

August 3, 2017

Memorandum -- delivered via email

To: Chris Walker, NWP Operations Division Fishery Section
US Army Corps of Engineers (Corps)

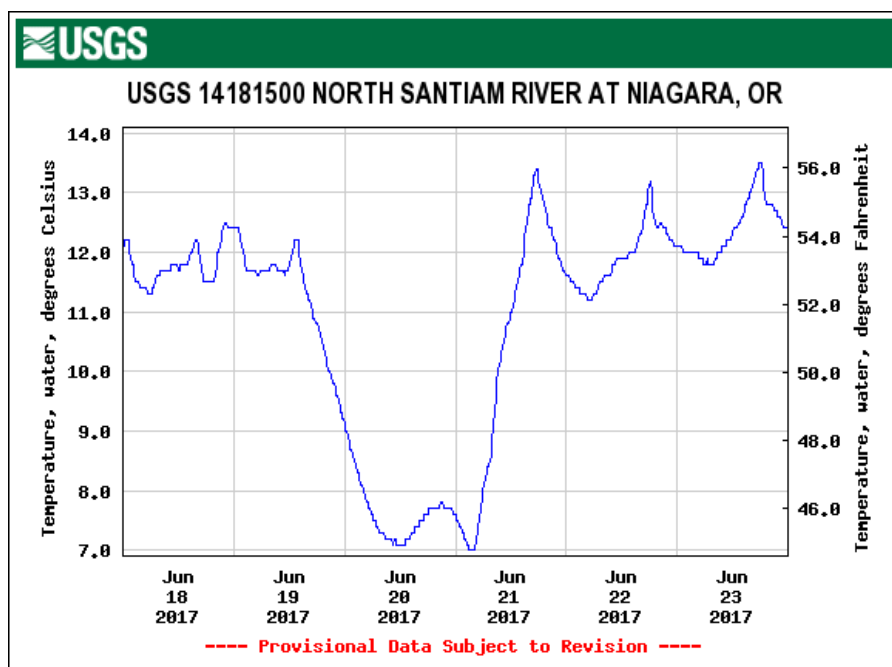
From: **AM**
Anne Mullan, Endangered Species Biologist, Willamette Branch
West Coast Region, National Marine Fisheries Service (NMFS)

Subject: NMFS' comments on MFR "17DET03 temperature decrease"

Thank you for this opportunity to review this Memorandum for the Record (MFR). This memo summarizes comments prepared by NMFS' West Coast Region technical staff.

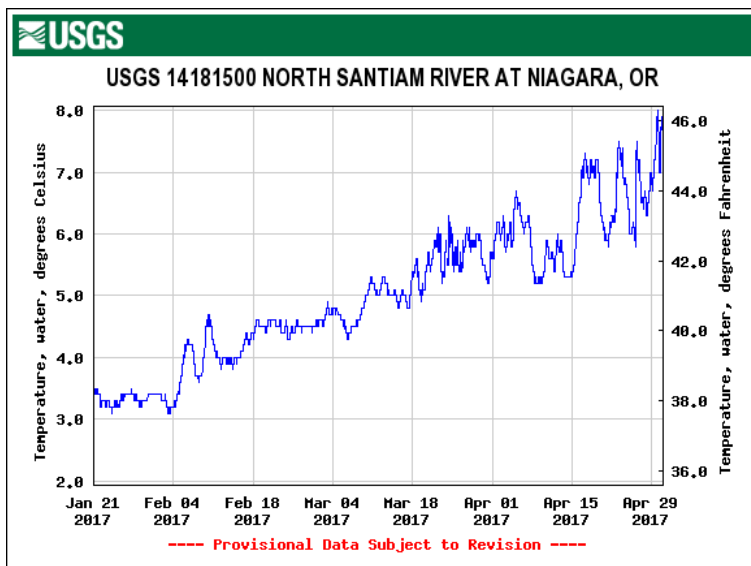
General Comments

This MFR describes a rapid decrease in temperatures in the tailrace of Detroit dam observed on June 21st-22nd, 2017. Temperatures dipped below the minimum of the interim temperature target range for the North Santiam (48 °F) to 44.6 °F. This decrease was due to an archeological survey being conducted at the reservoir which required a "flat pool." A lack of spill was scheduled to meet the needs of the survey, resulting in a decrease of downstream temperatures because all outflow came either through the ROs or turbines which draw from lower elevations in the reservoir.



NMFS agrees that it is likely some fish were impacted by this low temperature deviation, as steelhead redds and fry are expected to be present in the affected reach and Chinook salmon adults are expected to be migrating upstream in or towards this reach. This temporary decrease in temperature may have delayed upstream adult Chinook migrants or emergence timing of incubating steelhead. However, as the low temperature exposure was brief any delay impacts are expected to be minor.

In this case it appears this issue could have been avoided by scheduling this test earlier in the spring, when target temperatures are consistent with RO/turbine outflow temperatures (i.e., before the reservoir strongly stratifies for the season). For example, temperatures observed without temperature control operations in February, March, and April of this year fell within the interim temperature targets for part or all of those months:



Month	Temperature Maximum /Minimum	
	°F	°F
January	42	38
February	42	38
March	44	42
April	46	42

NMFS recommends updating the WFOP to include specific timing windows for such tests when refining maintenance outage windows in 2017. The Corps should inform WFOP members if there are other factors constraining scheduling of this kind of testing. In addition, NMFS requests closer coordination between the Corps and WFOP members prior to conducting these (or similar) tests. If any sudden changes in water quality or flow are anticipated from testing the WFOP fish agencies, specifically Minto Fish Facility Staff and ODFW regional biologists, should be notified prior to test initiation to avoid or reduce avoidable negative impacts to ESA-listed salmonids whenever possible.

Please direct questions or concerns about these comments to Anne Mullan at anne.mullan@noaa.gov or Diana Dishman at diana.dishman@noaa.gov.

cc:

Elise Kelley, Bernadette Graham-Hudson, ODFW
 Tom Friesen, Cameron Sharpe, ODFW – Research Lab
 Michael Hudson, USFWS

Lawrence Schwabe, CTGR

Nancy Gramlich, ODEQ

Leslie Bach, NWPCC

Marc Liverman, Anne Mullan, Diana Dishman, NMFS-WCR

Jim Myers, Rich Zabel, NMFS-NWFSC