

**Southern California Coastal Ocean Observing System (SCCOOS)  
Board of Governors Meeting  
NOTES**

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University of Southern California, Los Angeles  
1 December 2011

**Attendees**

David Caron, *University of Southern California*  
Chris Cohen, *Southern California Coastal Ocean Observing System*  
Amanda Dillon, *Southern California Coastal Ocean Observing System*  
Mas Dojiri, *Environmental Monitoring Division, City of Los Angeles*  
Linda Duguay, *University of Southern California Sea Grant*  
Dominic Gregorio, *State Water Resources Control Board*  
Lisa Hazard, *Southern California Coastal Ocean Observing System*  
Benjamin Holt, *Jet Propulsion Laboratory, NASA*  
Burt Jones, *University of Southern California*  
Roberta Marinelli, *Wrigley Institute*  
Guido Marinone Moschetto, *Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE)*  
Jim McWilliams, *University of California Los Angeles*  
George Robertson, *Orange County Sanitation District*  
Carlos Robles, *California State Los Angeles*  
Leslie Rosenfeld, *Central and Northern California Ocean Observing System (CeNCOOS)*  
Dan Rudnick, *Scripps Institution of Oceanography, UCSD*  
Arthur Shak, *U.S. Army Corps of Engineers*  
Soroosh Sorooshian, *University of California, Irvine*  
Eric Terrill, *Southern California Coastal Ocean Observing System*  
Julie Thomas, *Southern California Coastal Ocean Observing System*  
Brian Tracy, *U.S. Army Corps of Engineers*  
Libe Washburn, *University of California, Santa Barbara*  
Steven Weisberg, *Southern California Coastal Water Research Project*

**I. Welcome and Introductions**

**II. Overview of SCCOOS activities, brief status reports (Libe Washburn)**

- departure of Burt Jones and Mark Moline
- succession in SCCOOS and leadership challenges

Julie was nominated to be the new Chair of the National Federation of Regional Associations for Coastal and Ocean Observing (NFRA), congratulations!

**Update on SCCOOS finances (Julie Thomas)**

Julie Thomas: SCCOOS submitted a five year proposal to the U.S. Integrated Ocean Observing System (IOOS), through the National Oceanographic Partnership Program (NOPP), that was funded at \$1.768m for the current fiscal year FY2011. The total amount for U.S. IOOS in FY11

was \$28.442m, which includes \$20m for the 11 regions, \$1.956m for the modeling test bed and sensor verification (SURA and ACT), and \$6.486m for the IOOS Program Office.

The FY12 appropriations bill for NOAA has been signed into law with \$37.645m for IOOS, which includes \$17.55m for the regions, \$5m for high frequency (HF) radar systems, \$8.5m for Sensor Technology Innovation, and \$6.595 for the IOOS Program Office.

Eric Terrill: The HF radar line of \$5m will be allocated according to national priorities for surface currents which include search and rescue (SAR), oil spill response, and maritime traffic-major ports and shipping.

Thomas: The \$8.5m line for sensor technologies will be issued through a Request for Proposals (RPF) and it will be a good opportunity for SCCOOS to apply for support for harmful algal blooms (HABs) monitoring, gliders, and shore stations. SCCOOS partners are really trying to make do with current funding levels because everyone is so committed to this project.

Dan Rudnick: Everything in the SCCOOS budget is highly leveraged and has many other sources of funding.

Thomas: SCCOOS has a wonderful rapport with stakeholders and SCCOOS staff can provide further budget details if you have any questions.

Steven Weisberg: Can the group discuss the sensor technology innovation and sensor verification?

George Robertson: What happened to SURA and ACT in FY12?

Terrill: SURA and ACT were not earmarks in FY12 and were outside the IOOS budget line. If funded, the sensor technology grants will be handled as a NOPP proposal and are designated for advanced technology, not sensor development, but higher technologies that are ready to be picked up as part of the IOOS mission. NOAA wrote a sensor plan that includes ocean acidification, dissolved oxygen, nutrients, HABs, and animal borne sensors. SCCOOS will look at how to apply and include opportunities in Southern California.

Weisberg: SCCOOS is well positioned to apply for these funds, the focus is on chemical and biological sensors and with the strong emphasis on water quality in SCCOOS, there is an opportunity to tie in with beach water quality, HABs, chemical, nitrogen, and nutrient criteria. SCCOOS needs to be strategic and create a working group to develop a strategy.

Terrill: SCCOOS has a basis with the automated shore stations and pier network, there are a number of opportunities.

Leslie Rosenfeld: It is also important to have agencies committed to use the sensor data as end users.

Weisberg: I recently became chair of the board of ACT, their impact has been on sensor work that leads ocean observing systems to adopt technologies that they would not have focused on. ACT chose ocean acidification as its focus, but there is no plan for ocean observing systems and ocean acidification. The group is very interested in what is going on with C-CAN. ACT is a line item but the funding is not set yet.

### **California and West Coast Collaborations** (Chris Cohen and Leslie Rosenfeld)

Chris Cohen: Introduction and overview of statewide California and west coast collaborations.

Rosenfeld: Improving coordination between CeNCOOS and SCCOOS will benefit both regions. The next Joint Strategic Advisory Committee (JSAC) meeting will be in central or northern California in the spring. CeNCOOS is adopting a ports and harbors page for San Francisco that is based on the pages for Los Angeles/Long Beach and San Diego. For statewide modeling, both regions have atmospheric and ocean circulation models, but there could be more collaboration and increased efficiencies. I am currently working half-time with CeNCOOS and NFRA. As a consultant for NFRA, I am working on a national synthesis of the ten year build out plans from the regions. The synthesis emphasizes commonalities among the regions and will be combined into one cohesive package that will be useful for Congress.

Cohen: SCCOOS is making an effort to work in coordinated way with CeNCOOS for communications with the state. One area is marine protected area (MPA) monitoring, which is approaching a five-year evaluation, and SCCOOS is working with the Monitoring Enterprise to interpret data collection. SCCOOS also recently signed a West Coast Memorandum of Understanding (MOU) with CeNCOOS and the Northwest Association of Networked Ocean Observing Systems (NANOOS). There were a couple of reasons for creating this document, including coordinated management and policy at west coast level for interactions with the West Coast Governors' Agreement on Ocean Health and the National Ocean Policy. The MOU shows that the regions are committed to working together on a west coast scale and focus areas. One specific example is a recent proposal submitted to NOAA's Monitoring and Event Response for Harmful Algal Blooms (MERHAB) Research Program for an integrated west coast HAB portal.

### **Collaborations with Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE) and Universidad Autónoma de Baja California (UABC) colleagues (Dan Rudnick)**

- Glider program in Gulf of Mexico (in progress)
- Glider program off California in planning stage with CICESE (proposal submitted)
- High frequency (HF) radar on Coronado Islands with UABC, Reginaldo Durazo
- Coastal Data Information Program (CDIP) buoy collaboration

Rudnick: SCCOOS has a variety of collaborations with Mexican colleagues, including gliders, HF radar, and the CDIP buoy. In Southern California, three glider lines have been running continuously for five years, the data is going out to various models, and the goal is to extend coverage northward and southward. The spray gliders were involved in the 2010 Deepwater Horizon oil spill in the Gulf of Mexico and I was contacted by José Ochoa at CICESE to establish glider lines in Mexico. These gliders have been out since early this year, deployed in April or May, and an ongoing line in the Gulf of Mexico. They are measuring temperature,

salinity, and CDOM (colored dissolved organic matter); and was funded by Consejo Nacional de Ciencia y Tecnología (CONACYT). I am working with Reginaldo Durazo at UABC and we have submitted a proposal to Mexican agencies that, if successful, will include glider lines for Mexico.

Terrill: Coronado Island had a HF radar site in 2002 that was funded by the state board to study cross-border pollution. There could be other sites down to Ensenada, to cover the LNG terminals, and development continues in the border region.

Thomas: The CDIP buoy is invaluable because it provides the south waves that are critical to operations.

#### **Operational overview (Eric Terrill)**

- SCCOOS and NSF Ocean Observatories Initiative (OOI) collaboration
- Plume tracking capability for supporting diversions

Terrill: John Orcutt was unable to attend, so I can provide an overview of OOI and IOOS. IOOS has had a large emphasis on data management, at the overall national level, and OOI is maturing to the point that there are technologies that might be applicable at the regional level. SCCOOS is looking at the best way to capitalize on the investment and the best way to leverage OOI.

Jim McWilliams: A key step that SCCOOS has not taken is validation of the real-time analysis system. There is about to be a transition of the modeling system and energy has to be put into model validation.

Art Shak: Brian and I are in the Los Angeles district office of the U.S. Army Corps of Engineers (USACE) with a \$4b budget. There is a new strategic plan with four focus areas: coastal hazards and flooding, commercial navigation and ports, ecosystem protection, restoration projects and permit process. This is the framework which SCCOOS falls into, to help rethink project evaluation, instead of project by project, there is a push to evaluate by region. Our primary mission is focused on water resources, water supply, and navigation. The USACE needs to inform risk-based decision-making and communications for the risks of projects; a target item to consider is global climate change. But the tight budget situation affects us all.

### **III. Introduce issues and questions for morning roundtable discussion (Washburn)**

#### **Questions:**

- What does a future SCCOOS look like in partnership with regional boards, other state agencies, and research networks (e.g. The California Current Acidification Network [C-CAN] and OOI)?
- Are there funding opportunities and agency partnerships relevant to water quality at the state level that SCCOOS is missing?
- What new collaborations and data products could be developed with CeNCOOS and agencies to benefit state-wide water quality efforts?
- Are there cross-border water quality efforts that would benefit from collaborations between SCCOOS and Mexican colleagues and institutions?

- Do BOG members have advice for SCCOOS in obtaining funds to initiate activities related to these questions?

Washburn: SCCOOS has many partnerships with state boards and agencies, but funding is always a concern. Additional funding will come from agency partnerships, with CeNCOOS and statewide, for the California current ecosystem, to understand issues related to climate change on a larger scale. I, myself, would like to see more collaborations with Mexican colleagues and institutions.

Guido Marinone Moschetto: CICESE is working on several water quality issues including ocean acidification and HABs. It is already on our minds to integrate with SCCOOS and there are individual researchers' projects with SCCOOS.

Weisberg: What does the future of SCCOOS look like? SCCOOS has used most of its funds to collect data, but that is not where its strength is, it is in the brainpower- how to take the data and use it. SCCOOS could co-op others to collect the data and feed it into SCCOOS.

Washburn: The way SCCOOS has engaged this brainpower is shown in how the data are widely used in papers and supporting analysis, for example the Santa Barbara LTER program uses SCCOOS data. There has just never been enough funding to analyze or synthesize the data.

Weisberg: SCCOOS should produce products, it had to start with a network for data and approaches, but right now it is consuming too much of the funds.

McWilliams: Someone has to collect the data, but there is essentially a failed business plan. The presumption was that NOAA and the state would provide the basis for funding but those sources aren't growing and that doesn't seem to be where SCCOOS is valued. But it could be valued by products, for example by the USACE. How does SCCOOS create the bridge so that you can say what you want and SCCOOS can respond? At the moment, it is an untargeted effort, you aren't asking and SCCOOS isn't telling. SCCOOS needs to be in the position to provide answers.

Washburn: I hope that the BOG can get feedback from stakeholders and address the needs of agencies, that is one reason why Dominic and George are here today.

George Robertson: Locally, SCCOOS is good at collecting some data sets, but doesn't have all the staff necessary. There is some data that SCCOOS cannot collect because institutionally there isn't the capacity. HF radar will be included in the Environmental Impact Report (EIR) and will be an important part. Orange County Sanitation District (OCSD) has regional monitoring, it is an opportunity for SCCOOS to partner, OCSD goes out quarterly and collects data as well as special projects. What is the water quality program going to look like in five years? How can SCCOOS make it better in the future and less redundant? There are opportunities statewide.

Rosenfeld: I liked Jim's statement, "you aren't asking and we aren't telling." The Synthesis for Coastal Ocean Observing Products (SCOOP) Report, which I worked on as a consultant, is complete and will soon be released. That statement could be the title of the report. The problem is on both sides and there are some suggestions in the report on how to proceed. It is going to be

the basis of the discussion in the coming year with the Ocean Protection Council (OPC). With HF radar run by academic systems, it leads to some problems and the Regional Associations are spending too much time collecting data. Collecting data still needs to go through the technology experts, but it doesn't mean that there aren't other alternatives. For some types of data, the academic basis works fine, others might use other models. If there is a center for collecting data, it can accomplish efficiencies, and not lose the connections to the academic communities, but also connect to the user side.

Lisa Hazard: SCCOOS is trying to do a lot of these things on the collection and data delivery side. On the data side, once it is out of the research realm, there has to be an end-to-end experience to have full knowledge of the data set. On the product side, there are products delivered to stakeholders and users, such as the plume trajectories and harbor pages. IOOS is focused on data distribution and access to the data, output in near real-time, so that everyone has the opportunity to conduct analysis. Through collaborations and uses of common websites, SCCOOS has tried to make those data products and visualizations accessible for users and programmers. For example, HF radar data is available for programmers to integrate into their own websites and SCCOOS is working on making the HABs data accessible.

Weisberg: How does SCCOOS allocate its dollars, that are now going mainly into data collection? What if one third went to data collection, one third to new technologies, and one third to products?

McWilliams: Data organization availability is one level, but providing answers is a higher level standard that I think SCCOOS has been neglecting.

Terrill: NOAA has a specific business plan focused on products and the real-time uses of data synthesis products. IOOS does not recognize synthesis products, how can they be informed? Now, SCCOOS has multiple years of data that can be synthesized, but if you look at the synthesis products, they have not been funded out of IOOS. IOOS is metrics-based, based on data points rather than decision-making based on synthesis products. The state recognizes the value of products and have funded specific projects. So, I hesitate trying to restructure the SCCOOS budget, because so much is within the IOOS purview.

McWilliams: If SCCOOS future is only NOAA IOOS, it will be too limited.

Rosenfeld: The regions have to respond to mandates from the IOOS office but it might make a strong statement for boards of our Regional Associations to make that statement to the IOOS office, that some of the funding needs to be used to meet their demands which are numerous and time consuming. Would specific letters make a difference?

Terrill: Within the National Ocean Service, the focus is on data, it is not a climate synthesis office.

#### **IV. State-wide WQ perspective (Dominic Gregorio)**

#### **V. State-wide HAB issues (Dave Caron)**

- State-wide perspective on HABs
- SCCOOS HABMAP website display

**VI. High resolution models to address WQ issues (Jim McWilliams)**

**VII. Experiences from the first Hyperion Outfall diversion (Mas Dojiri)**

- Planning for 2013 diversion

**VIII. Planning & issues related to 2012 OCSD diversion (George Robertson)**

**IX. Follow-up on WQ presentations and morning roundtable discussion**

Ben Holt: The Jet Propulsion Laboratory (JPL) has a new web page: the state of the ocean page. It has the most recent ten days of satellite data in Google Earth. For example, with wind speed data, you can put in the image with wind vectors as an overlay. I would like it to eventually replace the JPL product that SCCOOS links to now.

Weisberg: SCCOOS should form a subgroup to develop a game plan. There are four topics for follow-up and planning: 1. Nutrients and HABs (where to go next with the infrastructure, who should it be marketed to?), 2. Sensor Technologies RFP, 3. Ocean Acidification (and how it ties into Dominic's work), 4. Hyperion Treatment Plant and OCSD Diversions. There needs to be a liaison in each area, a point of contact for following through on these activities.

Terrill: You can contact Julie or myself and the Executive Steering Committee can look at these projects and determine future plans.

Thomas: We have a weekly call with the Committee Chairs, to keep us in the loop on projects and going forward staff can address your concerns.

**Closing remarks (Washburn)**

**ACTION ITEMS;**

1. Form subcommittees for Sensor Technology RFP (Gliders, HABs, Shore Stations, Rapid Indicators)
2. Find new Point of Contact for water quality to replace Burt Jones