

Fact Sheet Region 2

San Francisco Bay Regional Water Quality Control Board

Overview

The San Francisco Bay Region, centrally located along our state's coastline, marks a natural topographic separation between the northern and southern coastal mountain ranges. More than 7 million people live in the 4,600-square-mile area. The San Francisco Bay estuarine system drains 40 percent of California and includes the Central Valley Region's Sacramento and San Joaquin Rivers, which account for 90 percent of the freshwater inflow to the bay. The San Francisco estuary is the largest estuary on the west coast of North and South America and forms the centerpiece of the nation's fifth largest metropolitan area, comprising San Francisco, Oakland and San Jose.

The region includes all or major portions of nine counties. With a generally Mediterranean climate of mild, wet winters and cool, dry summers, the region encompasses a range of microclimates from the foggy coast to the dry inland. The mean annual precipitation varies from 14 to 49 inches. Flows are highly seasonal, with more than 90 percent of the annual runoff occurring between November and April. Many streams run dry during the summer.

The land surrounding the San Francisco Bay is densely populated and highly urbanized, with channelized creeks and flood control structures, dams and reservoirs. A heavily industrialized corridor runs along the Contra Costa shoreline from Richmond to Pittsburg, home to major oil refineries and chemical companies. The land draining into the northern reaches of the estuary, which includes San Pablo and Suisun bays, supports pockets of urbanization within open space and extensive crop and range land, including vineyards in Napa and Sonoma counties and dairies in Sonoma and Marin counties. The less developed coastal watersheds in Marin and San Mateo counties support listed populations of salmon and steelhead. In the region, contaminants from urban runoff, mining and pesticide application are major concerns.



Water Facts

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- 1,100 square miles of San Francisco Bay Estuary
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- 110 miles of coastline
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- 7,655 miles of streams
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- Freshwater diversions provide drinking water to 22 million residents and irrigation water for 4.5 million acres of farmland
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- Two-thirds of the state's salmon and nearly half of the birds migrating along the Pacific Flyway pass through the estuary



www.waterboards.ca.gov/swamp

San Francisco Bay

Vision and Goals for Monitoring

San Francisco Bay Region SWAMP's primary goal is to form a coalition with urban dischargers and other organizations to fund, monitor and assess water quality in the region's watersheds to determine whether beneficial uses are protected. Regional SWAMP monitoring objectives include:

- Developing useful data for evaluating waterbodies for 305(b) reports and 303(d) listings.
- Using standard sampling protocols, SWAMP quality assurance management plan procedures and the SWAMP database to provide statewide comparability and availability of data through CEDEN.
- Generating data and associated information for the development of indicators, indices, and water quality benchmarks that can be used to make management decisions.
- Measuring long-term trends at reference sites to document inter-annual variation and climate change.

Program Activity

San Francisco Bay Region SWAMP has:

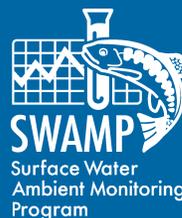
- Generated a substantial set of physical, chemical and biological data for 34 watersheds in all seven of our hydrologic units.
- Conducted a study of contaminants in fish at 27 reservoirs where people catch and consume fish, which has resulted in OEHAA fish consumption advisories.
- Developed a Rapid Trash Assessment Protocol and concluded a pilot study.
- Collected benthic macroinvertebrate (BMI) data that are being used to develop a Bay Area-specific index of biotic integrity (IBI) for non-perennial streams.
- Conducted studies in Suisun Bay to determine the effect of nutrients, particularly ammonium (NH₄), on phytoplankton in Suisun.
- Monitored nutrient and algae levels in the Napa River and Sonoma Creek to inform the total maximum daily load (TMDL) process in these impaired water bodies, and evaluate the nutrient numeric endpoint tool.

Collaborative Efforts

As part of its coalition building goal, San Francisco Bay Region SWAMP collaborates with a number of organizations. For watersheds in the SF Bay Region, SWAMP is supporting the Bay Area Stormwater Management Agencies Association Regional Monitoring Coalition (RMC) which was created to fulfill monitoring requirements under the Region 2 Phase I NPDES municipal stormwater permit. SWAMP monitors water quality, macroinvertebrates, algae, and physical habitat conditions in the Region's non-urban watersheds. For activities in the San Francisco Estuary, SWAMP collaborates with the San Francisco Estuary Regional Monitoring Program (RMP), by providing staff that sit on numerous committees, to ensure that information is developed to assist the Water Board in managing water quality in the Estuary.

In Suisun Bay, as an outgrowth of the SF Bay Region's SWAMP 2010-2012 studies, a Suisun Bay Workgroup was formed, chaired by SWAMP staff and under the umbrella of the San Francisco Bay Nutrient Management Strategy, to coordinate nutrient science in Suisun Bay. The workgroup is made up of representatives from the SF Bay and Central Valley Water Boards, wastewater treatment dischargers, water contractors, the San Francisco Estuary Institute (SFEI) and regional scientists.

Another continuing collaborative effort involves regional SWAMP studies that monitor contaminants (particularly mercury and PCBs) in SF Bay area reservoirs where people catch and consume fish. SWAMP works with responsible parties to catch the fish and to post advisories if needed. The Office of Environmental Health Hazard Assessment uses SWAMP data to develop fish consumption advisories to protect human health (www.waterboards.ca.gov/sanfranciscobay).



For more information on SWAMP in the San Francisco Bay Region, please contact:

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