

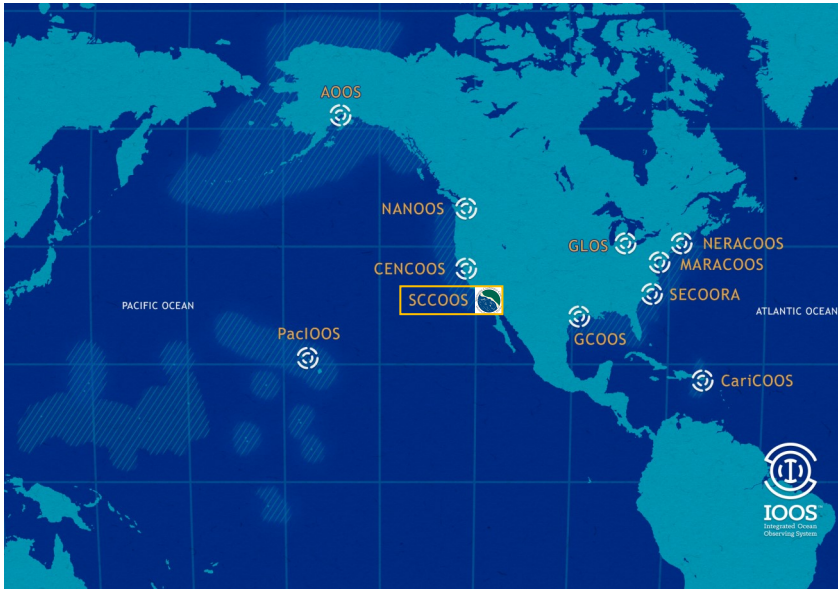



SCCOOS: A Year in Review

The IOOS Regional Association Serving Southern California

SCCOOS.ORG


Focus: SCCOOS was formed in 2003 under the nationwide U.S. IOOS directive to form 11 Regional Associations to generate and deliver data for improved decision making to agencies and stakeholders at both local and national levels. SCCOOS works within IOOS to coordinate and expand an integrated coastal observing system in the Southern California Bight, supporting national and regional priorities. 

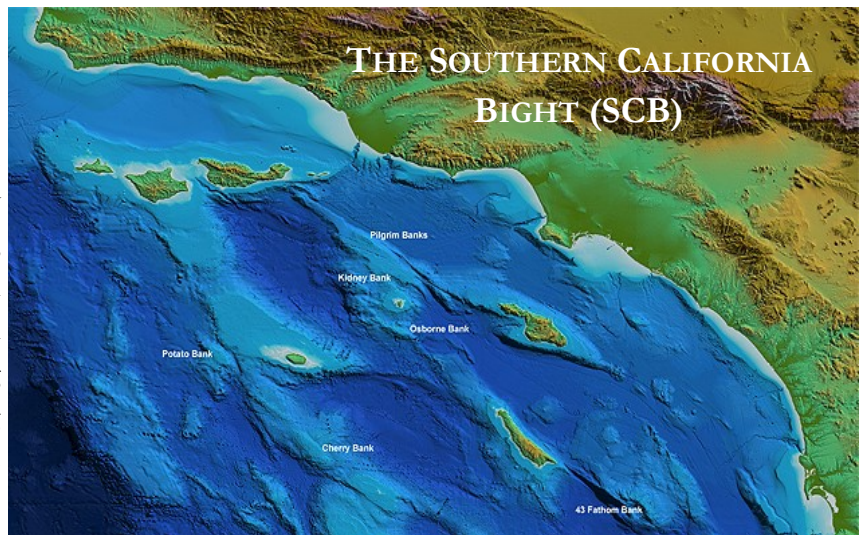


The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists, and the general public. As the regional observing system for Southern California, SCCOOS has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical, and physical observations and models, many of which are available in near real-time. SCCOOS advocates for sustained and enhanced observations while supporting product development. 

What makes the Southern California Bight so Unique?

The five heavily-impacted counties in the SCB have a population of 17 million people, representing 14% of the coastal population of the United States. In 2012, ocean-related tourism and recreation businesses employed about 193,000 persons in these five counties and contributed \$9 billion of GDP to local economy. Further, the SCB is distinguished by unique geography, climate, and life.

The highly urbanized coastline is adjacent to complex ocean conditions as a result of offshore islands; a diversity of coastline characterized by headlands, bays, beaches, submarine canyons, estuaries, and coastal mountain ranges, which influence the marine atmosphere. Unique ocean circulation patterns from subtropical water flowing to the north nearshore, and subarctic water moving south offshore, creates a biological transition zone that supports a vast diversity of marine species. 



SCCOOS REGULARLY COLLABORATES WITH LOCAL, STATE, FEDERAL AND INTERNATIONAL PARTNERS TO CONTINUE TO REACH NEW AUDIENCES AND TO STRENGTHEN EXISTING PARTNERSHIPS. HERE ARE A FEW HIGHLIGHTS!

| | |
|------------------|---|
| January 20 & 21 | SCCOOS Program Meeting at Ocean Institute in Dana Point, California |
| February 23-26 | OSPR-Chevron Technology Workshop |
| March 1-6 | IOOS Spring Meeting and Hill Visits |
| March 19 | San Diego Science and Technology Week Tour |
| April 6 | Russell Callendar, Acting Assistant Administrator, National Ocean Service Visit |
| April 29 | Southcoast Marine Protected Area Collaborative Regional Meeting |
| May 5 & 6 | 2014-2015 Pacific Anomalies Science and Technology Workshop |
| May 26-29 | IOOS Data Management and Communication Meeting |
| June 3 | SCCOOS Executive Steering Committee Meeting at UC, Los Angeles |
| June 4 | California Water Quality Monitoring Council Data Management Workgroup |
| July 2 | City of Los Angeles Hyperion Water Reclamation Plant Pre-diversion Meeting |
| July 6-10 | Senate Ocean Caucus Briefing in Washington DC |
| July 20-24 | Data Management Training—THREDDs Conference in Boulder, Colorado |
| August 4 | NOAA Leaders Visit—Manson Brown, Russell Callendar and Richard Spinrad |
| September 13-16 | IOOS Associations Director’s Meeting in St. Petersburg, Florida |
| September 22 | Ocean Protection Council Workshop |
| October 8 | Carlsbad Aquafarm Meeting |
| October 29 | SCCOOS tour with San Marcos Students |
| November 9-12 | Coastal & Estuarine Research Federation (CERE) Conference in Portland, Oregon |
| November 13 & 14 | NOAA Day at the Aquarium of the Pacific in Long Beach, California |
| December 3 | SCCOOS Board of Governors Meeting |



Pictures (Left to Right): 1) Dan Rudnick, Lisa Hazard, Bob Guza and Falk Feddersen use the break at the SCCOOS Program Meeting in January to discuss ideas. 2) SCCOOS has a touch screen display at UC, San Diego’s Birch Aquarium that informs patrons of the prevailing conditions and their local effects; 3) Reginaldo Durazo (UABC), Francisco Chavez (MBARI), Armando Trasvina (CICESE) Jose Gasti and Alfredo Giron Nava enjoy the Pacific Anomalies Reception.

January 2015: esri® Oceans Conference includes Jen McWhorter, SCCOOS Government and Public Relations Coordinator, on Panel Discussion

Alongside Dr. Russell Tait of ExxonMobil RADM, Michael Jones of The Maritime Alliance, Dawn Wright of esri® and Rear Admiral Gerd Gland of the NOAA’s Office of Coast Survey, Jen McWhorter participated on a panel at the most recent esri® Oceans conference.



How We Use the Oceans

Panel Discussion featuring Dr. Russell Tait of ExxonMobil RADM, Michael Jones of the Maritime Alliance, Dawn Wright, Esri Chief Scientist, Jennifer McWhorter, Scripps SCCOOS, and Rear Admiral Gerd Gland, Office of Coast Survey, NOAA.

The panel discussed the multitude of ways that we use our oceans and how to promote safe and effective marine spatial planning (MSP). If you don’t have the time to check out entire [video](#) you could view our

favorite section around minute 55 where Jen discusses practical applications of MSP and communicating successes in order push the collective movement forward. A special thanks to the folks at esri® for allowing SCCOOS to participate in such an important discussion.

February 2015: Julie Thomas (SCCOOS) and David Anderson (CeNCOOS) Present at an OSPR-Chevron Response Technology Workshop



Julie Thomas and David Anderson both participated in a the California Department of Fish and Wildlife's Office of Spill Prevention and Response workshop in Alameda, California February 23-26, 2015. The focus of this workshop was field data technology, data displays and management during oil spill responses. Julie’s talk expanded on how surface currents and wave information can assist with oil spill response and David’s talk informed the audience about how surface current observations and forecasts benefit the California Coast.



March 2015: SCCOOS Travels to DC for Hill Visits and IOOS Meetings

Julie Thomas, SCCOOS Executive Director and Jen McWhorter, SCCOOS Government & Public Relations Coordinator visited our nation’s capitol and participated in IOOS program meetings. They were accompanied by their fellow OOS colleagues in meetings with congressional representatives and their staff. These visits are integral to communicating the importance of ocean observations and their applications to decision makers.



Julie Thomas and Jen McWhorter stop for a photo with California Rep. Juan Vargas



Julie Thomas (SCCOOS) and Raphe Kudela (CeNCOOS) highlight the coordination between California’s two Ocean Observing Systems

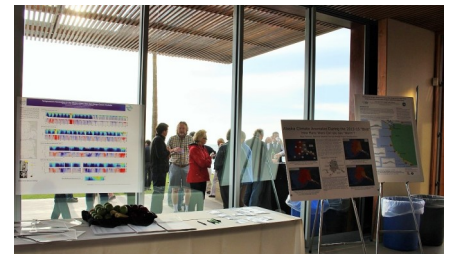
May 2015: Pacific Anomalies Science and Technology Workshops

On May 5th & 6th a workshop was held at Scripps Institution of Oceanography that brought together the Pacific Ocean regional associations of IOOS, the IOOS program office, as well as federal, state, and regional (including Alaska, Canada, Washington, Oregon, California, Mexico, and Hawaii) subject matter experts and coastal managers to discuss the 2014/2015 prevailing atmospheric and oceanographic anomalous conditions in the NE Pacific Ocean.

The first session of a two-part workshop brought together such a diverse range cross-disciplinary team of experts to better understand “what” is being observed, including the relative timing of the observations. A [second workshop in Seattle on January 20/21, 2016](#) will try to build and improve our understanding of how these significant oceanographic variations arose, their impact on our marine ecosystems, weather, and economic well-being, and ways in which we can potentially improve predictive capabilities. Special thanks for the generous support from our sponsors and steering team.

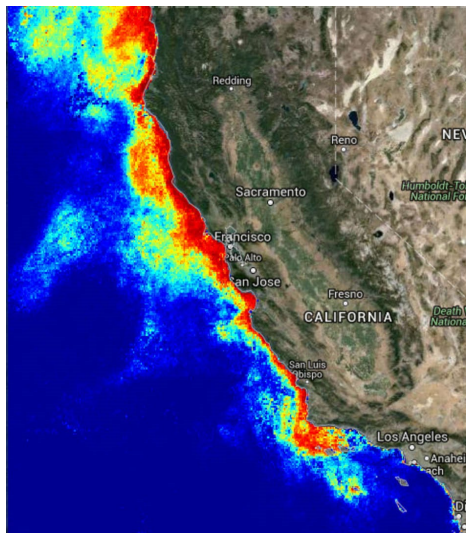


IOOS regional directors and the IOOS deputy director enjoy their reception.



Posters on display at the workshop

May 2015: Ongoing California Harmful Algal Bloom (HAB) Leads to Fisheries Closures



May 7, 2015—Information provided by Greg Doucette (NOAA), Greg Langlois (NOAA), Eric Bjorkstedt (NOAA Fisheries), Jason Smith (Moss Landing) and Holly Bowers (MBARI)

A large and spatially extensive bloom of [Pseudo-nitzschia](#) was along much of California. Oregon Harmful Algal Bloom Monitoring Program (ORHAB) also had a similar bloom off much of their coast, and they released an [update](#) that shows in more detail.

May 28, 2015—Information provided by Raphael Kudela (UCSC)

A massive [Domoic Acid](#) (DA) event continues in Central and Northern California. There is an ongoing research effort with a NOAA ECOHAB (Ecology and Oceanography of Harmful Algal Blooms) in Monterey, California and are running toxicity samples that show some of the highest levels of DA since

2000. CeNCOOS, SCCOOS’s partner in California Ocean Observing, hosts a [HAB forecast model](#) like the one pictured left.

Oct - Dec. 2015—Information Provided by Cal HABMAP

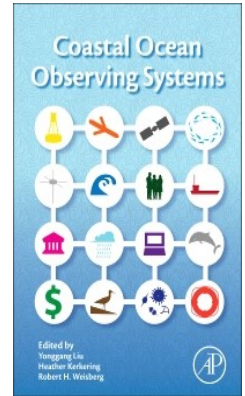
Washington, Oregon and California commercial and recreation mussel and crab fisheries are closed due to persistent harmful algal blooms.

Currently—Information provided by the San Francisco Chronicle

The commercial crab fishery, which brings in \$60 million to \$95 million a year, was scheduled to open Nov. 15 (it closes on June 30th). The California Dept. of Public Health will not reopen until 2 consecutive samplings, collected at least 7 days apart, show safe levels of domoic acid.

June 2015: Coastal Ocean Observing Systems Includes a Chapter Written by Julie Thomas and Lisa Hazard

A book titled, [Coastal Ocean Observing Systems](#) was released in response to a 2014 Ocean Sciences meeting session #009 called, “Scientific and Societal Benefits for Integrated Coastal Ocean Observations and Networked Marine Laboratories”. The lead authors for Chapter 10 called, “How High-Resolution Wave observations and HF Radar-Derived Surface Currents are Critical to Decision-Making for Maritime Operations” are Julie Thomas (SCCOOS Executive Director) and Lisa Hazard (Operations Manager, Coastal Observing Research and Development Center—CORDC). The book emphasizes that a healthy relationship with the ocean requires that we understand it, and one way is through Ocean Observing.



July 2015: Senate Ocean Caucus Briefing, “Making a Difference: Why Ocean Observing Matters”

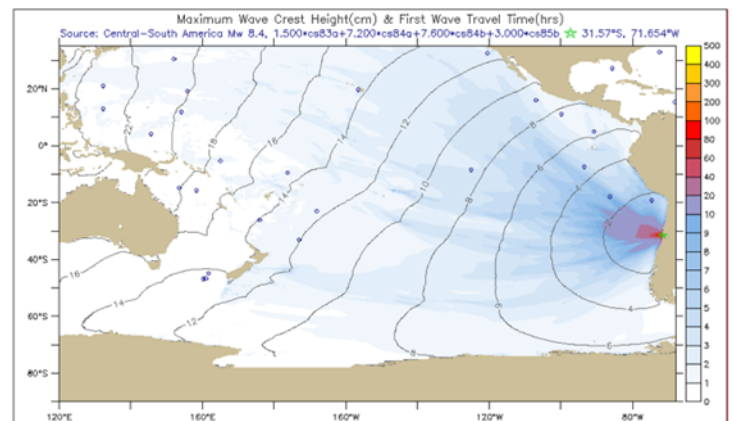


Senate Ocean Caucus Panelists (L-R): Samatha Helton & Brandon Elsner (Office of Senator Wicker) Cpt. Louttit, Dr. Macrander, Molly McCammon and VADM Brown

The [Senate Ocean Caucus](#) alongside the [U.S. IOOS Association](#), sponsored an informational briefing. Brandon Elsner, Legislative Assistant for Senator [Wicker \(R-MS\)](#), provided opening remarks. Vice Admiral Manson Brown ([NOAA Asst. Secretary](#) for Environmental Observation and Prediction), Captain Kip Louttit (Executive Director for the [Marine Exchange of Southern California](#)) and Dr. Michael Macrander ([Shell Arctic Program](#)) all spoke about the value of sustaining ocean observations and the practical application of those observations in their daily operations. The caucus was moderated by Molly McCammon, Executive Director of the [Alaska Ocean Observing System](#) with over 90 people in attendance—including the SCCOOS Executive Director, Julie Thomas. You can [read more](#) about the event on IOOS’s webpage.

Sept. 17, 2015: Ocean Observing Data Assists in Monitoring the Tsunami Triggered by the 8.3 Magnitude Earthquake off the Coast of Chile

Tsunami’s are measured through seismic measuring equipment, tide-sea-level instruments and [DART II buoys](#). CDIP’s (Coastal Data Information Program) Scripps Pier pressure sensor recorded a clear [tsunami signal](#) arriving at approximately 11:50 UTC on September 17. Preliminary analysis shows an tsunami amplitude of close to 10cm. Generated by undersea earthquakes, landslides, and volcanic eruptions instead of wind, tsunamis differ greatly in their dynamics. They have far longer wavelengths and periods than wind-generated waves, and travel at far greater

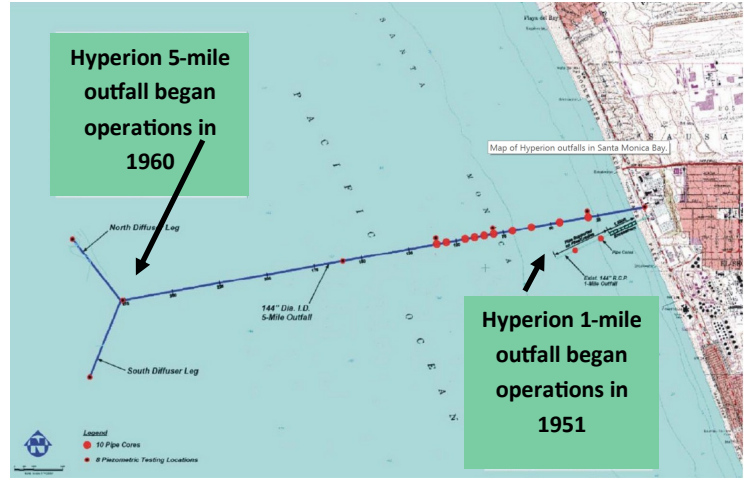


Instead of periods of 30 seconds or less, tsunamis have periods of several minutes to one hour; instead of traveling at speeds under 100 km/hr, they do move at speeds of 700 km/hr or more. For instance, [CDIP wave buoys](#) do not measure wave motions with periods greater than 40 seconds; therefore they cannot record tsunamis.

October 2015: SCCOOS Participates in Los Angeles’ Hyperion Water Reclamation Plant Diversion September 21-October 26

To protect from aging infrastructure, Los Angeles Sanitation (LSAN) has repaired their Hyperion Water Reclamation Plant Discharge System that discharges treated water to Santa Monica Bay through a five mile outfall. During the repairs, the disinfected, treated water was diverted to the one-mile outfall, which is used when the 5-mile outfall is not in service.

Due to the complexity of this project Hyperion developed a effluent and receiving water monitoring plan which included an [integrated webpage](#) developed by SCCOOS for daily operations.



November & December 2015: Understanding El Niño and Participate in Data Collection

Trying to wrap your mind around what El Niño can be, is difficult at best. SCCOOS thought that this would be an opportune time to do some of that work for you and share the results we have found.

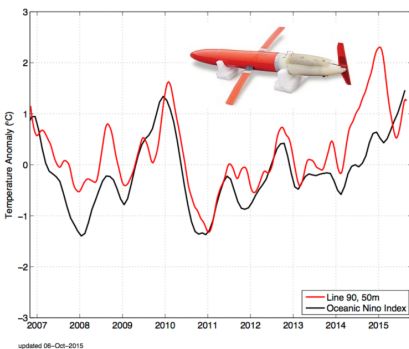
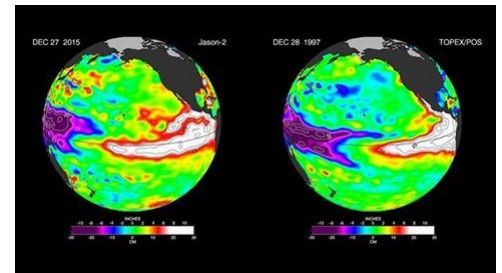
What is El Niño and how does it happen? Check out this [video](#)

What are the current [forecasts](#) for this El Niño season?

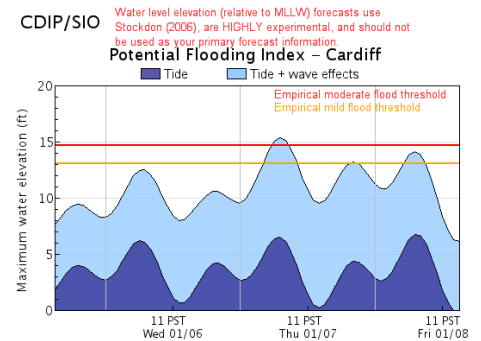
El Niño is expected to remain strong through the Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during late spring or early summer 2016

How does this El Niño [compare](#) to previous years?

What El Niño related data and information does [SCCOOS](#) host?



LEFT: Glider-measured temperatures have been collected off the Southern CA coast since 2007. These indices are remarkably correlated with glider-measured temperatures at the equator and are used to assist in forecasting the size and magnitude of El Niño's. RIGHT: A flooding index integrates local waves and tidal fluctuations to monitor and forecast local flooding. The Cardiff location is the initial test site for this project, there are more to come!



[STORM PHOTO](http://sccoos.org/projects/stormphoto/) <http://sccoos.org/projects/stormphoto/>

Document flooding events from Imperial Beach in San Diego County to Point Conception. Just enable the location services for photos on your smart phone and email your results to stormphoto@sccoos.org.

PLEASE READ: When participating in this citizen science project make your personal safety the highest priority!

SCCOOS IS GRATEFUL TO WORK WITH SUCH A FIRST-RATE COMMUNITY. PLEASE ENJOY SOME PICTURES OF THE FANTASTIC EVENTS THAT WE EXPERIENCED OVER THE LAST YEAR.

