



## Implementation of the Statewide SWAMP Algae Plan (Lahontan and San Diego Regions)

### What is it?

Biological assessment, or bioassessment, is a methodology for gauging the health of a waterbody by measuring the presence and abundance of certain animal and plant species. Bioassessment methodologies have been developed utilizing fish, macroinvertebrates (small animals visible to the naked eye), and algae. In California bioassessment monitoring has generally been conducted using macroinvertebrates, but algae bioassessments have also been successfully implemented in many areas of the State. The results of these studies indicate that algae bioassessment can be developed for statewide use and combined with macroinvertebrate bioassessments for a more robust measure of biological health.

In 2008, SWAMP completed the Algae Plan which identified two key needs for developing and implementing algae bioassessments statewide. First, consistent algae sampling methods should be used throughout California so that data collected by various agencies, programs, and regions can be compared. Second, a calibration study was needed to compare the performance of the most common methods in order to determine whether and how historic stream algae data can be compared to results obtained using the new, standard methods.

SWAMP addressed the first need beginning in June 2009 with the publication of standard protocols for sampling stream algae. During 2010, SWAMP followed up by partnering with the State Water Board's Training Academy to sponsor training sessions throughout the state to introduce the new field methods. In response to these efforts, the new protocols are now being used by numerous agencies and programs throughout California.

The second need is being met by a rigorous methods calibration study being undertaken by SWAMP at the Lahontan Regional Water Board (Region 6). With assistance from several partners, staff from Region 6 and the San Diego Regional Water Board (Region 9) led the study design and planning process. A detailed workplan was developed and peer-reviewed, and all field work was completed during the summer of 2010. Data analysis is now underway.

## **Why is it important to the State?**

Algae can be a very powerful indicator of aquatic ecosystem health, but bioassessments using algae can only be successful in California if methods are standardized, cost-effective, and if historic data can be compared to recent and future data. The Algae Plan, field protocols, and calibration study, taken together will provide the tools needed for algae bioassessments to be consistently performed throughout much of California, resulting in accurate and cost-effective assessments of the biological health of our water resources.

## **Why is it important to me?**

The incorporation of algae into statewide assessments of aquatic ecosystem health will improve our understanding of the condition of the State's waterbodies. This understanding will help raise public awareness and inform water quality management decisions, facilitating effective solutions to water quality problems.

## **How will this information be used?**

Historic stream algae data will be converted, as needed, based on the study findings, so that the older data can be used to assist in developing "reference conditions" and assessment thresholds (i.e., biological expectations) for stream algae. The assessment thresholds can then be used as a yardstick to develop report cards for stream health.

