Statewide Stream Pollution Trend (SPoT) Monitoring at Integrator Sites

What is it?

This program is part of the long-term statewide trend monitoring being conducted to assess California streams to detect any meaningful change in the concentrations of stream-borne contaminants and also to assess their effects in large watersheds at time scales appropriate to management decision making. Three specific goals of this program are to:

1. Determine long-term trends in stream contaminant concentrations and effects statewide.
2. Relate water quality indicators to land-use characteristics and management efforts.
3. Establish a network of sites throughout the state to serve as a backbone for collaboration with local, regional, & federal monitoring.

Sites will be selected in waterbodies at points where contaminants released throughout large watersheds are likely to accumulate. These sites will be similar to the "integrator" sites used in the USGS National Water Quality Assessment (NAWQA) program; that is, sites located near discharge points of large watersheds characterized by heterogeneous land uses. The design envisions trend monitoring at 100 sites in a state divided into approximately 200 major hydrologic units. Ideally, monitoring at these sites should characterize the cumulative contribution of contaminants from the target watersheds. The integrator site surveys are designed to link water (sediment) quality measurements at the base of a watershed with land use and management activities within the watershed. This involves the gathering and spatial analysis of supplementary data such as land cover, chemical application rates, and hydrologic variables. SWAMP scientists are adapting geographic analysis tools from the USGS, US EPA, NOAA, and others for these assessments.

Some Regional Water Boards (e.g., Central Valley) have contributed additional resources to augment the monitoring conducted by the statewide program to provide more monitoring within their region to obtain a more complete regional perspective. While these Regional Water Boards publish these data in separate reports, all the data are combined when the assessments are conducted.

Why is it important to the State?

This type of monitoring provides a direct assessment of the health of a waterbody. Aquatic communities may be affected by the transport of contaminants from upper watershed areas into streams and downstream habitats. SPoT primarily is designed to assess support for aquatic life beneficial uses of California streams.

Why is it important to me?

Californians hold a deep seated expectation to have clean water. Clean water is essential for our health and survival. Every year, hundreds of decisions are made that influence our water quality. These decisions range from local development decisions to statewide policy implementation. Studies like this provide information that can be used to help answer the questions:

- How well are we managing California's precious resource – water?
- Are we protecting the beneficial uses of our water – namely, is the water safe for me to swim in, is the fish I catch in it healthy so that I may eat it safely, and is the overall ecosystem healthy?
- Are we investing our limited state resources effectively and focusing them on the right water quality problems?

How will the data be used?

All monitoring data will be entered into the SWAMP data base, where they will be available for a number of uses, including the following:

- statewide 305[b] reporting and 303[d] listing as required by the Clean Water Act;
- enhancing Regional monitoring programs;
- evaluating the success of TMDL, Regional, and statewide management programs;
- determining relationships between stressors and effects for NPS programs;
- providing perspective for and enhancing agricultural waiver monitoring;
- providing perspective for and enhancing urban stormwater monitoring;
- assisting with sediment quality objective development;
- examining trends related to particular stressors of concern;
- providing a framework for prioritizing individual issues for further investigation.

SWAMP Partners: US EPA, multiple watershed monitoring programs, municipal stormwater programs, State Water Board Nonpoint Source Program, Moss Landing Marine Laboratories, U.C. Davis Granite Canyon Laboratory

To learn more about SPOT, click here.

Stream Pollution Trend Monitoring Sites