Eutrophication Assessment in San Diego Coastal Wetlands

What is it?

The eutrophication assessment in San Diego coastal wetlands is part of the Southern California Bight Regional Monitoring Program of 2008. The Southern California Bight Regional Monitoring (Bight) program is a partnership of more than sixty organizations collaborating to address management questions of regional importance in offshore, nearshore, and enclosed waters of the southern California Bight. It has been conducted periodically since 1994. The assessment of coastal wetlands is a new component of the Bight program. The sampling for the eutrophication assessment (nutrient overenrichment) in southern California coastal wetlands was completed in 2009.

The impacts of nutrient loading to coastal wetlands are well documented world-wide, but little work has been done to characterize conditions in California. Thirty sites in twenty-five estuaries were selected for sampling through a probability-based design. All estuaries in the San Diego region (except coastal wetlands on Camp Pendleton) were monitored between October 2008 and October 2009. Four types of indicators were used in the survey: (1) dissolved oxygen and related water quality parameters; (2) primary producer communities (phytoplankton, benthic algae, macroalgae, and/or submerged aquatic vegetation); (3) harmful algal bloom toxins; and (4) nitrogen and phosphorus concentrations and flow at mass loading stations.

Why is it important to the State?

In California, the impacts of nutrients to coastal wetlands, with the exception of the San Francisco Bay, have not been well monitored. In southern California, only four out of over fifty coastal wetlands were included in NOAA's National Estuarine Assessment Report. Data from this coastal wetlands assessment will document the extent of eutrophication in southern California coastal wetlands. In addition, the State is in the process of developing nutrient criteria for coastal wetlands. Data from this survey will be used to build the assessment framework for nutrient criteria in coastal wetlands.

Why is it important to me?

Eutrophication in coastal wetlands is of major concern because it has several potential impacts on ecological and human health. The impacts of eutrophication include low dissolved oxygen concentrations, fish-kills and lowered fishery production, loss or degradation of seagrass and kelp beds, nuisance odors, and impacts on human and marine life through increased algal blooms. The eutrophication assessment of coastal wetlands will show extent of impacts it has on the ecological and human health in the San Diego region.

How will this information be used?

The results from this assessment will inform stakeholders and decision makers about the status and extent of eutrophication in coastal wetlands in the San Diego region. The information produced by this study will be used in the development of nutrient criteria for coastal wetlands. The information also will be used by programs that address the protection and restoration of coastal wetlands. In addition, the data will be used for the development of Total Maximum Daily Loads (TMDLs) for nutrients in San Diego coastal lagoons.