

MEMORANDUM FOR THE RECORD

TITLE – 18DET02 North Santiam Water Temperature Targets

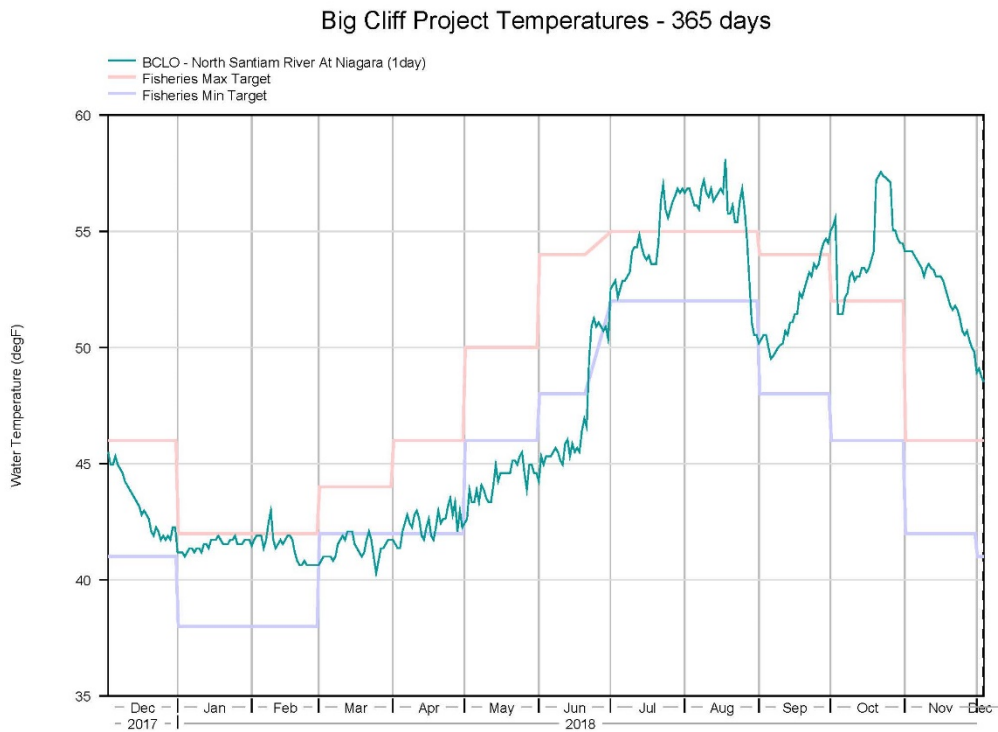
DATE – 24 July 2018

PROJECT – Detroit Dam

RESPONSE DATE – 07 August 2018

Description of the problem

On July 20, 2018, the maximum temperature target in the North Santiam River was adjusted to 60 degrees Fahrenheit for July and August to mitigate impacts of increased fall temperatures due to the delay in beginning temperature management operations (because of the algal bloom).



Type of change/outage required

The maximum temperature target in the North Santiam River was adjusted to 60 degrees Fahrenheit.

Impact on facility operation

Temperature management operations may be closer (i.e. mix of spill and turbine flow) to previous years where the maximum target was close to 60 degrees Fahrenheit during July and August.

Dates of impacts

July 20 into the fall season

Length of time for impacts

4-6 weeks for temperature management operations using the adjusted maximum temperature target

Expected impacts on fish

Operating with a higher maximum water temperature target will better protect incubating spring Chinook salmon eggs in redds this fall.

Comments from agencies**NMFS:**

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

From: Anne Mullan - NOAA Federal [mailto:anne.mullan@noaa.gov]
Sent: Thursday, July 19, 2018 3:11 PM
To: Walker, Christopher E CIV USARMY USACE (US)
<Christopher.E.Walker@usace.army.mil>
Cc: Elise X Kelley <Elise.X.Kelley@state.or.us>;
michael_hudson@fws.gov; Taylor, Gregory A CIV USARMY CENWP (US)
<Gregory.A.Taylor@usace.army.mil>
Subject: [Non-DoD Source] Re: NS temperatures 2015-2017

I take it that given the turbines invert elevation at 1,395.5 feet, and current reservoir elevation of ~1550 feet, mixing of flows from turbines, some ~50+ feet below top, with flows from the top (up to) 10 feet, would allow d/s temps (below Big Cliff) that do not exceed 60F -- matching 2016 (and earlier) targets.

If this is the case, we agree that the tradeoff in warmer water being spilled now will be acceptable to avoid harm when eggs are in redds in Sept-Oct-Nov.

Thanks for providing the helpful information. Let me know if you need any further responses, and if you have Detroit temp data graphed over the recent days / weeks (thought that was on the screen during the call Tuesday pm?), please send it on.

Best, Anne

ODFW:

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

From: Elise X Kelley [mailto:Elise.X.Kelley@state.or.us]
Sent: Friday, July 20, 2018 8:33 AM
To: Walker, Christopher E CIV USARMY USACE (US)
<Christopher.E.Walker@usace.army.mil>; Ann Mullan
<Anne.Mullan@noaa.gov>; Diana Dishman - NOAA Affiliate

<diana.dishman@noaa.gov>

Cc: michael_hudson@fws.gov; kelly.e.reis@state.or.us

Subject: [Non-DoD Source] RE: NS temperatures 2015-2017

Hi Chris,

On the N. Santiam, ODFW is seeing Chinook with fungus, and the run counts are lower than normal. That said, we do not want to overheat the redds in the fall, so we accept a 60F temperature on the N. Santiam below Big Cliff until mid-August. I'm not sure what NMFS guidelines are for gradually heating up a river, but the slower the better. Also, we could try to compensate for the extra heat by releasing an extra 100-200 cfs of water from Detroit. I'm sure there's an Excel spreadsheet somewhere that would tell me what that means for the reservoir elevation and spill during the spawn/incubation period, but if you could let me know that would be helpful. FYI, the warmer temps could result in higher PSM than we have seen in recent years.

Thanks,

Elise

Final results

The maximum temperature target was adjusted to 60 degrees Fahrenheit beginning July 20 into August until the reservoir elevation went below spillway crest (1,541 feet) by early September.

Please email or call with questions or concerns.

Thank you,

Chris Walker

NWP Operations Division Fish Section

503.808.4316

Christopher.E.Walker@usace.army.mil