

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

COORDINATION TITLE – 17DET02 North Santiam Temperature Targets

COORDINATION – 04 April 2017

PROJECT – Detroit Dam

RESPONSE DATE – 10 May 2017

Description of the problem – Changes to temperature target ranges in the Willamette Fish Operations Plan (WFOP) were proposed by the Oregon Department of Fish and Wildlife (Attachment 1) to provide benefits to fish and fisheries in the North Santiam River. A task group was formed to assess the proposed temperature targets. As a result, the North Santiam Temperature task group conducted work sessions to assess proposed water temperature target ranges to make recommendations for implementation of appropriate temperature ranges for 2017. Water temperature model runs were conducted and compared to a set of evaluation criteria to assess the potential effects of the proposed targets on various life stages of spring Chinook salmon and winter steelhead (Attachments 2, 3, and 4).

Type of operation required – The temperature management operation will be conducted in accordance with the ‘proposed’ water temperature targets detailed in Table 1. If a dry or warmer year is anticipated, temperature targets would revert back the original targets to minimize impacts to incubating spring Chinook eggs during the fall.

Table 1. Current and proposed water temperature targets in the North Santiam River.

Current:

Month	Temperature Maximum/Minimum	
	°F	°F
January	40.1	40.1
February	42.1	41
March	42.1	41
April	45.1	43.2
May	49.1	46
June	56.1	51.1
July	61.2	54.1

Proposed:

Month	Temperature Maximum/Minimum	
	°F	°F
January	42	38
February	42	38
March	44	42
April	46	42
May	50	46
June	54	48
July	55	52

August	60.3	54.1
September	56.1	52.3
October	<50.0	<50.0
November	<50.0	<50.0
December	41	41

August	55	52
September	54	48
October	52	46
November	46	42
December	46	41

Impact on facility operation – There should be minimal impacts to facility operations as temperature management operations are already being conducted.

Dates of impacts/repairs – This will be implemented beginning in June of 2017. If the desired benefits are observed with minimal unanticipated impacts, these water temperature targets may be used in future years.

Expected impacts on fish – There may be an increase survival and less disease potential for fish holding in the river and at the Minto Fish Collection Facility. Reduced temperatures during the summer may also increase harvest efficiency for summer-run steelhead, decreasing the potential for negative interactions between the hatchery summer steelhead and native winter steelhead.

Comments from agencies

See Attachment 5 for NMFS comments

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

From: Steven Marx [mailto:steven.d.marx@state.or.us]
 Sent: Tuesday, May 16, 2017 8:43 AM
 To: Bill Bakke <bmbakke@gmail.com>; Spear, Daniel J (BPA) - PGB-5 <djspear@bpa.gov>
 Cc: WFPOM
 Subject: [Non-DoD Source] RE: Question: 17DET02 North Santiam Temperature Targets

ODFW continues to monitor fish passage at Willamette Falls and the lower river fishery to determine if additional angling restrictions are warranted in the lower or upper Willamette.

On May 8th, ODFW reduced angling to three days per week below the falls to enhance escapement. Through May 13th, just over 4,000 adult spring Chinook salmon have passed above Willamette Falls. For comparison, 2810 adult spring Chinook passed Willamette Falls through the same date in 2008. Harvest was reduced to 1 Chinook per day on June 2nd that year with fewer than 5,000 adults over the falls. Total escapement for the year was 14,151 adults.

Catch rates and angling reports continue to suggest at least fair numbers of fish below the falls. Passage has been impacted by a temporary shutdown of one of the primary ladder legs at the falls and was only recently reopened, low temperatures persisted through April, and high flows are ongoing. Low temperatures and high flows have resulted in late migration and passage delays in the Willamette, Columbia, Umpqua, and Rogue river basins as well. High flows, such as the very high 450,000 cfs at Bonneville Dam right now, are known to delay passage at the dam.

Low return rates for spring Chinook salmon and winter steelhead in the Willamette are largely a consequence of freshwater habitat deficiencies and ocean conditions. ODFW is projecting low return rates in the future stemming from the 2015 water year which was one of the worst on record from a habitat standpoint. Population status in the early 1990's, 2008, 2017(?), and other low run years are a telling indicator of how marginalized habitat is in the Willamette which highlights a loss of buffering capacity, need to address habitat impacts, and implement interim and long-term passage measures as soon as possible according to industry standards.

Thanks,

Steve

Steven Marx

West Region Manager

Oregon Dept of Fish & Wildlife

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

From: Bill Bakke [mailto:bmbakke@gmail.com]

Sent: Friday, May 12, 2017 7:22 PM

To: WFOP

Subject: [Non-DoD Source] Re: Question: 17DET02 North Santiam Temperature Targets

A low run of protected threatened species and for hatchery brood stock exposed to expected fishing pressure is a definite problem that both NMFS and ODFW should review for the purpose of reducing angling or eliminating this impact altogether.

On Fri, May 12, 2017 at 5:34 PM, Spear, Daniel J (BPA) - PGB-5 <djspear@bpa.gov <mailto:djspear@bpa.gov> > wrote:

Hello:

Is there any response to the concern expressed below regarding brood collection? In what appears to be a very low return year increasing the amount of time that spring chinook and winter steelhead spend in the river, and exposed to fisheries, may not be beneficial even for hatchery spring chinook insomuch that we are counting on these fish for brood.

It is also not clear how the trade off between the benefit of increased time in river and better water conditions at Minto and the demerit reduced incubation timing for redds was considered.

BPA's ratepayers spend approximately \$1.5M annually on operation temperature control for wild fish in the North Santiam. BPA wants to assure that this operation is being managed to deliver the best reasonable benefit for wild, ESA-listed fish.

Have a good weekend.

Dan Spear

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

From: Elise X Kelley [mailto:elise.x.kelley@state.or.us]
Sent: Wednesday, May 10, 2017 7:50 AM
To: WFPOM
Subject: [Non-DoD Source] RE: Question: 17DET02 North Santiam Temperature Targets

Hi Chris,

Thanks for checking. ODFW would like to implement the temperature targets this year. With the forecasted low run numbers, we'd like to keep these fish in the best possible shape.

Thanks,
Elise

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

From: Anne Mullan - NOAA Federal [mailto:anne.mullan@noaa.gov]
Sent: Tuesday, May 09, 2017 4:59 PM
To: WFPOM
Subject: [Non-DoD Source] Re: Question: 17DET02 North Santiam Temperature Targets

NMFS would like to go ahead with implementing the new temperature targets this year. Thankfully numbers are up for Chinook crossing over Willamette Falls in recent days, so hopefully they will appreciate the cooler temperatures when they make it into the North Santiam, and continue to migrate upstream for collection at Minto. Thanks for the opportunity to comment.

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

From: Walker, Christopher E CIV USARMY USACE (US)
Sent: Tuesday, May 02, 2017 4:46 PM
To: To: WFPOM
Subject: Question: 17DET02 North Santiam Temperature Targets

W-FPOM

I wanted to send this out to the group for additional feedback given the expected low run size.

Do we want to implement new temperature targets for the North Santiam in a year where the projected run size is low? One concern would be achieving adequate fish collection at the Minto Fish Facility.

Please comment by May 10.

Chris Walker
U.S. Army Corps of Engineers
Operations Division
Fish Biologist
w: 503-808-4316
c: 503-887-6452

http://www.nwd-wc.usace.army.mil/tmt/documents/FPOM/2010/Willamette_Coordination/

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

From: GRAMLICH Nancy [mailto:nancy.h.gramlich@state.or.us]
Sent: Monday, April 24, 2017 1:03 PM
To: Walker, Christopher E CIV USARMY USACE (US)
<Christopher.E.Walker@usace.army.mil>
Cc: Anne Mullan (anne.mullan@noaa.gov) <anne.mullan@noaa.gov>; GRAHAM-HUDSON Bernadette N <bernadette.n.graham-hudson@state.or.us>; Cameron Sharpe - OSU <cameron.sharpe@oregonstate.edu>; Diana Dishman (diana.dishman@noaa.gov) <diana.dishman@noaa.gov>; Daniel J. Spear (djspear@bpa.gov) <djspear@bpa.gov>; KELLEY Elise X <elise.x.kelley@state.or.us>; GRENBERMER Greg A <greg.a.grenbemer@state.or.us>; Karl Weist (kweist@nwcouncil.org) <kweist@nwcouncil.org>; Lawrence Schwabe (Lawrence.schwabe@grandronde.org) <lawrence.schwabe@grandronde.org>; Bach, Leslie <lbach@nwcouncil.org>; Michael Hudson (michael_hudson@fws.gov) <michael_hudson@fws.gov>; GRAMLICH Nancy <nancy.h.gramlich@state.or.us>; COUTURE Ryan B <ryan.b.couture@state.or.us>; Stephanie Burchfield - NOAA Federal <stephanie.burchfield@noaa.gov>; Tom Friesen <tom.friesen@oregonstate.edu>; LOBOY Zach <zach.loboy@state.or.us>
Subject: [Non-DoD Source] RE: 17DET02 North Santiam Temperature Targets

Hello Chris,

Thank you for the opportunity to provide comment on 17DET02 North Santiam Temperature Targets and welcoming a delayed written response.

Based on the information enclosed, and consensus from the other agencies, DEQ acknowledges the North Santiam target adjustments as a means to adaptively manage and study temperature and offers brief comments at this time:

1. DEQ is greatly interested in temperature management operations at the Willamette projects that support the TMDL and Biop. Fish production is highly dependent on environmental conditions and projects releases out of Detroit and Big Cliff.
2. The TMDL targets are slightly cooler than the current resource agency minimum targets from Apr thru June and Sept, but are within the target ranges for the remaining months. For the proposed targets, the TMDL targets are slightly cooler than the RA targets in Apr, May, and Oct, within the ranges for Jun & Sept. Nov is within range slightly below max, and Jul-Aug are the max of range.
3. The Corp's modeling is greatly appreciated. The enclosed summary indicates "the difference between the improvements in spawning and impacts on incubation are minimal compared to current." The modeling indicates that adaptively managing temperature is difficult for optimizing downstream temperatures as a result of the limited

withdrawal capability. The current and proposed modeled targets for interim temperature operations demonstrate selective withdrawal structure at Detroit can significantly improve river temperatures downstream.

4. Physical and biological data collected will help inform 2018 operations and likely the design of the Detroit Phase 1 Downstream Fish Passage and Temperature Control project. In advance of implementing the interim temperature operations in June 2017, I recommend an interagency review of the monitoring plan. The Draft 90 Percent Report, March 2017 indicates that real-time temperature and TDG monitoring was reduced in 2014 and in 2016.

Please keep me posted on any future interagency task group meetings convened to discuss North Santiam temperature targets. I anticipate the task group will reconvene to discuss such things as if it is a predicted dry year and the results before 2018 interim temperature control operations.

Please let me know if you have any questions.

Regards, Nancy

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

From: Piaskowski, Richard M CIV CENWP CENWD (US)
Sent: Wednesday, April 19, 2017 9:55 AM
To: Walker, Christopher E CIV USARMY USACE (US)
<Christopher.E.Walker@usace.army.mil>
Cc: Taylor, Gregory A CIV USARMY CENWP (US)
<Gregory.A.Taylor@usace.army.mil>; Traylor, Andrew W CIV USARMY CENWP (US) <Andrew.W.Traylor@usace.army.mil>
Subject: RE: 17DET02 North Santiam Temperature Targets

Chris,

The MOC states "Expected impacts on fish - There may be an increase survival and less disease potential for fish holding in the river and at the Minto Fish Collection Facility. Reduced temperatures during the summer may also increase harvest efficiency for summer-run steelhead, decreasing the potential for negative interactions between the hatchery summer steelhead and native winter steelhead."

I suggest adding that, conversely, the proposed increase in summer temperature targets could delay adult hatchery- and natural-origin Chinook and hatchery summer steelhead upstream migration rates. This delay could decrease collection rates at Minto AFF, potentially leading to increased disease transmission and competition among adult hatchery and natural origin Chinook and steelhead, and increased numbers of hatchery-origin Chinook and summer steelhead spawning in the North Santiam subbasin.

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

From: Bernadette N Graham-hudson [mailto:bernadette.n.graham-hudson@state.or.us]
Sent: Tuesday, April 18, 2017 3:29 PM
To: Walker, Christopher E CIV USARMY USACE (US)
<Christopher.E.Walker@usace.army.mil>
Cc: Anne Mullan (anne.mullan@noaa.gov) <anne.mullan@noaa.gov>;
Stephanie Burchfield - NOAA Federal <stephanie.burchfield@noaa.gov>;

Diana Dishman (diana.dishman@noaa.gov) <diana.dishman@noaa.gov>; Elise X Kelley (elise.x.kelley@state.or.us) <elise.x.kelley@state.or.us>; GRAMLICH Nancy <Nancy.H.GRAMLICH@state.or.us>; Greg Grenbemer (greg.a.grenbemer@state.or.us) <greg.a.grenbemer@state.or.us>; Ryan Couture (ryan.b.couture@state.or.us) <ryan.b.couture@state.or.us>; Tom Friesen <tom.friesen@oregonstate.edu>; Bernadette Graham Hudson (bernadette.n.graham-hudson@state.or.us) <bernadette.n.graham-hudson@state.or.us>; Cameron Sharpe - OSU <cameron.sharpe@oregonstate.edu>; Michael Hudson (michael_hudson@fws.gov) <michael_hudson@fws.gov>; Bach, Leslie <lbach@nwcouncil.org>; Karl Weist (kweist@nwcouncil.org) <kweist@nwcouncil.org>; Lawrence Schwabe (Lawrence.schwabe@grandronde.org) <Lawrence.schwabe@grandronde.org>; Daniel J. Spear (djspear@bpa.gov) <djspear@bpa.gov>
Subject: [Non-DoD Source] RE: 17DET02 North Santiam Temperature Targets

Hi Chris,

Thank you for the opportunity to comment on the coordination request 17DET02 North Santiam Temperature Targets. ODFW appreciates the Corps' willingness to form the task group to discuss the proposed temperature targets. The modeling completed by the Corps was very helpful in assessing the potential impacts from the proposed temperature targets.

ODFW supports the proposed temperature targets to be implemented beginning in June, 2017. We feel these targets will help reduce the risk of disease in fish holding downstream of Minto, as well as reduce risk to fish at the Minto facility. While there may be impacts to incubation temperatures, based on modeling results, these impacts will likely be negligible relative to the already-accelerated emergence timing below Big Cliff and Detroit dams. This accelerated emergence timing highlights the need for permanent temperature control in this system.

ODFW requests that the task group reconvene this winter to review how the temperature operations were implemented in 2017, including how well operations were able to meet the temperature targets in the current water year, and any updated modeling that might be available at that time.

Please let me know if you have any questions about these comments.

Thanks,
Bernadette

Bernadette Graham Hudson | Willamette Fish & Wildlife Policy and Program Manager
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Final results

New water temperature targets will be implemented this year in the North Santiam River below Detroit and Big Cliff Dams once the special operations request is approved. These water temperature targets may be implemented in future years pending results of year-one implementation and future modeling efforts.

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

Chris Walker
NWP Operations Division Fishery Section
U.S. Army Corps of Engineers, Portland District
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