

## **Appendix D:**

# **California North Coast Regional Water Quality Control Board Temperature Targets Memo**



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## North Coast Regional Water Quality Control Board

**TO:** Alan Henning and Ryan Michie

**FROM:** Clayton Creager, Bryan McFadin, and Alydda Mangelsdorf

**DATE:** April 10, 2019

**SUBJECT:** INTERPRETATION OF CA WATER QUALITY STANDARDS  
(TEMPERATURE) FOR THE OR UPPER KLAMATH AND LOST RIVER  
WATER TEMPERATURE TMDL

Thank you for reaching out to us during development of the Upper Klamath and Lost River water temperature TMDL. We appreciate your consideration of applicable downstream water quality standards in California.

In June 2009, Regions 9 and 10 of the EPA entered into a Memorandum of Agreement (MOA) with the Oregon Department of Environmental Quality and California's North Coast Regional Water Quality Control Board to address TMDL development and implementation for interstate waters in the Klamath and Lost River Basins. Consistent with this MOA, the EPA and state agencies have worked collaboratively to develop TMDLs for interstate water quality impaired waterbodies. The purpose of this TMDL is to set allocations that attain and maintain Oregon's water quality standards. However, because the TMDL is being developed as part of a comprehensive bi-state effort to reduce temperature pollution in the Klamath and Lost River Basins it is also designed to meet California's water quality standards at the state border. The application of state water quality standards in an interstate context is wholly consistent with the CWA's broad purpose to restore and maintain the chemical, physical and biological integrity of the Nation's waters. 33 U.S.C. 1251(a).

From our discussions, we understand that the Oregon Department of Environmental Quality (ODEQ) and US EPA Region 10 (EPA R10) are requesting interpretation of water quality standards for the following interstate waters:

Upper Klamath Subbasin (18010206)

- Klamath River
- Jenny Creek

Lost River Subbasin (18010204)

- Rock Creek
- North Fork Willow Creek
- East Branch Lost River

Please let this email document the findings of the North Coast Regional Water Quality Control Board (North Coast Water Board) regarding requested temperature standards in California waters listed above. Note that watershed delineation in the North Coast Basin Plan differs from the federal HUC system, with little relevant consequence.

1. Water temperature objectives contained in the *Water Quality Control Plan for the North Coast Region* apply to ambient waters in California immediately south of the border with Oregon. This plan is commonly referred to as the Basin Plan.
2. The temperature objective contained in the Basin Plan says: "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses." The Basin Plan goes on to state, "at no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature," and "at no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature."
3. The interstate waters listed above have both COLD and WARM beneficial use designations.
4. The Basin Plan also states: "Controllable water quality factors shall conform to the water quality objectives contained in the basin plan. When other factors result in the degradation of water quality beyond the levels or limits established as water quality objectives, then controllable factors shall not cause further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the state and that may be reasonably controlled." This means that when natural water temperatures are warmer than the basin objectives, controllable warming is prohibited.
5. Given the Basin Plan requirements and beneficial use designations stated above, water temperature increases of up to 5°F above natural water temperature can be allowed, if a convincing demonstration of the need is made, unless such increases exceed beneficial use requirements (in this case salmonids). No controllable temperature increases are allowable when temperatures already exceed beneficial use requirements.
6. On the Klamath River, the natural receiving water temperatures at the California-Oregon boundary were determined as output from the T1BSR model scenario of the Klamath TMDL model and described in Tetra Tech, December 23, 2009 Modeling Scenarios: Klamath River Model for TMDL Development. Natural temperatures for the mainstem Klamath River, expressed as monthly averages, at the CA-OR Stateline are listed in Table 5.3 of the 2010 TMDL and are included below for your reference:

May	June	July	August	September	October
14.4 °C 58 °F	18.2 °C 64.8 °F	19.1 °C 66.5 °F	18.9 °C 66 °F	15.1 °C 59.2 °F	10.4 °C 50.7 °F
November	December	January	February	March	April
3.6 °C 38.4 °F	2.3 °C 36.1 °F	3 °C 37.4 °F	6 °C 42.8 °F	9.4 °C 48.9 °F	12 °C 53.5 °F

7. The purpose of establishing temperature objectives is to ensure protection of beneficial uses. Where modeled estimates of the natural condition are not available, temperature TMDL targets should be based on the temperatures necessary to support the most sensitive beneficial use. Such an approach was supported in our recent memorandum regarding temperature criteria for the Lost River mainstem dated December 7, 2018.
8. Based on readily available information and discussions with ODEQ and EPA R10, the most sensitive taxa for unmodeled interstate tributaries are as follows:

- Jenny Creek  
California Department of Fish and Wildlife's BIOS database indicates Jenny Creek currently supports coastal rainbow trout (*Oncorhynchus mykiss irrideus*) populations. Pending removal of four major dams along the Klamath mainstem, we believe improved fish passage to Jenny Creek may support rearing uses by other native anadromous salmonids, including steelhead.
- Lost River COLD tributaries  
Identification of sensitive taxa within the Lost River basin is made difficult by the fact that the Lost River system is highly modified, including the obstruction of headwaters with the construction of Clear Lake Reservoir in 1910. In addition, the geomorphic isolation of the Lost River subbasin may have precluded or limited spawning or rearing uses by native anadromous salmonids.

It is the Board's understanding that native redband trout are presumed present within Lost River COLD tributaries according to ODEQ's water quality standards. At this time, the Board has no information that suggests taxa more sensitive than redband trout are present in Lost River COLD tributaries.

In this determination the Board has not conducted an exhaustive analysis of aquatic species in COLD interstate waters and their associated temperature sensitivities. The Board reserves the right to consider new information related to the presence of temperature-sensitive taxa when interpreting the Basin Plan's narrative temperature objective in the future.

9. With respect to applicable numeric water temperature criteria for unmodeled COLD interstate waters, the Board concludes the following:

- Jenny Creek

Consistent with the EPA R10 Water Temperature Guidance (2003), a temperature criterion of 16 °C as 7DADM (7-day average maximum temperature) is suggested to support salmonid core rearing and migration in Jenny Creek. From our perspective Jenny Creek represents core rearing habitat based on the current population of rainbow trout. If Jenny Creek temperatures exceed this threshold then our Basin Plan holds that no controllable factors shall contribute to any further warming. In addition, any controllable factors, such as agricultural uses, must be addressed as a source within the TMDL.

- Lost River COLD tributaries

At this time, the Board has no information that suggests taxa more sensitive than redband trout are present (or were present historically) in Lost River COLD tributaries. Therefore, the Board concludes that a water temperature criterion of 20°C (as 7DADM) as assigned by ODEQ to protect redband trout in Oregon, is appropriate. In this determination, the Board notes that a 20°C criterion (as 7DADM) is consistent with needs for migrating salmonids according to EPA R10 Water Temperature Guidance (2003).

We hope this helps and please let us know if you would like to discuss further.