

2014 Central Coast Ambient Monitoring Program Activities

What is it?

The Central Coast Region is divided into five watershed rotation areas, with one area assessed each year, so that all watershed areas are monitored over a 5-year cycle. Watershed rotation area sites are selected to include an “accumulator site” or coastal confluence site at the bottom end of the watershed, and a number of sites along the main stem and at major tributary inputs. This tributary-based design is intended to aid in efficient identification of the general source areas of pollutant problems.

In each watershed area, monthly samples are analyzed for conventional parameters (e.g. nutrients, pH, and pathogen indicators) and flow. Because of funding restrictions, not all sites which are sampled for conventional water quality can be sampled for other parameters. Usually those sites that can best characterize watershed sub-areas, such as the confluence of two major tributaries forming the main stem, are selected for additional sampling beyond the conventional parameters.

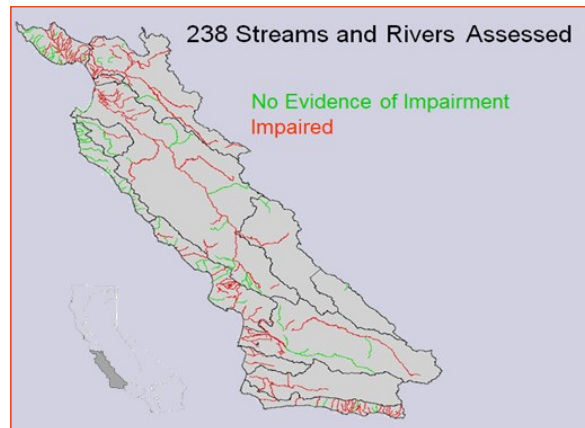


Figure 1. Map showing location of Central Coast Region's stream and rivers assessed for the 2010 303(d) List assessment summary.

In the 2014 calendar year, the Central Coast Ambient Monitoring Program efforts were focused in one of the Region's five watershed rotation areas, which includes the Santa Barbara County coastal watersheds, Santa Ynez and San Antonio Hydrologic Units, and at coastal confluence sites (at 33 coastal creek mouths in Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties within the Central Coast Region). Monitoring in this calendar year included the following monitoring types:

- Monthly monitoring for conventional pollutants at 30 watershed rotation area sites and at 33 coastal creek mouths throughout the Region. Monthly monitoring focuses on nutrients, salts, metals, dissolved and suspended solids, bacteria indicators, and onsite measurements, including flow, pH, dissolved oxygen, salinity, and turbidity.
- Bioassessment for benthic macro-invertebrates, diatoms, and soft-bodied algae at three watershed rotation sites, targeting upper watershed locations.
- Water column toxicity samples collected in dry season flows and tested using two invertebrate, one fish, and one algae test organism at six watershed rotation sites, targeting lower watershed sites. Each of these samples was also analyzed for concentrations of a suite of pyrethroid pesticides, organophosphate pesticides, and metals. Unfortunately, the pyrethroid data was lost due to contamination at the laboratory.
- Resident fish were collected from the Carpinteria Marsh estuary and analyzed for organochlorine pesticides, a suite of organophosphate pesticides, and a suite of pyrethroid pesticides.
- Diurnal dissolved oxygen, pH, water temperature, and conductivity were monitored for a one week period in the summer of 2014 at ten watershed sites. Measurements were taken every 30 minutes for five to seven days in a row.
- Continuous temperature probes were deployed at seventeen stations in spring of 2014 and were retrieved in fall of that year.

Why is it important?

The 2014 calendar year study design will add to the existing body of data that is used to answer several of the questions posed in the SWAMP Site-Specific Monitoring Guidance related to beneficial use support. Beneficial use questions and relevant monitoring parameters include the following:

- **Is it safe to swim?**
 - ⇒ Water Contact Recreation Beneficial Use assessed using monthly data for fecal coliform and *E. coli*.
- **Is it safe to drink the water?**

- ⇒ Municipal and Domestic Water Supply Beneficial Use assessed using monthly data for metals, fecal coliform, *E. coli*, nutrients, and minerals
- **Is it safe to eat fish and other aquatic resources?**
 - ⇒ Shellfish Harvesting and Commercial and Sport Fishing Beneficial Uses assessed using chemistry data from fish tissue collection at sites identified as high risk in the Streams Pollution Trends (SPoT) Monitoring Program and a Region 3 study using Proposition 50 funds.
- **Are aquatic populations, communities, and habitats protected?**
 - ⇒ Cold Freshwater Habitat, Warm Freshwater Habitat, and Spawning assessed using conventional water quality data (e.g. dissolved oxygen, water temperature, ammonia), sediment and water column toxicity, sediment chemistry (e.g., pesticides and metals), and benthic invertebrate assemblages.
 - ⇒ Rare, Threatened, or Endangered Species Beneficial Uses assessed using data from monthly sampling for dissolved oxygen, nutrients, turbidity, temperature, and continuous probe monitoring for dissolved oxygen.
- **Is water safe for agricultural use?**
 - ⇒ Agricultural Supply Beneficial Use assessed using monthly sampling for nutrients, salts, and total dissolved solids
- **Are aesthetic conditions of the water protected?**
 - ⇒ Non-Contact Water Recreation Beneficial Use assessed using monthly qualitative assessment of percent algal cover, presence of scum, trash, odor, etc.
- **What are trends in various analytes of concern?**
 - ⇒ Non-parametric trend analysis and change point analysis are employed where sampling time period and sample counts are sufficient to reliably detect year-to-year change.

How will this information be used?

- Data are used to update the online CCAMP data browser and the Central Coast Healthy Watersheds Project, which contain maps, charts, and summary statistics for all data collected by the program. This website is publically available and used by multiple programs at the Water Board and can be viewed at the [CCAMP](http://www.waterboards.ca.gov/water_issues/programs/swamp/) website.

- Data will be used in the development of Total Maximum Daily Loads.
- CCAMP data is one of the largest data sets supporting the currently approved Clean Water Act Section 303(d) List of Impaired Waters (Figure 1) and the 2014 assessment report currently under development.

For more information:

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