



California Regional Water Quality Control Board Central Coast Region



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FACT SHEET

DEVELOPMENT OF A TOTAL MAXIMUM DAILY LOAD FOR NITRATE: LOS BERROS CREEK SUBWATERSHED

What is a Total Maximum Daily Load?

TMDLs are strategies to restore clean water. The federal Clean Water Act requires every state to evaluate its waterbodies and maintain a list of waters that are considered "impaired" either because the water exceeds water quality standards or does not achieve its designated use. For each water on the Central Coast's "303(d) Impaired Waters List," the California Central Coast Water Board must develop and implement a plan to reduce pollutants so that the waterbody is no longer impaired and can be de-listed.

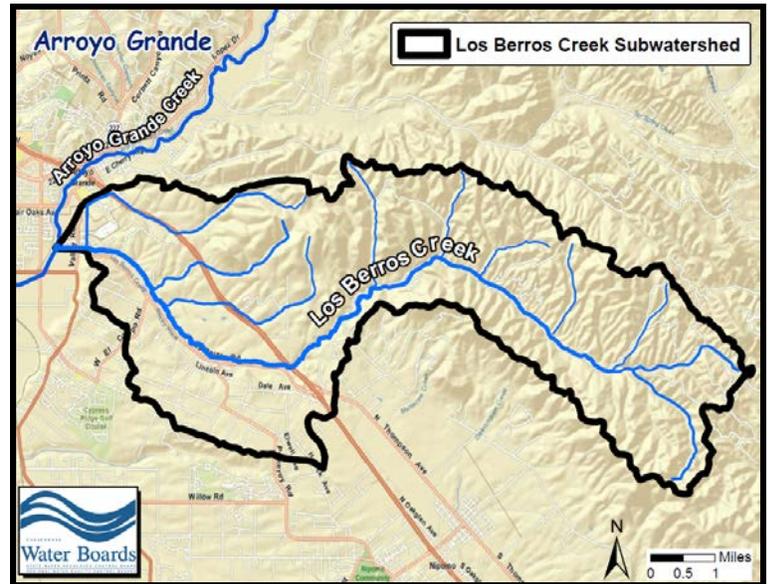
"Total Maximum Daily Load" (TMDL) is a term used to describe the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL study identifies the probable sources of pollution, establishes the maximum amount of pollution a waterbody can receive and still meet water quality standards, and allocates that amount to all probable contributing sources.

Location and Watershed Description

The proposed geographic scope of this TMDL encompasses approximately 28 square miles of the Los Berros Creek subwatershed in southern San Luis Obispo County.

The subwatershed is an east-west trending drainage with headwater reaches at Temettate Ridge to the east, and ultimately draining into Arroyo Grande Creek to the west. Estimated mean annual discharge from the Los Berros Creek subwatershed is approximately 1,900 acre-feet/year (source: San Luis Obispo County, Division of Public Works, stream gage #5, Water Years 1992-2001).

Agriculture, including cropland and grazing lands, is the current dominant land use in the watershed. According to recent San Luis Obispo County crop maps, vineyard, orchard, and vegetable crops are cultivated in the subwatershed. The few urban areas within the subwatershed include residential areas in the lowermost reaches of the subwatershed. Upper reaches of the subwatershed are characterized by oak woodland and grasslands (source: National Land Cover Dataset, 2001).



Los Berros Creek subwatershed

Why Do We Need a Nitrate TMDL for Los Berros Creek?

California's water quality standards designate beneficial uses for each waterbody (e.g., drinking water supply, aquatic life support, recreation, etc.) and the scientific criteria to support those uses. The Central Coast Water Board is required under both state and federal law to protect and regulate beneficial uses of waters of the state.

Water Board staff has identified nitrate pollution in surface waters of Los Berros Creek. Water Board staff is in the initial phases of assessing the need for TMDL development for Los Berros Creek. Elevated levels of nitrate can degrade municipal and domestic water supply and groundwater.

While some residents of San Luis Obispo County receive their drinking water from surface water sources, groundwater supplies almost all domestic water for individual residences and small water supply systems. Nitrate impairment of the groundwater recharge beneficial uses for Los Berros Creek should be compelling reason enough to warrant TMDL development for nitrate.

It is well established that infants younger than six months who drink water containing nitrate in excess of the maximum contaminant level (MCL) could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome, or methemoglobinemia.¹ Peer-reviewed epidemiological studies have suggested that nitrate in drinking water may be associated with elevated cancer risk²; however, these studies are not as conclusive or widely accepted as the nitrate linkage to methemoglobinemia.

In this TMDL project, water supply is likely to be the most sensitive applicable beneficial use (i.e., the most stringent numeric water quality standards). A TMDL project developed by the Water Board for nutrients will identify nitrate-impaired waterbodies in the subwatershed, identify numeric water quality targets to restore impaired designated beneficial uses, identify probable sources of nutrient loading, and propose an implementation plan outlining effective alternatives to restore water quality. To the extent possible, TMDLs leverage existing regulatory programs and permits to minimize cost and maximize effectiveness.

What are the Sources of Nitrate Pollution?

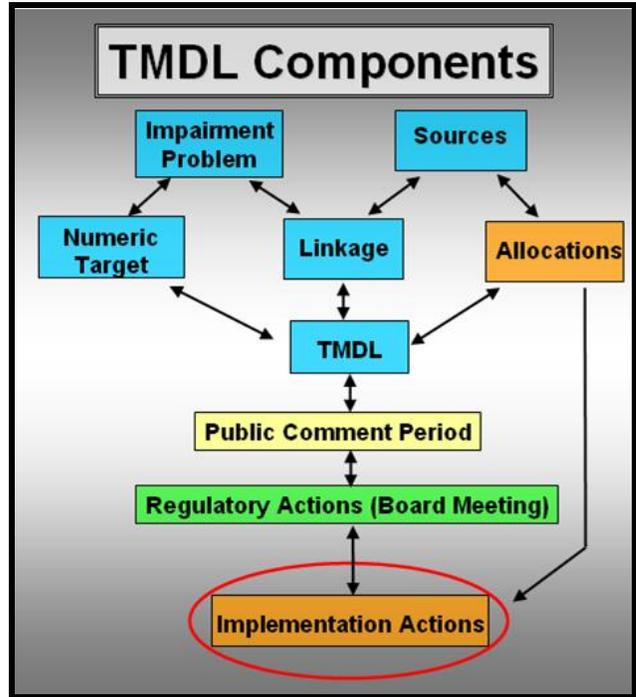
Probable sources of nutrient loading in the Los Berros Creek subwatershed have not yet been assessed or identified. Source analysis will be a key component of TMDL development. There are many possible nitrate sources within any given watershed; in general the following can potentially be significant sources of nitrate loads:

- Urban runoff
- Fertilizer
- Manure (domestic animals)
- Septic systems
- Natural background and atmospheric deposition
- Groundwater (baseflow into streams)

The TMDL Process

A TMDL is developed by Central Coast Water Board staff and must go through a hierarchy of approvals before it can go into effect. Public participation is an element of TMDL development. Water Board staff notify interested parties of opportunities for public participation through public meetings/workshops, we solicit public comments, and we encourage other forms of public participation through correspondence, email, and other informal contacts.

A TMDL must be approved by the Central Coast Water Board and the U.S. Environmental Protection Agency. Should TMDL development be merited for Los Berros Creek, we anticipate developing this TMDL over the next 6 months, and potentially bringing it to the Central Coast Water Board for consideration in May 2012



TMDL Components

For More Information

The Central Coast Water Board encourages interest and involvement in TMDL projects from stakeholders, interested parties, and the general public. Please refer to the Water Board's TMDL webpage at:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl

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¹ U.S. Environmental Protection Agency: <http://water.epa.gov/drink/contaminants/basicinformation/nitrate.cfm>

² Nitrate is endogenously reduced to nitrite and subsequently nitrosamines in the stomach, colon and bladder. Nitrosamines are known carcinogens.