Water Quality Report Card		Mercury in Clear Lake	
Regional Water Board:	**Central Valley, Region 5**	**STATUS**	☐ Conditions Improving ☐ Data Inconclusive ☑ **Improvement Needed** ☐ Targets Achieved/Water Body Delisted
Beneficial Uses Affected:	COMM, WILD		
Implemented Through:	TMDL		
Effective Date:	September 2003		
Attainment Date:	Allocations attained by 2023	**Pollutant Type:**	☐ Point Source ☑ Nonpoint Source ☑ Legacy

Water Quality Improvement Strategy

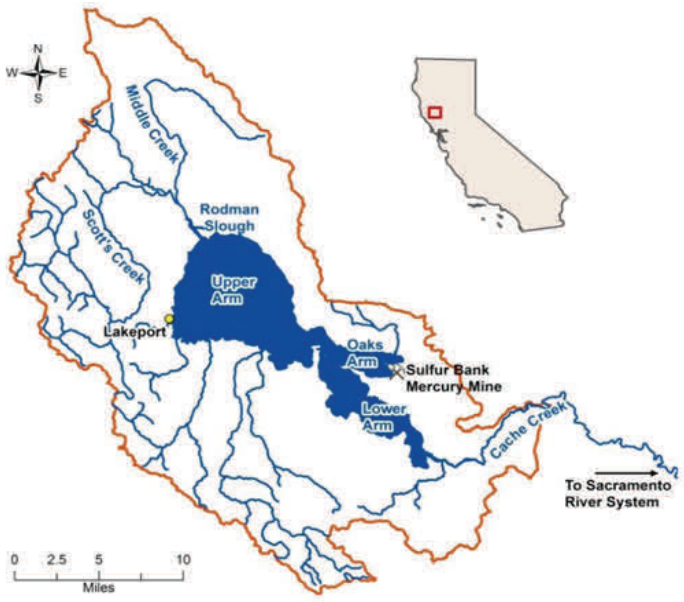
Clear Lake, located in Lake County, is situated within the California Coast Ranges, approximately 100 miles north of San Francisco Bay. It is the largest, natural freshwater lake in California with 68 square miles of surface area and an average depth of 26 feet. Mercury occurs naturally within the Coast Ranges and was mined heavily in the area. The mining resulted in elevated mercury levels in fish and wildlife. These elevated levels have led to a fish consumption advisory for fish and shellfish caught within the Clear Lake Watershed. The Clear Lake Mercury TMDL was developed to address mercury impairment in Clear Lake.

Sources of mercury in Clear Lake include the Sulfur Bank Mercury Mine (SBMM), an inactive mercury and sulfur mine adjacent to the lake, naturally enriched springs and serpentine soils in the watershed, and aerial deposition of mercury from local and global emission sources. The goal of the TMDL is to reduce mercury entering the lake and in the surficial lakebed sediment by 70% in order to attain site-specific water quality objectives for mercury in fish tissue. The TMDL numeric targets for fish tissue are 0.23 mg mercury/kg wet weight as the average concentration in bass, catfish and crappie, and 0.12 mg/kg as the average mercury concentration in bluegill, hitch, and bullhead. Load allocations will be achieved by controlling erosion in the watershed, remediating the SBMM, and controlling mercury from other sources in the watershed as identified.

TMDL Load Allocations

Mercury Source	Allocation
SBMM: total allocations for discharges to the lake	5% of pre-TMDL load
SBMM: maximum in groundwater discharge	0.05 kg/year
SBMM: surficial sediment offshore of SBMM in lakebed area that contains mine waste *	16 mg/kg
Clear Lake watershed tributaries	80% of pre-TMDL load
*Pre-TMDL surficial sediment concentrations: 30-250 mg/kg	

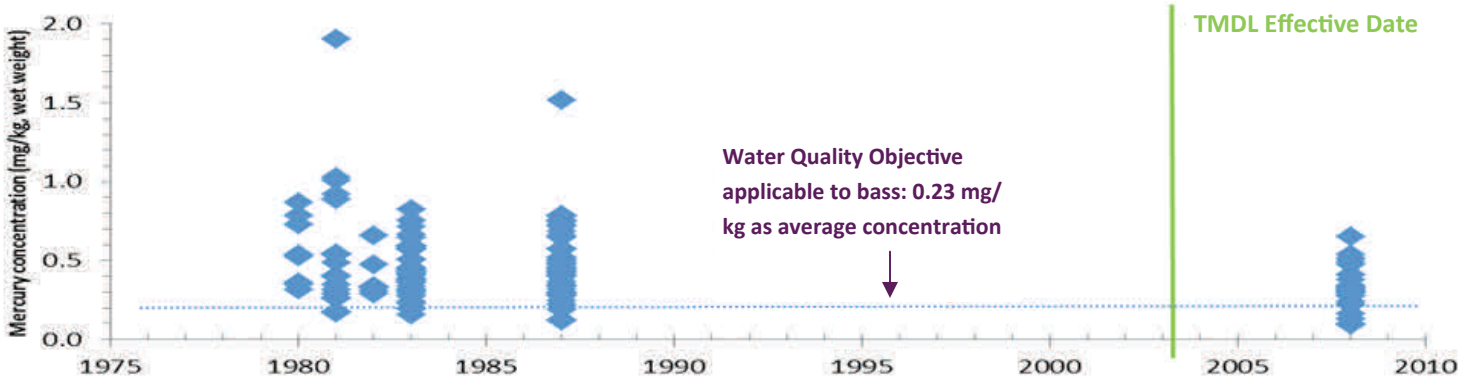
Clear Lake Watershed



Water Quality Outcomes

- Based in part on data collected by Lake County in 2007-2009, mercury loads from the tributaries have declined since the TMDL was adopted. Based on these data and other reports of erosion control successes, the Regional Water Board determined that the tributary load allocation has been met.
- Under the federal Comprehensive Environmental Response, Compensation, and Liability Act, the USEPA stopped overflows of the SBMM pit and mass erosion of mine waste into the lake.
- Next steps for the TMDL are focused on the SBMM, which includes: completion of a feasibility study by the USEPA; and identification of remediation options for remaining mercury sources at the mine site, which include the pit and shallow groundwater; and review of the effectiveness of a test cap covering contaminated sediments. The USEPA is working with the Regional Water Board and the Department of Toxic Substances Control to evaluate remediation options for the mine site and lakebed.

Mercury Concentrations in Largemouth Bass, Clear Lake (250-400 mm total length)



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