

Executive Officer's Summary Report
8:30 a.m., July 24, 2008
North Coast Regional Water Board
Hearing Room
5550 Skylane Blvd., Suite A
Santa Rosa, California

Item: 10

Subject: Update on the Development of the Klamath River Total Maximum Daily Loads for Elevated Water Temperatures, Elevated Nutrients and Reduced Dissolved Oxygen

Background

The Klamath River basin is 12,680 square miles originating in southern Oregon and flowing through northern California entering the Pacific Ocean at Requa in Del Norte County. Forty-four (44%) percent of the watershed lies within the boundaries of Oregon while the remaining lies within the boundaries of California. The Klamath River basin is of vital economic and cultural importance to both Oregon and California as well as to the Klamath Tribes in Oregon, and the Hoopa, Karuk, and Yurok Tribes, Quartz Valley Indian Reservation and the Resighini Rancheria in California. Two-thirds (2/3) of the watershed is under federal ownership including National Forests, Wildlife Refuges and Parks as well as by the Bureau of Reclamation. A land ownership map is included with this report as Attachment 1.

Fertile lands provide for a rich agricultural economy in the upper basin. Irrigation facilities known as the Klamath Project owned by the U.S. Bureau of Reclamation support this economy, as well as hydroelectric power provided via a system of five (5) dams operated by PacifiCorp. The Klamath River basin is the home spawning grounds of a once vast tribal, sport, and commercial fishery and provides other aquatic resources of cultural significance to the local Indian tribes. The watershed supports an active recreational industry, including activities that are specific to the Wild and Scenic portions of the river designated by both the states and federal governments in both Oregon and California. The watershed also continues to support what were once historically significant mining and timber industries.

Impairments to water quality have been identified as one of the factors contributing to the continued decline of native fish populations. This has led to water quality assessments by the States of Oregon and California and the listing of the Klamath River as an impaired waterbody under Section 303(d) of the Clean Water Act. The States of Oregon and California are responsible for calculating the total maximum daily load of each of the pollutants of concern that can be discharged to the river and still protect the fisheries and other beneficial uses of the water within their respective jurisdictions. These calculations are otherwise known as TMDLs (Total Maximum Daily Loads). A TMDL also includes an Action Plan, which, when adopted by the Regional and State

Board and approved by EPA, becomes the framework for attaining and maintaining water quality standards.

The State of California has listed on the Section 303(d) List the portions of the Klamath River within its jurisdiction for impairments due to increased water temperatures, elevated nutrients, and organic enrichment / low dissolved oxygen (DO). In addition, the portion of the Klamath River downstream of the Trinity River, within the Yurok Reservation, is impaired for sedimentation/siltation, and Copco and Iron Gate Reservoirs are impaired for the blue-green algae toxin microcystin. A consent decree entered into by the U.S. Environmental Protection Agency (USEPA) in March 1997 (*Pacific Coast Fisherman's Association et al. v. EPA*) establishes the date by which TMDLs for 17 California north coast watersheds must be completed. The Klamath River TMDLs for the listed temperature and nutrient impairments were scheduled for completion by 2007. Recent negotiations between USEPA and the plaintiffs have resulted in an extension of that deadline to 2010. The States of Oregon and California have formed a technical team in conjunction with USEPA and their contractor Tetra Tech, Inc. so as to develop a uniform water quality model of the basin that will ensure compatible TMDLs in each state. However, the states will establish independently the TMDLs for those portions of the basin within their respective jurisdiction. The State of Oregon is not bound by the deadlines associated with the above referenced consent decree.

Discussion

Technical TMDLs

In the Klamath River in California increased water temperatures, elevated nutrients, organic enrichment, sedimentation and the presence of blue-green algae toxins have decreased the quality and quantity of suitable habitat for cold water aquatic life (specifically the salmonid fishery) in California, and have disrupted cultural uses of the river by resident Tribes. Based on the extensive TMDL analysis conducted by the States of Oregon and California, with technical and financial support from USEPA, there is little doubt that the Klamath River is an impaired waterbody. Numerous water quality related factors and pollutant sources have been identified during development of the Klamath River TMDLs and must be addressed in the TMDL allocations and the associated implementation plan. The water quality conditions and impacts that will be addressed in the TMDL staff report and proposed Basin Plan Amendment (or TMDL Action Plan) are provided below.

- Nutrient concentrations in much of the Klamath River watershed are well above natural background levels and contribute to excess periphyton and phytoplankton growth, which in turn contributes to poor DO and pH conditions, and also contributes to increased abundance and exposure of fish to parasites (i.e., *Ceratomyxa shasta*).
- Conditions of low DO and high pH are persistent in much of the Klamath River and contribute to multiple impacts on cold water fisheries including: migration barriers, decreased growth and fecundity, decreased reproductive success,

increased juvenile fish mortality, increased adult mortality, and lower overall fish populations.

- High levels of nutrients and the presence of impoundments have contributed to the development of nuisance levels of blue-green algae that have created potential health hazards for people exposed to reservoir and downstream river waters. This health hazard has negatively impacted both recreational and ceremonial use of the reservoirs and the river.
- Temperature conditions that exceed natural levels exist throughout the Klamath River basin and contribute to: chronic stress and sometimes acute lethal conditions for cold water fisheries, proliferation of fish diseases such as *Columnaris*, presence of migration barriers, lower reproductive success, increased juvenile and adult mortality, and lower overall fish populations.
- Excess sediment delivery to the Klamath River and tributary streams has contributed to habitat impairment, increased levels of nutrients, and contributed to the development of water column temperatures that exceed Basin Plan water quality objectives.
- Reduced flows have led to increased water column temperatures, the accumulation of organic matter, and low DO conditions which have contributed to impacts on aquatic life.
- Water quality objectives for temperature, DO, pH, biostimulatory substances, and toxicity are regularly exceeded in the Klamath River basin in California.

Information on the load allocations for those sources and geographic areas contributing to the impairment of the River will be presented at the Board meeting.

TMDL Implementation

An implementation plan specific to the conditions and activities in the Klamath River watershed is necessary to ensure the implementation of the findings and loading allocations of the Klamath River TMDL. Those portions of this implementation plan specific to water quality conditions and activities within the state of California will be incorporated into the "Water Quality Control Plan for the North Coast Regional Water Quality Control Board" (Basin Plan) as a TMDL Action Plan for the Klamath River. The Klamath River TMDL for the portions of the watershed within the state of Oregon will be implemented and enforced by the Oregon Department of Environmental Quality (ODEQ) through Water Quality Management Plans developed by Designated Management Authorities.

The Klamath River TMDL Implementation Plan for California will contain:

- A description of the legal and regulatory controls available to the Regional Water Board and ODEQ to ensure that adequate and timely implementation of the TMDL occurs.

- A description of the implementation actions and management measures necessary to meet the TMDL load allocations and restore the beneficial uses of water in the Klamath River.
- A time line for implementing the identified management measures.
- A monitoring plan for tracking compliance with the TMDL management measures and progress toward meeting TMDL load allocations and water quality targets.
- An adaptive management component that requires the TMDL to be periodically revisited and updated based on documented progress towards TMDL compliance.

Regional Water Board staff will be meeting with a number of effected stakeholders in late July / early August to discuss and solicit input on components of the implementation plan.

TMDL Development and Adoption Schedule

Key milestones for the adoption of the Klamath River TMDLs are presented in the following table.

Major Steps	Completed by End of Month/Year
Regional Water Board Updates	July, Sept, & Oct 2008
Administrative Draft Review	Aug 2008
Peer Review (60-day)	Dec 2008
Public Review (90-day)	Mar 2009
Regional Water Board Hearing - Adoption	Nov 2009
State Board Hearing – Adoption	Jun 2010
Office of Administrative Law Approval	Sep 2010
US EPA Approval	Sep 2010
EPA Establishes TMDLs if disapproves State TMDLs or State failure to Act	Dec 2010

Regional Water Board staff are completing an Administrative Draft of the Klamath River TMDL Staff Report for review in late July and August 2008 by key agencies including US EPA, US Fish & Wildlife Service, National Marine Fisheries Service, State Water Resources Control Board staff, and the Hoopa Valley Tribe, Yurok Tribe, Karuk Tribe, Quartz Valley Rancheria, and Resighini Rancheria. In late July / early August Regional Water Board staff will be meeting with these key agencies as well as with other parties who will be recipients of TMDL loading allocations, including the US Bureau of Reclamation, US Forest Service, California Department of Fish and Game, Klamath Water Users Association, and PacifiCorp. Regional Water Board staff anticipate providing two additional updates to the Regional Water Board in the fall 2008 to discuss feedback we receive from these stakeholders and to solicit input on components of the TMDL.

PRELIMINARY STAFF
RECOMMENDATION:

Informational Item Only. No Board Action required.

Land ownership in the Klamath River watershed

