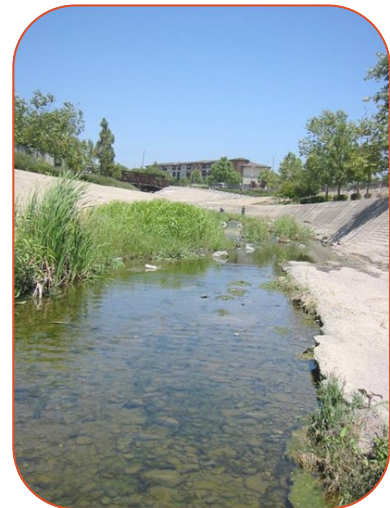


## Santa Ana Regional Stream Bioassessment Monitoring Program

### What is it?

The Santa Ana Regional Stream Bioassessment Monitoring Program is a SWAMP-funded ambient monitoring program that was initiated in 2006 to assess the ambient condition of wadeable streams. For six years (2006-2011), the biological (benthic macroinvertebrates), physical (in-stream habitat, surrounding riparian habitats), and chemical attributes at 182 sites within the Santa Ana Region have been sampled using a probabilistic (random) sampling design. These sites range from low elevation highly modified urbanized channels to high elevation forested areas.

In 2012 and 2013, the program focused on revisiting probabilistic sites of interest to estimate changes in the condition of streams. Additional analytes including benthic algae (i.e., ash-free dry mass and chlorophyll a), total and dissolved metals, water toxicity, and the California Rapid Assessment Method (CRAM) were analyzed along with benthic macroinvertebrates, physical habitat and water chemistry, including nutrients. Additional site revisits will be conducted in 2014; however, in lieu of analyzing for water toxicity and total and dissolved metals, benthic algae taxonomy will be added.



Site 532 - Santiago Creek, Orange County; SoCal IBI score =1. Photo courtesy of Dr. Dessie Underwood, CSULB-SEAL

### Why is it important?

The SWAMP-funded monitoring utilizes direct measurements of biological assemblages, including benthic macroinvertebrates and algae, to monitor the ecological condition of the Santa Ana Region's rivers and streams. Bioassessments integrate the effects of water quality over time

and provide a holistic assessment of stream condition. The data are of known quality and once assessed can be used to identify appropriate management actions to improve water quality.



Site 168 - Santa Ana River, San Bernardino County; SoCal IBI score = 67. Photo courtesy of Dr. Dessie Underwood, CSULB-SEAL

### How will this information be used?

The data will be used in water quality assessments required under Section 305(b) of the Clean Water Act. The data will be available to the public through the California Environmental Data Exchange Network (CEDEN). A multiyear report encompassing data collected from 2006-2011 is in preparation and will provide recommendations for future bioassessment monitoring.

Annual reports describing the physical habitat, water chemistry and benthic macroinvertebrate communities for each site sampled are produced for the Santa Ana Region and posted on the [region-specific SWAMP website](#).

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