American River Watershed
Methylmercury TMDL & Mercury Control Program
Information Sheet

Responsible Agency

California Regional Water Quality Control Board, Central Valley Region
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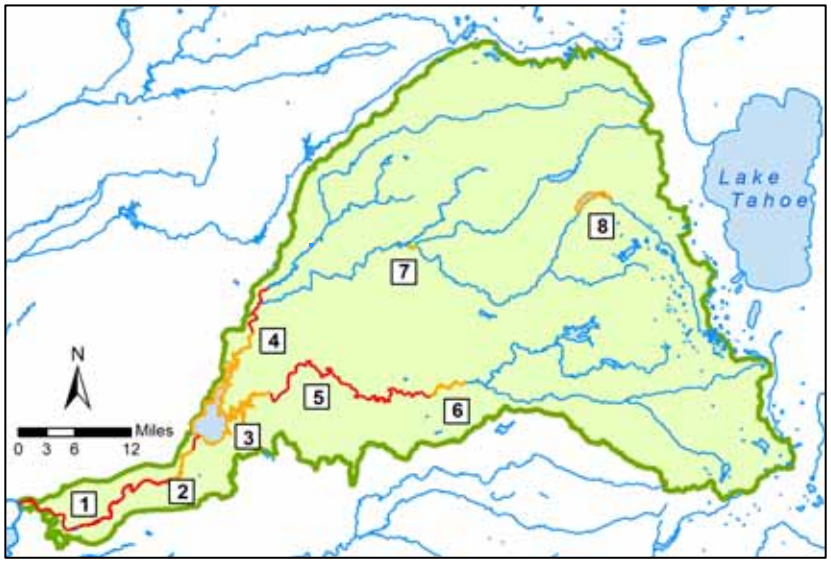
Mercury Impairment, TMDL Development and Basin Planning

The Central Valley Water Board identified eight waterways in the American River Watershed as impaired because some fish have elevated levels of methylmercury that may harm human and wildlife consumers. The eight impaired water bodies, as numbered on the map to the right, are: (1) lower American River; (2) Lake Natoma; (3) Folsom Lake; (4) North Fork American River (North Fork Dam to Folsom Lake); (5) South Fork American River (Slab Creek Reservoir to Folsom Lake); (6) Slab Creek Reservoir; (7) Oxbow Reservoir; and (8) Hell Hole Reservoir.



American River Watershed Mercury-Impaired Water Bodies
Red lines indicate impaired rivers and orange outlines indicate impaired reservoirs.

The Central Valley Water Board, a part of the California Environmental Protection Agency, is developing a plan to reduce levels of mercury in American River Watershed fish. The plan is called a "total maximum daily load" (TMDL) because it includes identifying the total amount of mercury that waters can contain and still provide safe fishing for people and wildlife. In addition, the TMDL will specify how much mercury reductions are required from various sources. The Water Board will amend the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (the Basin Plan) to be able to implement regulatory provisions of the TMDL.

Beginning in November 2010, Board staff will hold a series of meetings and work with stakeholders to develop options for a regulatory program that reduces both inorganic mercury and methylmercury sources. Draft reports will be made available for public review and comment prior to a Central Valley Water Board hearing, which is anticipated to be in spring 2012. A preliminary Straw Proposal, future reports, and other notices for the American River Watershed TMDL can be obtained at:

www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/ american_river_hg/

The TMDL development and Basin Planning process involves:

- Identifying methylmercury fish tissue concentrations to protect humans and wildlife that consume fish in the watershed;

- Analyzing methyl and inorganic (total) mercury sources and how much reduction is needed from sources to achieve safe fish methylmercury levels;
- Identifying possible ways to reduce methylmercury and inorganic mercury levels;
- Developing specific requirements for land owners, land managers, and/or agencies to reduce inorganic mercury and/or methylmercury
- Cost analysis and environmental analysis of the potential impacts to comply with the California Environmental Quality Act and other government codes; and
- Stakeholder involvement throughout the TMDL development and Basin Planning process.

Sources of Inorganic Mercury and Methylmercury in the American River Watershed

Sources of inorganic mercury in the American River Watershed include tunnels and hydraulic mine workings from historic gold mining operations, municipal discharges, urban and agricultural runoff, and deposition from the air. Methylmercury, a highly toxic form of mercury, is formed by particular bacteria in lakes and stream beds. Methylmercury sources include production within wetland, river, and reservoir sediments, municipal wastewater, agricultural drainage, and urban runoff.

Mercury was mined from the Coast Ranges of California starting in the late 1800s. Much of this mercury was transported to the Sierra Nevada and Klamath-Trinity Mountains to be used for placer gold mining operations. While it is essential to clean up mine sites, mercury lost during historic mining activities is now distributed along miles of downstream streams and rivers. Controlling erosion and transport of contaminated sediment, limiting mercury releases to water and the atmosphere from modern sources, and determining effective ways to reduce production of methylmercury are also important for reducing fish mercury levels in a timely fashion.

Potential Control Options

In general, there are two ways to reduce methylmercury:

- Reduce the amount of inorganic mercury available in sediment to be converted to methylmercury in open water and wetland areas; and
- Control activities that enhance the production and/or loss of methylmercury.

The TMDL will not list specific practices or methodologies that must be implemented to control methylmercury and inorganic (total) mercury. Possible actions that could be taken in order to achieve reductions in mercury and methylmercury loads include: mine site cleanups, reducing contaminants from dredge tailings and other mine-related material, trapping contaminated sediment, stabilizing stream banks, managing reservoirs through aeration or other means to minimize methylmercury levels, managing contaminated sediment within reservoirs, reducing loads from urban areas through pollution prevention and storm water management, and minimizing methylmercury–containing discharges from managed wetlands.

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