Monitoring Monday - San Francisco Bay Regional Water Quality Control Board (Region 2)

Join us each Monday as the Clean Water Team shares information and resources on water quality monitoring. This Monday we will look at the San Francisco Bay Regional Water Quality Control Board.

The San Francisco Bay lies at the heart of this area, home to more than 7 million people. Industries range from high-tech computer manufacturers in the Silicon Valley to oil refineries in Contra Costa County. The northern part of the region supports agriculture, such as the wine industry and dairies. Despite the region's heavy urbanization, the Bay and its watersheds are home to diverse populations of fish and migratory birds.

> The Water Board's overall mission is to protect surface waters and groundwater in the Region. The Water Board carries out its mission by:
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> - Addressing Region-wide water quality concerns through the creation and triennial update of a Water Quality Control Plan (Basin Plan);
> - Preparing new or revised policies addressing Region-wide water quality concerns;
> - Adopting, monitoring compliance with, and enforcing waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permits;
> - Providing recommendations to the State Water Board on financial assistance programs, proposals for water diversion, budget development, and other statewide programs and policies;
> - Coordinating with other public agencies that are concerned with water quality control; and
> - Informing and involving the public on water quality issues.

The San Francisco Bay Region (Region) is 4,603 square miles, roughly the size of the State of Connecticut, and characterized by its dominant feature, 1,100 square miles of the 1,600 square mile San Francisco Bay Estuary (Estuary), the largest estuary on the west coast of the United States, where fresh waters from California's Central Valley mix with the saline waters of the Pacific Ocean. The Region also includes coastal portions of Marin and San Mateo counties, from Tomales Bay in the north to Pescadero and Butano Creeks in the south.

The Estuary conveys the waters of the Sacramento and San Joaquin rivers into the Pacific Ocean.
Located on the central coast of California, the Bay system functions as the only drainage outlet for waters of the Central Valley. It also marks natural topographic separation between the

northern and southern coastal mountain ranges. The Region's waterways, wetlands, and bays form the centerpiece of the United States' fourth-largest metropolitan region, including all or major portions of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.

Because of its highly dynamic and complex environmental conditions, the Bay system supports an extraordinarily diverse and productive ecosystem. Within each section of the Bay lie deepwater areas that are adjacent to large expanses of very shallow water. Salinity levels range from hypersaline to fresh water, and water temperature varies throughout the Bay system. These factors greatly increase the number of species that can live in the Estuary and enhance its biological stability.

The Bay system's deepwater channels, tidelands, marshlands, freshwater streams, and rivers provide a wide variety of habitats that have become increasingly vital to the survival of several plant and animal species as other estuaries are reduced in size or lost to development. These areas sustain rich communities of crabs, clams, fish, birds, and other aquatic life and serve both as important wintering sites for migrating waterfowl and as spawning areas for anadromous fish.

The Sacramento and San Joaquin rivers, which enter the Bay system through the Delta at the eastern end of Suisun Bay, contribute almost all the freshwater inflow to the Bay. Many small rivers and streams also convey fresh water to the Bay system. The rate and timing of these freshwater flows are among the most important factors influencing physical, chemical, and biological conditions in the Estuary. Much of the freshwater inflow, however, is trapped upstream by the dams, canals, and reservoirs of California's water diversion projects, which provide vital water to industries, farms, homes, and businesses throughout the state. This freshwater diversion has sparked statewide controversy over possible adverse effects on the Estuary's water quality, fisheries, and ecosystem.

Flows in the Region are highly seasonal, with more than 90 percent of the annual runoff occurring during the winter rainy season between October and April. Many streams go dry during the middle or late summer. For example, the Napa River, which is least affected by upstream regulation, clearly shows the seasonal nature of runoff. Only 4-1/2 percent of this river's average annual runoff occurs during the summer months.

Watershed management is a strategy for protecting water quality in all water bodies by looking at all components that make up a watershed area, including the natural environment, water supply, land uses and their effects on drainage, wastewater collection and discharges, and the ways humans interact with the water bodies.

In the Water Board's watershed management approach to water quality protection, water resource problems are identified and prioritized primarily on the basis of water quality within individual watersheds. Unfortunately, water quality of many water bodies continues to be degraded from pollutants. To improve and protect water quality, unique solutions are

developed for each watershed that consider all local conditions and pollution sources and rely on the input and involvement of local stakeholders. Some of the major features of a watershed management approach are: targeting priority problems based on water quality information and monitoring, promoting stakeholder involvement in prioritization and management decisions, developing integrated solutions that make use of the expertise and authority of multiple agencies and organizations, and measuring success through monitoring and other collected data.

Groundwater is an important component of the hydrologic system in the Region. Groundwater provides excellent natural storage, distribution, and treatment systems. Groundwater also supplies high quality water for drinking, irrigation, and industrial processing and service. As an important source of freshwater replenishment, groundwater may also discharge to surface streams, wetlands, and San Francisco Bay.

A variety of historical and ongoing industrial, urban, and agricultural activities and their associated discharges degrade groundwater quality, including industrial and agricultural chemical spills, underground and above-ground tank and sump leaks, landfill leachate, septic tank failures, and chemical seepage via shallow drainage wells and abandoned wells. In addition, saltwater intrusion directly attributed to over- pumping has degraded the purity of some groundwater aquifers.

These adverse impacts on groundwater quality often have long-term effects that are costly to remediate. Consequently, as additional discharges are identified, source removal, pollution containment, and cleanup must be undertaken as quickly as possible. Activities that may potentially pollute groundwater must be managed to ensure that groundwater quality is protected.

Because of its unique characteristics, the San Francisco Bay estuarine system merits special protection. The adverse effects of waste discharges must be controlled. The State Water Board administers water rights, water pollution control, and water quality functions for the state as part of the California Environmental Protection Agency (Cal/EPA). It provides policy guidance and budgetary authority to the Regional Water Boards, which conduct planning, permitting, and enforcement activities. The State Water Board shares authority for implementation of the federal Clean Water Act and the state Porter-Cologne Act with the Regional Water Boards. The San Francisco Bay Regional Water Quality Control Board (Water Board) regulates surface water and groundwater quality in the Region. The area under the Water Board's jurisdiction comprises all of the San Francisco Bay segments extending to the mouth of the Sacramento-San Joaquin Delta (Winter Island near Pittsburg).

The Water Board has also been an active participant in the San Francisco Estuary Project (Estuary Project), a cooperative program aimed at promoting effective, environmentally sound management of the San Francisco Bay Estuary while protecting and restoring its natural resources. In 1993, the Estuary Project reached its goal of developing a Comprehensive Conservation and Management Plan (CCMP). The CCMP addresses five critical concerns

identified by the Estuary Project's broad-based advisory committees: decline of biological resources; increased pollutants; freshwater diversion and altered flow regime; dredging and waterway modification; and intensified land use.

HOT TOPICS:

- Bremer Family Winery Vineyard
- Upper Berryessa Creek Flood Risk Management Project
- Point Buckler Island
- San Francisquito Creek Flood Reduction Project
- Lehigh Southwest Cement Company, Cupertino, Documents
- 2015 Completion of Leona Heights Sulfur Mine Cleanup
- Mothball Fleet Enforcement in Suisun Bay
- Municipal Regional Permit
- Dutra Haystack Asphalt Plant Project
- Corte Madera Inn Rebuild Project

RESOURCES:

San Francisco Bay Regional Water Quality Control Board's Website
www.waterboards.ca.gov/sanfranciscobay/

- Fact Sheet
  www.waterboards.ca.gov/water_issues/programs/swamp/docs/regional/r2_factsheet_18.pdf
- Contact Information
  www.waterboards.ca.gov/sanfranciscobay/about_us/contact_us.html
- Basin Plan
  www.waterboards.ca.gov/sanfranciscobay/basin_planning.html
- Report a Problem
  www.waterboards.ca.gov/sanfranciscobay/report_problem.html
- SWAMP - Region 2 (San Francisco Bay) Monitoring Program
  www.waterboards.ca.gov/water_issues/programs/swamp/monitoring/regional_monitoring_programs/region_2.html

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