SWAMP Monitor Newsletter

Fall 2011

In This Issue

SWAMP 2010 Achievements Report

It has been a year since the last SWAMP Monitor newsletter was published. A lot has happened since then - (See the SWAMP Achievements Report 2010).

This issue of the SWAMP Monitor contains articles about SWAMP activities in 2011. For more information on any of the topics, please visit the SWAMP website.

Mary Tappel

SWAMP Website Coordinator

Monitoring the Health of the San Gabriel River Watershed (in the Los Angeles Region)

The Council for Watershed Health and its partners envision a healthy, sustainable San Gabriel River Watershed that meets the water quality, water supply, recreational and habitat needs of its human and biological communities. With over 1,236 miles of streams stretching from the San Gabriel Mountains to the Pacific Ocean, the San Gabriel River Watershed supports a population of more than 2.3 million people. Protection and management of this resource requires an understanding of the watershed's overall health and the major stressors that affect its condition.

East Fork, San Gabriel River

In 2004, a group of local, state and federal stakeholders formed the San Gabriel River Regional Monitoring Program (SGRRMP) to integrate and expand monitoring efforts in the San Gabriel River watershed. By providing a framework for monitoring at the watershed scale, the SGRRMP aims to provide regional information specifically designed to answer five key management questions: 1) What is the condition of streams in the watershed?; 2) Are conditions at areas of unique interest getting better or worse?; 3) Are receiving waters near discharges meeting water quality objectives?; 4) Is it safe to swim?; and 5) Are locally caught fish safe to eat?

Valley Water Board

Farewell to SUSAN!
Farewell to Adam

Recent & Upcoming Events

Quick Links

To Receive SWAMP Program Updates (including future Newsletters) Click Here

SWAMP WQ Monitoring Lyris ListServe

More About SWAMP

Shakoora Azimi-Gaylon - New OIMA Assistant Director

Shakoora Azimi-Gaylon recently joined the OIMA and SWAMP team as the Assistant Director of the Office of Information Management and

Since 2005, the SGRRMP has performed rigorous, scientific monitoring at targeted and randomly selected sites distributed throughout the watershed during dry weather, including the mountainous upper watershed, the highly urbanized lower watershed and the main stem of the river. Building upon a backbone of early monitoring efforts funded by the State of California's Surface Water Ambient Monitoring Program (SWAMP), local stakeholders have developed an integrated watershed monitoring program that provided context to answer essential management questions, while improving monitoring efficiencies.

On July 20, 2011, a symposium entitled "State of the San Gabriel River Watershed" was held in Whittier, California. Speakers and panelists included staff from state and local agencies, city managers and local scientists. The symposium presented the results from a Five-Year State of the Watershed report, which represents the culmination of a successful, cooperative watershed scale assessment program. More than 100 interested stakeholders attended the symposium.

Lake Piru

To help disseminate the monitoring data and other information available about the watershed, the Council for Watershed Health has created the San Gabriel River Watershed Data Portal. At this web site, users can find and easily access information about water quality, resources and land uses. The data portal and other useful information can be found at: http://lasgrwc2.org/programsandprojects/sgrrmp.aspx.

For additional information or assistance, please contact Kristy Morris, Senior Scientist, at kristy@watershedhealth.org.

Michael Lyons
Staff Environmental Scientist
Los Angeles Regional Water Quality Control Board

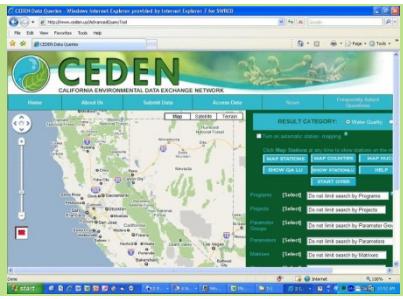
email: mlyons@waterboards.ca.gov

Update from the Data Management Team

The SWAMP Data Management Team (DMT) has been busy with their regular tasks as well as adding new functionality to the SWAMP Data Management System. The DMT continues to work with all nine Regional Water Boards as well as project management for the four statewide monitoring programs. This includes regular services of assisting in training labs and field crews on data entry and reporting, loading of data reported from laboratories and field crews, and working with project staff to make sure the project data is complete and comparable with the rest of SWAMP. Once complete, the DMT makes these data available to the public and larger audiences via CEDEN.

Analysis.

Shakoora Azimi-Gaylon was named Assistant Deputy Director of OIMA in April 2011. Shakoora has worked in water quality throughout her environmental career. She has a masters in environmental science and an undergraduate degree in chemistry. Shakoora has 15 years experience in analytical and research chemistry and environmental project managements. Shakoora began her Water Board career with the Central Valley Water Board in 2000 where she designed and implemented water quality monitoring programs, developed TMDLs, and worked on designing monitoring requirements for the Irrigated Lands Regulatory



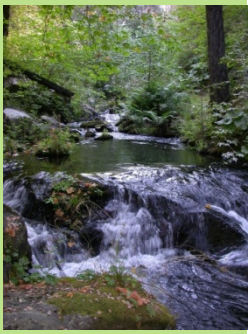
CEDEN Advanced Query Tool

Along with these tasks, the DMT continues to improve systems for our users. An additional data entry system for entering bioassessment related field data to the SWAMP database was created this spring. This adds greater flexibility for simultaneous loading of both field and laboratory data. A Bioassessment Reporting Module was created to report Bioassessment Benthic Macroinvertebrate Indices of Biotic Integrity (B-IBI). The DMT will be working with the Bioassessment Workgroup to produce physical habitat metrics this fall. The DMT will also be working to improve access to SWAMP data by Board staff and internal data users.

There have been several significant additions to the database including historical taxonomy and physical habitat data from the Sierra Nevada Aquatic Research Laboratory. The SWAMP soft algae master taxonomy list has been approved and the corresponding data are being added this fall. The DMT has been working closely with the Central Valley Water Board to move their Safe to Swim Bacteria projects through the SWAMP system for more rapid reporting. These data are being collected, analyzed, reported, verified and made available to the public via CEDEN on a monthly basis.

Stacey Swenson, Golden Mouse DMT Internal Award Winner

SWAMP Partnership with the Bay Area Regional Monitoring Coalition



The Municipal Regional Stormwater NPDES Permit (MRP) was adopted by the San Francisco Bay Regional Water Quality Control Board on October 14, 2009. In early 2010, San Francisco Bay Area public agencies joined together to form the Bay Area Stormwater Management Agencies Association (BASMAA) Regional Monitoring Coalition (RMC) to coordinate and oversee water quality monitoring required by the MRP. The RMC monitoring plan will answer the questions: "Are water quality objectives, both numeric and narrative, being met in local receiving waters, including creeks, rivers and tributaries?"; and "Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?". In addition, the unique probabilistic sample design of the RMC Creek Status and Trends Survey will be able to answer additional management questions such

Program. She joined the State Board's Ocean Standards unit in 2005 and worked as the Chief of Water Quality Assessment Unit in the Division of Water Quality from 2007 to 2011. Shakoora welcomes the opportunity as the Assistant Deputy Director and looks forward to working with the Surface Water Ambient Monitoring Program staff and partner organizations across the State. She will continue to embrace the SWAMP high quality monitoring progr ams while working with the SWAMP team to move forward to the next phase!

Welcome Shakoora!

SWAMP

as:

1. What is the condition of aquatic life in creeks in the San Francisco Bay Area?
2. What are the major stressors to aquatic life?
3. What are the long-term trends in water quality in creeks over time?

The San Francisco Bay Regional Water Quality Control Board's Surface Water Ambient Monitoring Program (Region 2 SWAMP) has joined the RMC to assist with sampling perennial and non-perennial creeks and rivers in the Bay Area. Additional participants include many city and county programs. In addition, the draft Phase II NPDES permit allows municipalities in the North Bay to join this large-scale monitoring program.

Region 2 SWAMP will assist this collaboration by sampling 10 sites per year over the five year study (2012-2016). These sites will be spread across the five counties of Solano, Contra Costa, Alameda, Santa Clara and San Mateo. Region 2 SWAMP will specifically sample sites in non-urban environments in order to document stream conditions in relatively undisturbed habitats to provide a much needed frame of reference for the urban sites sampled under the NPDES permit. Sampling methods will include the full SWAMP protocol for bioassessment including benthic macroinvertebrates and algae in addition to a full physical habitat assessment and testing for basic water chemistry http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/standard-operating-procedures.

Mount Tamalpias from Pinole

This monitoring project has implications for other statewide and regional Water Board activities. Data generated in this study will contribute to the data available to develop statewide biological objectives, numeric criteria based on the macroinvertebrate community which will relate to the aquatic life beneficial use. These data will also be used to improve the number of reference sites in the Bay Area for the Bay Area Index of Biotic Integrity, a tool used to quantify the biological condition in local streams and creeks. Furthermore, these data will be submitted to the California Environmental Data Exchange Network (CEDEN) and be available to partners in the water quality community and general public. The sampling design for this project was developed so that RMC data can be integrated with data from the SWAMP statewide design, contribute data for 303(d) assessments, contribute data which can be used to enforce anti-degradation policy, and help evaluate NPS and BMP effectiveness.

This project follows recommendations by the 2006 Scientific Planning and Review Committee review of California's SWAMP program to leverage its funds with other programs and meets many SWAMP Core Implementation Priorities listed in the 2010 SWAMP Strategy including: 1) implementing regional monitoring programs; 2) guiding development of assessment tools that will be developed from this project and existing data (Bay Area IBI and Bio-objectives numeric tool); and 3) engaging Water Board regulatory programs (NPDES) to integrate Quality Assurance Systems.

& Partners

California Water Boards

Surface Water Ambient Monitoring Program

U.S. Environmental Protection Agency, Region IX

California Department of

The San Diego Water Board Makes Monitoring One of its Highest Priorities!

David Gibson, San Diego Region Executive Officer

The San Diego Water Board has taken steps to make the water quality monitoring of ambient waters one of its highest priorities by creating a Monitoring, Assessment, and Research Unit (MARU) staffed with scientists, engineers, and geologists. Cynthia Gorham, Senior Environmental Scientist, is leading the unit. The following staff are working in the unit: Barry Pulver (Ag Waiver Monitoring, and 303d/305b Report), Cathryn Henning (TMDL Monitoring), and Lilian Busse (SWAMP Coordination, MS4 Monitoring). Bruce Posthumus (Monitoring and Surveillance Coordinator) also works closely with the unit.

The goal of the new unit is to improve coordination and usefulness of regulatory and non-regulatory water quality monitoring in the San Diego Region. Also, MARU will help implement the new strategy of the San Diego Water Board to restructure its monitoring programs from being compliance/discharger-oriented towards being waterbody/beneficial use-oriented. Such coordination and strategy implementation will improve the assessment of water bodies/beneficial uses, will help evaluate the effectiveness of management efforts, and will help management efforts to be more effective.

In keeping with this goal, the San Diego Water Board SWAMP program is funding a project to substantially improve coordination and usefulness of monitoring in the San Diego River Watershed. This project implements the statewide 2010 SWAMP Strategy and SWAMP Assessment Framework by working to ensure that monitoring is question-driven and that Water Board programs are coordinated. Brock Bernstein, facilitator for this project, together with the stakeholders are developing an integrated and cost-effective comprehensive monitoring plan for this watershed.

SWAMP Quality Assurance Team - Fiscal Year 2010-2011 Summary

Fish & Game

San Francisco Estuary Institute

Moss Landing Marine Laboratories Water; Marine Pollution Studies Laboratory

Southern California Coastal Water Research Project

SWAMP Quality Assurance Team continued -

The SWAMP Quality Assurance (QA) Team (QAT) is staffed by the QA Research Group at the Moss Landing Marine Laboratories. In 2005, the QAT began building SWAMP's infrastructure with planning and procedural documents, trainings, assessments, and consultations. More recently, the group has worked to apply this infrastructure to other State Water Resources Control Board (State Board) programs and projects.

Kayak & Sea Lions at Moss Landing

Much of this outreach occurs though the SWAMP QA Help Desk, which is meant to help external parties (e.g., municipalities, non-profits) understand QA requirements. In fiscal year (FY) 2010-2011, the Help Desk spent over 1,000 hours on document review and creation; training; and research. As SWAMP continues to coordinate with other State Board programs, the QA Help Desk will remain an important resource.

Sea Lions at Moss Landing

One of the QAT's recent outreach efforts has been the adoption of marine matrices into SWAMP's measurement quality objective (MQO) and sample handling requirements. In cooperation with stakeholders and the State Board's Ocean Unit, the QAT has worked to establish matrix-specific guidelines that are based on the California Ocean Plan. Another recent collaborative effort has been the establishment of SWAMP reporting limit (RL) requirements for fresh water and marine matrices. This has involved numerous parties (e.g., contractors, State Board), as well as extensive method and database research.

Central Coast Region Ambient Monitoring Program - CCAMP

Central Coast Ambient Monitoring Program - In 2010, Pinto Lake in Watsonville (Santa Cruz County) was placed on the 303(d) list of Impaired Waters because of high levels of microcystin associated with periodic cyanobacteria blooms. A group of researchers, from California Department of Fish and Game, U.C. Santa Cruz, U.C. Davis, Applied Marine Sciences,

Pinto Lake Algae Sample

USGS, Monterey Bay Aquarium, Department of Public Health, and State Water Resources Control Board, linked deaths of 21 sea otters to microcystin intoxication. They also found microcystin in the Pajaro River downstream from Pinto Lake, as well as in several locations along the Monterey Bay coastline, and showed that bivalves can effectively bioaccumulate microcystin toxin. These findings provide compelling evidence that toxins from freshwater cyanobacteria blooms may be moving into the marine environment and impacting a federally listed threatened species and potentially other marine species.

CCAMP is working with Dr. Raphe Kudela at U.C. Santa Cruz to place Solid Phase Adsorption Toxin Tracking (SPATT) devices in all of our coastal confluence monitoring sites this summer. SPATT essentially act like fake clams - they are hydrophobic membranes that can passively capture and retain microcystin toxin when suspended in the water over a period of time. SPATT sampling will allow us to screen for presence of this toxin in the majority of our Region's watersheds. Dr. Kudela has already found that the toxin is present in other watersheds, including Carmel and even Big Sur. Cyanobacteria blooms may be much more wide-spread than we have realized in the past, though perhaps not always in concentrations that cause toxicity. Central Coast Water Board Scientists are hoping that the Pinto Lake research will give us better tools to address this serious problem and that CCAMP monitoring can identify which watersheds should be prioritized for additional source identification work.

CCAMP is also working with members of the same team to further explore the relationship between freshwater nutrient plumes, toxic cyanobacteria and plankton blooms, and sea otter mortality. Several years ago, we added urea and silicate to the otherwise extensive list of nutrients we are monitoring monthly at our coastal confluence trend sites. This data has already been used, along with modeled flow, in U.C. Santa Cruz research examining the influence of anthropogenic sources of nutrients relative to upwelling in stimulating plankton blooms. This new work will examine risk factors for microcystin intoxication in sea otters, and will look at potential cross-connections between nutrient outflows and sea otter deaths from cyanotoxins or marine algal toxins.

Southern Sea Otter

Russian River Nutrient Study (North Coast)

The North Coast Region's SWAMP Program has been conducting a nutrient study in the Russian River drainage. At low to moderate concentrations, nutrients provide an integral part of the health and integrity of a waterbody. Healthy nutrient concentrations foster algal growth, which provides the important base functions of stream ecology.

Algae provides the basis for food production as primary producers in the aquatic food chain. Algae also provides important habitat for invertebrates and other organisms within a waterbody, and is an important source of dissolved oxygen necessary for aquatic life survival. Algal productivity and density is maintained at healthy levels through a balance of a variety of factors that are subject to human influence including but not limited to: nutrient concentrations, flow, temperature, channel configuration, riparian conditions, and the aquatic grazing community. All of the factors listed above have been modified to a significant extent within the Russian River drainage. Disturbance of this balance can lead to conditions of impaired water quality conditions that do not support beneficial uses (e.g., aquatic life, recreation) within the waterbody.

Excessive nutrient enrichment in combination with other factors can lead to cases of nuisance algal growth or blooms, impacting dissolved oxygen and pH levels negatively which in turn affect the aquatic life within the waterbody. Algal blooms can negatively effect many beneficial uses of water, lead to depressed dissolved oxygen conditions and alter the pH of a waterbody causing a stressful environment for aquatic life. In addition, nuisance algal blooms can affect the aesthetics and enjoyment of a waterbody, leading to limitations on usage which can have an impact on a local economy. Finally, some algal species associated with algal blooms can produce toxins that are harmful or potentially lethal to animals or humans that drink the contaminated waters or ingest the water during recreational use.

The lower Russian River experiences algal blooms every year. At this time, little is known about the current nutrient loading and cycling in the Russian River. The purpose of this study is to evaluate the current nutrient conditions of the Russian River. The results of this monitoring study will provide valuable information to develop an understanding of the relationship between nutrients and algal growth and composition.

This monitoring effort provides information on issues that concern everyone in our state. The monitoring was designed to address local watershed concerns, including impacts to recreation, aquatic life, habitat, and drinking water beneficial uses. The findings within this report also can help determine future program design by focusing resources toward identified concerns.

Safe to Swim Monitoring Central Valley Water Board

Since 2007 the Central Valley Water Board's SWAMP has conducted a series of Safe to Swim studies focused on swimming holes in creeks, rivers, and springs throughout the Central Valley. SWAMP staff have coordinated with over twenty citizen monitoring groups to identify swimming holes in their local areas. For monitoring groups that were interested, SWAMP staff have provided training and supplies. These partnerships have enabled SWAMP to expand the number of swimming holes included in the studies. The studies use E. coli as a pathogen indicator to assess swimming safety. More targeted efforts have also monitored for specific pathogens in the swimming holes. More information, including reports and results, is available on the Central Valley Water Board SWAMP website.

Rainbow Pools, South Fork Tuolumne River Swimming Hole

In 2011 the Central Valley Water Board's SWAMP conducted Safe to Swim monitoring throughout the summer swimming season. Monitoring included swimming holes, as well as some upstream and downstream sites. A core set of sites were monitored twice a month by SWAMP staff and additional sites were monitored monthly by partnering citizen monitoring groups. Seventy-five sites were monitored between April and September. Over thirty sites were monitored for specific pathogens in May and June. SWAMP partnered with seven citizen groups to help conduct sampling in 2011.

Data from the 2011 Safe to Swim study are currently being compiled and assessed to determine if there is evidence it is not safe to swim in any of the swimming holes or swimming beaches. Data will also be compared with the results from previous years to look for trends or patterns. A preliminary review of the data show that Cryptospridium and/or Giardia were detected in samples from 22 sites. Salmonella and E. Coli O157:H7 were not detected at any of the sites sampled. Runoff from the wet winter and spring likely impacted results.

The Central Valley Water Board is currently developing a three year Safe to Swim monitoring plan. The plan calls for continued monitoring of E. coli and pathogens throughout the summer swimming season in order to assess conditions at individual swimming holes, look for changes or patterns during the swimming season, and compare results from year to year.

Popular South Fork American River Swimming Beach, Lotus, CA

For more information about the Safe to Swim monitoring or to participate, contact: Catherine Gill, cgill@waterboards.ca.gov

For more information about Central Valley Water Board SWAMP activities, contact: Alisha Wenzel, awenzel@waterboards.ca.gov

Farewell to SUSAN ...

Susan Monheit in her SWAMP Office

Susan came to SWAMP a year and a half ago as our SWAMP Communications Coordinator. When she came aboard, she said she felt as though she was coming home. She had worked with many of the SWAMP family over the last 20 years and felt as though she already belonged.

With her Watershed Science research background, as well as excellent writing skills, she was an important addition to our SWAMP team.

Susan now leaves us to move up the ladder. She has taken a promotional position with the Water Board's Division of Water Rights as a Federal Energy Regulatory Commission (FERC) unit supervisor. We hope she both enjoys it, and consults with us often for mutual benefit. Susan will be missed!

Farewell to ADAM ...

Adam Ballard

Adam Ballard, currently on loan to the Division of Water Rights, is soon moving on to the Department of Fish and Game's Water Branch. There he will be working on watershed assessment related activities, and will still cross paths with SWAMP staff. We will miss Adam!

Recent & Upcoming Events

Development of Biological Objectives
The Biological Objectives Advisory Groups (Stakeholder, Scientific and Regulatory) recent meetings:

Regulatory Advisory Group- September 28, 2011
Stakeholder Advisory Group- September 30, 2011
Scientific Advisory Group- October 12-13, 2011

Next meetings:
Stakeholder and Regulatory Advisory Groups in January 2012
Stakeholder, Scientific and Regulatory Advisory Groups in Spring 2012

Check the DEVELOPMENT OF BIOLOGICAL OBJECTIVES webpage for agenda posting and details.

California Aquatic Bioassessment Workgroup, Annual Meeting was held November 9-10th, 2011.

For more information contact: Jim Harrington (916) 358-2862, jharring@ospr.dfg.ca.gov

The next CABW meeting will be held in November 2012

The California Water Quality Monitoring Council
Meetings of the Monitoring Council are open to the public.

Upcoming California Water Quality Monitoring Council (CWQMC) meetings

- November 30, 2011 - Sacramento
- (Tentatively) February 29, 2012 - To be arranged
- (Tentatively) May 30, 2012 - To be arranged

- (Tentatively) August 29, 2012 - To be arranged
- (Tentatively) November 28, 2012 - To be arranged

California Water Quality Monitoring Collaboration Network
The CWQMCN continues to provide Webinars on topics of interest to water quality monitors. Sessions are planned to share technical, organizational and support tools for monitoring, assessment and reporting.

All Webinars are recorded live (video with sound) and are available online along with accompanying PDFs of presentation material shortly after the live Webinar has been held. These recordings and a schedule of future Webinars can be found at:
http://www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/index.shtml

Late 2011 & 2012 Webinar Announcements
December 8, 2011 Yurok Tribe Water Quality Monitoring Program: A Tribal Perspective on the development of a comprehensive water quality monitoring program:
http://www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/docs/agnd120811.pdf

January 2012 (Date TBA) Determining Reporting Limits (RL's) for Quality Assurance:
http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

February 2012 (Date TBA) Most up to present "Perennial Streams Assessment Report" (Title in Development) - by the Aquatic Bioassessment Laboratory's Pete Ode:
Bioassessment Monitoring Program

March 2012 (Date TBA) Grant Writing Preparation - Presented by Grantsmanship Center's Barbara Floersch
http://www.tgci.com/

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If you have questions concerning this newsletter, or article ideas for the next SWAMP Monitor Newsletter (Fall 2012), please contact me.

Sincerely,

Mary Tappel
SWAMP Website Coordinator

Office of Information Management and Analysis
State Water Resources Control Board
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