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SWAMP Monitor Newsletter

Fall 2010

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More About SWAMP

WELCOME to the SWAMP Monitor!

It has been a while since the last SWAMP Monitor newsletter was published. A lot has happened since then - (See the SWAMP Achievements Report 2009).

This issue of the SWAMP Monitor contains articles about SWAMP activities in 2010, since the 2009 Achievements Report was released. For more information on any of the topics, please visit the SWAMP website.

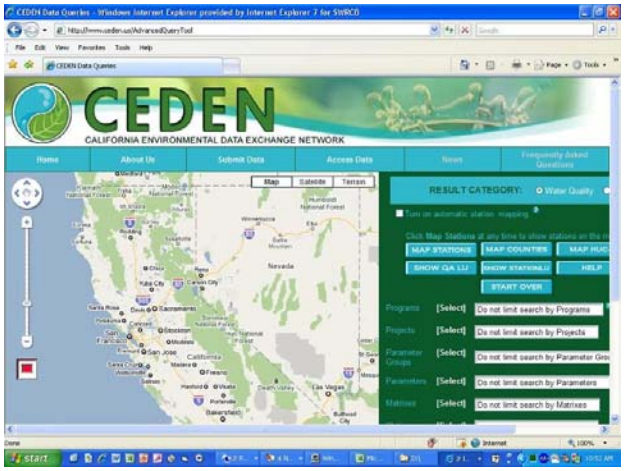
Susan Monheit
SWAMP Communications Coordinator

California Environmental Data Exchange Network (CEDEN) Launched to the Public in August

The Surface Water Ambient Monitoring Program (SWAMP) is pleased to announce the release of the California Environmental Data Exchange Network (CEDEN) online!

CEDEN is designed to facilitate the integration and sharing of data collected by many different participants involved in the water and environmental resources of the State of California, and make that data available to the public in an easily downloadable and timely fashion.

We encourage you to use the system and provide us feedback on functionality and improvements that you think should or could be made.



Comments and suggestions on the CEDEN website and query tool functions and ideas for assessment applications should be directed to Mark Pranger at pranger@mlml.calstate.edu.

If the links above do not work, you can access CEDEN as follows:
Public access - http://www.ceden.org/
Water Board Staff access - if accessing from a Water Board computer, type "ceden" into your web browser.

If you were unable to participate in the webinar demonstration on August 24th, you can view a recording of the webinar (click here to view the recorded webinar demonstration).

For more information contact:
Karen Larsen
klarsen@waterboards.ca.gov

Adam Ballard
- New SWAMP Coordinator

Adam Ballard recently joined the SWAMP team as the supervisor of the SWAMP Unit at the State Water Board. For the past couple years, Adam worked for the Central Valley Regional Water Board,

SWAMP Completes Largest-Ever Survey Documenting Extent of Contamination in Sport Fish in California Lakes

The State Water Resources Control Board's Surface Water Ambient Monitoring Program (SWAMP) has released findings from California's largest ever survey of contaminants in sport fish from lakes and reservoirs. The survey found mercury and polychlorinated biphenyls (PCBs) are the two greatest concerns.

This report represents the end of a two-year survey during which 272 of the most popular fishing lakes in

during which he was primarily engaged in tasks related to the Sacramento-San Joaquin Delta (Delta). This included involvement in the effort to develop a regional monitoring and assessment program for contaminants in the Delta, serving as the field lead for a sampling program designed to characterize seasonal concentrations of nutrients at multiple sites across the Delta, and conducting water quality assessments in support of the Clean Water Act Section 303(d) listing process. Prior to coming to the Water Boards, Adam spent ten years working as a biologist in the private and public sectors on issues related to wetlands, special-status species, and environmental compliance/permitting.

Welcome Adam!

Gail Cho - New QA Chemist at CDFG

Gail Cho is the new Quality Assurance Chemist at the California Department of Fish and Game (CDFG)-Water Pollution Control Lab (WPCL) in Rancho Cordova, CA. Early in her career, Gail chose to specialize in lab quality systems. Now, she brings to WPCL over 20 years of lab QA experience earned during her stints in environmental and biotechnology commercial testing labs working on behalf of "potentially responsible parties" or FDA registrants. She's delighted to be with CDFG and is impressed by the significance of the work done by all the State agencies tasked with protecting the environment, wildlife, the public.

When she is not pontificating on quality, she can be found kayaking, playing tennis, bass fishing, biking along the Sacramento river, or being harassed by her two dogs.

Welcome Gail!

the state were sampled. Approximately one fifth (50 of the 272) of lakes were randomly sampled to provide the basis for a statistical statewide assessment (representing California's 9,000 lakes). This initial screening study was the first step in an effort to identify and quantify contaminants in sportfish from California's lakes. The survey focuses on sport fish because they are a direct pathway for human exposure and also represent the top of the aquatic food chain.

Mercury accumulation in fish is a persistent problem throughout much of the state. Twenty-one percent of the lakes surveyed had at least one fish species with an average mercury level that exceeded the Office of Environmental Health Hazard Assessment (OEHHA) threshold for considering a recommendation of no consumption for women of childbearing age and children. Mercury contamination of California water bodies is largely a legacy of historic mercury and gold mining, but can also reach lakes from regional and global emissions to the atmosphere. However, the degree of mercury contamination in the state's lakes is comparable to the average condition observed across the U.S. in a recent national lakes survey.

PCBs were second to methylmercury as a potential health concern to consumers of fish caught from California lakes. However, only 1% of the lakes sampled had a species with an average concentration that exceeded OEHHA's threshold for PCBs. PCBs are persistent chemicals that are now banned, but were commonly used in electrical, industrial and other applications. Other pollutants, including dieldrin, DDT, chlordanes, and selenium, were also found, but generally at low levels.

OEHHA will not be able to develop new consumption recommendations based solely on data from this screening study - more thorough sampling will be required.

The Lakes Survey was the first component of a new program that is tracking sport fish contamination in all California water bodies. Results from the first year of a two-year survey of contaminants in sport fish from California coastal waters will be available in 2011.

The public can access results for individual fishing locations included in the Lakes Survey through the California Water Quality Monitoring Council's "My Water Quality" web portal, Safe To Eat Fish tab, Data and Trends.

Information on consumption guidelines of sport fish at contaminated locations can be accessed by clicking on "Is It Safe to Eat Fish and Shellfish from Our Waters?"

The Lakes Study Report is available on the SWAMP website.
The condensed *Lakes 2-Year Study Fact Sheet* is also available.

Contaminants in Fish from Lakes and Reservoirs in the Los Angeles Region

The State Water Resources Control Board's Surface Water Ambient Monitoring Program (SWAMP) implemented a statewide bioaccumulation monitoring program for lakes and reservoirs throughout the State of California in 2007 and 2008. This program was designed as a screening study to serve as a preliminary assessment of contaminant concentrations in fish from lakes and reservoirs. The monitoring data collected by this screening study was not intended to be sufficient to allow development of fish consumption advisories by the State of California's Office of Environmental Health Hazard Assessment (OEHHA), but rather was intended to provide a preliminary indication of potential human health risks associated with consumption of fish by anglers and their families from lakes and reservoirs throughout the state.

The Los Angeles Water Board has conducted periodic monitoring of fish contamination levels in lakes and reservoirs over the past 25 years via the State's Toxic Substances Monitoring Program (TSMP). However, with limited TSMP funding in recent years it has only been possible to monitor a few lakes each year. Some lakes in our region have been monitored every few years, while others were rarely or never monitored. With the elimination of TSMP funding in 2002, the Los Angeles Water Board has been unable to conduct any further contaminant monitoring of fish.

The study design selected for the statewide lakes and reservoirs bioaccumulation monitoring program would have resulted in fish sampling in 10 lakes and reservoirs in the Los Angeles Region. The Los Angeles Water Board decided to augment the statewide monitoring design by providing additional funding to ensure that sampling would occur in most of the lakes and reservoirs in our region where sport fishing

occurs. This augmentation resulted in fish sampling in 32 of our lakes and reservoirs during 2007.

The species selected for sampling are known to accumulate high concentrations of contaminants and therefore were thought to be good indicators of contamination problems in lakes and reservoirs. Largemouth bass was the target species to evaluate mercury contamination levels, while common carp or catfish (channel catfish or brown bullhead) were the target species for organic contaminants (DDTs, PCBs, aldrin, dieldrin, chlordane). It was not always possible to collect both target species from each lake or reservoir (this occurred in 14 lakes and reservoirs), so other species were collected if available. Largemouth bass were collected from 23 of the 32 lakes and reservoirs sampled, while common carp or catfish were collected from 22 of the lakes and reservoirs.

The results from the 2007 monitoring of fish from lakes and reservoirs throughout the Los Angeles Region are presented in the report entitled "Contaminants in Fish from California Lakes and Reservoirs": Technical Report on Year One of a Two-Year Screening Study", published by SWAMP in 2009. High mercury and high PCB concentrations were found in several lakes in the Los Angeles Region. Consequently, Los Angeles Regional Board staff, in consultation with OEHHA staff and California Department of Fish and Game staff, designed a follow-up study of fish in lakes and reservoirs designed to provide sufficient information to allow OEHHA to develop fish consumption advisories for many lakes and reservoirs in the Los Angeles Region. This follow-up study was conducted in 23 lakes in 2009, including fish sampling in 3 lakes not sampled during the 2007 survey.

The monitoring results from the 2009 sampling are expected to be available by the end of 2010. OEHHA and the Los Angeles Regional Board anticipate producing fish consumption advisories for lakes and reservoirs in the Los Angeles Region in 2011. In 2011, the Los Angeles Regional Board also plans to issue a report analyzing and interpreting the results from the 2007 and 2009 sampling programs.

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

email: mlyons@waterboards.ca.gov

SWAMP Reference Site Studies Update
San Francisco Bay Water Board

Starting in 2008 and through 2010, the San Francisco Bay Water Board's SWAMP conducted a reference site study in the region's wadeable creeks. The objectives of the study are to: 1) measure the long-term trends and annual variability in benthic macroinvertebrate (BMI) assemblages and how they vary between perennial and intermittent streams, 2) measure the seasonal and annual variability in benthic algae assemblages and how they vary between perennial and intermittent streams and, 3) measure the seasonal variability and interrelationships among dissolved nutrients, benthic algae biomass and assemblages, dissolved oxygen, temperature and stream flow. BMI were sampled once a year, benthic algae three times per year and nutrients six times per year every other month starting in April/May. Continuous water quality monitoring sondes measuring temperature, oxygen, pH, conductivity, turbidity and depth were deployed from March to September. Samples were collected in Coyote, Indian, Mt. Diablo, Ritchie, Redwood, and Pescadero creeks. These reference sites were chosen to represent different eco-regions, intermittent and perennial streams, and large and small stream sizes. The purpose of this monitoring is to determine reference conditions in this region for bioassessment indicators (benthic macroinvertebrates and algae) and nutrients, and to assess relationships between nutrient concentrations, algal biomass, temperature, light, and dissolved oxygen. This information is important for the development of a regional Index of Biological Integrity (IBI), to evaluate nutrient guidelines and to provide perspective on monitoring results from urban areas.

Susan Monheit - New SWAMP Communications Coordinator

Susan Monheit is the SWAMP team's new Communications Coordinator. Her background reflects 20 years of water quality assessment, ecological and human health risk assessment, and invasive species management. She holds a Masters degree in Environmental Management from the University of San Francisco.

Susan has worked for environmental consultants on ecological and human health risk assessments of the Calcaseiu River Estuary in Louisiana, and Remedial Action Feasibility Studies (RI/FS) of contaminated sediments in San Francisco Bay (Navy Base closures). In recent years, she has worked water quality monitoring for aquatic weed control projects, human health hazard assessment for the ingestion of herbicides by Native Americans eating Tules from Clear Lake, California, and an independent evaluation of the Light Brown Apple Moth Eradication Program, which included conducting toxicity studies with honey bees. In 2006/07 Susan was the Communications Coordinator for SWAMP funded collaborative study on water quality improvement of a mixed use watershed (Willow Slough) in Yolo County. Susan is pleased to be part of the SWAMP team.

SWAMP Partners

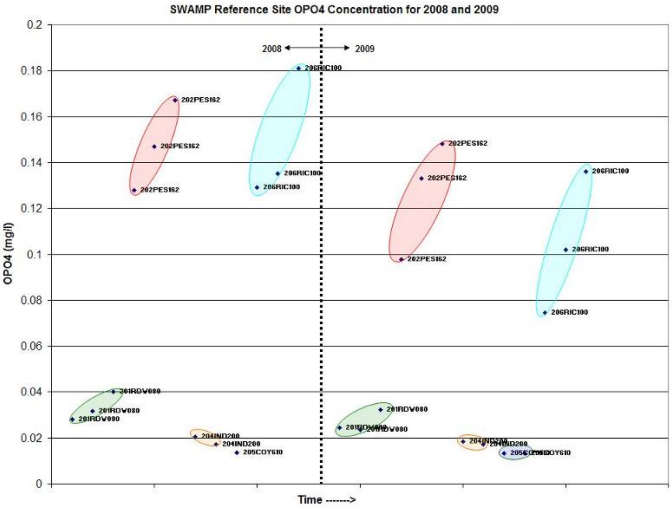


Figure 1. SWAMP Reference Site Concentrations for 2008 and 2009

USEPA has developed nutrient criteria based on reference conditions that apply to the Bay Area (USEPA, 2000). The regional SWAMP monitored 37 creeks between 2000 and 2006. Most samples collected from April-October at sites in these creeks exceeded these criteria. Of 249 samples, 70% exceeded the 0.155 mg/L nitrate criterion, and 93% exceeded the 30 ug/L total phosphorus criterion. Even at reference sites, 27% of 26 samples exceeded the total nitrogen criterion (0.5 mg/L) and 65% exceeded the total phosphorus criterion.

Preliminary results from the reference site study indicate that orthophosphate concentrations vary spatially between reference sites, and seasonally (April - August) within a site (Figure 1). This is important when considering nutrient guidelines since nutrient concentrations at reference sites vary with geology, aerial deposition, vegetation, and other sources. Additional factors, such as morphology, light availability, flooding frequency, and biological community structure can also influence how a particular waterbody reacts to specific nutrient concentrations.

The State Water Board is taking a different approach to developing nutrient objectives by using a risk-based framework, known as the Nutrient Numeric Endpoint (NNE) approach. The NNE approach selects nutrient response indicators, such as algal biomass or dissolved oxygen, which can be used to evaluate the risk of beneficial use impairment, rather than pre-defined nutrient limits that may or may not actually result in excessive algal growth (Tetra Tech, 2006). In the SWAMP reference site study, although 73% of samples exceeded at least one of USEPA's nutrient criteria, chlorophyll a, an index of algal abundance and the primary response indicator used in the NNE, never exceeded the suggested level (150 mg/m2). Since the NNE uses a modeling approach, linking nutrient concentrations to response indicators, it inherently accounts for variability and bases impairment decisions on the actual response to nutrients that impair aquatic life beneficial uses.

In the future, the regional SWAMP will continue monitoring reference sites in order to provide perspective on guideline development and on urban creek monitoring. The regional SWAMP will also partner with stormwater monitoring programs in a regional watershed monitoring coalition.

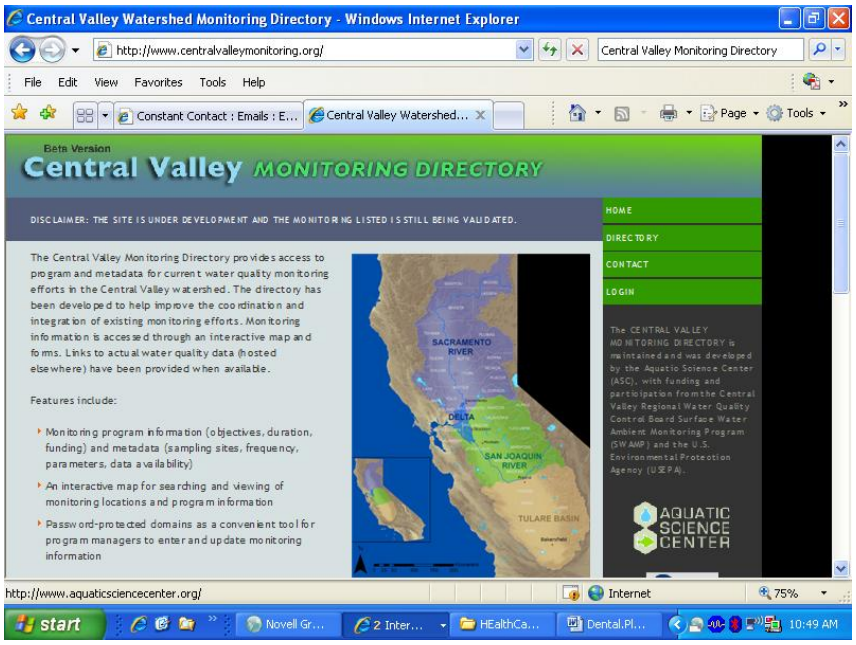
For more information, contact:
Karen Taberski
email: ktaberski@waterboards.ca.gov

Tetra Tech, 2006.Technical approach to develop nutrient numeric endpoints for California. Prepared for USEPA Region IX and California State Water Resources Control Board by Tetra Tech, Inc. Lafayette, Ca.

USEPA, 2000. Ambient Water Quality Recommendations. Information supporting the development of state and tribal nutrient criteria. Rivers and streams in nutrient ecoregion III. EPA 822-B-00-016.

Central Valley Monitoring Directory

The newly revised Central Valley Monitoring Directory is now available to the public. The monitoring directory is a web-based tool developed to help improve the coordination and integration of existing surface water monitoring efforts. The monitoring directory provides access to program details and metadata for current water quality monitoring efforts in the Central Valley watershed. Currently, the monitoring directory has information on 31 programs monitoring at 1,088 sites.



- An interactive map for searching and viewing of monitoring locations and program information.
- Tabbed basin summary tables of programs, agencies, parameters, and sites that interact with the map and are also available to download in Excel format.
- Individual program pages that identify the lead agency and partners; provide links to available contacts, monitoring plans, and data products; and summarize program details (objectives, duration, funding) and metadata (sampling sites, frequency, parameters).
- Password-protected domains as a convenient tool for program managers to enter and update monitoring information.

Features include:

The Central Valley Monitoring Directory is maintained and was developed by the Aquatic Science Center (ASC). Initial funding for the directory was provided by USEPA as a pilot project in the San Joaquin Basin. The Central Valley Water Board SWAMP provided funding to expand the directory to the entire Central Valley, and to improve web interfaces, develop summary tables, and incorporate a Google-based mapping tool.

Central Valley Water Board staff will be meeting with various stakeholder groups and agencies over the next few months to provide demonstrations of the new directory. Staff will also provide technical support to groups submitting their program details and metadata to the directory. Surveys will be provided to stakeholders and made available online to solicit feedback on the use of the directory. A feasibility report, reflecting user feedback, will be completed in November 2010 by the ASC. The feasibility report will include cost and time estimates for future maintenance and enhancements to the Central Valley Monitoring Directory and summarize the priority improvements identified by survey respondents.

For more information, or to schedule a demonstration,
Contact:
Anne Littlejohn: ***ALittlejohn@waterboards.ca.gov*** or
Calvin Yang: ***ccyang@waterboards.ca.gov***

California Water Quality Monitoring Council Endorses Statewide Wetland Monitoring Strategy!

The California Water Quality Monitoring Council formally endorses the California Wetland Monitoring Workgroup's (CWMW) coordinated strategy to assess the extent and health of California's wetland resources.

CHECK OUT the Tenets of a State Wetland and Riparian Area Monitoring Program (WRAMP). It proposes a bold new strategy to improve the State's wetland monitoring and assessment systems while minimizing new costs and maximizing public access to assessment information. The WRAMP is intended to serve all State agencies and support the State Water Resources Control Board's new Wetland and Riparian Area Protection Policy.

In its June 22 letter to the Workgroup, the Monitoring Council calls for every agency and program involved in California's wetlands to find ways to incorporate the California Wetland Monitoring Workgroup's statewide strategy. The Monitoring Council calls on the Workgroup to "provide broad oversight and direction" and act as the coordinating body for wetland monitoring, assessment and data management.

The California Water Quality Monitoring Council, formed through a collaborative agreement between the California Environmental Protection and Natural Resources Agencies, has been tasked with enhancing the efficiency and effectiveness of water quality and associated ecosystem monitoring throughout the State. The California Wetland Monitoring Workgroup (CWMW), a formal workgroup of the Monitoring Council, coordinates the efforts of 23 state, federal, and local organizations to assess the extent and condition of California's wetlands. Their California Wetlands Portal was released in March of this year.

Jon B. Marshack, D.Env.
Staff Environmental Scientist
email: jmarshack@waterboards.ca.gov

Clean Water Team Activities

World Water Monitoring Day was celebrated September 18. Events were held in San Diego by the San Diego River Park Foundation and in San Jose by the City of San Jose. September is usually a busy month for watershed groups involved with California Coastal Cleanup Day, especially since more and more inland waters have cleanups scheduled. Therefore, expect additional World Water Monitoring Day (WWMD) events to occur throughout the State. In 2009, over 120,000 people in 81 countries monitored their local waterways. California has typically been a leader in the number of WWMD participants and in the number of sites monitored. Last year California's Clean Water Team was given the Oasis Award. The celebration continues through December 31 so there is still time to host a monitoring event or activity.http://www.worldwatermonitoringday.org/

September 25, 2010 is the 26th Annual California Coastal Cleanup Day (and inland waters). The Clean Water Team sent out an Email announcement and information with Weblinks promoting Rapid Trash Assessments. In 2009, more than 80,600 volunteers worked together to collect more than 1,300,00 pounds of trash and recyclables from our beaches, lakes and waterways.

CreekWatch, a smart phone application by IBM and developed in consultation with the Clean Water Team should soon be available. The CreekWatch App is currently being tested by the City of San Jose, South San Francisco Bay citizen monitors and others. http://www.creekwatch.org/

From the CreekWatch Website:
CreekWatch is an iPhone application that enables you to help monitor the health of your local watershed. Whenever you pass by a waterway, spend a few seconds using the Creek Watch application to snap a picture and report how much water and trash you see. We aggregate the data and share it with Regional Water Boards to help them track pollution and manage water resources. You can use the map on the left to explore the data that people have contributed, or see recent contributions as a table.

The CreekWatch App uses four pieces of data:
(1) amount of water- the creek is empty, contains some water, or is full.
(2) flow rate- the water is still, moving slowly, or moving fast.
(3) trash- the area is trash free, dirtied by some trash (a few items), or has a lot of trash (10 or more items).
(4) a picture of your creek.

Webinar
On October 21, 2010 the California Water Quality Monitoring Collaboration Network will host a Webinar on the California Environmental Data Exchange Network. Past Webinars can be viewed online and the PowerPoint slides can be downloaded as PDF files. In November the Network will host a Webinar high-lighting water programs that use AmeriCorps.
http://www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/#webinar

GUIDANCE COMPENDIUM FOR WATERSHED MONITORING AND ASSESSMENT
The Clean Water Team is pleased to announce that the GUIDANCE COMPENDIUM FOR WATERSHED MONITORING AND ASSESSMENT has had additional documents added to it this year and many more guidance documents will be added by year's end. The "Compendium" is designed to be a collection of useful material for Citizen Monitors and consists of Informational Papers, Fact Sheets, Standard Operating Procedures, Monitoring Manuals, Materials in Spanish, Useful Weblinks and more. Whether you are looking for information on how to start a Citizen Monitoring Group, measure dissolved oxygen, or conduct a rapid trash assessment you'll find it all in the "Compendium".
http://waterboards.ca.gov/water_issues/programs/swamp/cwt_guidance.shtml

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Erick Burres

Citizen Monitoring Coordinator
SWRCB - SWAMP - Clean Water Team

Visit the Clean Water Team at:
http://www.waterboards.ca.gov/water_issues/programs/swamp/cwt_volunteer.shtml

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Bioassessment Update:

SWAMP provides new tools and support to assess biological integrity of freshwater streams

SWAMP has invested in developing a robust bioassessment program statewide. The program includes a reference condition management program, standardized field and laboratory methods, and data management and assessment tools. Now that the program is established and has produced eight years of data, the State Water Board has committed to developing biological objectives that will be thresholds for interpreting bioassessment data in the Water Boards' regulatory programs.

The current effort is focused on wadeable perennial streams and rivers, and will use benthic macroinvertebrate (BMI) assemblages to assess stream/river health. (BMIs are small, bottom-dwelling animals that live in streams and rivers. Because some BMIs are pollution-tolerant, while others need clean water and undisturbed habitat to thrive, the assemblage of BMIs provides an accurate indicator of stream health. "Wadeable" streams and rivers are those that can be sampled safely while wading).

Three advisory groups are being formed to support the development of biological objectives: A **Stakeholder Advisory Group** will foster two-way communication with interested stakeholders. A **Scientific Advisory Group**, comprised of external experts, will provide advice about the technical merits of alternative approaches. A **Regulatory Advisory Group**will engage Water Board staff and others to ensure that the project delivers the tools that regulators and managers need to implement the policy.

SWAMP staff has designed a new website for the project, and is providing much of the data and technical support. All interested persons are invited to sign up for email updates.

New Bioassessment Tools Available:
The Lahontan Water Board (Region 6) recently released a new Index of Biological Integrity (IBI) for the eastern Sierra Nevada ecoregion. The IBI, produced under contract by scientists from the University of California's Sierra Nevada Aquatic Research Laboratory, is accompanied by a spreadsheet calculator tool that may be used to assess the health of streams and rivers in the eastern Sierra.

The new IBI for the eastern Sierra adds to the growing list of bioassessment tools available for California. IBIs based on benthic macroinvertebrates are also available for the South Coast, North Coast, and Central Valley. All of these tools can now be used by landowners, local agencies, resource managers, and other interested stakeholders to assess the health of streams in these areas. All of the available IBIs will also be considered during the process for establishing biological objectives (described above), to determine if and how they might be used for future regulatory applications.

For more information, see the bioassessment reports section of SWAMP's website,
or email:
Tom Suk: tsuk@waterboards.ca.gov
Lahontan Regional Water Board.

Farewell to VAL - SWAMP Mom forever!

SWAMP has done a lot of growing up since Val Connor took charge seven years ago. With a clear vision, a deep understanding of water science and policy, and a "tough love" approach to keep us all on track, our "SWAMP Mom" brought us together and taught us how to play well with others. Thanks in large part to Val's guidance and perseverance under difficult circumstances, SWAMP now has an aligned set of statewide and regional monitoring programs, a QA program that enables data sharing among many entities, a publicly accessible data network, and a process to develop biology-based water quality objectives. Having decided that we're now mature enough to stand on our own, Val is moving on to other challenges. As you read this, Val has become the new lead scientist for the State and Federal Contractor's

Water Agency, helping to reconcile the water needs of 25 million Californians with restoration of the Delta ecosystem.

Val brought to SWAMP 30 years of experience in environmental science (including B.S., M.A. and Ph.D. degrees) and 19 years with the Water Boards in positions of increasing responsibility. She was the first Director of the Office of Information Management and Analysis, and in that role sought to make SWAMP an integral part of the information flow to and from other Water Board programs. Val fully engaged the external scientific review process, and was instrumental in finding ways to adopt the recommendations of the SWAMP Scientific Planning and Review Committee. Many will remember Val's ability to address expert panels and follow lines of inquiry as deep as necessary on any topic in the realms of science, policy, and the machinations of California water's complex administrative structure.

From her early publications in ecology, through her groundbreaking studies on pesticide fate and effects in the Central Valley, to her leadership in bringing diverse interests together around core principles of water stewardship, Val has put her remarkable scientific skill and personal integrity to work on behalf of water quality in California. Now it's up to SWAMP to be the monitoring program that Mom always wanted us to be.

To see the SWAMP Mom Poster, click link below:
http://share.shutterfly.com/action/welcome?sid=0AZOHDFo0ctWTp4

Upcoming Events

Regional Monitoring Program (RMP) Annual Meeting 2010:
The theme of the meeting is "Water Quality Monitoring: Linking the Watersheds and the Bay"
(see attached meeting agenda).**You need to register: http://www.sfei.org/node/3542.**
Pre-registration deadline
is 5 PM Friday, September 24. The RMP 2010 annual meeting will take place Tuesday, October 5 at the Oakland Museum.

California Water Quality Monitoring Collaboration Network Webinar
On October 21, 2010 the California Water Quality Monitoring Collaboration Network will host a Webinar on the California Environmental Data Exchange Network (CEDEN). Past Webinars can be viewed online and the PowerPoint slides can be downloaded as a PDF. In November the Network will host a Webinar highlighting water programs that use AmeriCorps.
http://www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/#webinar

Biological Objectives Scientific Advisory Group Meeting
October 20-21, 2010 at SCCWRP in Orange County. For draft agenda click here.

Biological Objectives Stakeholder Advisory Group Meeting
November 18th, 2010- UC Center, 1130 K Street, Sacramento. Check the DEVELOPMENT OF BIOLOGICAL OBJECTIVES webpage for agenda posting and details.

California Aquatic Bioassessment Workgroup, Annual Meeting
November 16 and 17, 2010, 8 am - 4 pm, UCD
There is no fee to attend, but registration is required.
Pre-registration: Regional and State Water Board Staff should register at: http://waternet/training/
All other participants should register at: http://www.waterboards.ca.gov/academy/
For more information contact: **Jim Harrington (916) 358-2862, jharring@ospr.dfg.ca.gov**

Upcoming California Water Quality Monitoring Council (CWQMC) meetings
Meetings of the Monitoring Council are open to the public.
- October 13, 2010 - Costa Mesa
- December 8, 2010 - Sacramento

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As you can see Regional and State SWAMP programs are busy and continue to make progress on SWAMP projects. If you have questions concerning this newsletter, or article ideas for the next SWAMP Monitor Newsletter (Winter 2011), please contact me.

Sincerely,

Susan Monheit
SWAMP Communications Coordinator
Office of Information Management and Analysis
State Water Resources Control Board
916-341-5868

Forward email