# ABSTRACT

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## Mercury Bioaccumulation from Historical Mining in the Trinity River Watershed, California

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Historical gold and mercury mining operations in the Trinity River watershed continue to release mercury to downstream water bodies. To evaluate the extent of mercury contamination in the watershed, the U.S. Geological Survey collected game fish during 2000-2001 from sites in the Trinity River watershed: 4 locations within Trinity Lake, 11 stream sites, and 3 pond sites. Samples of amphibians and predaceous aquatic insects were also collected from select sites. Concentrations of total mercury (Hg) were determined in fish tissue (fillets), amphibian carcasses, and composites of predaceous aquatic insects. Additionally, methylmercury/total mercury ratios were determined for predaceous aquatic insects. Total mercury in 69 black bass (Micropterus spp.) ranged from 0.12 to 1.22 parts per million (ppm) wet weight (ww). Mercury concentrations in 76 percent of the 34 black bass of "legal catch size" (≥ 305 millimeters in length) were ≥ 0.3 ppm (ww)(which is the U.S. Environmental Protection Agency water-quality criterion for the protection of human health). Mercury concentrations exceeded 1.0 ppm (which is the Food and Drug Administration action level for commercial fish) in 9 percent of the legal size black bass. In contrast, all 41 trout samples from stream sites had Hg concentrations < 0.3 ppm (ww), which is likely due to trophic position. Mercury concentrations in samples of water, sediment, insects, amphibians, and fish indicate that the inactive Altoona mercury mine, which drains into the East Fork

Trinity River, is a significant contributor of mercury to Trinity Lake. Ongoing studies are focused on understanding the fate and transport of mercury from the Altoona mine into Trinity Lake.

Wildlife

Research Team

Research Laboratory

Reports, 1999-2009

**Abandoned Mines**

Abandoned Mine Lands Initiative

Mineral Resources Data System (MRDS)