

**STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION--DIVISION OF WATER QUALITY  
MAY 20, 2008**

**ITEM 7**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY BASIN (BASIN PLAN) TO ESTABLISH A TOTAL MAXIMUM DAILY LOAD (TMDL) FOR SEDIMENT AND RELATED HABITAT ENHANCEMENT GOALS IN THE NAPA RIVER WATERSHED

**DISCUSSION**

On January 23, 2007, the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted Resolution R2-2007-0011 ([Attachment](#)) that establishes a program to control excessive sediment and achieve related habitat enhancement goals in the Napa River Watershed. This Basin Plan amendment is necessary because the Napa River was identified in 1990 under federal Clean Water Act § 303(d)(1) as not fully meeting narrative water quality objectives in the Basin Plan, as a result of excessive sedimentation. Excess erosion and subsequent fine sediment deposition in the watershed have impaired designated beneficial uses of Napa River, including cold freshwater habitat, wildlife habitat, fish spawning, recreation, and preservation of rare and endangered species.

The Napa River is one of the largest rivers in the Coastal Ranges and drains about 430 square miles in the predominately rural Napa County. The Napa River flows south through the Napa Valley, located between the Vaca Mountains to the east and the Mayacama Mountains to the west, before terminating as an estuary system to San Pablo Bay. The Napa River and numerous tributaries support an exceptional diversity of native fish, including steelhead trout and Chinook salmon, which are listed as threatened species.

The main purpose of this amendment is to reduce deposition of fine sediment (primarily sand) in the Napa River and its tributaries, as needed to support the recovery of native steelhead trout and Chinook salmon, which have declined significantly since the late 1940s. The Coho salmon disappeared by the late 1960s. The amendment also seeks to reduce other identified stressors on native steelhead and salmon, such as habitat degradation, low summer flows, fish migration barriers, and high summer stream temperatures.

Studies show that channel incision, caused by excessive erosion, has reduced the quantity and quality of gravel bars, riffles, side channels, and sloughs, which provide spawning and rearing habitat for the salmon and trout. Channel incision in the Napa River and lower baseflows in the tributaries appear to be the key factors limiting reproductive success and fry survival for the Chinook salmon. Steelhead trout spawn further upstream in the tributaries, and are not as affected by channel incision. Low summer stream baseflow and poor habitat access and passage appear to be the most important factors in the decline of steelhead trout.

Channel incision is a significant source of fine sediment in Napa River. Excess fine sediment in the streambed clogs spawning gravels and causes poor incubation conditions for fish eggs,

resulting in high mortality prior to emergence. When large amounts of fine sediment are deposited, the streambed is vulnerable to deep scour during storms, which can wash away eggs and thereby further reduce survival during incubation. Excess fine sediment in the streambed also decreases the growth and survival of juvenile salmon and steelhead. Other limiting habitat factors include poor base flow combined with stressful water temperatures in the summer, blockage of access to spawning and rearing habitat, loss of riparian vegetation, and reduction in the amount of large woody debris in the stream channels.

As required by Clean Water Act § 303(d), a sediment TMDL was developed to control the identified pollution and ensure that standards are met. Numeric targets were selected to interpret the narrative water quality objectives and track the effectiveness of the TMDL. The sediment TMDL includes targets for spawning gravel permeability (median values must be at least 7000 centimeter/hour) and streambed scour (mean depth must not exceed 15 centimeters) at potential spawning sites. Scour depth is a function of suspended sediment. The streambed scour target is based on the depth at which Chinook salmon typically bury their eggs and on natural scour depth. The gravel permeability target corresponds to about 50 percent or greater survival of eggs to emergence. Streambed permeability is inversely related to fine sediment concentration.

A 1994-2004 study showed that an average of 272,000 metric tons of sediment per year was delivered to the Napa River at Soda Creek<sup>1</sup>, of which about 147,000 metric tons per year were derived from natural erosional processes. Using the Noyo River as a reference watershed, San Francisco Bay Water Board staff has estimated that in order to achieve the TMDL targets, the mean annual sediment delivery to Napa River at Soda Creek must be reduced to less than 185,000 metric tons per year (125 percent of the average natural background load). Because natural background load may vary significantly from year to year, the TMDL and load allocations are expressed not just in terms of mass but also as percentages of natural load, which applies throughout the watershed.

Over 400 dams are located on tributary channels that drain approximately 30 percent of the Napa River watershed. These dams trap the coarse sediment and much of the fine sediment generated upstream of the dams. Therefore, overall sediment discharges from controllable anthropogenic sources of sediment need only be halved to accomplish the required sediment reduction. The TMDL requires that sediment stemming from nonpoint sources (such as land use activities associated with roads, vineyards, grazing, and human-caused channel incision) be reduced by 51 percent. No reductions are required from point source discharges of sediment (such as stormwater discharges and wastewater treatment plant discharges), which are relatively minor and are already regulated under National Pollutant Discharge Elimination System (NPDES) permits.

To regulate anthropogenic sediment discharges, the San Francisco Bay Water Board will rely on the Water Boards' existing authorities to issue waste discharge requirements (WDRs), waivers of WDRs, and NPDES permits. Nonpoint source dischargers are required to file a Report of Waste Discharge by October 2012, and must comply with any applicable WDRs or waivers of WDRs.

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<sup>1</sup> The Soda Creek confluence is the approximate downstream boundary of freshwater habitat for salmon and trout in the Napa River.

Monitoring is required to evaluate the effectiveness of the control actions specified in the TMDL and the progress made towards meeting the targets. The San Francisco Bay Water Board will evaluate the monitoring results and any new information approximately every five years, and may revise the TMDL as necessary.

The habitat enhancement plan specifies other recommended management actions needed in order to provide for the recovery of trout and salmon populations. These include enhancing the stream and riparian habitat, maintaining woody debris, establishing flow guidelines, installing water-level gauges, restoring fish passage, enhancing baseflow, and providing adequate summer water temperatures. These goals will be implemented through the various local landowners' voluntary participation in cooperative partnerships, stewardship groups, and local initiatives; educational outreach; and improved coordination and collaboration between local, state, and federal agencies. Many of these habitat enhancement efforts are already well under way, including several habitat restoration projects on the Napa River, and certification and implementation under the Fish Friendly Farming Program.

The total cost to agriculture associated with efforts to reduce sediment supply and enhance habitat in the Napa River is estimated at \$800,000-\$1,700,000 per year.

#### **POLICY ISSUE**

Should the State Water Resources Control Board (State Water Board) approve the proposed amendment to the Basin Plan in accordance with the staff recommendations below?

#### **FISCAL IMPACT**

San Francisco Bay Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

#### **REGIONAL WATER BOARD IMPACT**

Yes, San Francisco Bay Water Board.

#### **STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan adopted under San Francisco Bay Water Board Resolution R2-2007-0011.
2. Authorizes the Executive Director, or designee, to transmit the amendment and the administrative record for this action to the Office of Administrative Law and the TMDL to the U.S. Environmental Protection Agency for approval.

# DRAFT

## STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2008-

APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY BASIN (BASIN PLAN) TO ESTABLISH A TOTAL MAXIMUM DAILY LOAD (TMDL) FOR SEDIMENT AND RELATED HABITAT ENHANCEMENT GOALS IN THE NAPA RIVER WATERSHED

### WHEREAS:

1. The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted the latest revision of the Basin Plan under [Resolution No. R2-2005-0062](#) on November 16, 2005. The revised Basin Plan was approved by the State Water Resources Control Board (State Water Board) on April 18, 2006 and by the Office of Administrative Law (OAL) on December 22, 2006.
2. On January 23, 2007, the San Francisco Bay Water Board adopted Resolution R2-2007-0011 ([Attachment](#)) that establishes a program to control excessive sediment and achieve related habitat enhancement goals in the Napa River Watershed.
3. The State Water Board finds that in amending the Basin Plan to establish this TMDL and related habitat enhancement goals, the San Francisco Bay Water Board complied with the requirements set forth in sections 13240 et. seq. of the California Water Code. The State Water Board also finds that the TMDL is consistent with the requirements of federal Clean Water Act section 303(d).
4. The San Francisco Bay Water Board considered the analysis contained in the California Environmental Quality Act (CEQA) checklist, staff report, and supporting documentation for the Basin Plan amendment and found that the amendment will not have any significant adverse impact on the environment.
5. The Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by OAL and the TMDL approved by the U.S. Environmental Protection Agency (U.S. EPA).

### THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan adopted under San Francisco Bay Water Board Resolution R2-2007-0011.

# **D R A F T**

2. Authorizes the Executive Director or designee to transmit the amendment and the administrative record for this action to OAL and the TMDL to U.S. EPA for approval.

## **CERTIFICATION**

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on May 20, 2008.

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Jeanine Townsend  
Clerk to the Board