evaluation of the upgraded Lower Granite JBS coordinated through the Study Review Work Group (SRWG), portions of the system are being evaluated by PNNL with *sensor fish* as described in study BPS-W-18-03 (Post Construction Evaluation of the Upgraded Juvenile Bypass System at Lower Granite Dam). In order to complete the sensor fish evaluation of the emergency bypass route, the system needs to operate in emergency bypass for two days of testing.

In order to facilitate sensor fish testing and minimize impacts to the facility and fish passage, the Corps will put the system into emergency bypass the morning of 13 November 2018 and subsequently shut down on 15 November 2018 to facilitate winter construction and maintenance activities as coordinated through FPOM MOC *18 LWG 05*. This will allow PNNL to conduct *sensor fish* testing on 13-14 November 2018.

Type of outage required

Impact on facility operation (FPP deviations) – The JBS will placed in emergency bypass the morning of 13 November 2018 prior to being taken out of service 15 November 2018 through 24 March 2019.

Impact on unit priority – None anticipated

Impact on forebay/tailwater operation – No changes to FPP requirements

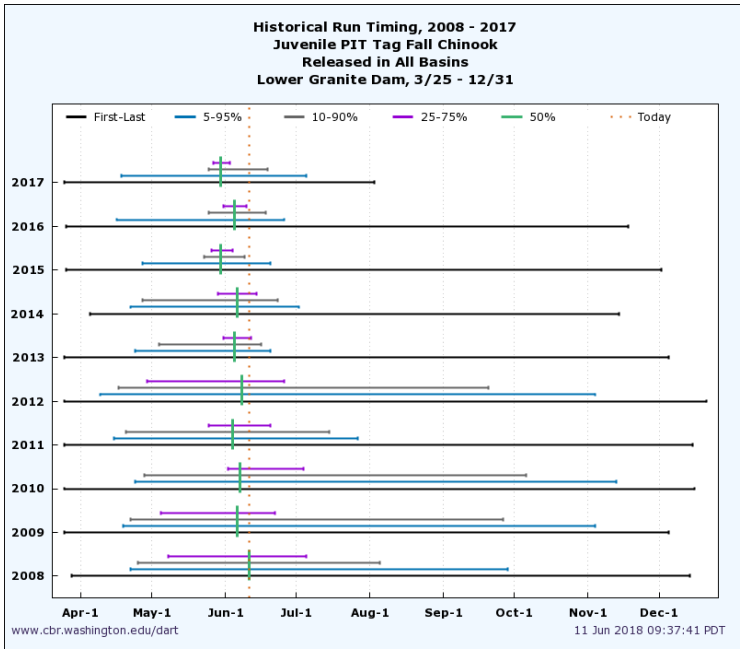
Impact on spill – None anticipated

Dates of impacts/repairs – 13 November to 14 November 2018

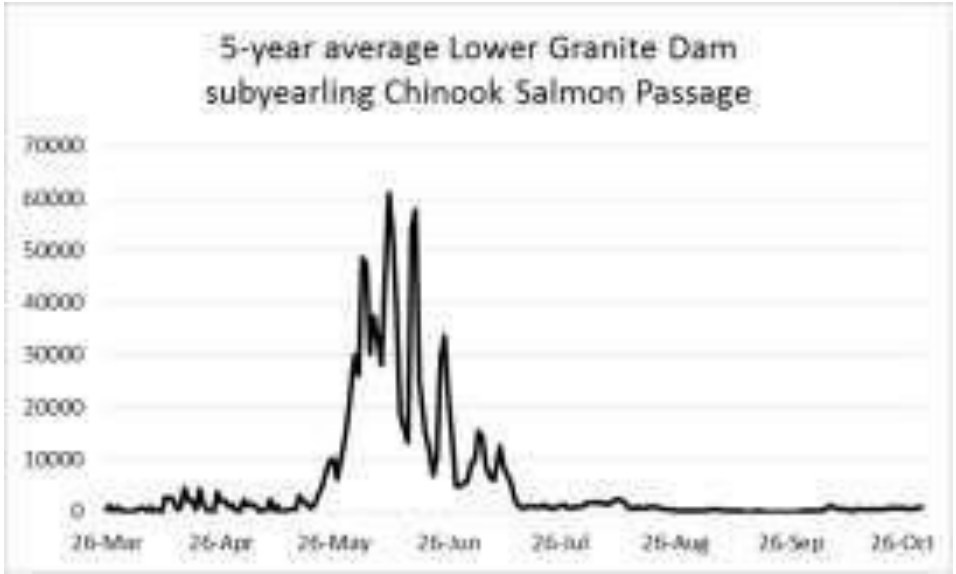
Length of time for repairs – It is anticipated that sensor fish testing will take PNNL two days to complete (13-14 November 2018). In order to facilitate switching to emergency bypass, JBS will be put into emergency bypass the morning of 13 November 2018 prior to being shut down on 15 November 2018.

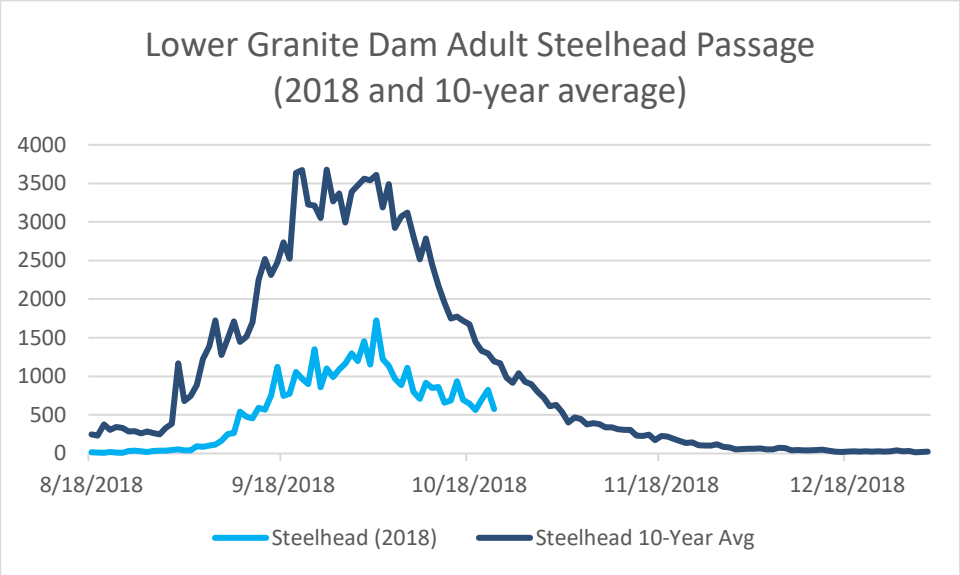
Analysis of potential impacts to fish

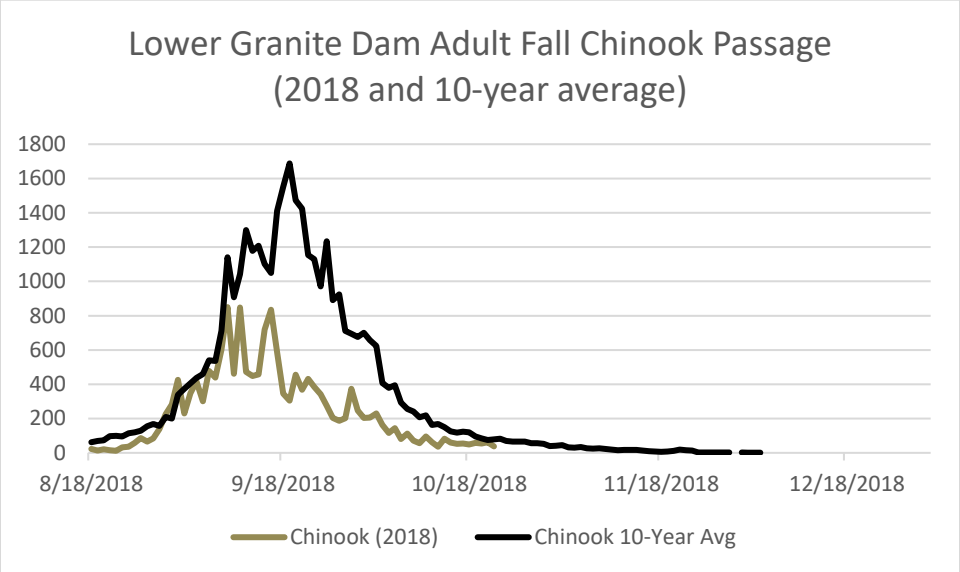
1. 10-year average passage by run during the period of impact for adults and juvenile listed species, as appropriate for the proposed action and time of year;



The JBS operational period passage timing graphic is constrained by JBS operational period (generally March 24 to December 15) which was shut down early in 2017 (early August) and in 2016 (November 15) for JBS upgrades.

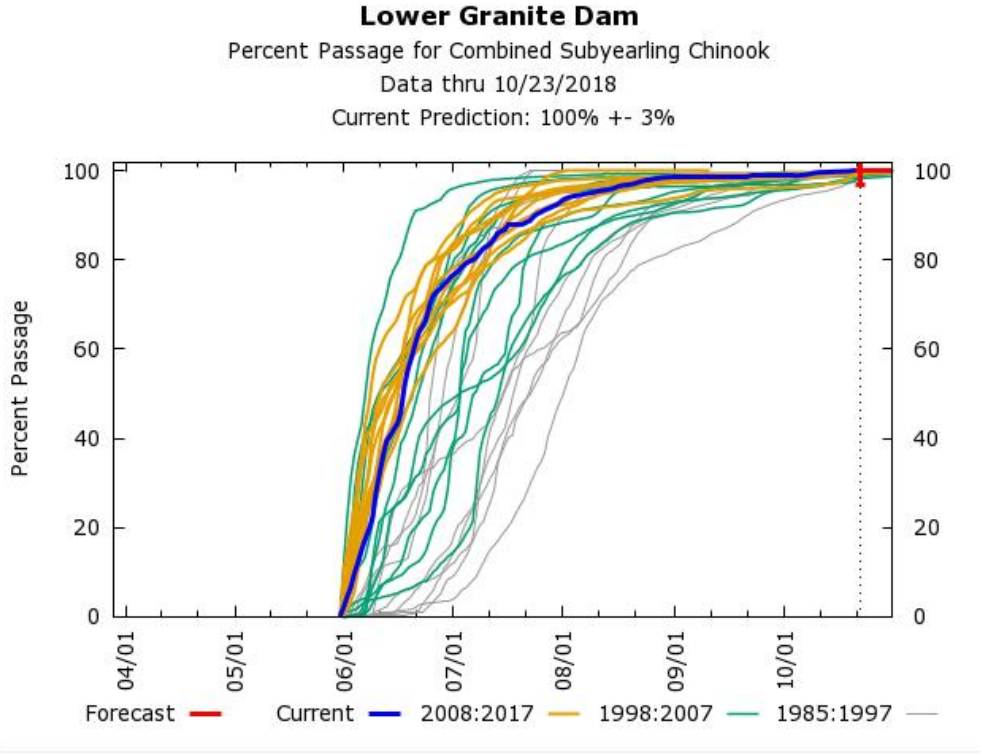



Lower Granite Dam Adult Steelhead Passage
(2018 and 10-year average)
4000
3500
3000
2500
2000
1500
1000
500
0
8/18/2018
9/18/2018
10/18/2018
11/18/2018
12/18/2018
Steelhead (2018)
Steelhead 10-Year Avg


Lower Granite Dam Adult Fall Chinook Passage
(2018 and 10-year average)
1800
1600
1400
1200
1000
800
600
400
200
0
8/18/2018
9/18/2018
10/18/2018
11/18/2018
12/18/2018
Chinook (2018)
Chinook 10-Year Avg

2. Statement about the current year's run (e.g., higher or lower than 10-year average) – Through October 24th the 2018 adult fall Chinook run passing Lower Granite Dam is 45% of the 10-year average (16,273 vs. 36,230). Through October 24th the 2018 adult steelhead run passing Lower Granite Dam is 31% of the 10-year average (42,010 vs. 135,213).

   - The 2018 juvenile subyearling run timing is similar to the last 10-years. Based on adult Snake River fall Chinook 2017 returns, the wild subyearling production is anticipated to be roughly 25% lower than the 10-year average. Hatchery production of Snake River fall Chinook was similar to previous years.



3. Estimated exposure to impact by species and age class (i.e., number or percentage of run exposed to an impact by the action):

   Available data on downstream passage of juvenile salmonids is typically not collected after October 31 through the smolt monitoring program, however PIT-tag monitoring has continued in recent years until the JBS is dewatered (typically December 15). Based on PIT-tag detection the downstream passage of juveniles would be limited to less than 0.2% of the subyearling fall Chinook outmigration during this time period (Table 1). While a relatively small portion of the total juvenile abundance pass through the JBS during November and December, these winter migrants are an important part of diversity and have exhibited higher smolt to adult return rates.

   Table 1. Annual and 10-year average juvenile fall Chinook salmon JBS PIT-tag

detections at Lower Granite Dam compared to numbers detected from November 13 through November 14 for, 2006-2015. JBS was shut down November 12 in 2014.

Year	Nov 13 -14	Annual Total	% of the run
2007	0	5,481	0.0%
2008	242	65,639	0.4%
2009	382	65,227	0.6%
2010	153	57,441	0.3%
2011	31	82,160	0.0%
2012	220	77,978	0.3%
2013	1	1,627	0.1%
2014	No Data Available		
2015	4	8,065	0.0%
2016	2	12,134	0.0%
10-year Average	182	38,289	0.2%

Data on downstream passage of adults through the JBS is limited during the November 13 to November 14 timeframe and has only been quantified in certain years when the JBS was not shut down due to cold temperatures or construction activities as shown in Table 2.

Table 2. Total number of adult Chinook and Steelhead fallbacks through the JBS and across the separator at Lower Granite Dam from November 13-14 and when the JBS was shutdown for 2011 through 2016.

Year	Steelhead	Chinook Adults	Chinook Jacks	JBS Shutdown
2011	6	19	6	16-Dec
2012	26	14	4	20-Dec
2013	7	20	25	5-Dec
2014	No Data Available			12-Nov
2015	17	41	9	2-Dec
2016	14	39	14	17-Nov
Average	14	27	12	

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.):

   Fish would normally pass through the JBS's primary bypass outfall during this time period; however fish will instead be bypassed through the new emergency bypass outfall. Based on the design of the emergency bypass outfall, survival is expected to be similar or better than historical survival rates through the JBS during this time period.

Summary statement - expected impacts on:

Downstream migrants – Fish that would have passed through the JBS's

primary bypass outfall from the morning of November 13 through the morning of November 15 will instead be passed through the new emergency bypass outfall. Survival is expected to be similar or better than historical survival rates through the JBS.

Upstream migrants (including Bull Trout) - A small portion of adult Chinook and adult steelhead would normally fallback through the JBS from the morning of November 13 through the morning of November 15. These fish will be bypassed through the emergency bypass route instead of through the primary bypass system. Survival is expected to be similar or better than historical survival rates through the JBS.

Lamprey – No impacts to adult lamprey anticipated. Limited impacts to downstream migrants.

Comments from agencies

Final coordination results

After Action update - Lower Granite Dam initiated transition to emergency bypass on November 13 at 0805 hours with full emergency bypass operations starting November 13 at 1033 hours. The project remained in emergency bypass until the JBS was shutdown and dewatered at 1155 hours November 15 for the winter maintenance period on in accordance with FPOM MOC "18 LWG 05 MOC JBS 2018 Shutdown."

Please email or call with questions or concerns.
Thank you,

Elizabeth Holdren
Lower Granite Project
USACE Supervisory Fisheries Biologist
Elizabeth.a.holdren@usace.army.mil

David Trachtenbarg
Fish Biologist
Environmental Analysis Section
U.S. Army Corps of Engineers
Walla Walla District
201 N 3rd Ave.
Walla Walla, WA 99362
Phone: 509-527-7238
David.A.Trachtenbarg@usace.army.mil