

Using Monitoring Information to Help Manage California Coastal Water Quality

Craig J. Wilson

State Water Resources Control Board, Sacramento, CA, USA

Monitoring is an essential tool in determining the effectiveness of management actions regarding coastal marine water quality and in evaluating if management goals are being attained. Monitoring data has been collected in California since the 1950s. In the late 1970s, this monitoring information became an increasingly important factor in some management decision-making (e.g., waivers from secondary treatment). But, management agencies often had difficulty in interpreting this information that they had long been required to collect. In some cases, management goals were vague and the monitoring information was only marginally influencing decisions that were being made.

This presentation will describe the use of monitoring information in standards setting, decisions regarding waivers from secondary treatment, development of sediment quality objectives, bioaccumulation monitoring, and identification of toxic hot spots. A model depicting the role of monitoring in marine and estuarine environmental management will be presented. The role of monitoring will be examined in the context of decision-making under uncertain environmental conditions.

As an example of integrating monitoring into environmental decision-making, the Bay Protection and Toxic Cleanup Program monitoring activities for identifying toxic hot spots will be described. Toxic hot spots are locations in bays and estuaries where toxic pollutants impact aquatic life or human health. The monitoring activities include a sensitive screening step using a battery of sediment and water toxicity tests to determine potential for environmental impacts. Once sites have been screened, the areas most impacted are resampled to more carefully assess the impacts identified in the screening step. This confirmation step is augmented with analysis of pollutants (scans of both metals and organic chemicals) and use of other indicators that could detect impacts (benthic community analysis and bioaccumulation monitoring). After the site is confirmed to be a toxic hot spot, the process to rank the site for cleanup activities can be initiated.