

## **California Water Quality Monitoring Collaboration Network Participant:**

Join the California Water Quality Monitoring Collaboration Network and Southern California Coastal Water Research Project's Karen McLaughlin, Ph.D. from your own workspace for a special Webinar session, "Extent and Magnitude of Eutrophication in Southern California Bight Estuaries: Results of the Bight '08 Regional Survey". Please join us on Thursday, June 20, 2013, 11:30 AM -12:30 PM. Please see the instructions below to join the webinar. To watch the presentation, "join the online meeting" and to hear the meeting, "join the teleconference" as we use voice over phone protocol

## **Extent and Magnitude of Eutrophication in Southern California Bight Estuaries: Results of the Bight '08 Regional Survey**

Eutrophication of estuaries is a global environmental issue, with demonstrated links between anthropogenic impacts in watersheds, increased nutrient loading to coastal waters, harmful algal blooms, hypoxia, and impacts on aquatic food webs (Valiela et al. 1992, Smith et al. 1999, Kamer and Stein 2003). According to U.S. Environmental Protection Agency (EPA), eutrophication is one of the top three causes of impairment to the nation's waters (USEPA 2001). A 2007 study of US estuaries conducted through the National Oceanic and Atmospheric Administration's (NOAA) National Estuarine Eutrophication Assessment (NEEA) found the majority of estuaries assessed had overall conditions rated as moderate to highly eutrophic (Bricker et al. 2007). This survey also highlighted significant data gaps. In the Southern California Bight (SCB), one of the most populated regions in the US, only eight of the region's 76 estuaries were on the list of study sites in the NEEA and there was adequate data in only 2 of the 8 SCB estuaries to make an assessment of eutrophic status. In response to this data gap, the magnitude and extent of eutrophication and linkage to nitrogen (N) and phosphorus (P) loads were measured between October 2008-2009 at 27 "segments" in 23 estuaries in the Southern California Bight (SCB). Extent and magnitude of eutrophication was scored with modified components of the European Union Water Framework Directive (WFD) Assessment Framework, which categorizes estuaries from very high to very low ecological condition using 3 indicators (macroalgae, phytoplankton, DO). Based on this framework, a large fraction of segments had moderate or lower ecological condition, which is considered actionable in the EU: (78% based on macroalgae, 39% for phytoplankton, and 63% for DO). Macroalgal biomass greater than 70 g dw m<sup>-2</sup> and 25% cover (which typifies the threshold between moderate ecological condition and high ecological condition in the EUWFD) was found at 52% of sites during any single period and 33% of segments had this level of biomass for 8 weeks or longer, a duration found to negatively impact benthic infauna. Duration of hypoxic events (DO < 4 mg L<sup>-1</sup>) was typically short, with most events (98%) less than 1 day; although 53% of segments had at least one event longer than 24 hours. A significant positive correlation was found between dry season N load and macroalgae and phytoplankton biomass. DO was not correlated with N load; however, it was correlated with sediment organic carbon, suggesting it integrates the effects of eutrophication over longer time scales compared to primary producers.

For more information:

## **Southern California Bight 2008 Regional Monitoring Program: VIII. Estuarine**

**Eutrophication.** 2012. K Mc Laughlin, M Sutula, L Busse, S Anderson, J Crooks, R Dagit, D Gibson, K Johnston, N Nezlin, L Stratton. Technical Report 711. Southern California Coastal Water Research Project. Costa Mesa, CA

### **Abstract**

[ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/711\\_B08EE\\_ES.pdf](ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/711_B08EE_ES.pdf)

### **Full Document**

[ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/706\\_StatusTrendsMonitorAgResources.pdf](ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/706_StatusTrendsMonitorAgResources.pdf)

### **Karen McLaughlin, Ph.D.**

Karen McLaughlin, Ph.D. is a biogeochemist specializing in nutrient cycling and source tracking in streams, estuaries, and coastal waters. She received her B.S. in Geosciences from Penn State University in 1999, and her Ph.D. in Geological and Environmental Sciences from Stanford University in 2005. Karen joined SCCWRP in March 2007. Her current research falls into three areas: 1) understanding factors and processes controlling ecosystem response to nutrient loading, 2) development of indicators of eutrophication in estuaries and streams, and 3) determination of "natural background" sources and cycling of nutrients via atmospheric deposition, groundwater inputs, assimilation, nitrogen fixation, and denitrification.

[www.sccwrp.org/AboutSCCWRP/SCCWRPStaff/McLaughlinKaren/](http://www.sccwrp.org/AboutSCCWRP/SCCWRPStaff/McLaughlinKaren/)

### **Meeting information**

Topic: CWQMCN - Eutrophication in Southern California Bight Estuaries

Date: Thursday, June 20, 2013

Time: 11:30 am, Pacific Daylight Time (San Francisco, GMT-07:00) <Please log-in early.>

Meeting Number: 743 934 795

**Meeting Password: wqwebinar**

### **To join the online meeting**

**Goto** <https://waterboards.webex.com/waterboards/j.php?ED=200731647&UID=484113162&PW=NZjU0ZTRkNmVh&RT=MiM0>

### **Teleconference information**

**Call-in toll-free number (Verizon): 1-866-761-8603 (US)**

Call-in number (Verizon): 1-517-652-7895 (US)

Show global

numbers: <https://wbbc.verizonbusiness.com/wbbcClick2Join/servlet/WBCClick2Join?TollNumCC=1&TollNum=517-652-7895&TollFreeNumCC=1&TollFreeNum=866-761-8603&ParticipantCode=5095154&customHeader=mymeetings&dialInNumbers=true>

**Attendee access code: 509 515 4**

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2. On the left navigation bar, click "Support".

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<https://waterboards.webex.com/waterboards/systemdiagnosis.php>.

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**We have set up a webpage for the California Water Quality Monitoring Collaboration Network (CWQMCN) at:**

[www.waterboards.ca.gov/water\\_issues/programs/monitoring\\_council/collaboration\\_network/index.shtml](http://www.waterboards.ca.gov/water_issues/programs/monitoring_council/collaboration_network/index.shtml)  
Webinar materials (if available), all past webinars (recordings and pdfs) will be posted on the website. The recorded webinars and associated materials are located under 'Monthly Webinars'. We hope to use this webpage to help you network with each other and with the larger monitoring community. So, feel free to give us your ideas on how to make it better.

**CWQMCN Emails:**

New participants can join the webinar listserv by signing up on the web at:

[www.waterboards.ca.gov/resources/email\\_subscriptions/swrcb\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml). Enter your email address and name, place a check mark next to "Water Quality Monitoring Collaboration Network - Webinar Sessions", then click the "subscribe" button.

**California Water Quality Monitoring Professional Network :**

Share technical and support tools for water quality monitoring, assessment and reporting; Encourage discussion on common concerns like information management and program development; Provide a forum for networking and collaboration. This LinkedIn Group, California Water Quality Monitoring Professional Network, compliments the California Water Quality Monitoring Collaboration Network (CWQMCN) and was created so that water quality monitors and Network members would have the ability to further collaborate and communicate outside of the current CWQMCN Webinar series and emails. If you are a member of LinkedIn please join the group. Not a member yet? Please consider doing so and joining this group of water quality monitoring professionals, [www.linkedin.com](http://www.linkedin.com)