

Achievements Report 2010

Surface Water Ambient Monitoring Program

Forward

Welcome to the 2010 Surface Water Ambient Monitoring Program's Achievements Report. While the goal of this document is to highlight SWAMP and its 2010 accomplishments, it is important to note these were achieved by SWAMP's partners and collaborators – from the organizations that use our data, or use the SWAMP Quality Assurance or tools, to the program scientists.

SWAMP is about water quality; it's about collecting data and determining how good our water resources are; it's about communicating what we know to the public and where we need to focus to make the water resources clean and usable for this and future generations.

SWAMP started in 2000 with grand aspirations and few resources. Today we add several years from laying a firm foundation to the wisdom that comes with many years of hard work. Currently, SWAMP has three statewide monitoring programs – monitoring of pollutants in sport fish, bioassessment of wadeable streams and the development of reference conditions, and pollutant assessment at integrator sites in streams. There are also significant collaborative monitoring and assessment activities occurring in the regions. We thank our collaborators and partners who are working with us shaping SWAMP into the program it is today.

Please take a minute to read about SWAMP and its 2010 achievements. The numerous and varied activities that transpired reflect on the past year's accomplishments.

Karen Larsen

Deputy Director, Office of Information Management and Analysis

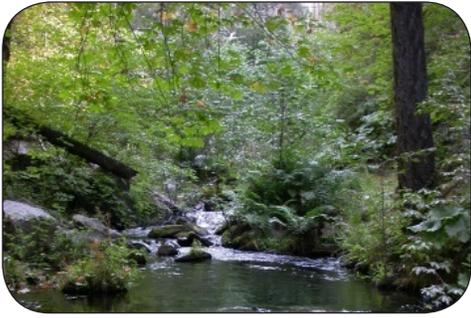
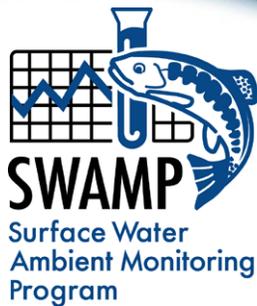


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Introduction

Surface Water Ambient Monitoring Program (AB982)

What is SWAMP?

The mission of the Surface Water Ambient Monitoring Program (SWAMP) at the State Water Resources Control Board is to provide the information about surface water quality that our society needs to make informed decisions about how to manage, restore, and allocate water resources. SWAMP was created to fulfill the State Legislature's mandate (AB982) for a comprehensive and unifying program that would coordinate all surface water quality monitoring conducted by the State and Regional Water Boards. SWAMP has produced conventions for monitoring design, measurement indicators, data management, quality assurance, and assessment strategies, so that data from many programs can be combined and used in integrated assessments that answer critical management questions. Statewide and regional monitoring programs that receive funding from SWAMP are each designed to evaluate one or more of the following assessment questions:

- Status: What is the overall quality of California's surface waters?
- Trends: What is the pace and direction of change in surface water quality over time?
- Problem Identification: Which water bodies have water quality problems and which are at risk?
- Diagnostic: What are the causes of water quality problems and where are the sources?
- Evaluation: How effective are water quality improvement projects and programs at protecting or restoring beneficial uses?

An important step for SWAMP in implementing the State Legislature's mandate has been to forge partnerships with outside agencies and organizations. The collaboration that results, allows SWAMP and its partners to leverage their limited funds for monitoring, promote communication between groups, and lay the foundation for further cooperative projects.



Why is SWAMP important to the State?

SWAMP's mission is to provide resource managers, other decision makers, and the public with timely, cost effective, high-quality information to evaluate the condition of all surface waters throughout the State. To accomplish this mission, SWAMP proceeds primarily along two pathways: 1) SWAMP conducts limited monitoring on statewide and regional scales and relies on partnerships and collaboration to stretch limited monitoring resources, and 2) SWAMP

has created a common framework that coordinates monitoring efforts by offering a uniform approach and important tools. Tools include a Quality Assurance (QA) program that ensures that the data collected are of known and documented quality; a standardized data storage system that meets the growing need for data standardization and integration; a set of standard operating procedures for sampling that promote comparability among projects conducted by different groups; and peer review of monitoring plans for each project that ensures scientific rigor. Additionally, SWAMP continues to create a water quality indicator list to further enhance the tools available to assess water quality. All of these elements assist SWAMP in fulfilling its stated mission and the State by providing meaningful data to fulfill federal regulatory mandates in a cost effective manner.



Why is SWAMP important to me?

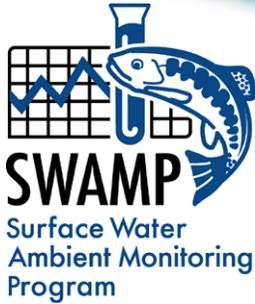
Water is precious to all Californians. Its value is directly related to its quality. Every year, hundreds of decisions are made that influence water quality. These decisions range from local development decisions to statewide policy implementation. Without monitoring data, we would not know the affect of these decisions on water quality until it was visually obvious – which is usually too late. SWAMP provides data that can inform state and local officials about

the current condition of a water body as well as how quickly the condition of a water body is changing.

How will this information be used?

The State is required to report on the status of the waters of California and to identify and report on impaired water bodies. Data collected by SWAMP and its many collaborators and partners provides information that can be used to help answer the above questions as well as used for making management decisions such as recognizing that a water body is not meeting water quality objectives and requiring that actions be taken to make the water cleaner. Additionally, this information is used by other agencies. For example, the Office of Environmental Health Hazard Assessment uses SWAMP data along with monitoring data from other agencies to develop fish consumption advisories and safe eating guidelines.





Data Standardization - Minimum Quality Assurance Requirements and Data Management

What is it?

The Water Board's mission is to preserve, enhance and restore the quality of California's water resources. An enormous amount of data is collected to track the condition of our public waters and aquatic resources throughout the state. The State Water Boards recognize that other organizations may have similar experiences and needs for water quality data. The State Water Board is committed to making water quality data available for both its internal use and by other organizations and the public. To this end, Water Board staff will be working with a variety of organizations and agencies in a collaborative effort to coordinate and make these data available via the California Environmental Data Exchange Network (CEDEN).

The State Water Board's Surface Water Ambient Monitoring Program (SWAMP) has focused its efforts on developing data comparability program guidance and tools to establish a common framework for statewide ambient monitoring projects over the last decade. The CEDEN was developed to simplify and improve access to California's water resource monitoring data by providing services that integrate, standardize and display data from the State's many diverse monitoring and data management efforts.

CEDEN goals include:

- Incorporating many diverse data sources into a standardized integrated data sharing network. Data sources include stormwater, agricultural waiver, and surface water ambient monitoring data, available through the Regional Data Centers (RDC);
- Providing direct public access to monitoring data in an easily downloadable form; and
- Supporting question-driven assessments through the California Water Quality Monitoring Council's My Water Quality web portals.

To assist in producing standardized data, minimum Quality Assurance (QA) requirements were developed for Water Board Programs. These requirements include minimum data elements for laboratory and field data to achieve consistency in data quality and data reporting. This data of known quality will then be stored and accessed through CEDEN. Its



purpose is to facilitate the development and efficient production of valid, useable, and consistent data that can be used in compliance determinations in water quality assessment.

Why is it important to the State?

CEDEN is a system designed to facilitate integration and sharing of data collected by many different participants involved in the water and environmental resources of the State of California. This network is open to federal, state, county and private organizations. The purpose of the CEDEN network is to allow the exchange and integration of water and environmental data between groups and to make it accessible to the public.

Why is it important to me?

The State Water Board goal is to improve and increase data transparency which, in part, is due to a lack of coordination among entities collecting water quality data. Monitoring data from several programs stored in CEDEN is readily available and easy for Water Board staff and the public to access from a single location. Being able to integrate data from many different programs will assist resource managers in answering a broader range of management questions.

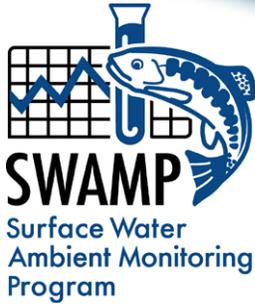
Standard templates will be publicly available for download to increase data comparability within the CEDEN network.

How will this information be used for Water Board Programs?

This information will be used to:

- Increase programs efficiency and leveraging of resources
- Increase geographic and temporal coverage in monitoring
- Provide all participating programs with data from several sources that would not be available otherwise

Users interested in submitting data should contact their local RDC to register projects. If you are unsure of which RDC to contact, please contact the help desk at (831) 771-4114.



Monitoring

What is it?

Monitoring is the collection of scientific data at specified intervals from a network of sites in order to answer assessment questions such as:

- What is the overall quality of California's surface waters?
- What is the pace and direction of change in surface water quality over time?
- Which water bodies have water quality problems and which areas are at risk?
- What are the causes of water quality problems and where are the sources of those stressors?
- How effective are water quality improvement projects and programs at protecting or restoring beneficial uses?

SWAMP monitoring activities include the design of monitoring programs, including survey schedules, site networks, measurement indicators, and statistical methods to best characterize resource condition; field observation and field sample collection; laboratory analyses of field samples; and retrieval and organization of relevant ancillary data (flow, land use, etc.) available from other sources. The resulting data are then evaluated or assessed to provide information for resource management. Prior to the start of a monitoring project, a Monitoring Plan and Quality Assurance Project Plan must be developed and approved. These documents also receive external peer review by known experts. The statewide and regional monitoring projects are collaborative efforts receiving financial support from SWAMP as well as one or more of our valued partners. Many of the monitoring efforts span multiple years.

Why is SWAMP monitoring data important to the State?

SWAMP monitoring programs address information needs at both the statewide and regional levels. SWAMP encourages data sharing, consolidation, and comparability by providing disparate projects and partner agencies with program-compatible database formats, management guidelines, and quality systems. Data collected by and for SWAMP are then used to conduct regional and statewide assessments. Statewide monitoring

Monitoring continued...



and assessments provide information on the status and trends of California waters to guide decisions made by the Legislature and State Environmental and Resource agencies. Regional monitoring and assessment provides rapid feedback for problem management, information to determine the causes and sources of impairments, identification of emerging threats, and evaluation of management effectiveness.

Why is SWAMP monitoring important to me?

Healthy surface waters (streams, rivers, lakes, bays, estuaries and coastal waters) provide multiple beneficial uses for California. The “aquatic life” beneficial use supports spawning grounds for fish, and food and shelter for bugs, fish, birds, and other wildlife. SWAMP monitoring supports the “drinkable” and “fishable” beneficial uses of our waters by collecting data on the levels of contaminants in the water and fish we might ingest. The monitoring of surface waters also support the beneficial uses of “recreation” and “swimming” by identifying healthy and impaired waters, to restrict access as needed, and reduce exposure to harmful compounds and pathogens. Degradation and impairment of water quality reduces the ability of a waterbody to provide these functions that we enjoy. Monitoring provides valuable information on the health of our waters – on both a statewide and local scale.



How will this information be used?

Data collected for and by SWAMP provides information that can be used to help answer the assessment questions listed above. It can also be used for making management decisions by recognizing that a water body is not meeting water quality objectives and requiring that actions be taken to protect all the beneficial uses of that waterbody.

SWAMP data are used by local agencies for developing permits and by State agencies in the development of fish consumption advisories and safe eating guidelines.



A list of SWAMP-sponsored Monitoring Projects in 2010 is provided below:

Statewide Effort

- Bioaccumulation Monitoring Program – Statewide Coastal Study Continued 2-yr study to assess contaminants in sport fish along California’s coast.
- Perennial Streams Assessment (PSA) Bioassessment Monitoring Program Continued statewide study to assess condition of perennial wadeable streams

using bioassessment (Perennial Streams Assessment and Reference Condition Management Program)

- Stream Pollution Trends (SPoT) Monitoring at Integrator Sites Continued the statewide study to assess stream contamination by assessing sediment chemistry and toxicity at integrator sites

Regional Efforts

- Sacramento Watershed Coordinated Monitoring Program - Continued (Central Valley Region) Seasonal Trend Monitoring at Central Valley Integrator Sites (Central Valley Region)
- Safe to Swim Monitoring - Continued (Central Valley Region)
- Collaboration of the Stormwater Monitoring Coalition (SMC) and Perennial Streams Assessment (PSA) Programs in Southern California - Continued (Los Angeles, Santa Ana, and San Diego Regions)
- Los Angeles River Watershed Monitoring Program - Continued (Los Angeles Region) Continued collaboration in the Los Angeles River Watershed Comprehensive Monitoring Program
- San Gabriel River Regional Monitoring Program - Continued (Los Angeles Region)
- North Coast Regional Trend Monitoring Program - (North Coast Region) Continue Rotational Regional Trend Monitoring Program of the North Coast: Russian River watershed, Eel River watershed, Coastal River watersheds, and the Klamath and Trinity River Basins.
- Nutrient Study - South Fork Eel River - (North Coast Region) Nutrients Monitoring



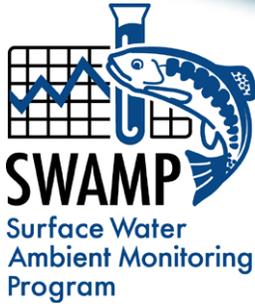


Program (North Coast Region) focuses on the association between nutrients and algal blooms along the south fork of the Eel River.

- Garcia River TMDL Implementation and Bioassessment Monitoring - Continued (North Coast Region) Continued to support trend monitoring and ongoing bioassessment work in implementation of the Garcia River TMDL
- Klamath Basin Monitoring Program - Continued (North Coast Region)
- Implementation of the Statewide SWAMP Algae Plan (Lahontan and San Diego Regions) This plan outlines how the types and quantities of algae present in streams & rivers can be used as indicator of the stream health.
- Effective Coordination of Monitoring and Assessment in the San Diego River Watershed (San Diego Region)
- Initiated a study of Pharmaceuticals and Personal Care Products (San Diego Region)
- Monitoring Spring Phytoplankton Bloom Progression In Suisun Bay (San Francisco Bay Region)

Conducted a study documenting the relationship between nutrient concentrations (including ammonium), and spring diatom blooms in Suisun Bay.





Assessment

What is it?

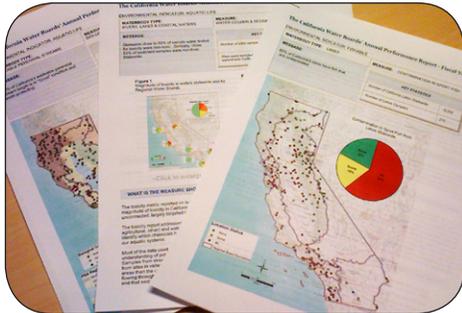
In order to provide information necessary for resource management decisions, data need to be collected through carefully designed monitoring, and those data need to be translated into policy-relevant information through data assessment. Assessment may take the form of comparing measured chemical concentrations against standards set to protect the beneficial uses of waterways. Assessment may include statistical analyses to evaluate average conditions across the landscape at a point in time, or to describe trends in condition over time. Assessments can incorporate other types of data, such as land use or management activity information, to determine causes of environmental impacts. To be of greatest value for decision making, monitoring must be designed to address clearly articulated assessment questions, and the resulting data must be of known quality and easily accessible.

Why is it important to the State?

Adequate and accurate monitoring and assessment are the cornerstones to preserving, enhancing and restoring water quality. Without evaluation or assessment, data are simply numbers from a laboratory test or field inventory. Water quality assessments turn monitoring data into policy-relevant information to protect and enhance the State's water resources. Assessments are used in the preparation of the Clean Water Act Section (CWA) § 305(b) reports on the status of water quality in California, and §303(d) listings of impaired waters throughout the State.

Why is it important to me?

Assessments help us to know many things about our State's water including: if it is safe to swim in our rivers, how healthy our rivers and streams are, how quickly

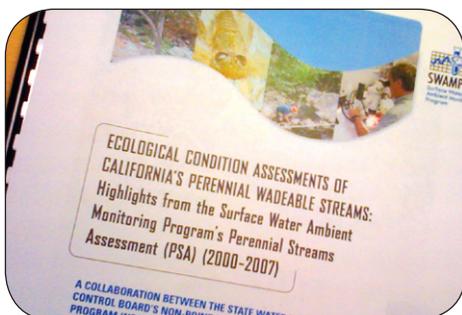


the health of our water bodies are changing and whether they are getting better or worse. They can also inform us on whether fish caught at popular fishing spots are safe to eat and what has caused water quality problems at a particular waterbody.

How will they be used?

SWAMP assessments are contained in interpretive reports, web-based information products, fact sheets, CWA §303(d) impaired water body listings, and the bi-annual CWA §305(b) report on the status of water quality in California. SWAMP assessment efforts are geared toward:

- Providing context for specific water resource issues;
- Developing and evaluating water quality indicators, such as chemical measurements, biological and ecological metrics, toxicity endpoints, and field observations, that adequately and repeatedly characterize environmental conditions;
- Setting assessment thresholds (values against which to compare measurement data) to determine whether water quality is sufficient to support its designated beneficial uses;
- Developing assessment tools: Assessment tools are procedures used to compare measurements (statistically or otherwise), with assessment thresholds in order to evaluate resource condition;
- Establishing a statewide assessment framework that describes the types of data needed from all partners to adequately answer the State's priority assessment questions.



A list of SWAMP-sponsored Assessments in 2010 is given below:

Statewide Effort

- Statewide Assessment of Toxicity in California Waters Published report summarizing nine years of sediment and water toxicity test results from California watersheds and coastal waters.
- Areas of Special Biological Significance (ASBS) Ambient Water Quality Studies (Coastal)
- Contaminants in Fish from California Lakes and Reservoirs 2-yr Study: Technical Report on Two Years of Screening Surveys. This



- is a Bioaccumulation Monitoring Program study.
- Published the Two-Year Lakes Study (2007, 2008): Frequently Asked Questions Fact Sheet (See Two-Year Lakes Report under the Assessment Tab)
 - Developed automated processing tools to assess all SWAMP data for inclusion in future integrated 303d/305b reports. Over 10,000 lines of evidence (LOEs) were created by this system in 2009 to support the listing process
 - Published SWAMP Assessment Framework

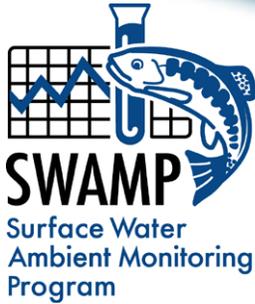
The Assessment Framework is a guidance document that will be used to assist other Water Board programs in designing monitoring programs that answer their management questions. The objective is to get data from other programs to be comparable with SWAMP.

- Updated the My Water Quality Safe to Eat Portal. SWAMP is the lead agency for the Bioaccumulation Workgroup which reports to the California Water Quality Monitoring Council.

Regional Efforts

- SWAMP Publishes: An Approach to Interpreting Narrative Objectives for Biostimulatory Substances along the Central Coast (Central Coast Region)
- San Joaquin River Basin Rotational Sub-basin Monitoring: Eastside Basin Report (Central Valley Region)
- San Joaquin River Basin Rotational Sub-basin Monitoring Project: Westside Basin Report (Central Valley Region)
- Published Urban and Agricultural Sources of Pyrethroid Insecticides to the Sacramento-San Joaquin Delta (Central Valley Region)
- Published a report on Water Quality Monitoring and Bioassessments in San Francisco Bay Region Watersheds at Select Reference Sites, 2007 – 2010. (San Francisco Bay Region)





Communication and Outreach

What is it?

An important part of scientific inquiry is the communication of results. SWAMP communicates by sharing the analysis of its monitoring data through reports, presentations and web-based interactive materials. SWAMP monitoring produces data that program scientists evaluate, analyze, and present as information to answer water quality assessment questions.

Why is it important to the State?

SWAMP strives to create and deliver communication products in ways that most effectively provide the information needed by decision makers to manage California's water resources. SWAMP also works to communicate scientific findings to the general public.

Why is it important to me?

All SWAMP programs produce data that program scientists evaluate, analyze, and present as information to answer assessment questions. SWAMP communicates this information in a number of consistent formats designed to effectively reach target audiences. SWAMP produces a newsletter (The Monitor), fact sheets on specific issues, meeting presentations for agencies, partners, and the public, interpretive reports, including the CWA required State 305(b)/303(d) Integrated Report, and water quality assessments on SWAMP's statewide monitoring programs (Bioaccumulation in Sport Fish, Perennial Streams Assessment (PSA), Stream Pollution Trends (SPoT), and the Statewide Toxicity Report).

How will it be used?

SWAMP communicates this information in a number of consistent formats designed to effectively reach target audiences. Types of SWAMP information products include:

- An annual Achievements Report that describes current SWAMP activities and highlights annual accomplishments;

Communication and Outreach continued



- An annual meeting to disseminate SWAMP information and receive feedback from partner monitoring organizations and stakeholders;
- Interpretive reports providing assessments from key SWAMP programs on important water quality issues;
- State of the State reports on key issues and to fulfill the State's reporting obligations under section §305b of the Clean Water Act;
- A semi-annual newsletter, The Monitor, to promote opportunities for coordination and to alert readers to availability of larger SWAMP information products;
- Fact sheets with abbreviated highlights of SWAMP assessments;
- Electronic email updates to alert partners and stakeholders to the availability of recent documents;
- Data submitted to the SWAMP database and made available to the public through CEDEN;
- Data products from the SWAMP database to be used both by external scientists and by agency staff responsible for impaired waterbody (§303d) listings, TMDL programs, stormwater monitoring, waste receiving water monitoring, and other water quality protection programs.



SWAMP Publications (General) - 2010

Statewide Effort

- Fall 2010 SWAMP Monitor Newsletter
- SWAMP Strategy 2010 Update

Published the Updated SWAMP Comprehensive Monitoring and Assessment Strategy to Protect and Restore California's Water Quality (SWAMP Strategy). This document was then appended to the Comprehensive Water Quality Monitoring Program Strategy by the California Water Quality Monitoring Council (CWQMC).

- Published the Two-Year Lakes Study (2007, 2008): Frequently Asked Questions Fact Sheet



A list of SWAMP Communication Activities in 2010 is provided below:

- Presentation of Water Board information systems (including California Environmental Data Exchange Network (CEDEN) and SWAMP) to legislative staff - April 2010
- Upgraded the “My Water Quality” Internet Portals, (California Water Quality Monitoring Council)
- Reorganized and improved the SWAMP website
- Clean Water Team (CWT): CreekWatch App Released
- CWT “At Your Service” interactive map
- California Water Quality Monitoring Collaborative Network Webinar Series (2010)
- Continued SWAMP webinars series; Nine webinars were produced in 2010:
 - Biological Objectives - Introduction to Bioassessment
 - Establishing Reference Conditions for CA’s Wadeable Perennial Streams
 - Sublethal Responses to Environmental Stressors in Fish: an Integrative Multi-biomarker Approach
 - The Importance of a Stream’s Physical Habitat Condition and How to Measure It
 - The Ecology of Benthic Macroinvertebrates and How to Collect and Describe Them
- Central Coast (Region 3) Monitoring and Data Assessment Activities
- San Francisco Bay Regional Board Regional Monitoring and Data Assessment Activities
- Central Valley Regional Board SWAMP Monitoring and Data Assessment Activities
- SWAMP Monitoring and SWAMP Leveraged Monitoring in the San Diego Region – past, present, future
- Presentations
 - Biological Objectives: Presented to the California Aquatic Bioassessment Workshop (CABW) and the California Water Quality Monitoring Council (CWQMC)
 - General SWAMP Overview: Presented to the Wetlands 401 Certification Group and the CABW



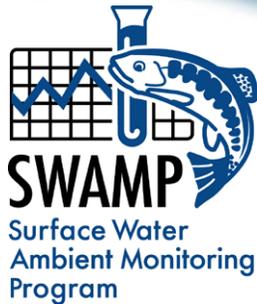
News Coverage

- Featured in regional news coverage – Contaminants in Fish from California Lakes and Reservoirs, 2007-2008: Summary Report on a Two-Year Screening Survey
- Featured in regional news coverage – Summary of Toxicity in California Waters: 2001 – 2009

Regional Efforts

- Central Coast Ambient Monitoring Program (CCAMP) Website Release - Upgraded the “My Water Quality Internet Portals, (CWQMC) (Central Coast Region)
- Central Valley Monitoring Directory – Released (Central Valley Region)



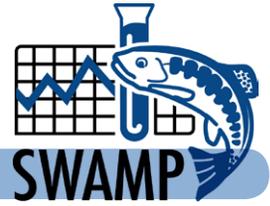


Coordination - Partners

SWAMP works with partners to coordinate monitoring efforts among many groups and agencies, and to facilitate the use of data from many sources in statewide and regional assessments.

The list of SWAMP Partners in 2010 included:

- Biological Objectives Policy Advisory Groups (Stakeholder, Scientific and Regulatory)
- SWRCB Oceans Unit: Areas of Biological Significance (ASBS)
- Cal EPA Environmental Indicators Development Team
- California Department of Fish and Game, Aquatic Bioassessment Laboratory
- California Department of Fish and Game
- California Department of Water Resources, Northern District
- California Office of Health Hazard Assessment
- California Water Quality Monitoring Council (CWQMC)
- California Environmental Data Exchange Network (CEDEN) Regional Data Centers (RDC)
 - Central Valley Regional Data Center (CV RDC)
 - Moss Landing Regional Data Center (MLML)
 - San Francisco Estuary Institute (SFEI)
 - Southern California Coastal Water Research Project (SCCWRP)
- Sacramento - San Joaquin Delta Regional Monitoring Program (Delta RMP)
- Grasslands Bypass Project
- Klamath Basin Monitoring Program
- Moss Landing Marine Laboratories, Marine Pollution Studies Laboratory
- Natural Resource Projects Inventory
- Romberg Tiburon Center



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Coordination - Partners continued...



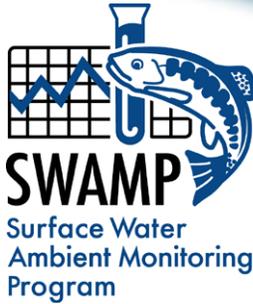
- San Diego River Watershed Monitoring and Assessment Coordination
- San Francisco Estuary Institute
- San Francisco Estuary Regional Monitoring Program
- San Gabriel River Regional Monitoring Program
- San Joaquin River Restoration Program
- Southern California Bight Regional Monitoring Program
- Southern California Coastal Water Research Project
- State and Federal Contractors Water Agency (SFCWA)
- Stormwater Monitoring Coalition
- U.C. Davis Aquatic Toxicology Labs
- U.C. Davis Marine Pollution Studies Laboratory at Granite Canyon
- U.S. Environmental Protection Agency
- U.S. Geological Survey (USGS)



COORDINATION – State and Regional Water Board Program Partners

- Ag Waivers/Irrigated Lands Regulatory Program
- Bay-Delta Program - San Francisco Bay/Sacramento - San Joaquin Delta Estuary Program 401 Certification and Wetlands Program
- Clean Water Team - Citizen Monitoring of the Surface Water Ambient Monitoring Program
- Grants Projects
- Nonpoint Source Pollution Control Program
- NPDES Permitting Program
- Ocean Standards Program
- Stormwater Program
- Total Maximum Daily Loads Program





Management Decisions

Data is routinely used by the State Water Resources Control Board and the nine Regional Water Quality Control Boards to inform assessment reports, to make enforcement decisions, to develop permits and programs, and to make Clean Water Act 303(d) listing and 305(b) reporting decisions.

Examples of specific management decisions made in 2010 include:

- Biological Objectives Development (SWAMP)

Biological Objectives are being developed for California streams to establish thresholds for biological condition that will be implemented in SWAMP regulatory programs. The Perennial Streams Assessment (PSA) and Reference Condition Management Plan (RCMP) data are being used to support this effort.

- Ammonia & diatom correlation study effects Sacramento Regional Wastewater Treatment Plant NPDES discharge permit (San Francisco Bay Region)

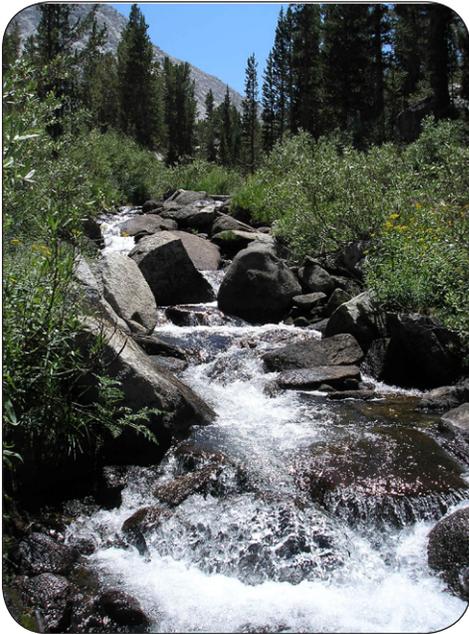
Results from the San Francisco Bay Regional Water Board SWAMP study on the relationship between ammonium and spring diatom blooms in Suisun Bay played a significant role in decisions by Central Valley Regional Water Board on discharge limits in the NPDES permit renewal of the Sacramento Regional Wastewater Treatment Plant.

- Urban and Agricultural Sources of Pyrethroid Insecticides to the Sacramento-San Joaquin Delta (Central Valley Region)

Findings in the Urban and Agricultural Sources of Pyrethroid Insecticides to the Sacramento-San Joaquin Delta report support inclusion of requirements for whole effluent toxicity testing using *Hyaella azteca* as waste discharge requirements for the Sacramento Regional County Sanitation District discharge permit.

- 303d listings based on SWAMP Data (Central Coast Region & Bioaccumulation Workgroup)

The 2010 Integrated Report [Clean Water Act Sections 303(d) and 305(b)] contained over 11,000 lines of evidence (LOE) for the listing and delisting of waterbodies



that were generated from SWAMP data. The Central Coast Regional Water Board SWAMP program (CCAMP) developed software to analyze all Central Coast SWAMP data electronically, and develop “Lines of Evidence” for listing and delisting of impaired waters in the Central Coast Region, 2008 Integrated Report. This approach allowed the Central Coast Region to produce over 10,000 LOEs for the 2008-2010 Integrated Report, with much of it originating from SWAMP data. In the Central Coast, a number of water bodies were listed as impaired for aquatic life uses by nitrate in the 2008-2010 Integrated Report. The listings were based on exceedance of numeric action levels for nitrate with supporting evidence of eutrophication. The action level was developed by staff using nutrient information for the Central Coast Region, currently in the SWAMP database, and through application of the State’s Nutrient Numeric Endpoint technical approach.

- SWAMP Bioassessment Data Provided Critical Information in the Adoption of the New Riverside Municipal Stormwater Permit (San Diego Region):

Previous versions of the Municipal Separate Storm Sewer System (MS4) Permit for southwest Riverside County were typically less stringent than concurrent MS4 permits for portions of San Diego and Orange Counties under the purview of the San Diego Water Board. This, in part, contributed to degradation of water quality as rapid development occurred in southwestern Riverside County.

In preparation for the permit reissuance, a review of SWAMP benthic macroinvertebrate (BMI) data clearly demonstrated that the ecological health of urban sites in southwestern Riverside County was consistently poor and had declined over the past several years, while the ecological health of minimally impacted reference sites was consistently good, with some improvement over time. The degradation of water quality identified by SWAMP bioassessment data was sufficiently troubling to warrant permit changes. The San Diego Water Board adopted a new MS4 Permit for southwestern Riverside County on November 10, 2010.

The new permit is comparable to the Orange County Municipal Stormwater Permit that was adopted in 2009. These two municipal stormwater permits now include numeric action levels,



detailed and extensive monitoring requirements, as well as the inclusion of low impact development mandates and the obligation to develop hydro-modification management plans. The SWAMP data graphically demonstrated declining water quality and a direct assessment of Beneficial Uses in the urban environment; which were both critical considerations during development and adoption of a more stringent MS4 permit.

- Fish Consumption Advisories

Since the release of the Statewide Lakes 2-year report on the bioaccumulation of contaminants in sport fish in June 2010, several Regional Water Quality Control Boards (RWQCB) have followed-up with the initiation of additional sampling in problem areas, collaboration with County Health Officials to post warnings at lakes with high contaminant concentrations in fish, and responding to media interest. Follow-up sampling was initiated in the San Francisco Bay, Central Coast and Santa Ana Regions at locations with significantly elevated contaminant tissue levels. Working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), the additional data collected will be used to develop new fish consumption advisories for the public at select lakes.

- Data Screening Software

The State adopted the Central Coast Regional Water Board's software to comprehensively screen all the States SWAMP data for the 2012 303(d) List, and evaluated all data sources for all applicable beneficial uses.

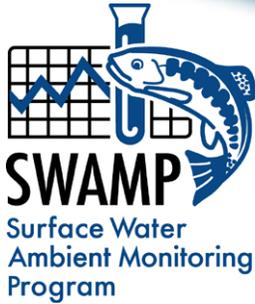
- Toxicity Summary

Supported recommendations in the draft Toxicity Policy.

- Stormwater Permitting and Conditional Waivers

Recommended using toxicity testing in stormwater permitting and conditional waivers of waste discharge requirements for agriculture.





The Future – SWAMP 2011 COMMITMENTS

Many of the programs and projects that had accomplishments in 2009 are multiple year efforts that will continue to have work products throughout the length of the study. Anticipated accomplishments for SWAMP directed and collaborative projects in 2011 include:

Comparability - Guidance, Quality Assurance, and Data Management

- Create documentation for Bioassessment Data Submission templates
- Add bioassessment data checks to the SWAMP Online Data Checker
- Publish plans for a screening study to evaluate bioaccumulation of contaminants in sport fish found in California's Rivers and Streams.
 - Sampling and Analysis Plan (SAP)
 - Related Quality Assurance Program Plan (QAPP)
- Establish minimum data elements and data format requirements for CEDEN and Integrated Report submissions
- Beach Watch database (Southern California Coastal Water Research Project - SCCWRP)

Monitoring

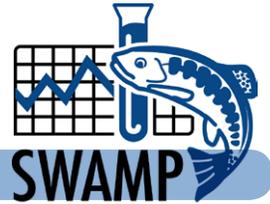
Continue to sponsor statewide programs and regional projects:

- Bacterial Study (Central Valley Region)
- Publish Reference Site Study as Technical Report (San Francisco Bay Region)
- Develop a regional creek monitoring design in coordination with the SF Bay Regional Monitoring Coalition (San Francisco Bay Region)



Assessments

- Publish a detailed interpretive report and associated regional reports, as a follow-up to the Summary of Toxicity in California Waters: 2001 – 2009 report published in 2010
 - Publish the Monitoring Spring Phytoplankton Bloom Progression In Suisun Bay study in a peer reviewed journal (San Francisco Bay Region)
 - Publish Ecological Condition Assessments of California's Perennial Wadeable Streams: Highlights from the Surface Water Ambient Monitoring Program's Perennial Streams Assessment (PSA) (2000 - 2007) report
 - Publish three Perennial Streams Assessment (PSA) Managers Memos highlighting aspects of the eight year report (Statewide)
 - Extent of California's Perennial and Non-Perennial Streams
-
- Value of SWAMP's Statewide Monitoring Programs
 - Status of California's Wadeable Perennial Streams (2000-2007)
 - Publish Stream Pollutant Trend (SPoT) Monitoring at Integrator Sites Technical Report – First year data
 - Publish Healthy Streams Partnership Report
 - Publish the Central Valley Safe-to-Swim Reports
 - Publish the Sacramento Watershed Coordinated Monitoring Program Report
 - Publish the Sacramento Watershed Coordinated Monitoring Program Year 1 Fact Sheet
 - Publish the Central Valley Bacteria Source Identification Screening Study
 - Publish the report on Contaminants in Sport Fish from the California Coast: Summary Report on Year One of a Two-Year Screening Survey)
 - Final report,
 - Fact Sheet,
 - Press release, and



SWAMP
Surface Water
Ambient Monitoring
Program

The Future – SWAMP 2011 COMMITMENTS continued...



- Updated Safe to Eat Portal on the My Water Quality website.
- Publish the Stormwater Monitoring Coalition Year One Fact Sheet: Assessing the Health of Southern California Streams
- Updated Performance Outcome Measures for ecosystem health indicators: Bioassessment, Bioaccumulation, Sediment toxicity and Water toxicity.

Communication And Outreach

- Upgrade CEDEN with new data types and set up to feed “My Water Quality” Portals
- Create and release Healthy Streams Web Portal
- Draft SWAMP Communications Strategy
- Deliver additional Webinars
- Produce and circulate Quarterly Monitor Newsletters
- Release Citizen Monitoring Directory

Coordination - Partnerships

- Continue to support existing partnerships
- Forge new partnerships as appropriate
- Publish integrated report by SWAMP, the Regional Monitoring Program for Water Quality in the San Francisco Estuary and the Southern California Bight Regional Monitoring Program, on coordinated monitoring of sport fish along the California coast



SWAMP Achievements Report 2010

http://www.waterboards.ca.gov/water_issues/programs/swamp

