

San Francisco Bay Regional Water Board

During the first five years of SWAMP, the San Francisco Bay Regional Water Board's program focused on monitoring watersheds throughout the region on a rotating basis and conducting studies to measure the concentrations of contaminants in fish caught and consumed by fishers in places other than San Francisco Bay. Since the San Francisco Estuary Regional Monitoring Program (RMP) conducts comprehensive monitoring in San Francisco Bay, we decided to concentrate our limited resources on evaluating whether the beneficial use of aquatic life was protected in wadeable streams and whether it was safe to consume fish from water bodies other than San Francisco Bay. A description of the San Francisco Bay Region, as well as our regional SWAMP activity, monitoring goals and vision, and collaborative efforts are available in our [regional fact sheet](#).

To assess whether aquatic life was protected in wadeable streams, we used a suite of indicators including bioassessments, physical habitat assessments, continuous basic water quality monitoring, water column chemistry and toxicity, and sediment chemistry and toxicity. In five years of monitoring we assessed whether aquatic life was protected in 34 wadeable streams. Three [interpretive reports](#) on the water quality condition of these streams can be found on the Regional Water Board SWAMP website. We also developed a trash assessment method, used this method to assess trash at 26 sites, in 14 water bodies, and documented this information in a [technical report](#).

To assess whether it is safe to eat the fish, we conducted studies measuring contaminants in fish in Tomales Bay, along the San Mateo coast and in 10 lakes in the Region. A [report](#) interpreting the data is



available online. To better inform the public of potential risks associated with eating fish from these reservoirs, we formed a committee consisting of the Office of Environmental Health Hazard Assessment (OEHHA), the California Department of Public Health, county environmental health departments, East Bay Regional Parks and other responsible parties to develop advisories for consuming fish, translating advisories in to several languages, and developing signs and other materials for education and outreach. In subsequent years, we collected additional data so that OEHHA could refine fish advisories for the lakes we sampled. All of the creek and fish data collected over this 5-year period was used in the 2006 and 2008 water quality assessment process and resulted in a total of 30 water bodies being listed as impaired.

In 2008 we modified our SWAMP strategy based on needs identified during previous monitoring and on funding constraints. Our current strategy is to monitor water quality conditions and biotic assemblages, and the spatial and temporal variability of those conditions, at minimally disturbed reference sites and at urban sites that represent “best attainable” conditions. Our new [peer reviewed design](#) is available online. The purpose of this monitoring is to: 1) provide context for future watershed monitoring that will be conducted by storm water programs and watershed monitoring groups; 2) collect data that can be used for developing bioassessment protocols, indices of biological integrity, biological objectives and nutrient criteria; and 3) identify long-term trends associated with climate change.

In addition to the studies conducted by the regional program, the San Francisco Bay Regional Water Board SWAMP spends significant staff resources coordinating monitoring in the region. This provides an opportunity to leverage SWAMP funding and to form coalitions that can provide consistent water quality information targeted at answering specific water quality management questions, while maximizing efficient use of resources. To develop information on water quality in the San Francisco Estuary, SWAMP staff has been integral to the establishment and development of the San Francisco Estuary [Regional Monitoring Program](#) (RMP). The RMP is a world-class water quality monitoring program targeted at the highest priority questions faced by the San Francisco Bay Water Board and the regulated community.



Currently, the RMP is working collaboratively with SWAMP to monitor contaminants in fish in bays and estuaries of the state.

SWAMP staff has been working with a coalition of programs that collect bioassessment data, the Bay Area Macroinvertebrate Bioassessment Information Network (BAMBI_{net}), to further develop information on water quality in wadable streams. BAMBI_{net} meets to: 1) discuss and standardize bioassessment data, 2) input all regional bioassessment data in to one database, and 3) analyze regional data for the purpose of developing a Bay area Index of Biotic Integrity (IBI). Regional SWAMP staff also is working with storm water programs, as an outgrowth of the regional MS4 permit, to develop a watershed monitoring coalition so that watershed monitoring will be coordinated throughout the region and with SWAMP statewide. Regional SWAMP staff also plays an advisory role in TMDL monitoring, NPDES mandated monitoring and volunteer monitoring in order to provide consistency, enhance coordination and foster a comprehensive approach to water quality monitoring in the region.

