

Southern California Coastal Water Research Project Authority

Quarterly Director's Report To the SCCWRP Commission

May 2010

(Detailing activities February 5, 2010 – May 4, 2010)



**Stephen B. Weisberg
Executive Director**

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HIGHLIGHTS

News:

SCCWRP staff reorganization creates two new departments

The [SCCWRP staff](#) underwent reorganization on April 1, creating two new departments in place of the former Watersheds department. The Watersheds group was previously the only geography-based department, diverging from SCCWRP's current preference to align research groups with technically-focused mandates. The department was created about 12 years ago, differentiating investigation of coastal watersheds from SCCWRP's main research focus on marine waters. Its closure is a testament to its success, as watersheds work now comprises a large part of SCCWRP's research portfolio and extends into many departments. Some former members of the Watersheds department were moved into a new Biogeochemistry group, which will be led by [Dr. Martha Sutula](#). Others joined a reformed Biology department under the direction of [Dr. Eric Stein](#), who previously ran the Watersheds department and will spearhead SCCWRP's efforts to assist the State with [bio-objectives](#) development. The newly formed Microbiology department, formerly a part of the Biology group, will be headed by [Dr. John Griffith](#).

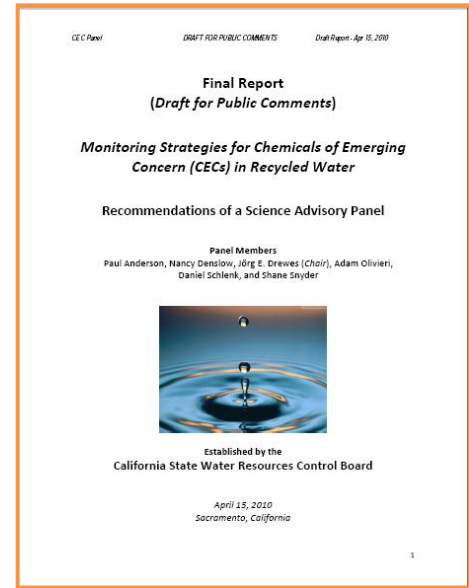
Bio-Objectives kickoff meeting held at SCCWRP

The State Water Resources Control Board held a public kickoff meeting at SCCWRP on March 11 to begin developing a statewide policy on biological objectives. SCCWRP will assist the SWRCB and stakeholders by providing scientific information to support the State's policy development. This effort falls under the purview of SCCWRP's project to [develop a technical foundation for freshwater bio-objectives](#). Biological objectives, or bio-objectives, are criteria that can be used to gauge compliance with regulations based on standardized assessment endpoints. Biological indicators integrate stream conditions over space and time, thus providing an advantage when added to the suite of traditional indicators. Questions about this project can be directed to [Ken Schiff](#) or [Dr. Eric Stein](#). Information on the State's policy development can be found on their [website](#).



Draft Report released by Panel on CECs in Recycled Water

The [Science Advisory Panel for Contaminants of Emerging Concern \(CECs\) in Recycled Water](#) recently issued a [draft report](#) for public comment. The panel, which includes six national experts in the fields of chemistry, biochemistry, toxicology, epidemiology, risk assessment, and engineering, was requested by the State Water Resources Control Board and is being facilitated by SCCWRP. The report, entitled "Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water", discusses how to apply the best available science to CEC monitoring design, as specified in the State's [Recycled Water Policy](#). Comments on the draft report should be submitted to [Dr. Keith Maruya](#) by May 15, 2010. The Panel will hold its fourth and final meeting on May 20-21 to address any comments received by the deadline.



SCCWRP staff members conduct training for the Stormwater Monitoring Coalition

In April, SCCWRP's [Dr. Raphael Mazor](#), [Dr. Betty Fetscher](#), and [Dr. Chris Solek](#) collaborated with the California Department of Fish and Game to train staff from the [Southern California Stormwater Monitoring Coalition](#) on the State's [standard operating procedure](#) for freshwater bioassessment. This training was specifically for agencies collaborating in the Regional Watershed Monitoring Program coordinated by SCCWRP. SCCWRP staff members helped to train crews working for Ventura County Watershed Protection District, LA County Department of Public Works, Riverside County Flood Control, Orange County Public Works, San Diego County, Santa Ana Regional Board, and LA County Sanitation District, in addition to non-SMC member agencies such as Heal the Bay and the LA/San Gabriel Rivers Watershed Council.



Fetscher to serve on field operations review panel for EPA's National Wetlands Condition Assessment

[Dr. Betty Fetscher](#) of SCCWRP's Biology department was invited to serve as an algae expert on the technical review panel for the Environmental Protection Agency's National Wetlands Condition Assessment ([NWCA](#)) Field Operations Manual. Along with other partners, the EPA is beginning work on this first-ever national survey of wetland condition, to be completed in 2013. The survey will be designed to provide regional and national estimates of ecological integrity and biological condition in wetlands. A fact sheet on the NWCA is available [here](#). More information about algae bioassessment research can be found on SCCWRP's [website](#).

CRAM practitioner training to be held at SCCWRP May 24-28

Training on the California Rapid Assessment Method for Wetlands ([CRAM](#)) will be held at SCCWRP May 24-26 (riverine component) and May 27-28 (estuarine component). These two-part practitioner level training courses are intended to equip participants with the skills necessary to conduct an accurate CRAM assessment for riverine and estuarine wetlands. The course is open to the public. Registration and more information are available through the [UC Davis Extension](#). Course-specific questions can be addressed to [Nancy Barker](#) of UC Davis Extension or [Dr. Chris Solek](#) of SCCWRP. Training courses are also planned for other portions of the state; please visit the [CRAM training website](#) for dates and locations.

SCCWRP Scenes:



SCCWRP's Dr. Betty Fetscher demonstrates an algal bioassessment procedure at Regional Watershed Monitoring training held in March. This year's sampling effort at over 120 stream sites from Ventura to San Diego will begin in May.

PEOPLE

Honors and Awards:

- Dr. Betty Fetscher was invited to serve as an algae expert on the technical review panel for the EPA's National Wetlands Condition Assessment - Field Operations Manual.

Personnel:

- Marlene Merchain was hired as a programmer in the Information Management department. She comes to SCCWRP from CRG Marine Laboratories and began March 1.
- Dr. Ashmita Sengupta was hired as a modeler in the Biogeochemistry department. She comes to SCCWRP from the University of Massachusetts and began April 1.
- After 7 years at SCCWRP working on atmospheric deposition research, Lisa Sabin moved with her family to northern California. Her work will be continued by other staff members.



Merchain



Sengupta

Commission:

- Tracy Egoscue resigned from her post as Executive Officer (and SCCWRP Commission Vice-Chair) for the Los Angeles Regional Water Quality Control Board effective May 14. A replacement has not yet been named.



Sabin



Berchtold

- Gerard Thibeault retired from his post as Executive Officer (and SCCWRP Commissioner) for the Santa Ana Regional Water Quality Control Board effective in June. Thibeault was the longest-running Commissioner in the history of SCCWRP.
- Congratulations to Kurt Berchtold, former Assistant Executive Officer and Alternate SCCWRP Commissioner, who was selected last week as the new Executive Officer for the Santa Ana Board.
- Jim Barrett took a position out of state and resigned from the City of San Diego and the Commission. A replacement has not yet been named.

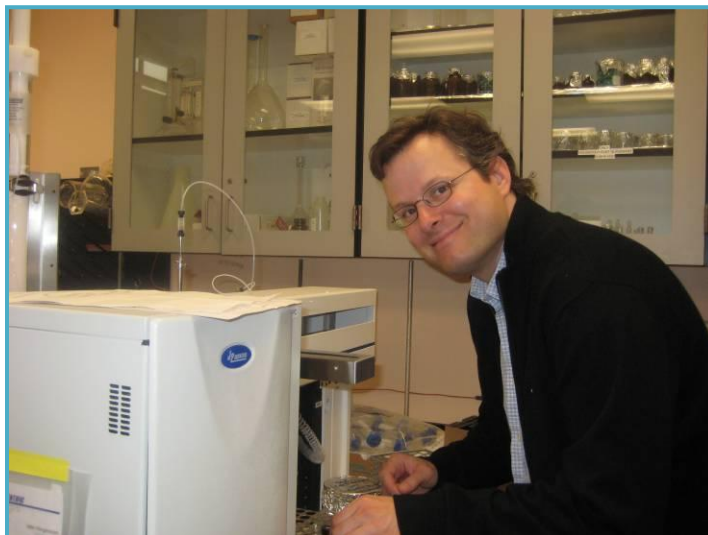
Commission's Technical Advisory Group:

- Hector Bordas received a new assignment at LA County Public Works and will be replaced by former CTAG member Rossana D'Antonio.

Spotlight on Staff:

Nathan Dodder - Chemist

Dr. Nathan Dodder is a chemist who specializes in the measurement of trace environmental contaminants and biomarkers by organic/biological mass spectrometry and chromatography. At SCCWRP, Nathan works in two research areas: (1) analytical method development and passive sampling technology for contaminants of emerging concern, and (2) quantification of protein and metabolite markers for biological responses that are indicative of water quality.



Dodder's educational background includes a BA degree in chemistry from Minnesota State University Moorhead (in northern Minnesota) and a Ph.D. from Indiana University (in Bloomington) with a major in analytical chemistry and minor in environmental science. Beginning in graduate school under Ronald Hites, Nathan worked on several projects that investigated the environmental fate and bioaccumulation of polybrominated diphenyl ethers (PBDEs) and other brominated flame retardants, measuring them in air, sediment, fish, human serum, household dust, and marine mammals using mass spectrometry. Some of his publications were among the initial reports of PBDEs in the North American environment, which contributed to the body of knowledge resulting in a reduction of PBDE use in the United States.

Nathan was attracted to SCCWRP because of the applied nature of their research and their focus on regional environmental issues. Prior to joining SCCWRP in February 2010, Nathan worked at the National Institute of Standards and Technology (NIST; Gaithersburg, Maryland). Here he had moved into the area of clinical mass spectrometry. He learned a number of relatively new mass spectrometry based technologies at NIST, which he now has a chance to apply to environmental analyses at SCCWRP. Despite the difference in application (clinical vs. environmental), the analytical methods are very similar. At NIST he also cultivated an interest in computer programming, and began developing information management and analysis systems that were customized to handle the amount and complexity of data produced in these experiments.

Nathan's hobbies include hiking and exploring outdoors in southern California. Nathan and his fiancée have made an effort to visit several beaches; so far Coronado Beach is their favorite. They also frequently travel up to LA to visit family.

For more information on Dr. Dodder and his research, please visit:

<http://www.sccwrp.org/About/SCCWRPStaff/DodderNathan>.

Spotlight on Partners:

Dan Schlenk - University of California, Riverside



Dr. Dan Schlenk is an Aquatic Ecotoxicology Professor at the University of California, Riverside. His laboratory focuses on evaluating mechanisms of action for legacy and emerging chemicals of concern in aquatic and marine organisms. Dr. Schlenk's research in California has looked at the impacts of feminization on marine fish reproduction and populations, as well as the identification of causal agents in sediments and waters receiving oceanic discharge from municipal wastewater treatment facilities, particularly off the coast of Orange County.

Schlenk grew up in Torrance and spent a great deal of time at the beach throughout his childhood. He got interested in marine biology during his junior year of high school, but started college as a pre-med major due to concerns about making a living as a marine scientist. He decided to pursue toxicology after meeting Dr. Paul Ferguson, who was starting up an undergraduate degree program at the time. Schlenk received his BS in Toxicology from Northeast Louisiana University (now known as University of Louisiana at Monroe), his PhD from Oregon State University in Biochemical Toxicology, and was an NIEHS Postdoctoral Fellow at Duke University. Inspired by his mentors, Dan sought academia as a career with hopes of encouraging and positively influencing the lives of others. He first worked as an Assistant Professor at the University of Arkansas for Medical Sciences. Schlenk later moved to a more collaborative environment at the University of Mississippi. When his primary co-investigator Dr. William Benson left in 1999, he finally realized he was a long way from the ocean and returned to California. Schlenk says, "Since moving here nearly 10 years ago, I have been very fortunate to meet a plethora of fantastic scientists with whom to collaborate."

Schlenk has worked with Keith Maruya, Steve Bay, and Doris Vidal-Dorsch of SCCWRP on a number of projects over the past 10 years, primarily focused on the impacts of contaminants of emerging concern (CECs) and endocrine disrupting compounds on marine organisms. He and others from CSU Long Beach, UC San Diego, and SCCWRP collaborated on a Bight-wide study to determine the prevalence of endocrine disruption in demersal flatfish species. Dr. Schlenk currently serves on two CEC expert panels (for [recycled](#) and [coastal ambient](#) waters) facilitated by Dr. Maruya.

While on sabbatical in Australia a few years ago, Dan picked up surfing again after a 20 year hiatus, and it is now his primary hobby. In addition, he loves spending time with his wife Ronly and two children Marina and Noah. (Note the oceanic/aquatic theme!) They too enjoy the beach, as well as rock-climbing and camping at the National Parks within a day's drive of Riverside. He notes that it is good to be "back home".



For more information on Dr. Schlenk and his research, please visit:

<http://www.envisci.ucr.edu/faculty/schlenk.html>.

Spotlight on Commissioners:

Mas Dojiri - City of Los Angeles



Dr. Mas Dojiri is the Chair of the SCCWRP Commission and Manager of the Environmental Monitoring Division (EMD) at the [City of Los Angeles](#). This division conducts biological and chemical testing with the mission of protecting public health and the environment. Dojiri currently manages five major sections at EMD, as well as the satellite laboratories at the D.C. Tillman, Los Angeles-Glendale, and Terminal Island Water Reclamation Plants.

Born in the Wakayama province of Japan, Mas immigrated to Hawthorne, California in 1955. He went on to earn a BA in

Biological Sciences from the University of California, Santa Barbara, MA in Biology from California State University, Long Beach, and a PhD in Biology from Boston University. Mas was also a Postdoctoral Fellow at the Smithsonian Institution. He never dreamed of switching from marine parasitology and taxonomy/systematics to marine pollution studies, but was dissatisfied with his work as a Museum Technician at the Smithsonian Oceanographic Sorting Center and thus moved back to southern California.

Dojiri got interested in the field of environmental pollution and monitoring through his first job with the City of Los Angeles EMD as a Water Biologist in 1989. He heard about the job while working as a research professor at the CSU Long Beach Institute of Parasitology, decided to apply, and was accepted. Much of his career has been devoted to this division, interrupted only by a 16-month Assistant Division Manager position at the Regulatory Affairs Division, where he successfully started and headed up the Total Maximum Daily Load (TMDL) Section. Dojiri was promoted to EMD's Division Manager in 2002.

Mas has been serving on the SCCWRP Commission for nine years and was the Vice-Chair for two years. He has also acted as Chair of the Commission's Personnel and Finance Committee, and is currently chairing the [Rapid Bacteriological Methods](#) Task Force. His division has been closely involved with the [Bight Regional Monitoring Program](#) since the 1994 Southern California Bight Pilot Project. Mas notes, "The research that SCCWRP conducts is relevant to environmental decision-making, so [it] contributes significantly to my work as a manager."

During his spare time, Mas continues conducting research and discovering new species. In total, he has discovered one order, one family, 15 genera, and 88 species of marine organisms; two marine crustacean species have been named in his honor. Mas also enjoys fishing. His primary pastime during school was beach and indoor volleyball, including at UCSB and for the Woods Hole Oceanographic Institution, where he played in numerous tournaments throughout New England.



COMMUNICATIONS

Journal Articles - Published:

- [Assessing coastal benthic macrofauna community condition using best professional judgment – Developing consensus across North America and Europe](#). 2010. H Teixeira, Á Borja, SB [Weisberg](#), JA Ranasinghe, DB Cadien, DM Dauer, J-C Dauvin, S Degraer, RJ Diaz, A Grémare, I Karakassis, RJ Llansó, LL Lovell, JC Marques, DE Montagne, A Occhipinti-Ambrogi, R Rosenberg, R Sardá, LC Schaffner, RG Velarde. *Marine Pollution Bulletin* 60:589-600.
- [Tracking stormwater discharge plumes and water quality of the Tijuana River with multispectral aerial imagery](#). 2010. J Svejksky, NP [Nezlin](#), NM Mustain, JB Kum. *Estuarine, Coastal and Shelf Science* 87:387-398.
- [Microbiological water quality at non-human influenced reference beaches in southern California during wet weather](#). 2010. JF [Griffith](#), KC Schiff, GS Lyon, JA Fuhrman. *Marine Pollution Bulletin* 60:500-508.
- [Analysis, occurrence, and toxic potential of pyrethroids, and fibronil in sediments from an urban estuary](#). 2010. W [Lao](#), D Tsukada, DJ Greenstein, SM Bay, KA Maruya. *Environmental Toxicology and Chemistry* 29:843-851.
- [Exchange of polycyclic aromatic hydrocarbons among the atmosphere, water, and sediment in coastal embayments of southern California, USA](#). 2010. LD Sabin, KA Maruya, W Lao, D Diehl, D Tsukada, KD Stolzenbach, KC [Schiff](#). *Environmental Toxicology and Chemistry* 29:265–274.

Journal Articles - Accepted:

- [Habitat-related benthic macrofaunal assemblages of bays and estuaries of the western United States](#). JA [Ranasinghe](#), KI Welch, PN Slattery, DE Montagne, DD Huff, H Lee II, JL Hyland, B Thompson, SB Weisberg, JM Oakden, DB Cadien and RG Velarde. *Integrated Environmental Assessment and Management*, in press.
- The effect of sample area and sieve size on benthic macrofaunal community condition assessments in California enclosed bays and estuaries. KK Hammerstrom, JA [Ranasinghe](#), SB Weisberg, JS Oliver, WR Fairey, PN Slattery and JM Oakden. *Integrated Environmental Assessment and Management*, in press.
- Historical ecology as a tool for assessing landscape change and informing wetland restoration priorities. ED [Stein](#), S Dark, T Longcore, R Grossinger, N Hall, and M Beland. *Wetlands*, in press.

Technical Reports:

- [Hydromodification Screening Tools: Field manual for assessing channel susceptibility](#). 2010. BP Bledsoe, RJ Hawley, ED [Stein](#), DB Booth. Technical Report 606. Southern California Coastal Water Research Project. Costa Mesa, CA.
- [Hydromodification Screening Tools: GIS-based catchment analyses of potential changes in runoff and sediment discharge](#). 2010. DB Booth, SR Dusterhoff, ED [Stein](#), BP Bledsoe. Technical Report 605. Southern California Coastal Water Research Project. Costa Mesa, CA.

Conference Presentations:

[Ocean Science Meeting](#) - February 2010

- [Tracking storm water discharge plumes and water quality of the Tijuana River with multispectral aerial imagery](#) - J Svejksky, NP [Nezlin](#), NM Mustain, and JB Kum
- [Wastewater discharge plumes in the Southern California Bight](#) - NP [Nezlin](#)
- Poster: Atmosphere-ocean coupling associated with September 22-24, 2009 Australia dust event - RP Singh, NP [Nezlin](#) and R Singh

[California Water Environment Association \(CWEA\) 37th Pretreatment, Pollution Prevention, and Stormwater \(P3S\) Conference](#) - March 2010

- [Constituents of emerging concern: The California Recycled Water Policy Science Advisory Panel](#) - K [Maruya](#)
- Contaminants of Emerging Concern in Southern California Coastal Waters - D [Vidal-Dorsch](#)

[California Estuarine Research Society](#) - March 2010

- Influence of estuarine class on the relationship between nitrogen loads and primary producer response- M [Sutula](#)

[American Chemical Society 239th National Meeting & Exposition](#) - March 2010

- [Potential contribution of pyrethroids and fipronil to toxicity observed in sediments from an urban estuary](#) - W [Lao](#), D Tsukada, DJ Greenstein, SM Bay, and KA Maruya
- [An early warning system for constituents of emerging concern \(CECs\): A multiagency Mussel Watch pilot study in California](#) - K Kimbrough, G Lauenstein, J Christensen, D Gregorio, K Smalling, E Furlong, J Kucklick, M Sedlak, S Klosterhaus, S Weisberg, and K [Maruya](#)
- Endocrine disruptors and pharmaceuticals in California coastal waters - S Snyder, D [Vidal-Dorsch](#), S Bay, K Maruya

- Sediment contamination and biological effects relationships in California's Sacramento and San Joaquin River Delta - S [Bay](#)

[Urban and Regional Information Systems Association \(URISA\) 16th Annual California GIS Conference](#) - April 2010

- Designing and analyzing regional marine surveys using ArcGIS and the open source statistics software 'R' - R [Schaffner](#)

[National Water Quality Monitoring Council \(NWQMC\) 7th National Monitoring Conference - Monitoring From the Summit to the Sea](#) - April 2010

- Bight Regional Monitoring Program: Coordinating existing programs to provide large scale regional assessments in southern California - S [Weisberg](#)

[Southern California Regional Chapter of the Society of Environmental Toxicology and Chemistry \(SETAC\) 2010 Annual Meeting](#) - April 2010

- [Solid phase microextraction \(SPME\) calibration for pyrethroids and fipronil in seawater and sediment porewater](#) - W [Lao](#)
- [Evaluation of sediment toxicity in the Southern California Bight using the SQO approach](#) - SM [Bay](#), D Greenstein, D Young, and M Mays
- Statewide status of Areas of Special Biological Significance – K [Schiff](#)
- Bight'08 Regional Monitoring: Stormwater impacts on Areas of Special Biological Significance –K [Schiff](#)

Other Presentations:

- Chris [Solek](#) coordinated with UC Davis Extension to administer CRAM training courses for the South Coast, Central Coast, and San Francisco Bay regions in spring 2010. Solek also worked with the US Army Corps on a series of CRAM trainings targeted to Corps regulators and staff.
- Steve [Bay](#) gave two presentations entitled “Sediment Quality in the Lower Delta” and “Indirect Effects Assessment Update” to the Delta Pelagic Organism Decline Contaminants Work Team on February 10 in Rancho Cordova, CA.
- Ken [Schiff](#) gave a presentation entitled “Research Activities at the Southern California Coastal Water Research Project” as part of the Speaker Series at the US Environmental Protection Agency, Region IX on February 10 in San Francisco, CA.
- Martha [Sutula](#) gave an invited lecture entitled “Investigations of nutrient sources, transport and biological response in streams” to the Babcock Laboratories Seminar Series on February 12 in Riverside, CA.

- Raphael [Mazor](#) gave a presentation entitled "Southern California's regional bioassessment program: Lessons for the Bay Area" to the Bay Area Macroinvertebrate Biomonitoring Information Network (BAMBI) on February 16 in Oakland, CA.
- Ananda [Ranasinghe](#) and Steve [Bay](#) gave several presentations during a short course on Sediment Quality Objectives at the San Diego Regional Water Quality Control Board on March 1-2 in San Diego, CA.
- Ananda [Ranasinghe](#) and Steve [Bay](#) gave several presentations during a short course on Sediment Quality Objectives at the San Francisco Bay Regional Water Quality Control Board on March 15-16 in Oakland, CA.
- Steve [Bay](#) gave a presentation entitled "Evaluation of gene expression for sediment toxicity identification evaluation" to the San Francisco Bay Regional Monitoring Program Exposure and Effects Workgroup on March 11 in Oakland, CA.
- Eric [Stein](#) gave a presentation entitled "Trends in coastal water quality – what have we learned from all this monitoring?" at the Osher Lifelong Learning Institute at UC Irvine Extension on March 11 in Irvine, CA.
- Martha [Sutula](#) gave an invited lecture entitled "Estuarine nutrient criteria development: process, concepts and data needs" to the Stanford University Woods Environmental Institute on March 11 in Palo Alto, CA.
- Keith [Maruya](#) gave a presentation on the California Science Advisory Panel for Constituents of Emerging Concern to members of Tri-TAC at their meeting on March 11 in Sacramento, CA.
- Keith [Maruya](#) gave a presentation entitled "An early warning system for contaminants of emerging concern: A multiagency Mussel Watch pilot study in California" to the San Francisco Estuary Institute's Emerging Contaminants Work Group on March 26 in Oakland, CA.
- Keith [Maruya](#) gave a presentation entitled "Identifying chemicals responsible for sediment toxicity: analytical challenges" at the San Francisco Estuary Institute's RMP Sediment Toxicity Stressor Identification Workshop on April 7 in Oakland, CA.
- Doris [Vidal-Dorsch](#) gave a presentation entitled "Gene microarray as a rapid water quality indicator in wetlands" to the California Wetland Recovery Project Wetland Managers Group on April 7 in Costa Mesa, CA.
- Steve [Bay](#) gave a presentation entitled "Application of multiple approaches for stressor investigation in southern California sediments" at the SFEI Regional Monitoring Program (RMP) Sediment Toxicity Stressor Identification Workshop on April 7 in Oakland, CA.
- Betty [Fetscher](#) gave a presentation entitled "Developing algae bioassessment capacity for California streams" at the Malibu Creek Watershed TAC meeting on April 15 in Malibu, CA.

- Betty [Fetscher](#) gave a presentation entitled “Nutrient-algal biomass relationships in southern California streams: Insights to key questions about the use of Nutrient Numeric Endpoints for listing” at the meeting of the State Regional Board Technical Advisory Group (STRTAG) for nutrient criteria development for California on April 19 via WebEx.
- Keith [Maruya](#) gave a presentation entitled “Draft recommendations from the Science Advisory Panel for Constituents of Emerging Concern (CECs) in Recycled Water” to the State Water Resources Control Board on April 20 in Sacramento, CA.
- Steve [Weisberg](#) made a presentation to the NOAA Administrator and the NOAA Science Advisory Board providing [recommendations](#) as chair of the SAB Subcommittee about NOAA’s future directions regarding how oceans affect health on March 23 in Washington, DC.
- Donna [Ferguson](#) gave a primer on microbial source identification to the State Water Board’s California Water Quality Monitoring Collaboration Network on March 24 via WebEx.
- Steve [Weisberg](#) gave a presentation on implementation of rapid microbiological methods to the Santa Ana Regional Water Quality Control Board on April 30 in Loma Linda, CA.
- Steve [Bay](#) gave lecture entitled “Understanding California ocean pollution: past, present and future” at a teacher workshop for Center for Ocean Sciences Education Excellence (COSEE-West) on May 1 in Costa Mesa, CA.

Meetings & Workshops Held at SCCWRP:

Date	Meeting	SCCWRP Contact/ Sponsoring Agency
Feb 9	Low Impact Development	Southern California Stormwater Monitoring Council
Feb 10	California Water Quality Monitoring Council	State Water Resources Control Board
Feb 11	Commission's Technical Advisory Group	Weisberg
Feb 17	DNA Barcoding Colloquium	Miller
Feb 18	Benthic Assessment Taxonomy Management	Ranasinghe
Feb 19	Seminar: Dr. Kevin Chipman - " Application of Transcriptomics to Assessment of Pollutant Impact in the European Flounder "	Weisberg
Feb 23	Bight '08 Areas of Special Biological Significance	Schiff
Feb 25	Bight'08 Coastal Wetlands	McLaughlin
Mar 1	IWRAP Implementation Workgroup	Solek
Mar 2	Southern California Stormwater Monitoring Coalition - Steering Committee	Schiff
Mar 3	Bight '08 Toxicology Subcommittee	Bay
Mar 4	CTAG Special Meeting - SCCWRP Thematic Report	Weisberg
Mar 5	Seminar: Dr. Glen MacDonald - " Climate Warming and Perfect Drought in Southern California "	Weisberg
Mar 11	State of California Bio-objectives - Public Input	State Water Resources Control Board
Mar 12	Epidemiology Study	Schiff
Mar 16	Commission's Rapid Methods Task Force	Weisberg

Mar 16	Dissolved Oxygen Indicator Species Workshop	Sutula
Mar 16	Southern California Association of Marine Invertebrate Taxonomists	Ranasinghe
Mar 17	Bight '08 Rocky Reef	Schiff
Mar 17	Ocean Water Quality Monitoring	Weisberg
Mar 25	Genedisc	Cao
Mar 25	Bight '08 Coastal Ecology	Schiff
Mar 26	Desalination Workgroup	Weisberg
Mar 29	CRAM Training for Southern California Stormwater Monitoring Coalition	Solek
Mar 29	Bio-Rad	Cao
Mar 29	Seminar: Dr. Lee Ferguson - " Engineered Nanomaterials in the Environment: Environmental Behavior and Risk to Aquatic Life "	Weisberg
Mar 30	SCCWRP Commission	Weisberg
Mar 31	Habitat Management and Restoration - Orange County	Stein
Apr 1	Bio-Objectives	Schiff
Apr 7	San Diego Bacterial Re-growth Study	Griffith
Apr 7	Wetland Managers' Group	Southern California Wetlands Recovery Project
Apr 7	Wetlands Outreach Group	Southern California Wetlands Recovery Project
Apr 9	Seminar: Dr. Craig Jones - " Sediment Transport Investigations at Contaminated Sediment Sites "	Weisberg
Apr 12	CTAG Special Meeting - SCCWRP Thematic Report	Weisberg

Apr 15	Bight '08 Coastal Wetlands	McLaughlin
Apr 19	Bight '08 Areas of Special Biological Significance	Schiff
Apr 19	Beach Water Quality Workgroup Monitoring and Reporting Subcommittee	Weisberg
Apr 20	Surface Water Ambient Monitoring Program - Measurement Quality Objectives	State Water Resources Control Board
Apr 21	Orange County Sanitation District Mapping Study	Ritter
Apr 22	Ballona Historical Ecology	Stein
Apr 27	University of Southern California Sea Grant	Maruya
May 1	Science Educator Workshop	Centers for Ocean Sciences Education Excellence (COSEE) Network
May 4	Laboratory Information Management Systems (LIMS)	Moore

Upcoming Commission/CTAG Meetings:

- The next [CTAG](#) meeting will be held as a joint meeting with San Francisco Estuary Institute's Regional Monitoring Program Technical Review Committee on Tuesday, May 11 from 10:00 to 6:00 at the East Bay Municipal Utilities District in Oakland, CA.
- The next [Commission](#) meeting will be held on Wednesday, June 2 from 9:30 to 12:00 at SCCWRP.

PROJECTS

Note: The following are progress updates about accomplishments for each of SCCWRP's projects in the last quarter. More details about each project can be found in SCCWRP's [2009-2010 Research Plan](#).

Projects with significant activity this quarter:

[DNA Barcoding for Assessing Benthic Infauna Communities](#)

[Science Advisory Panel for the State of California Recycled Water Policy](#)

[Emerging Contaminant Effects on Coastal Fish](#)

[Assessment and Management of Hydromodification Effects](#)

[Rapid Bacterial Indicator Development](#)

[Regional Monitoring/Assessment Program for Southern California Wetlands](#)

A. CONTAMINANTS

1. Sources

a. [Characteristics of Effluents from Large Municipal Wastewater Treatment Facilities](#)

Purpose: Characterize effluent discharge from each of southern California's major POTWs, and track trends in effluent quality and quantity over time.

Update: Staff members continued conducting quality control exercises on the 2007-08 data and updating the database.

Primary Investigator: [Stein](#)

b. [Characteristics of Stormwater Mass Emissions to the Southern California Bight](#)

Purpose: Compile and analyze information on the quality and quantity of stormwater discharges to the Southern California Bight, and track trends in these discharges relative to other pollutant sources.

Update: Staff continued analyzing historical stormwater data collected by the major municipalities.

Primary Investigator: [Stein](#)

c. Comparative Mass Emissions to the Southern California Bight

Purpose: Estimate mass emissions from all major sources to the Southern California Bight, estimate the relative contribution of each source, and track trends in mass emissions over time.

Update: Staff continued compiling information on discharges from oil platforms in preparation for producing an article in the 2010 Annual Report.

Primary Investigator: [Stein](#)

2. Measurement, Fate, and Bioavailability

a. In situ Measurement of Toxic Organic Compounds in Sediment Pore Water

Purpose: Develop and test an *in situ* sampler that utilizes solid phase microextraction (SPME) to improve sediment quality assessment for a wide range of regulated hydrophobic organic chemicals (HOCs).

Update: The final project report describing the technology development and lab and field trials was recently submitted to the Cooperative Institute of Coastal and Estuarine Environmental Technology (CICEET). A proposal to the EPA for continuing this work has been submitted and is under review.

Primary Investigator: [Maruya](#)

b. Development of Analytical Methods for Toxaphene

Purpose: Develop a new determinative method for identification and quantification of toxaphene residues in organic extracts of environmental samples.

Update: Staff completed purity analysis of purified toxaphene components over the past quarter. Over the next quarter, Staff will finalize sediment spiking protocols and commence preparation of a sediment control material containing known amounts of toxaphene congeners.

Primary Investigator: [Maruya](#)

3. Sediment Quality

a. Guidance for Implementation of a Sediment Quality Assessment Framework for Marine Bays

Purpose: Provide technical support and training for sediment quality assessment methods used to evaluate the new sediment quality objectives (SQO).

Update: Staff developed and conducted two 2-day SQO training classes for regulatory agency personnel. The classes were held on March 1-2 (San Diego) and March 15-16 (Oakland). A similar class for SCCWRP member agency staff has been scheduled for May 17-18 at SCCWRP.

Primary Investigator: [Bay](#)

[b. Development of a Sediment Quality Assessment Framework for Estuaries](#)

Purpose: Develop measurement tools and a data integration framework for assessing sediment quality in California estuaries.

Update: Work is continuing on a technical report summarizing the results of a sediment quality survey of the Sacramento and San Joaquin River Delta; a summary of the survey was presented during the March 25 ACS meeting in San Francisco. A meeting of the Benthic Index Workgroup was held April 22 in Oakland to discuss recent analyses of San Francisco Estuary benthic macrofaunal assemblages. Additional desired analyses of the results were identified in order to resolve questions regarding the impact of hydrologic and taxonomic variations on the assemblage groups. A manuscript describing the results is in preparation. Review of the results from a study to evaluate the ability of expert judgment to assess estuarine benthic community condition indicated a lack of consensus among experts in methods to classify benthic macrofauna in the Sacramento and San Joaquin Delta. It is unlikely that a benthic community index can be developed for the Delta without further research.

Primary Investigator: [Bay](#)

[c. Framework to Assess Impacts from Sediment Contaminant Bioaccumulation](#)

Purpose: Develop an assessment framework for evaluating the indirect effects of sediment contamination on humans resulting from the consumption of seafood, with a special focus on chlorinated hydrocarbons.

Update: A conference call with the Scientific Steering Committee (SSC) was held on February 8 to discuss refinements to the indirect effects assessment framework. An alternative (stochastic) approach that utilizes Monte Carlo simulation was presented and discussed. Additional information on the stochastic approach was requested, and an expanded description of the approach has been submitted for SSC review. SWRCB has released a [scoping document](#) on the second phase of the SQO policy development; comments on the document will be presented at the Water Board's May 19 meeting.

Primary Investigator: [Bay](#)

[d. Development of Toxicity Identification Methods for Current Use Pesticides](#)

Purpose: Develop and refine toxicity identification methods for marine sediments, with an emphasis on methods for current use pesticides.

Update: The focus of recent research has been on confirming TIE results for Ballona Estuary through measurements of bioavailable contaminant concentrations and sediment spiking tests. Chemical analysis of passive samplers deployed in Ballona Estuary indicated that bioavailable concentrations of trace metals, chlorinated hydrocarbons, and pesticides were below thresholds likely to result in toxicity to benthic organisms. Final sediment spiking experiments with DDT, DDE, Chlordane, and cyfluthrin are in progress. A workshop to discuss methods to improve sediment toxicity TIEs was held on April 7 in collaboration with the San Francisco Estuary Institute. Participants included a private testing laboratory,

University of California, USGS, EPA, and the Water Boards. Recommendations for improving the evaluation of non-contaminant effects, chemistry, and molecular responses were developed. The participants agreed to hold additional meetings and collaborate on improved TIE method development.

Primary Investigator: [Bay](#)

e. *Molecular Tools for Toxicity Identification Evaluation*

Purpose: Develop sediment toxicity identification tools based on the analysis of gene expression in marine invertebrates.

Update: The initial assembly and annotation of amphipod (*Eohaustorius estuarius*) RNA sequence data has been completed. A preliminary microarray consisting of approximately 9,000 gene probes has been designed. Refinements to the assembly are in progress and a final microarray for use in the next phase of research is expected to be completed in June. This microarray will be used by our collaborators at UC Berkeley and Hollings Marine Laboratory to develop contaminant-specific gene expression profiles for several contaminants.

Primary Investigator: [Bay](#)

f. *Development of Benthic Infauna as Indicators for Sediment Quality Assessment*

Purpose: Develop intercalibrated marine and estuarine benthic indices for habitats where benthic indices are not presently available.

Update: In collaboration with the San Francisco Estuary Institute, SCCWRP staff completed preliminary analysis of index development feasibility based on samples across a disturbance gradient in the San Francisco Bay and Delta. Feasibility in these mesohaline and limnetic habitats is less promising than what was achieved in previous efforts in polyhaline and euhaline estuarine and coastal areas. In addition, staff worked with the Washington State Department of Ecology to prepare for identifying habitat-related benthic assemblages in mesohaline and polyhaline estuaries.

Primary Investigator: [Ranasinghe](#)

g. *Sediment Profile Imaging for Evaluating Benthic Community Condition*

Purpose: Investigate sediment profile imagery (SPI) as an alternate method of measuring benthic community condition.

Update: The images and infaunal samples collected during the first year of the project continue to be processed.

Primary Investigator: [Ranasinghe](#)

h. [DNA Barcoding for Assessing Benthic Infauna Communities](#)

Purpose: Evaluate the efficiency of DNA barcoding in rapidly identifying benthic marine invertebrate species, for use in assessing environmental conditions in the Southern California Bight.

Update: A DNA barcoding colloquium was held at SCCWRP on February 17 with the keynote talk given by Dr. Paul Hebert, the founder of the barcoding concept. Additional talks were presented on using barcoding to identify freshwater invertebrate species and conduct bioassessment (Dr. Bernard Sweeney, Stroud Water Research Center), environmental barcoding of bulk un-sorted samples (Dr. Mehrdad Hajibabaei), and on challenges and difficulties facing barcoding (Dr. Erik Pilgrim, US EPA). Attendees of the colloquium came from SCCWRP member agencies, local universities, museums, and NGOs. A workshop has been organized by SCAMIT and SCCWRP to prepare marine benthic invertebrate specimens for DNA barcoding. The workshop will take place next quarter at the LACSD Marine Biology Laboratory with the goal of building the marine invertebrate DNA barcode reference library. Outcomes from the workshop will include collection of numerous properly identified voucher specimens, photographs of the specimens, and preparation of tissue samples for barcoding.

Primary Investigator: [Miller](#)

4. Emerging Contaminants

a. [Analytical Methods for Emerging Contaminants](#)

Purpose: Develop and evaluate analytical methods for detection and quantification of specific classes of emerging contaminants in various matrices (e.g. water, sediment, and biological tissues) at environmentally relevant levels.

Update: Staff members completed analysis of passive samplers deployed in the Ballona creek estuary to measure current use pesticides suspected of contributing to observed sediment toxicity (see projects [In Situ Measurement of Toxic Organic Compounds in Sediment Pore Water](#) and [Development of Toxicity Identification Methods for Current Use Pesticides](#)). Staff and project collaborators, including graduate students from USC, completed planning of calibration experiments for additional emerging chemicals using passive samplers. They will initiate these studies over the next quarter.

Primary Investigator: [Maruya](#)

b. [Occurrence and Fate of Emerging Contaminants in Coastal Habitats](#)

Purpose: Assess the inputs, occurrence, and levels of emerging contaminants throughout the Southern California Bight.

Update: Staff deployed and retrieved passive samplers in coastal watersheds to characterize emerging contaminants in stormwater. They also identified historical sediment, bivalve tissue, and marine mammal tissue samples for analysis of emerging contaminants. Over the next quarter, staff will oversee

analysis of both passive samplers and the historic environmental samples and commence with cataloguing of known and unknown contaminants in selected marine mammal tissues.

Primary Investigator: [Maruya](#)

Highlight

c. [Science Advisory Panel for the State of California Recycled Water Policy](#)

Purpose: Convene and facilitate a panel of scientific experts to provide the State with recommendations for addressing contaminants of emerging concern (CECs) in the Recycled Water Policy.

Update: The third meeting of the panel was held in Golden, CO February 25-26, where they continued their work to address their charge questions. The panel released their [draft recommendations](#) for public comment on April 16, 2010. Keith Maruya gave a briefing on the contents of the draft report to the State Water Resources Control Board at their April 20 meeting. The panel's fourth and final scheduled meeting will be held at SCCWRP on May 20-21, 2010.

Primary Investigator: [Maruya](#)

Highlight

d. [Emerging Contaminant Effects on Coastal Fish](#)

Purpose: Investigate the effects of emerging contaminant exposure on fish living in the vicinity of POTW or nonpoint source discharges.

Update: Preparation of a final report detailing a laboratory exposure of hornyhead turbot to two types of municipal wastewater effluent is near completion. This study found no significant alterations in plasma hormones at effluent concentrations up to 10-fold greater than those likely to be present in coastal receiving water. In a separate study, analyses of chemical and biological samples from longjaw mudsuckers collected from four wetland sites in southern California have been completed. A variety of pharmaceuticals, personal care products, and other contaminants of emerging concern were detected in water, sediment, and fish tissue samples from all sites, with the greatest occurrence in Tijuana Estuary. Mudsuckers from the Seal Beach Wildlife Refuge and Tijuana Estuary tended to have reduced reproductive maturity and greater gonad histopathological abnormalities compared to fish from study sites in Carpinteria Marsh. The preliminary results were presented to the Outreach Group for this project on April 7 and a report summarizing the study is in preparation.

Primary Investigator: [Bay](#)

e. [Molecular Tools for Assessing Contaminant Exposure and Effects](#)

Purpose: Develop improved tools for measuring emerging contaminant exposure and effects in fish based on measurement of gene expression.

Update: Measurements of gene expression in longjaw mudsucker liver samples for a study to investigate [Emerging Contaminant Effects on Coastal Fish](#) have been completed, and the data are currently undergoing statistical analysis. Preliminary results indicate that approximately 100 genes were differentially expressed among fish from four wetland study sites, and overall gene expression patterns

also appeared to differ among sites. A comparison of the gene expression results to other biological response and chemistry measures is underway.

Primary Investigator: [Bay](#)

f. Science Advisory Panel to Assess Effects of Contaminants of Emerging Concern on Coastal and Marine Ecosystems

Purpose: Convene and facilitate a panel of scientific experts to provide the State with recommendations for addressing contaminants of emerging concern (CECs) in coastal and marine ecosystems.

Update: At their initial meeting in January, the panel identified three areas of short term research that they would like to see conducted to help fill high priority data gaps: 1) characterize CECs in stormwater discharges to identify if this is an important route for CECs into the environment; 2) characterize CECs in historical marine samples such as sediments or tissues to identify trends in CEC magnitude; and 3) conduct toxicity screening studies to test for CEC effects in the environment. Sample identification, collection, and analysis to support these studies commenced in March 2010 and will continue through September 2010. The next panel meeting is tentatively scheduled for September 2010.

Primary Investigator: [Maruya](#)

B. NUTRIENTS

a. Development of a Periphyton Bioassessment Tool for Southern California Streams

Purpose: Produce tools utilizing periphyton communities for bioassessment of stream condition and nutrient impairment.

Update: Data analysis has begun to generate a set of candidate metrics to be incorporated into the southern California periphyton index of biotic integrity. Work building a suite of online resources for algal taxonomic identification is ongoing.

Primary Investigator: [Fetscher](#)

b. Technical Support for Development of Nutrient Numeric Endpoints in California Estuaries

Purpose: Provide technical support to the SWRCB for the development of nutrient numeric endpoints in estuaries.

Update: Staff entered the Bight '08 Eutrophication Assessment survey data into the database and conducted preliminary QA/QC (see project [Bight '08 Estuaries and Coastal Wetlands](#)). Staff also continued to support the statewide technical team, which is currently working on a comprehensive review of candidate indicators. They conducted a workshop on March 16 to review which fish species should be used as dissolved oxygen effects indicators.

Primary Investigator: [Sutula](#)

c. *Investigation of Algal Nuisance and Relationships with Nutrient Sources in Rainbow Creek and the Santa Margarita River Watershed*

Purpose: Assist the County of San Diego in evaluating the science supporting the use of the Nutrient Numeric Endpoint (NNE) framework and support the development or implementation of nutrient Total Maximum Daily Loads (TMDLs).

Update: This project is in the beginning phases. Staff met with watershed stakeholders to initiate study design. Further design and study preparation is expected over the next quarter.

Primary Investigator: [Fetscher](#)

d. *Quantifying the Role of Sediments in Nutrient Cycling in Southern California Lagoons*

Purpose: Understand the mechanisms and processes that control nutrient cycling in southern California lagoons.

Update: Staff members completed individual lagoon draft reports for Loma Alta Slough and Famosa Slough, two of the five lagoons in the study. Presentations of results for stakeholders will be scheduled during the next quarter. Data analysis and reporting continue for the other three lagoons.

Primary Investigator: [McLaughlin](#)

e. *Validation of Measurement Techniques for Quantifying Atmospheric Nutrient Deposition*

Purpose: Establish a reliable measurement technique as a first step toward characterizing and understanding the impact of atmospheric nutrient deposition on water quality in southern California.

Update: In collaboration with scientists at the U.S. Forest Service and Clarksen University, staff members have continued working on a 10-week inter-comparison study to identify the best methods for quantifying dry atmospheric nutrient deposition. The sampling methods being evaluated for dry atmospheric deposition include surrogate surfaces, passive absorbent samplers, and pumped air extraction samplers.

Primary Investigator: [Sabin](#)

C. STORMWATER DYNAMICS

a. *Dynamics and Partitioning of Stormwater Particles*

Purpose: Characterize the particle size distribution in stormwater discharges and quantify the partitioning of pollutants of concern onto various particle size fractions.

Update: Over the last quarter, staff analyzed data from the three storms sampled in Ballona Creek. For each of these storms, real time particle size data was collected using the LISST instrumentation, and samples were collected and analyzed to evaluate metals and bacteria partitioning to various particle size classes.

Primary Investigator: [Stein](#)

[b. Effects of Regionwide Fires on Deposition, Runoff, and Emissions to the SCB](#)

Purpose: Investigate the fate of water quality constituents resulting from southern California wildfires in order to quantify the effects of post-fire runoff on downstream metals and organics concentrations and loads.

Update: SCCWRP and partners continued implementation of the regional post-fire water quality monitoring program plan. Data from the final two storms sampled during the 2009-2010 season were compiled for analysis. In addition, planning continued for spring bioassessment sampling at the Station and Morris fire burn areas with the Stormwater Monitoring Coalition and the Los Angeles and San Gabriel Rivers Watershed Council.

Primary Investigator: [Stein](#)

Highlight

[c. Assessment and Management of Hydromodification Effects](#)

Purpose: Develop a series of tools supporting implementation of hydromodification management measures that could be used to better protect the physical, chemical, and biological integrity of streams.

Update: The channel susceptibility analysis tool was completed over the past quarter. This product represents one of the main goals of this project, which is to develop tools to help screen channels for the likely effects of hydromodification. The screening tool has two main elements, a GIS-based landscape scale analysis of changes in runoff and sediment yield and a field based assessment of susceptibility to both lateral and vertical adjustments to the channel cross-section. These two elements of the screening tools were published as SCCWRP Technical Reports [605](#) and [606](#), respectively.

Primary Investigator: [Stein](#)

New Project

[d. Biological Effects of Hydromodification on Stream Beneficial Uses](#)

Purpose: Investigate how in-stream structures (e.g., bank armoring) constructed in otherwise natural channels affect in-stream biological resources.

Update: Over the past quarter, a draft work plan was prepared and submitted to regional board staff for review. Preliminary study sites have been identified and site reconnaissance was also initiated over the past quarter. Field work is scheduled to commence in mid-late June 2010.

Primary Investigator: [Stein](#)

D. WETLANDS

1. Historical Ecology

a. Historical Ecology of Coastal Watersheds

Purpose: Document the historical condition of Southern California’s coastal and freshwater wetlands by compiling sentinel data sets from the 19th and 20th centuries.

Update: Work over the last quarter focused on three areas. First, the majority of data compilation was completed for the Ballona Creek watershed historical analysis. Second, data compilation and synthesis continued for the Santa Clara River/Ventura River historical analyses. Third, agency review of the digitized coastal survey map analyses was initiated.

Primary Investigator: [Stein](#)

2. Wetland Extent and Condition

a. Mapping the Extent and Distribution of Southern California Wetland and Riparian Resources

Purpose: Map existing southern California wetland and riparian habitat.

Update: After more than one year on hold due to the State bond freeze, activities will recommence next quarter.

Primary Investigator: [Sutula](#)

b. Effect of Climate Change on Coastal Wetland Extent and Distribution

Purpose: Describe and address the anticipated effects of global climate change on the extent and distribution of southern California’s coastal wetlands.

Update: Modeling analysis was completed over the last quarter and work began on the final report for the project.

Primary Investigator: [Stein](#)

c. Science to Support Wetland Restoration Uncertainties

Purpose: Identify and address regional uncertainties in wetland restoration in conjunction with the Southern California Wetland Recovery Project Science Advisory Panel.

Update: This project is still on hold due to the State bond freeze and will not appear in future Director’s Reports.

Primary Investigator: [Stein](#)

Completed

Highlight

E. BEACH WATER QUALITY

a. [Rapid Bacterial Indicator Development](#)

Purpose: Develop rapid methods that can augment or replace the existing methods for one or more species of indicator bacteria.

Update: At their last meeting, the SCCRWP Commission approved a demonstration project using rapid methods to make beach posting and re-opening decisions. The method will be used for the first time ever at select Orange County beaches this summer. Three local labs with varying levels of previous experience with rapid methods will participate. Training will occur in May and the labs will start to perform the new assay (without reporting results) in early June. Subject to approval of the Rapid Methods Task Force, results from the rapid methods will be used beginning July 1 by the Orange County Department of Public Health to make beach management decisions.

Primary Investigator: [Weisberg](#)

b. [Epidemiology of Nonpoint Source Impacted Beaches](#)

Purpose: Assess the risk of swimming-related illness following exposure to nonpoint source contaminated waters and, if needed, test new technologies to improve beach warning systems.

Update: Sampling from three different beaches in southern California is now completed. Over 25,000 swimmers were recruited and more than 700 samples were collected for at least two dozen water quality indicators. Data analysis is currently underway and nearly finished for the first study area (Doheny State Beach in Orange County).

Primary Investigator: [Schiff](#)

c. [Bacterial Source Tracking in Upper Santa Monica Bay](#)

Purpose: Develop a source tracking protocol that can be used to identify whether surface runoff is the primary bacterial source to impacted beaches throughout southern California.

Update: *Enterococci* levels at Paradise Cove beach have continued to remain lower than previous years. Future studies to support or rule out specific sources in the lower Ramirez watershed are on hold pending increased *enterococci* levels at the beach. A presentation to update LA County Supervisor Zev Yaroslavsky, who initially requested the study, was given April 29.

Primary Investigator: [Weisberg](#)

d. [Shellfish Beneficial Use](#)

Purpose: Collect information to inform the State's reclassification of shellfish harvesting areas based on the type of harvesting conducted.

Update: Staff briefed the project's Regional Board advisory committee on March 8 about analyses to quantify frequency of meeting shellfish bacterial standards at reference beaches. Subsequent efforts have focused on refinements to the analysis requested at that meeting. State Board staff are preparing for a public meeting scheduled May 3 in Sacramento to inform stakeholders about the project and solicit their input.

Primary Investigator: [Weisberg](#)

e. [BeachWatch Database Maintenance](#)

Purpose: Provide continued support to each of the coastal county environmental health agencies and the SWRCB in order to ensure successful collection and submission of beach water quality data.

Update: SCCWRP is making progress on the web portal and data system. SCCWRP staff will begin beta-testing the system web data submission portal with local environmental health agencies over the next quarter. While completing the implementation of this system, SCCWRP staff will continue to provide support to the SWRCB and environmental health agencies with data entry and upload to the current state Beach Watch system until the system transfer is complete.

Primary Investigator: [Moore](#)

F. REGIONAL MONITORING

1. Regional Marine Assessments

a. [Bight'08 Coastal Ecology](#)

Purpose: Determine the extent and magnitude of coastal ecology impact in the SCB, how the impact varies by habitat, trends in condition over time, and levels of contaminants in organisms that may be harvested for seafood.

Update: Sediment toxicity and trawl results were summarized and presented to the Planning Committee this quarter. Preliminary analysis indicates that the greatest impacts are occurring in embayments and estuaries. The extent of impact has changed little since the regional marine survey in 1998. The next meeting of the participants will be in June.

Primary Investigator: [Schiff](#)

b. [Bight'08 Water Quality](#)

Purpose: Quantify the major nutrient sources to the Southern California Bight and characterize the extent, magnitude, and ecological characteristics of algal blooms, with an emphasis on harmful algal bloom species.

Update: Glider and ship-based sampling of the Bight began in March 2010 and will continue into next quarter. Data analysis to quantify terrestrial inputs will begin next quarter.

Primary Investigator: [Howard](#)

c. Bight'08 Areas of Special Biological Significance

Purpose: Determine the range of natural water quality at reference locations, compare water quality near ASBS discharges to natural conditions, and assess the extent of ASBS with natural water quality among areas with and without discharges.

Update: Over the last quarter, reference site data from receiving waters were used to generate “natural water quality” thresholds. While average water quality near ASBS discharges was not dissimilar from reference site samples, some specific ASBS sites exceeded reference thresholds. Participants are now working on the final report.

Primary Investigator: [Schiff](#)

d. Bight'08 Rocky Habitat

Purpose: Determine the distribution of hard bottom habitats in the Southern California Bight, the range of natural biological conditions in these reef assemblages, how these conditions correlate with anthropogenic factors.

Update: Staff began data analysis with a comparison between professional monitoring organizations and citizen monitoring that sampled the same sites during Bight'08. Data showed that similarity between the two monitoring programs was limited. The next meeting of the participants will be in June.

Primary Investigator: [Schiff](#)

e. Bight'08 Shoreline Microbiology

Purpose: Identify the principal sources of fecal indicator bacteria at chronically problematic beaches in the southern California Bight.

Update: The Shoreline Microbiology program is on hold pending frozen State funding, though SCCWRP staff are conducting pilot studies to develop the sampling protocols. The first of those pilot efforts was conducted in Orange and Los Angeles Counties, where fecal indicator bacteria were found to re-grow on artificial storm drain substrates in large densities over a short amount of time. SCCWRP staff, in cooperation with the Cities of San Diego and Encinitas, will begin a pilot study on May 10 examining growth of *Enterococcus* bacteria in storm drains discharging to Moonlight Creek and La Jolla beaches.

Primary Investigator: [Griffith](#)

f. [Southern California Mussel Watch](#)

Purpose: Increase spatial coverage of the Mussel Watch program, compare it with passive sampling technology, and identify contaminants of emerging concern (CECs).

Update: Staff completed the winter season collection of native mussels for Southern California stations. Staff and collaborators will finalize the detailed design for targeted summer season collection with co-located passive samplers over the next quarter.

Primary Investigator: [Maruya](#)

h. [Water Quality Compliance Assessment](#)

Purpose: Develop a shared water quality compliance assessment protocol for coastal southern California POTWs.

Update: Work over this quarter has focused on 1) using salinity anomalies as a plume tracer, 2) analysis of spatial correlation between plumes detected using traditional (bacteria, ammonia) and CTD+ parameters, and 3) developing handy visualization methods for analysis of effluent plume's behavior. The preliminary results were presented at the "Ocean Sciences-2010" Meeting held February 24 in Portland, OR.

Primary Investigator: [Nezlin](#)

2. Regional Wetland Assessments

a. [Status and Trends in the Extent of California's Wetlands and Intensification of the 2011 National Wetland Condition Assessment](#)

Purpose: Increase state capacity for implementing a probability-based approach to monitoring the status and trends in wetland extent and condition.

Update: Collaborators continue to engage in pre-project planning and investigate potential opportunities to coordinate with the national wetland condition assessment planned for spring 2011.

Primary Investigator: [Sutula](#)

b. [Regional Monitoring/Assessment Program for Southern California Wetlands](#)

Purpose: Develop and begin to implement a regional monitoring program for southern California wetlands.

Update: SCCWRP staff worked with their statewide partners to launch the first version of the State Wetlands Portal (www.californiawetlands.net). The goal of this website is to provide the public with information on the quantity and quality of California wetlands. In addition, staff continued working with the California Wetlands Monitoring Workgroup to refine the State wetland monitoring and data management strategy.

Highlight

Primary Investigator: [Stein](#)

c. [Development of a Statewide Network of Reference Wetlands for California](#)

Purpose: Establish a conceptual approach to develop a network of reference wetlands for California.

Update: Over the last quarter, preparations for site sampling in summer 2010 continued. Potential reference sites for depressional and vernal pool wetlands have been identified with the assistance of researchers from UC Davis, UC Merced, and UC Berkeley.

Primary Investigator: [Solek](#)

d. [Bight '08 Estuaries and Coastal Wetlands](#)

Purpose: Assess the status of eutrophication in Southern California estuaries.

Update: Over the past quarter, staff worked to get the Bight '08 Eutrophication Assessment survey data into the master database. They also conducted a data inventory and preliminary QA/QC on the data. Two committee meetings were held to plan data analysis, which will begin over the next quarter.

Primary Investigator: [Sutula](#)

3. Regional Freshwater Assessments

a. [Regional Watershed Monitoring](#)

Purpose: Assess the extent and magnitude of environmental impact to freshwater perennial streams throughout southern California.

Update: This multi-year project completed its first year of sampling in 2009. SCCWRP is currently assisting participating agencies with coordination activities for the next round of sampling. This includes procedural training and QA exercises to ensure data comparability among monitoring personnel and laboratories.

Primary Investigator: [Schiff](#)

b. [Non-perennial Stream Assessment](#)

Purpose: Assess the validity of biological assessment tools in non-perennial streams and modify or develop new tools as needed.

Update: Sampling has been initiated for this project at 10 sites in Orange, Riverside, and San Diego counties. Sampling in 2010 will include reference sites, as well as those affected by moderate amounts of urban runoff, in order to assess biological responses due to water quality versus water quantity.

Primary investigator: [Mazor](#)

c. [Developing a Technical Foundation for Freshwater Biological Objectives](#)

Purpose: Develop the technical foundation for biologically-based regulatory thresholds (bio-objectives) in freshwater ecosystems.

Update: The SWRCB's public kickoff meeting for the Biological Objectives Policy development was held in early March. Since then, SCCWRP staff has been busy finalizing details of the technical study plan with the project team, which includes the California Department of Fish and Game and the US Geological Survey. The first Stakeholder Advisory Committee meeting is scheduled for May 26 at SCCWRP.

Primary Investigator: [Schiff](#); [Stein](#)

4. Regional Debris Assessments

a. [Distribution and Amount of Plastic Pellets on Beaches in California](#)

Purpose: Provide baseline information on the distribution and amount of plastic pellets on beaches throughout the state of California.

Update: Staff members have completed data analysis and are beginning to write a report. Preliminary results from the statewide survey showed that plastic pellets occurred primarily on southern California beaches. Over the next quarter, SCCWRP staff will also begin working with the State Water Resources Control Board and local citizen groups to begin an intensified survey based on the current results.

Primary Investigator: [Moore](#)

5. Information and Data Center

a. [Southern California Regional Data Center](#)

Purpose: Create and support a distributed data center at SCCWRP to improve data sharing between existing monitoring programs and the California Environmental Data Exchange Network (CEDEN).

Update: Staff members continue working with CEDEN partners to maintain and add data to the SCCWRP Southern California Regional Data Center (SCRDC). Over the next quarter, SCCWRP will continue to collaborate with CEDEN and other data center partners to add data and develop additional data visualization tools.

Primary Investigator: [Moore](#)

b. [National Hydrography Dataset Stewardship](#)

Purpose: Work with local agencies and scientists to provide accurate and timely updates to the USGS National Hydrography Dataset for the Santa Ana River watershed.

Update: Staff members continue to gather the most current spatial information and update NHD layers for the Santa Ana River watershed. Over the next quarter, staff will upload changes to the NHD website and continue working with local partners to make adjustments to the NHD layers.

Primary Investigator: [Moore](#)

c. [Web Data Services](#)

Purpose: Develop and maintain browser-based data discovery and visualization tools that will be made available through the SCCWRP web page.

Update: Staff members continue to work on new data visualization and analysis tools for the agency's web site.

Primary Investigator: [Moore](#)

d. [Spatial Sampling Designs for Mapping](#)

Purpose: Provide general guidelines for monitoring programs regarding how to capture the necessary spatial information to construct cost-efficient and scientifically defensible maps of environmental impact.

Update: SCCWRP has been working closely with the Orange County Sanitation District (OCSD) to conduct preliminary spatial variance estimates of the sediments near their ocean outfall. Lag histograms and variograms for multiple parameters, including sediment contaminants and biological assemblages, indicate that the current monitoring grid is likely insufficient to produce a contour map with acceptable statistical confidence. A special study design specifically to assess spatial variability near the OCSD ocean outfall is being designed for summer 2010.

Primary Investigator: [Ritter](#)

e. [Improving Probabilistic Surveys of Environmental Condition to Include Trend Detection](#)

Purpose: Create a probabilistic survey design and explore statistical analysis approaches that effectively combine both spatial extent and temporal trend information.

Update: Samples from revisited Bight '08 Coastal Ecology sites are still being processed.

Primary Investigator: [Ritter](#)

f. [Clean Beach Initiative Website](#)

Purpose: Provide an interface for the Clean Beach Initiative Program that will allow grant agencies to upload their beach water quality monitoring data.

Update: Staff members continue to work with the SWRCB and coastal county environmental health agencies to develop a mechanism for retrieving and displaying Beach Watch data (see project [Beach](#)

[Watch Database Maintenance](#)) through the new Water Quality Monitoring Council website. Over the next quarter, staff will work on further developing and implementing a web data portal for the submission of Clean Beach Initiative grant projects data.

Primary Investigator: [Moore](#)