**Joint Informational Hearing of the**
**Assembly Water, Parks & Wildlife Committee**
**Assembly Environmental Safety and Toxic Materials Committee**
**Assembly Natural Resources Committee**

**on**

# Public Land and Water Contamination Issues Related to Historic Gold Mining in California

**March 4, 2008**
**9:00 a.m.**
**State Capitol, Room 4202**

## B A C K G R O U N D

The California gold rush was a formative period in California's history, attracted thousands of settlers to California, and contributed significantly to the state's development. However, not all of the impacts of historic gold mining were positive, and the state today is dealing with a toxic legacy left over from the gold rush era.

Federal and state agencies estimate that there are approximately 47,000 abandoned mine sites (with 165,000 mine features) throughout California, many of which pose a serious threat to public safety and are a source of environmental pollution. The Department of Conservation estimates that approximately 39,500 of these mines are physical safety hazards, and 5,200 are environmental hazards, though it should be noted that to date federal and state agencies have only inventoried about 2,500 of California's estimated 47,000 abandoned mine sites (five percent).

The California Abandoned Mine Lands Forum, a consortium of over fifteen federal and state agencies recently undertook a process of prioritizing the top 100+ abandoned mines in California that represent the agencies' current assessment of priority sites for environmental and physical hazard remediation. The forum has also noted that in recent years exposure to mining toxics has increased significantly, as the number of people migrating to and settling in regions of the state with high densities of abandoned mines has increased.

Contaminants from mine wastes impair drinking water, degrade habitat, and contribute to high concentrations of toxic metals in many streams in California. The three toxic contaminants of greatest environmental and public health concern are mercury, arsenic and asbestos. The United States Geological Survey estimates that from the 1860s through the early 1900s, over 10 million pounds of mercury, which was used by miners to recover gold in the Sierras, was lost to the environment in California from placer mining operations, and an additional 3 million pounds from hardrock mining operations.

Mercury mines in the coastal range are also a significant source of mercury contamination. Over the years, significant quantities of the mercury have washed down from mountain rivers and streams to the Central Valley and settled in the Delta and coastal bays, though significant amounts of mercury still exist upstream and in reservoirs behind dams.

Under the Clean Water Act, the State Water Resources Control Board and regional water quality control boards are responsible for adopting total maximum daily loads (TMDLs) for water bodies that are impaired by certain contaminants, including mercury. The water boards are particularly concerned with the process by which mercury converts to the more toxic methyl mercury, which is more readily available biologically and becomes concentrated in the food web, first in fish and then in humans who consume fish. Mercury is a reproductive toxin. High mercury concentrations in fish are a concern particularly for humans who rely on fish for subsistence, and may also be a concern for some wildlife species that consume fish. Certain practices such as dredging and shallow seasonal flooding may serve to increase methyl mercury production, which poses particular challenges for flood protection activities and wetlands restoration projects.

Through CALFED's Ecosystem Restoration Program a mercury strategy for Northern California was developed in 2003, with input from scientists, diverse stakeholders, and numerous state and federal agencies. The strategy outlines a framework for scientific study of how mercury moves through the system and the food web, and recommends actions such as cleaning up mines, issuing warnings to fish consumers, and managing landscapes to reduce mercury methylation. CALFED and other agencies have spent millions of dollars on studies aimed at better understanding the complex factors that govern mercury methylation. The studies have shown that the rate of methylation and demethylation is influenced by a wide variety of factors in the aquatic environment. Scientists hope through further studies to determine the most effective adaptive management strategies and to develop guidelines for restoration managers to minimize mercury risks. Policy makers also need guidance to determine where best to focus future research and remediation actions, and to make the most effective use of limited resources in addressing these problems.

This hearing will hopefully help answer the following questions:

- What are the most important points that policymakers should know regarding the public risks and toxic exposures associated with historic gold mining?

- What are the most promising initiatives currently underway to address these challenges, and what are the obstacles to making greater progress?

- Where should we focus our future efforts to produce the greatest benefit and reduction in risks, protect public health and safety, and clean up our environment?

- How can the state, federal government, local governments, and stakeholders best collaborate and work together to tackle these problems we have all inherited?