

OFFICIAL COORDINATION REQUEST FOR NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE: 14BON20 WA Shore LFS venting modifications

COORDINATION DATE: 25 June 2014

PROJECT: Bonneville Dam

RESPONSE DATE: 7 July 2014

Description of the problem: The Lamprey Flume System (LFS) at the North Downstream Entrance (NDE) of Bonneville Washington Shore Ladder requires modification to alleviate an entrained air problem, as documented previously in tests described in MOC 14BON14. Portland District engineers have devised two alternative solutions that involve installation of small air vents in key locations (Figure 1): (1) a snorkel-like vent on the uppermost “water box” of the flume and a low-profile vent in the lid of LPS Rest Box 1 (Figures 2 and 4), or: (2) a single vent on an existing access panel in the lower section of the LPS (Figure 3). Installation of either alternative design requires operation of a crane near the North Upstream Entrance (NUE) and work over the tailrace from a man basket.

In addition to this work, the University of Idaho has two small-scale tasks that require work over the water. The half-duplex PIT antenna located in Rest Box 1 requires maintenance and the Lamprey Passage Structure (LPS) inspection lid located immediately above Rest Box 1 is leaking water, which may indicate some sort of blockage or disturbance of flow within the LPS (Figure 4). A similar issue identified in 2013 led to minor modifications to the fyke leading from the rest box to the ramp.

Operation of the LFS is currently capped at 50% of maximum design discharge, based on observations documented in MOC 14BON14. There is some preliminary indication from lamprey collection data that increasing attraction flows from the LFS may increase collection of lamprey in this system (C. Caudill, personal comm.). Installing vents during the lamprey passage season may allow operation of the LFS at higher flow settings, thereby increasing attraction of lamprey to the prototype passage structure. Additionally, U of I’s inspection (and any resulting modifications) of the LPS issue above Rest Box 1 and maintenance of the Rest Box 1 PIT antenna will likely benefit lamprey passage and research.

Type of outage required: The water supply for the Lamprey Flume System (LFS) must be turned off during installation. The water supply pumps for the LPS at the upstream end of the LFS may also be turned off, depending on conditions. Work will involve operation of a crane and hand tools within 50 ft of an operating fishway. It will also require presence of a safety boat in the tailrace of Powerhouse 2 during over-water work.

Impact on facility operation: The water supply for the Lamprey Flume System (LFS) must be turned off during installation; LPS pumps may also be turned off during

installation, requiring inspection of rest boxes for possible lamprey salvage. The Washington Shore Fish Ladder will operate normally.

Dates of operation: Between July 7 and 10, depending on crane and personnel availability. The current preferred date is July 8.

Length of time for operation: Up to 5 hours in total. This operation would be performed during off-peak hours to minimize potential impacts of installation activity on migrating adult salmonids. The crane would be set up first thing in the morning, with active crane activity over the fishway from mid-morning to mid-day (approximately 09:00 to 14:00).

Expected impacts on fish passage: Minimal. Operation of the crane, hand tools, and boat in the vicinity of the fishway may cause minor disturbance. The proposed dates were selected based on the typical lull in passage between summer and fall runs, but will coincide with the first portion of the summer steelhead run.

During this period, average daily passage of Chinook salmon, steelhead, and sockeye salmon is 1367, 1704, and 2567, respectively. Approximately 70% of adult salmonids passed via the Washington Shore Fish Ladder during this period, from 2003-2013. This is near the average peak date for Pacific lamprey passage at Bonneville Dam.

Comments from agencies:

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

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]

Sent: Monday, June 30, 2014 9:09 AM

To: Mackey, Tammy M NWP

Cc: Tackley, Sean C NWP; Lorz, Tom; Trevor Conder - NOAA Federal; Hausmann, Ben J NWP

Subject: [EXTERNAL] Re: FPOM: Official Coordination - 14BON20

Tammy, We are good with doing the work as indicated. While it is unlikely that this work would pose a problem for adults entering the north entrances, I do want to point out that the risk to sockeye is likely a bit larger than indicated in the MOC. Given the magnitude of the run this year, I would anticipate double the number of sockeye indicated on those work dates (probably more like 2011). This also assumes the shape of the run timing is similar to past years. Thanks, Gary

CRITFC - -----Original Message-----

From: Tom Lorz [mailto:lorz@critfc.org]

Sent: Monday, July 07, 2014 10:17 AM

To: Mackey, Tammy M NWP

Subject: [EXTERNAL] Re: FPOM: Official Coordination - 14BON20

ok with me

Final results: This work will proceed as coordinated.

Please email or call with questions or concerns.

Thank you,
Tammy

Tammy Mackey
NWP Operations Division Fishery Section
Columbia River Coordination Biologist
503-961-5733
Tammy.m.mackey@usace.army.mil

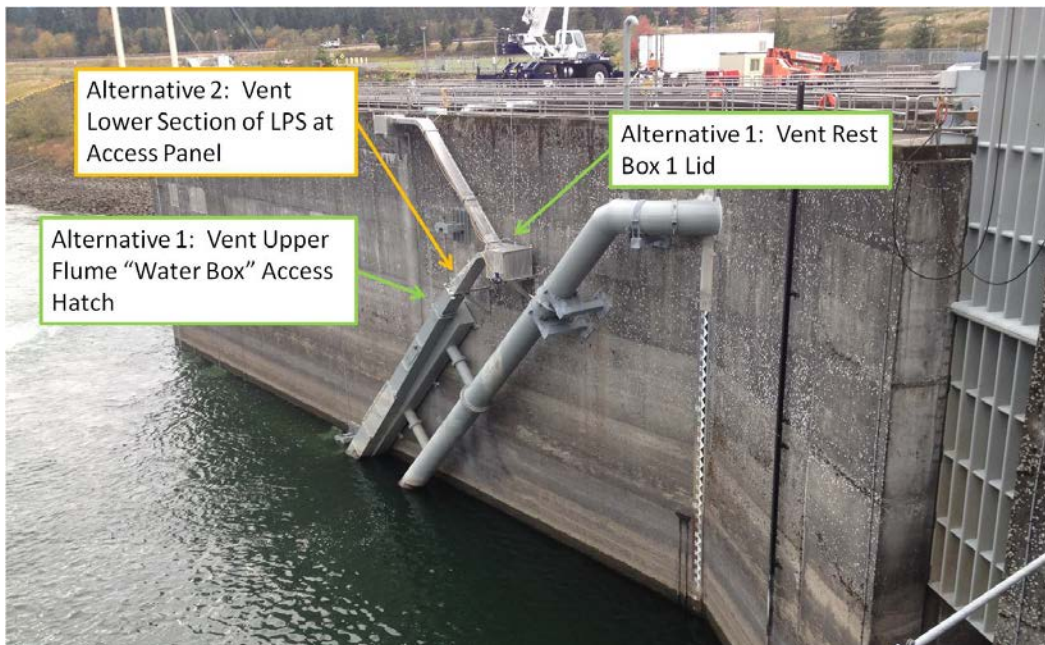


Figure 1. Photograph showing locations of venting alternatives for the Bonneville Washington Shore Lamprey Flume System (LFS). A mobile crane would be staged near the North Upstream Entrance (NUE), in the right of this photo.

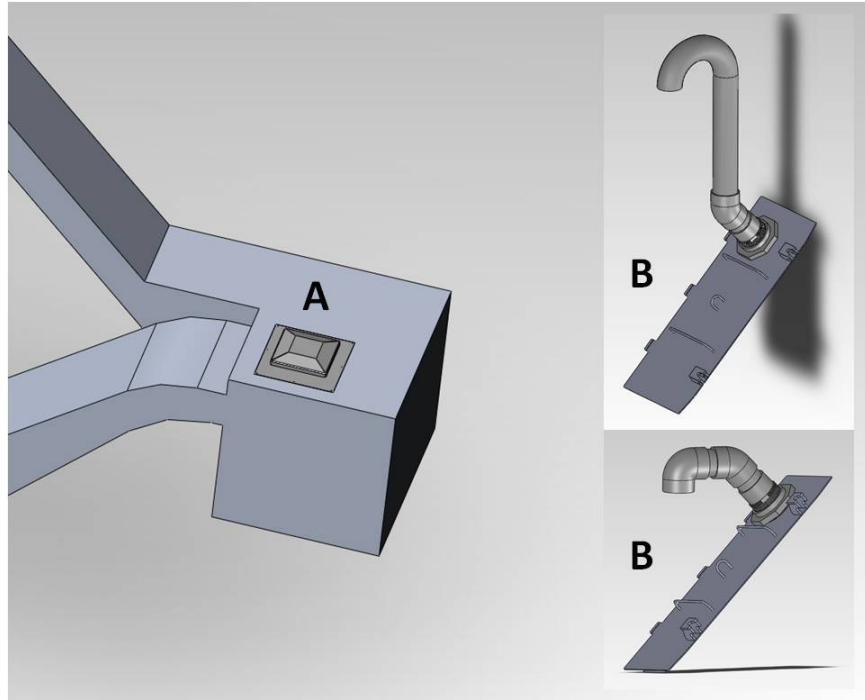


Figure 2. Conceptual drawings of venting structures for Rest Box 1 (A) and the Upper Flume “Water Box” Access Hatch (B). Designs for Alternative 2 are still in development.

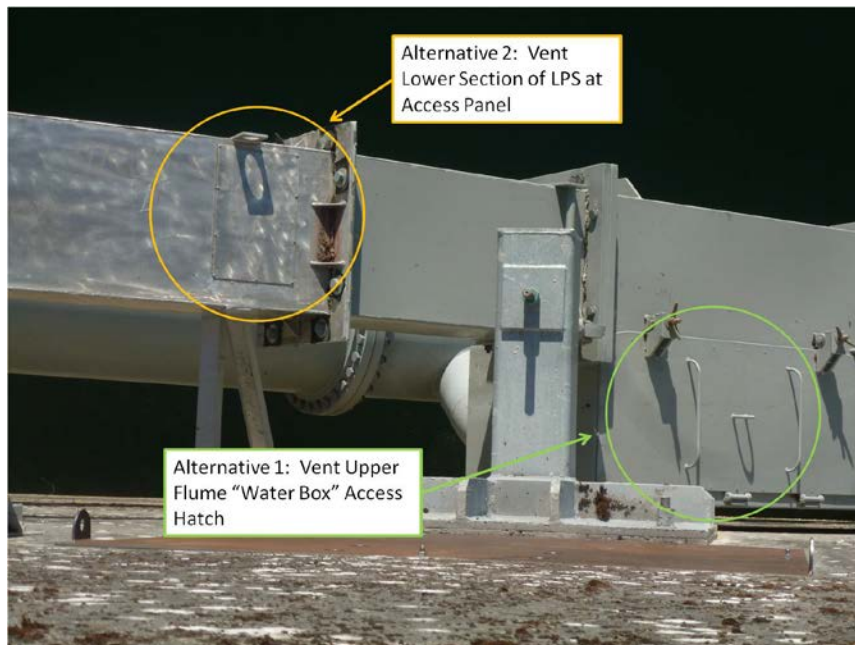


Figure 3. Photograph showing existing access panel on lower portion of LPS (A) and LFS upper flume water box access hatch (B).

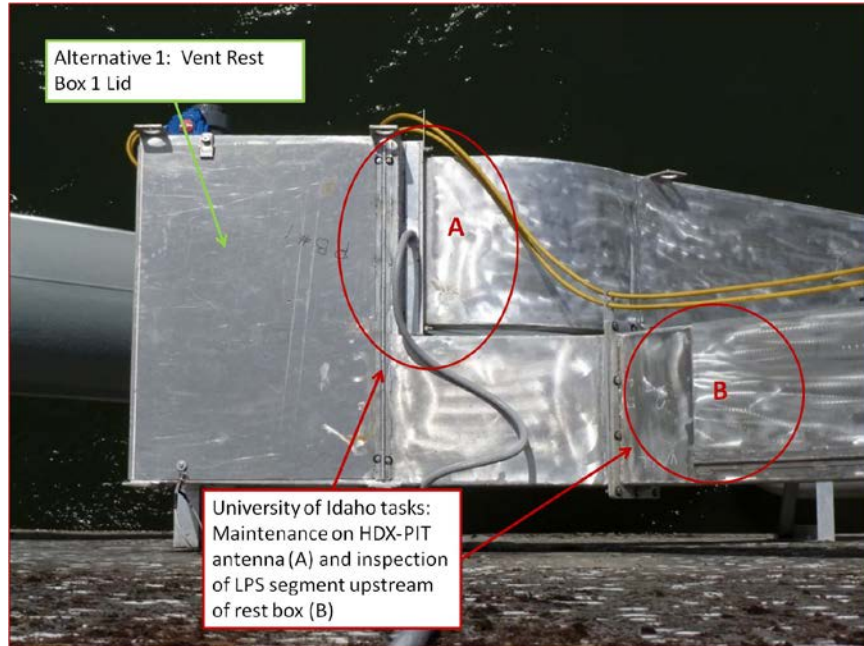


Figure 4. Photograph showing lower sections of LPS, including Rest Box 1, Rest Box 1 half-duplex PIT antenna (A), and LPS segment above Rest Box 1 (B). The PIT antenna at this location is not functional and will be replaced. Water has been observed emanating from the edges of the inspection lid of the LPS segment above Rest Box 1.

Passage/Adult Chinook 10YrAvg/Adult Steelhead 10YrAvg/Adult Sockeye
 2014, Bonneville, Chinook, 10YrAvg 2013-2004

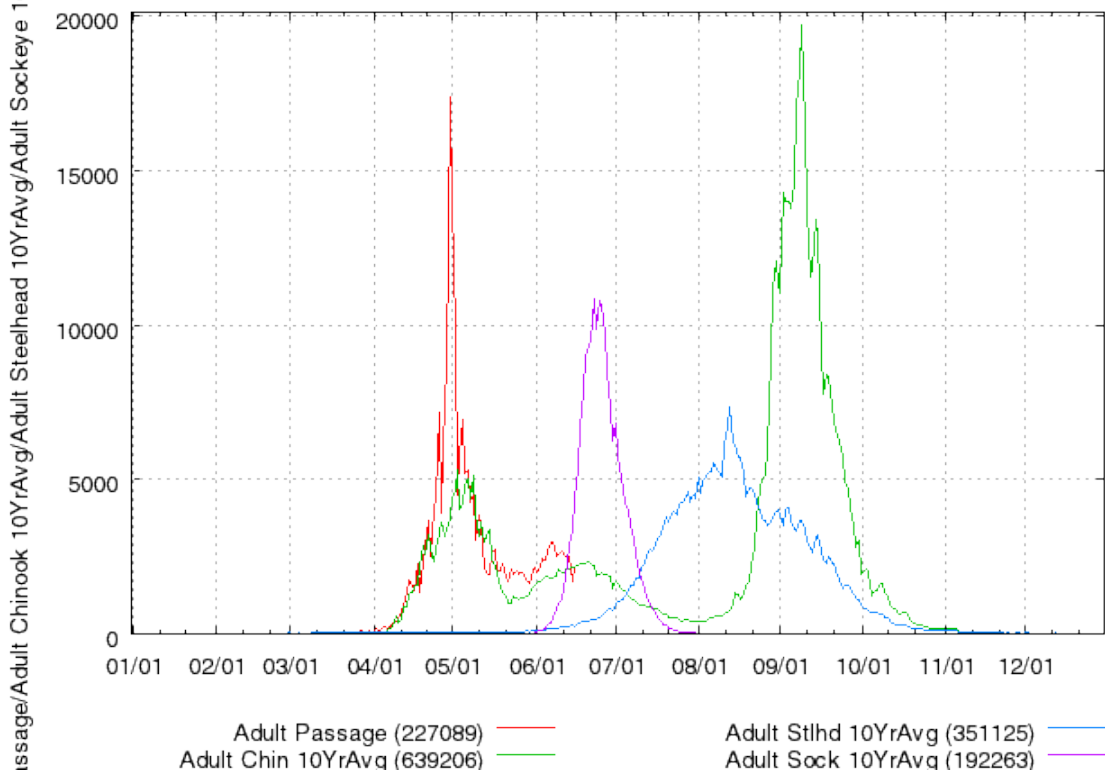


Figure 5. Adult salmonid passage at Bonneville Dam, 2004-2013. The proposed July 7-10 period for completing this work is intended to minimize any impacts on passage by timing the operation between summer and fall Chinook runs, after the sockeye run, and on the ascending portion of the summer steelhead run.