SWAMP
Surface Water Ambient Monitoring Program

Fact Sheet | Region 9

San Diego
Regional Water Quality Control Board

Overview

The San Diego Region stretches along 85 miles of coastline from Laguna Beach to the Mexican border and extends 50 miles inland to the crest of the coastal mountain range. It encompasses most of San Diego County, southwestern Riverside County and southern Orange County. The region's semi-arid Mediterranean climate is generally mild. Relatively little precipitation falls in much of the region; most precipitation falls from November through March and occurs principally as rain, with snow rare except in the higher mountains. The region's population of more than 3 million people enjoys many water-related recreational activities, including swimming, surfing, fishing, and boating.

The diverse water resources of the San Diego Region include the ocean, bays, estuaries, streams, freshwater wetlands, reservoirs, and groundwater. All major drainage basins in the region contain groundwater basins, which are generally relatively small in area and shallow. The region has a variety of wetlands, including vernal pools, coastal salt marsh, freshwater marsh, and riparian woodlands. The region's streams include perennial and non-perennial reaches, with some segments flowing for only a few days or months each year. The region supports an extraordinarily diverse biota, including a number of special-status and endemic species. Areas in the region designated to provide special protection for various species and the habitats they depend on include national wildlife refuges, ecological reserves, natural preserves, state marine conservation

Water Facts

- 3,900 square miles of land
- 910 miles of streams
- 19,220 acres of lakes
- 85 miles of coastline
- Average annual precipitation of 10 to 13 inches
- Annual average temperature of 63°F

CALIFORNIA Water Boards

San Diego Region

areas, state marine reserves, Areas of Special Biological Significance, critical habitats, wilderness areas, and a National Estuarine Research Reserve, among others.

The region imports approximately 90 percent of its water supply from northern California and the Colorado River, and much of this water is stored in local reservoirs. Nearly all of the local groundwater basins in the region have been intensively developed for municipal and agricultural supply purposes. Recycled water is a growing component of the region's water supply, as are seawater desalination projects. The San Diego County Water Authority added desalinated seawater (via the Claude "Bud" Lewis Carlsbad Desalination Plant) to its water-supply portfolio in December 2015 with the start of commercial operations at the nation's largest seawater desalination plant. This new, drought-proof supply reduces the region's dependence on water from the Colorado River and the Bay-Delta that is vulnerable to droughts, natural disasters, and regulatory restrictions.

Numerous water bodies in the region are known to be degraded due to several different stressors from various sources. Many of the region's surface waters are included on the Clean Water Act Section 303 (d) list of waters where water quality objectives are not met. Many wetland areas have been filled, dredged, fragmented, or otherwise lost or degraded. The ecosystems of many stream systems and coastal lagoons have been modified by dams, water diversions, channelization, transportation corridors, runoff from urban and agricultural areas, invasive species, and other anthropogenic influences.

Vision and Goals for Monitoring

In the San Diego Region, SWAMP is designed to support our mission to protect and restore the chemical, physical, and biological integrity of waters by monitoring and assessing conditions in water bodies. SWAMP monitoring and assessment programs are question-driven and scientifically and statistically sound.

The vision of SWAMP in the San Diego region is that monitoring and assessment programs will

1. produce information so that the work of protecting and restoring San Diego Region waters can be strategic and effective
2. provide for meaningful evaluation of the success of that work.

SWAMP's monitoring and assessment programs are designed to support the following goals:

- Determine the status and trends of conditions in San Diego Region waters;
- Identify the causes of unsatisfactory conditions and their sources;
- Determine the effectiveness of management actions; and
- Effectively communicate key findings to the public, stakeholders, and decision-makers.

Fact Sheet | Region 9

San Diego Region

Program Activity

SWAMP was established in 2000. From 2000-2008, the activities of SWAMP in the San Diego Region consisted of targeted monitoring and assessment of the health of stream ecosystems using physical, chemical, and biological indicators. The results are summarized in reports for each of the region's eleven hydrologic units as well as a region wide synthesis report. Since 2009, SWAMP has consisted of three major components:

- Conditions Monitoring and Assessments
- Special Studies
- Coordination and Collaboration

More recently, the San Diego Region SWAMP has helped to support an ongoing regional probabilistic monitoring and assessment program focused on the health of southern California stream ecosystems in the jurisdictions of the San Diego, Santa Ana, and Los Angeles regional water boards. In addition, SWAMP is currently funding a study on developing high-resolution, biotic indicators to assess the health of non-perennial and episodic streams, which represent a substantial portion of lotic waters in the region. Other special studies include developing tools for trash monitoring in coastal waters and wetlands and tools for using molecular methods for algae bioassessment, as well as development of a monitoring approach for assessing the health and ecological functioning of beds of submerged aquatic vegetation (e.g., eelgrass) for use in local nearshore waters.

SWAMP produces technical reports and management summaries on these programs. SWAMP has also been developing watershed report cards. Information about SWAMP work is disseminated through presentations at Board meetings of the San Diego Water Board, Executive Officer Reports, scientific conferences and public meetings, and the San Diego Water Board's website. Data from SWAMP are available through the California Environmental Data Exchange Network (CEDEN).

Collaborative Efforts

Under SWAMP, the San Diego Water Board collaborates with several government agencies, environmental organizations, stakeholders, and citizen volunteers to enhance monitoring and assessment activities throughout the region and to ensure the collection and comparability of high-quality monitoring data. The San Diego Water Board works closely with the California Department of Fish and Wildlife on bioassessment and bioaccumulation studies. In addition, SWAMP collaborates with the Southern California Coastal Water Research Project on several research-related projects to protect aquatic ecosystem health. Furthermore, SWAMP collaborates with the Stormwater Monitoring Coalition as well as the US Forest Service and the US Geological Survey to enhance watershed monitoring.

For More Information On SWAMP on the San Diego Region, Please Contact:

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Betty Fetscher, Ph.D. (619) 521-3358
Betty.Fetscher@waterboards.ca.gov

San Diego Regional
Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, California 92108

http://www.waterboards.ca.gov/sandiego