Monitoring Monday - Los Angeles Regional Water Quality Control Board (Region 4)

Join us each Monday as the Clean Water Team shares information and resources on water quality monitoring. This Monday we will look at the Los Angeles Regional Water Quality Control Board (Region 4).

With over 10 million residents, the Los Angeles Regional Water Quality Control Board's area is the most densely populated region in the State. It encompasses all coastal watersheds and drainages flowing to the Pacific Ocean between Rincon Point (on the coast of western Ventura County) and the eastern Los Angeles County line, as well as the drainages of five coastal islands (Anacapa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente). In addition, the Region includes all coastal waters within three nautical miles (approximately 5½ kilometers) off the continental and island coastlines.

WATER GLANCE

- Area Size (Square Miles): 4,447 miles
- Coastline (Square Miles): 120 miles
- Miles of Streams: 1,115 miles
- Acres of Lakes: 12,107 acres
- Watershed Management Areas (WMAs): 10

Most of the Los Angeles Region lies within the western portion of the Transverse Ranges Geomorphic Province. The San Andreas transform fault system, forming the boundary between the North American and Pacific tectonic plates, dissects these western Transverse Ranges. This fault system, which extends northwesterly for over 700 miles (1,127 kilometers) from the Salton Sea in southern California to Cape Mendocino in northern California, bends in an east-west direction through the Transverse Ranges. Known as the "Big Bend," this portion of the San Andreas fault system formed from complex movements of the Pacific Plate against the North American Plate. Compression generated by such forces resulted in uplift of the Transverse Ranges, which have a conspicuous east-west trend (unlike other major ranges in the continental United States, which typically have a roughly north-south trend).

Precipitation in the Region generally occurs as rainfall, although snowfall can occur at high elevations. Most precipitation occurs during just a few major storms. Annual rainfall in Ventura County averages 16.1 inches (40.9 cm), although there is considerable variability in rainfall totals in dry versus wet years and at high versus low elevations. In wet years, mountain areas

can exceed 40 inches (101.8 cm) of rain while in dry years, coastal lowlands can receive as little as 5 inches (12.7 cm) (VCWPD, 2007). The average annual rainfall for Los Angeles County is 15.7 inches (39.9 cm). However, large variations exist within Los Angeles County also, as indicated by average annual rainfall of 34.2 inches (86.9 cm) at Cogswell Dam in the San Gabriel Mountains and average annual rainfall of 13.71 inches (34.82 cm) for the coastal plain part of the County (LACDPW, 2011). These variations in precipitation are expected to increase as the impacts of climate change become more pronounced.

The rivers and streams of the Los Angeles Region flow from headwaters in pristine mountain areas (largely in two National Forests -- the Angeles National Forest and Los Padres National Forest, and the Santa Monica Mountains National Recreation Area), through urbanized foothill and valley areas, high density residential, industrial, or intensely farmed coastal areas, and terminate at highly utilized recreational beaches and harbors. Coastal waters in the Region include bays, harbors, estuaries and lagoons, beaches, and the open ocean. Santa Monica Bay dominates a large portion of the Region's open coastal waters and is a nationally significant waterbody, which is part of the National Estuary Program.

The economy in Los Angeles County is primarily industrial, commercial, and service, while in Ventura County the economy is primarily agricultural, service, and commercial. Land use varies considerably. In Ventura County, agriculture and open space exist alongside urban, residential, and commercial areas. In northern Los Angeles County, open space is steadily being transformed into residential communities. In southern Los Angeles County, land uses include urban, residential, commercial, and industrial.

Diversity in topography, soils, and microclimates of the Region supports a corresponding variety of plant and animal communities. Native vegetation in the Region can be categorized into a number of general plant communities including grasslands, coastal sage scrub, chaparral, oak woodland, riparian, pinyon - juniper, and timber - conifer.

The Los Angeles Region is the State's most densely populated and industrialized region. Despite this, many of the watersheds in the Region encompass a great deal of diversity in level of development, land use, topography, and socioeconomic characteristics. National forest land may dominate one part of a watershed, while extensive development dominates another part. Irrigated agriculture and grazing remain significant in parts of the Region. To add to this complexity, the Regional Water Board regulates over 1,000 discharges of wastewater from a wide variety of municipal and industrial sources throughout the Region and a vast network of municipal separate storm sewer systems serving two counties and 99 cities. The sources of water that sustain the Region are also diverse. Because surface water and groundwater supplies within the Region are insufficient to support the population, water imported from other areas meets about 50 percent of fresh water demands in the Region. In addition, the demand for water is increasingly being fulfilled by the use of reclaimed water for indirect potable reuse (i.e., groundwater recharge) and non-potable purposes such as landscape irrigation and industrial processing and servicing.

California experiences frequent drought conditions including the most recent instances from 1987 to 1992, 2008 to 2011, and a drought period that was declared in 2014. The Los Angeles region's dependence on imported waters leaves it vulnerable during such periods, and as such, state and local water agencies in the region have focused efforts on finding ways to integrate water quality protection programs with provisions that also have the benefit of increasing local water supplies and off-setting use of imported water, while reducing run-off from irrigation and other urban and agricultural activities. These efforts have included promoting water recycling as opposed to discharges, promoting reuse of water under de-watering permits; water conservation programs; public education; and the promotion of stormwater capture for recharge of groundwater basins. In response to 2014 drought conditions, on July 29, 2014, the State Water Board adopted emergency regulations to increase conservation practices by all Californians (State Water Board Resolution No. 2014-0038). This regulation establishes the minimum level of conservation practices that residents, businesses and water suppliers must implement as the drought deepens and will be in effect for 270 days unless extended or repealed. The State and Regional Water Boards are also expediting permitting to safely use recycled water in order to reduce demand on potable water supplies.

In addition to the water supply concerns during drought periods, impacts to water quality such as increasing salinity need to be considered and managed. In the past, as in the drought period from 1987 through 1992, the Regional Water Board addressed these concerns though the adoption of interim permit limits for wastewater treatment plant discharges in certain watersheds - temporarily allowing for higher effluent limits for salts to accommodate drought-related increases in salt loading from imported potable water. In a similar vein, during the current drought period the State Water Board has acted on requests to provide flexibility with respect to recycled water permit requirements (State Water Board Order No. WQ 2014-0090). Such measures are taken in consideration of the need to protect existing and potential beneficial uses of receiving waters.

Twenty-four beneficial uses for the Region have been identified. These beneficial uses and their definitions were developed by the State and Regional Boards for use in the Regional Board Basin Plans. Monitoring and assessment are essential to maintain beneficial uses and the success of the Region's water quality control programs and are part of the Regional Water Board's program of implementation for achieving water quality objectives required pursuant to Water Code section 13242. Additionally, Water Code section 13163 directs the State Water Board to coordinate water quality investigations with the Regional Water Boards and among state agencies and evaluate the need for water quality investigations to effectively develop and implement statewide policy for water quality control.

The varied objectives of the State's water quality monitoring programs include:

- Evaluate attainment and maintenance of water quality objectives and beneficial uses consistent with State and federal requirements.

- Measure effects of water quality changes on beneficial uses.
- Measure background and existing conditions of water quality and determine long-term trends.
- Locate and identify sources of pollutants that pose an acute, accumulative, and/or chronic threat to waters.
- Provide information needed to relate receiving water quality to mass emissions of pollutants by waste dischargers.
- Provide data for determining discharger compliance with the requirements of permits and other orders (e.g., Cleanup and Abatement Orders) and supporting the enforcement of permit and order requirements.
- Evaluate effectiveness of treatment and remediation activities
- Provide data needed to implement water quality planning programs.
- Measure the effects of water rights decisions on water quality, and to guide the State Water Board in its responsibility to regulate unappropriated water for the control of quality.
- Provide a clearinghouse for water quality data gathered by other agencies, regulated parties, and/or citizen monitoring programs.
- Report on water quality conditions as required by federal and State regulations or requested by others.

RESOURCES:

Los Angeles Regional Water Quality Control Board (Region 4) Website
www.waterboards.ca.gov/losangeles/

- Contact Information
  www.waterboards.ca.gov/losangeles/about_us/contact_us/
- Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties
  https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html
- Los Angeles and Ventura County Watersheds Map
  www.waterboards.ca.gov/losangeles/images/region4.jpg
- Los Angeles and Ventura County Hydrological Units
  www.waterboards.ca.gov/losangeles/images/region4hu2web.jpg

Notice of Data Solicitation for the 2023-2025 Triennial Review of Water Quality Standards in the Los Angeles Region - Data Solicitation Notice
www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Triennial_Review/2023/2023-25_TR_Solicitation_Notice_ADAchecked_signed.pdf

SWAMP - Region 4 (Los Angeles) Monitoring Program
www.waterboards.ca.gov/water_issues/programs/swamp/monitoring/regional_monitoring_programs/region_4.html

- Assessing the Health of Southern California Streams
  www.waterboards.ca.gov/water_issues/programs/swamp/docs/assesshealthsocalstreams.pdf

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