

Tijuana River National Estuarine Research Reserve

"A Wetland of International Importance" *International Ramsar Convention, 2005*



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jcrooks@tijuanaestuary.org



28 September 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive #0213
La Jolla, CA 92093

Dear Dr. Terrill,

It is my pleasure to write you this letter of support for your proposal to the FY 2010 Implementation of Regional Integrated Ocean Observing Systems. The Southern California Coastal Ocean Observing System (SCCOOS) continues to be a very valuable resource for wide audiences interested in the southern California's marine environment, including those of us at NOAA's Tijuana River National Estuarine Research Reserve (TRNERR). We therefore strongly encourage further support of your program.

The SCCOOS effort is vital in helping us fulfill the TRNERR's mission in several different ways. One of our core programs at the TRNERR is monitoring of water quality, weather, and biotic indicators within the Tijuana River Estuary, conducted as part of the NERR System-Wide Monitoring Program (SWMP). Of course, one of our goals is better understand the role of the outflow of the often-polluted Tijuana River in the near-shore marine environment, and SCCOOS provides this critical larger context for the information we generate. More broadly, because SCCOOS offers a wealth of other data in an easily accessible format, I often rely on it when I need to provide researchers, decision-makers, and the general public with information on our coastal ocean. I especially appreciate the degree to which SCCOOS has been responsive to the needs and ideas voiced by myself and others.

Again, I would like to strongly support the SCCOOS effort, and I look forward to continued partnership with this excellent program.

Sincerely,

Dr. Jeff Crooks

CITY OF LOS ANGELES

CALIFORNIA



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ENVIRONMENTAL MONITORING DIVISION
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PLAYA DEL REY, CA 90293
TEL: (310) 648-5610
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September 11, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive
La Jolla, CA 92093

Dear Dr. Terrill:

**LETTER OF SUPPORT FOR THE SOUTHERN CALIFORNIA COASTAL OCEAN OBSERVING SYSTEM
(SCCOOS AND THE REGIONAL COASTAL OCEAN OBSERVING SYSTEM)**

The City of Los Angeles, Bureau of Sanitation's Environmental Monitoring Division (EMD) is supportive of the Southern California Coastal Ocean Observing System efforts to develop the Regional Coastal Ocean Observing System (RCOOS) for Southern California. SCCOOS provides badly needed coastal and ocean observations and generates extremely useful products for environmental managers, regulators, and nongovernmental agencies (e.g., environmental groups). The City conducts extensive monitoring in the coastal ocean of Southern California, primarily in Santa Monica Bay. A significant portion of this effort involves tracking the Hyperion Treatment Plant's effluent plume as it is discharged from the 5-Mile Outfall pipe into Santa Monica Bay and estimating bacterial concentrations at ankle depth in the surfzone due to the potential for pathogens to adversely impact public health. The effluent plume has the potential for traveling considerable distances and depositing organic particles, metals, and organic pollutants into the sediment within the Bay. Storm drains are the major source of bacteria and other pollutants to these waters, and they mostly discharge into the surfzone.

Southern California beaches and near-shore waters are world famous, and nearly 80 million people engage in water contact recreational activities at Los Angeles and Orange County beaches every year. This is not only an important component of the Southern California life style, but also an important economic engine for the region. Unfortunately, it has been estimated that between 627,800 and 1,479,200 "excess" cases of gastrointestinal illness occur at these beaches each year with estimated healthcare costs of \$21 million to \$414 million annually; therefore, ensuring good, safe water quality along our coast is an extremely high priority. In addition, the deposition of pollutants and their subsequent accumulation have adverse impacts on the benthic macrofaunal and demersal fish and invertebrate communities. Some of the seafood, e.g., white croakers, have been issued fish advisory notices and may not be safe for consumption.



Knowledge of circulation patterns in the coastal region is meager, especially from a regional perspective. A better understanding of circulation in the shallow and near-shore regions could be extremely valuable because it holds the potential to forecast the fate of surfzone and near-shore pollutants, which would increase our ability to protect public health and the environment.

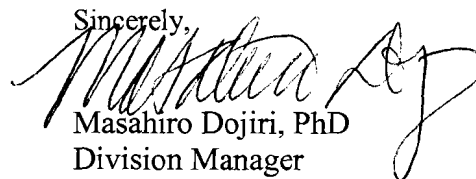
The work conducted by SCCOOS is important because it is focused on improving our understanding and potential for modeling dispersion within a few hundred meters of the shoreline, which is where most water-contact recreation occurs, as well as the near-shore waters. This information will be useful in studying stormwater dispersion and fate, as well as discharges from wastewater treatment plants. I believe this will greatly benefit monitoring efforts aimed at protecting public health and the environment.

The City of Los Angeles' Hyperion Treatment Plant recently diverted the flow of its wastewater from a pipe with an outfall that is five miles from the shoreline to one that is only one mile from the shoreline in order to inspect the 5-mile pipe. The diversion lasted approximately three days and about 800 million gallons of secondary-treated effluent was discharged through the 1-mile pipe. EMD in conjunction with other researchers conducted an extensive monitoring effort during this diversion. Our monitoring effort greatly benefited from surface current information provided through the Southern California Coastal Ocean Observing System (SCCOOS). The real-time current information provided by SCCOOS enabled us to adaptively modify our sampling grid to better track the discharge plume and to predict the dispersion of the surface plume by the use of a trajectory model developed by SCCOOS researchers using high frequency radar data. If the winds had blown onshore, EMD would have utilized the surfzone model developed by Scripps Institution of Oceanography through SCCOOS to predict the dispersion of the effluent in the surfzone. We believe improved understanding of dispersion in the surfzone may similarly benefit our monitoring efforts in the future, as well as those of other monitoring agencies in southern California, for example the Los Angeles County Sanitation Districts (LACSD), Orange County Sanitation Districts, and the Southern California Coastal Water Research Project, among several others. Both Los Angeles County and the City of Los Angeles are very interested in the near-shore current data and surfzone model of SCCOOS to help shed light on the dispersion of legacy pollutants, i.e., DDT and PCBs that were discharged from the LACSD outfall at White's Point and onto the Palos Verdes shelf.

Also, within the next few years, the Hyperion Treatment Plant in Playa del Rey will need to repair the portion of the 5-mile outfall pipe that was identified as problematic during its internal outfall inspection in November 2006. During this repair period, the City of Los Angeles' Bureau of Sanitation will call upon and work closely with SCCOOS scientists to design and conduct a monitoring program tailored for the diversion of the secondary-treated effluent from the 5-mile to the 1-mile outfall as the City did in 2006.

In summary, the City of Los Angeles shares an interest in better understanding the dynamics of water transport in the surfzone and near-shore waters, which may increase our understanding of the fate of flow from storm drains and other sources into the surfzone as well as the flow from offshore sources into near-shore waters. Because of this, the City believes it will continue to directly benefit from the ocean observing activities proposed by SCCOOS; the City wholeheartedly endorses the proposal and recommends it be funded.

Sincerely,



Masahiro Dojiri, PhD
Division Manager



County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
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JACK MILLER
ASSISTANT DIRECTOR

September 18, 2009

Eric Terrill, Ph.D.
Southern California Coastal Ocean Observing System
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive #0213
La Jolla, CA 92093

Dear Dr. Terrill:

SUPPORT FOR INTEGRATED OCEAN OBSERVING SYSTEMS TO PROVIDE REAL TIME COASTAL WATER QUALITY DATA

The Department of Environmental Health (DEH) Recreational Water Quality Program acts as a clearing house for beach water quality monitoring data in San Diego County and notifies the public when water quality standards are not met at recreational beaches (ocean and bays). The Recreational Water Program coordinates water sampling and posting of signs warning of contaminated water at beaches affected by sewage spills, when monitoring indicates bacteria levels exceed State standards, or during other events that may pose a threat to public health. The warnings (Advisory or Closure), issued by DEH for contaminated waters, allow beach-goers to make informed decisions on where to swim and surf to reduce their risk of illness from water contact.

Since 2003, DEH has used real time data provided by the Southern California Coastal Ocean Observing System (SCCOOS) as a tool to assist in making more accurate and timely decisions for issuing water contact warnings to protect public health. Specifically, the Tijuana River plume trajectory model, a product of the SCCOOS real time monitoring data, has provided greater confidence for decisions to issue water contact closures for south county beaches.

DEH understands that the SCCOOS is funded by grants from the National Oceanic and Atmospheric Administration and the State of California, and encourages continued support for SCCOOS to maintain, operate, and improve the regional observing system. If you have any questions concerning this letter, please contact Mark McPherson, Chief of the Land and Water Quality Division at (858) 495-5572.

Sincerely,

GARY W. ERBECK, Director

GWE/MM:fs

cc: Mark McPherson, Chief, Land and Water Division



COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN
October 6, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive 0213
La Jolla, CA 92093

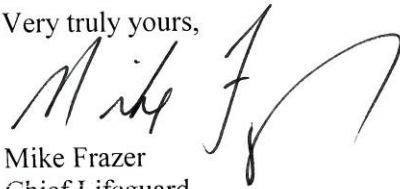
Dear Dr. Terrill,

As you know our agency is responsible for providing protection for lives, property and the environment along seventy-two miles of coastline in the County of Los Angeles, and over thirty miles of beach. Southern California Coastal Ocean Observing System measurements, models and wave forecasts along the US West Coast have been invaluable to us over the years. Timely and accurate surf information is essential when making staffing decisions and anticipating ocean conditions such as big surf and rip currents.

SCCOOS is an important part of our award winning Coastal Monitoring Network (www.watchthewater.org). Data from SCCOOS is used to update our system with accurate nowcasting and forecasting of swell size and period. watchthewater.org functions as an "electronic tide board" and is viewed by the public over 600,000 times each month.

Thank you for your continued contribution to our public safety mission.

Very truly yours,



Mike Frazer
Chief Lifeguard

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

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September 10, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive 0213
La Jolla, CA 92093

Re: Support for Southern California Coastal Ocean Observing System Proposal (SCCOOS)

Heal the Bay, a non-profit organization with over 13,000 members dedicated to making southern California coastal waters and watersheds safe, healthy and clean, supports the proposal being submitted to NOAA by SCCOOS to develop the Regional Coastal Ocean Observing System (RCOOS) for Southern California as part of IOOS. Heal the Bay has supported SCCOOS since its inception to provide coastal and ocean observations and monitoring for the Southern California Bight. SCCOOS and Heal the Bay have collaborated in efforts to address monitoring of coastal water quality in an effort to improve real-time management of and decision making about our vital coastal resources.

SCCOOS has been developing an ongoing stakeholder-driven, end-to-end ocean observing system that serves local and regional needs for information and data critical to public health and water quality issues. Data services and products developed by SCCOOS are being used to track and monitor stormwater runoff events, sewage outfall plumes, harmful algal blooms and other similar water quality issues. These data are used to provide three-dimensional maps of water quality properties that are made readily available to the public through the SCCOOS web site in near real-time. SCCOOS ongoing operations aid in identifying the source of contamination and predicting the fate and transport of contaminants that impair the beneficial uses of coastal ocean waters. SCCOOS also provided valuable environmental data services to the important monitoring effort of the November 2006 Hyperion Discharge Diversion event by the City of Los Angeles and set the stage for the approach to rapid response by SCCOOS for our region.

Once again, Heal the Bay strongly supports SCCOOS's proposal to continue its development of the Regional Coastal Ocean Observing System for Southern California. The continuation and further development of SCCOOS important programs will provide important scientific information to the public and decision makers that will facilitate protection of southern California's marine and coastal resources.

Sincerely,

Mark Gold, D. Env.
President



**COUNTY OF ORANGE
HEALTH CARE AGENCY**

**PUBLIC HEALTH SERVICES
ENVIRONMENTAL HEALTH**

DAVID L. RILEY
DIRECTOR

DAVID M. SOULELES, MPH
DEPUTY AGENCY DIRECTOR

RICHARD SANCHEZ, REHS, MPH
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September 25, 2009

Dr. Eric Terrill, COO
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive, #0213
La Jolla, CA 92093

Dear Eric,

As a representative of a Southern California public health agency and beach water quality manager, I would like to take this opportunity to voice our continued support for the Southern California Coastal Ocean Observing System (www.sccoos.org). SCCOOS has evolved into a comprehensive and accurate observing system providing partners, stakeholders and the public with an extensive array of useful ocean observation data and products, much of it real time.

We continue to support SCCOOS by providing shoreline bacteriological water quality monitoring data to SCCOOS on a regular basis. The user-friendly web site provides consumers with recent and historical monitoring site data, GIS reference maps, and compliance analysis with state marine bathing water standards. Site navigation is extremely easy and intuitive. In addition to water quality data, SCCOOS has coordinated the development of a high frequency radar current monitoring system. This real time surface current monitoring system has allowed the San Diego County Environmental Health Agency to predict when contaminated water from the Tijuana River will impact the southern beaches of San Diego County. They are able to preemptively prevent swimmers from being exposed to contaminated ocean waters. This system can also be used to predict where sewage spills or urban runoff will impact when they reach ocean receiving waters.

The use of predictive models, coupled with existing and enhanced water quality monitoring methodologies and real or near real time ocean observing systems, will allow better prediction of potential public health risks associated with the recreational use of California's marine waters. It is important that SCCOOS continues to be an integral part of the solution to these challenges. We strongly support your efforts and look forward to continued and future collaborations with SCCOOS.

If you have any questions, please feel free to call me at (714) 433-6015.

Very truly yours,

Larry Honeybourne
Program Manager
County of Orange, Health Care Agency
Environmental Health



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE

Weather Forecast Office
520 North Elevar St.
Oxnard, CA 93030

October 6, 2009

Julie Thomas
SCCOOS Executive Director
Scripps Institution of Oceanography
University of California at San Diego
9500 Gilman Drive, Mail Code 0214
La Jolla, CA 92093-0214

RE: Federal Funding Opportunity – FY2010 Integrated Ocean Observing System Implementation

Dear Julie,

I strongly endorse this SCCOOS project as proposed to NOAA and greatly look forward to coordinating with your group.

As you are aware, we serve a very complex – and highly traveled – marine area that requires specific and accurate marine observation and prediction information to best serve the marine community. The results of this project can directly benefit multiple areas of our marine services program, plus through the project's goal of building a long term data collection of waves, currents and wind observations, it can benefit NOAA's role in better understanding and communicating climate change and its impacts across our coastal communities.

This project can have tremendous benefits on our overall marine program responsibility to help better ensure safe and efficient marine transportation across our waters. More specifically, the work to develop detailed ocean current data and surface wind analyses will benefit our support of oil spill response, and marine area search and rescue efforts. We also look forward to working with you in integrating coastal wave height and alongshore current information for an improved rip current warning and advisory program. This, along with the proposed web page designed to provide important rip current information for lifeguards, will ultimately help mitigate a hazard that can impact a very large population of beachgoers across southern California.

I am committed to help ensure the success of this SCCOOS project and look forward to future project collaborations that can benefit our marine and climate services.

Sincerely,

Mark E. Jackson

Meteorologist in Charge
WFO Los Angeles/Oxnard



United States Department of the Interior

U. S. GEOLOGICAL SURVEY

Western Coastal and Marine Geology Team
400 Natural Bridges Drive
Santa Cruz, CA 95060
(831-427-4746); sjohnson@usgs.gov

September 4, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
9500 Gilman Drive, 0214
La Jolla, CA 92093

Dear Dr. Terrill,

I am writing to provide a letter of support for the proposal submitted by the Southern California Coastal Ocean Observing System (SCCOOS) for the NOAA funding opportunity: FY 2010 Implementation of Regional Integrated Ocean Observing System. I am a Research Geologist for the U.S. Geological Survey's Western Coastal and Marine Geology Team (WCMG), also Chair of the USGS Western Region Ocean Science Coordination (WROC) group. WCMG works across the western U.S. with a focus on coastal geologic hazards (e.g., erosion, tsunamis, earthquakes), seafloor and habitat mapping, environmental quality and monitoring, natural resources, and communication/outreach on these topics. The WROC attempts to coordinate and integrate multidisciplinary (geology, biology, geography, hydrology) ocean science conducted across ten science centers in the western U.S., including Alaska and Hawaii. I also serve as a member of the SCCOOS Science Advisory Committee. Through these roles, I've become familiar with the history and development of SCCOOS. I've been continually impressed with the range of data products and services provided by SCCOOS and with their commitment to provide these to the public through an excellent, easy-to-use web portal.

WCMG hosts one large effort, the "California Urban Ocean Project" that focuses largely on sediment "source-to-sink" issues in southern California. Project members commonly rely on SCCOOS for real time and archived information on wave climate, surface currents, and other ocean conditions to provide the framework for understanding sediment and contaminant budgets and transport. As one example, we're presently conducting an important ecosystem restoration and sediment transport experiment ("fate and transport of fines") for the Tijuana Estuary and offshore area that has relevance for much of the urban California coast and involves numerous important stakeholders (e.g., California Coastal Conservancy, California State Parks, National Estuary Research Reserve, Southern California Wetlands Recovery Project, California Sediment Management Workgroup). SCCOOS "plume tracking" data offshore of the Tijuana River was important to the design of this investigation and is being relied on as an important data set as work continues and analysis begins. As another example, we are using SCCOOS data for our work in the USGS Southern California Multihazards Demonstration Project, building an inundation and physical effects scenario for a large (i.e., 100 yr) winter storm – this work also has obvious importance for evaluating sea level rise impacts. More generally, SCCOOS data are and will continue to be essential for monitoring both short- and long-term environmental change, a critical regional need during this highly dynamic period of changing climate.

My understanding is that SCCOOS is funded entirely by grants from NOAA National Ocean Service and by the State of California. I think continued support of SCCOOS from these sources is very important to the regional ocean science community. There is a clear continuing need to operate, maintain, and improve the regional observing system. I hope this letter will be helpful in obtaining continuing support for SCCOOS. Please do not hesitate to contact me directly if you need additional information.

Sincerely,

Samuel Y. Johnson
Research Geologist
Western Region Oceans Coordinator



Central and Northern California Ocean Observing System

October 12, 2009

Julie Thomas, Executive Director
Southern California Coastal Ocean Observing System
Scripps Institution of Oceanography, University of California San Diego
9500 Gilman Drive, 0214
La Jolla, CA 92093-0214

Dear Ms. Thomas:

Please accept this letter of support from the Central and Northern California Ocean Observing System (CeNCOOS) for your proposal to NOAA, "Implementation of Regional Integrated Ocean Observing Systems: The Southern California Coastal Ocean Observing Systems (SCCOOS)."

Due to shared ocean issues and initiatives in California and along the West Coast, it is imperative that the two Regional Associations (RAs), SCCOOS and CeNCOOS, work collaboratively and seamlessly to respond to state and regional needs. Additionally, a more cohesive partnership allows the RAs to effectively represent the National Integrated Ocean Observing System, its goals and its values, at local levels.

It is critical that regional ocean governance structures such as the California Ocean Protection Council and the West Coast Governors Agreement on Ocean Health, as well as all of our partners and stakeholders, perceive each RA as effective, collaborative, capable, and equal. This perception and our ability to operate effectively will be greatly enhanced if the proposed activities are realized.

CeNCOOS needs SCCOOS to operate and vice-versa. We already share a Joint Strategic Advisory Committee, an underway effort to meet the state's Harmful Algal Bloom Monitoring and Prediction requirements, data management and modeling strategies, and an array of partners that operate state-wide. Many of the successful applications and products created for one region are simply being transferred and tailored to the other. Our effective efforts to collaborate, reduce redundancy, identify priorities, and create local, state and regional products are recognized by our users. Examples of our success can be found in our collaborative responses to Marine Spatial Planning initiatives and to priorities such as Ecosystem and Climate Trends, Water Quality, Marine Operations, and Coastal Hazards.

SCCOOS is a success and an ideal model for an IOOS Regional Association. They respond to user needs rapidly and operate a highly functioning program. Please consider their proposal and its value not only to Southern California, but also to joint efforts with CeNCOOS for all of California, and to IOOS as a whole.

Sincerely,

Heather Kerkering
CeNCOOS Coordinator



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
SAN DIEGO BORDER LIAISON OFFICE
610 West Ash Street
Suite 905
San Diego, CA 92101

September 24, 2009

Eric J. Terrill, Ph.D.
Director, Coastal Observing Research and Development Center
Marine Physical Laboratory
Scripps Institution of Oceanography
La Jolla, CA 92093-0213

Dear Dr. Terrill:

EPA wishes to thank you for the work you performed for us using the Southern California Coastal Ocean Observing System (www.sccoos.org). The products you generated for us in the past are currently being used to assess the impact of the effluent from the Mexican wastewater treatment plant on U.S. coastal waters. Such an assessment is required by the National Environmental Policy Act (NEPA) in order to document the environmental impacts resulting from the proposed Tijuana wastewater infrastructure projects that EPA hopes to help finance through the Border Environmental Infrastructure Fund.

EPA also anticipates using past and future SCCOOS data to determine if there is a correlation between ocean-current direction and beach water quality in Tijuana and Rosarito as a means of predicting exceedances in water quality standards for bacteria. Such forecasting would allow Mexican authorities to post beach warnings and thereby protect public without having to wait for results from weekly (or monthly) water quality sampling. We look forward to your help in this effort as well.

Thank you again for your assistance.

Sincerely,

A handwritten signature in black ink, which appears to read "Doug Liden". The signature is written in a cursive, flowing style.

Doug Liden
U.S.-Mexico Border Coordinator
Water Division, USEPA Region 9



California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Cal/EPA Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

September 14, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive, #0213
La Jolla, CA 92093

PROPOSAL TO THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION FOR 100S FUNDING TO PROVIDE OPERATIONAL FUNDS FOR SCCOOS MONITORING SYSTEM

Dear Dr. Terrill:

I am writing to express my support for a grant proposal submitted for consideration for funding by the National Oceanographic and Atmospheric Administration. The proposal would provide operational funds for the SCCOOS monitoring system. The SCCOOS monitoring would place an emphasis on two areas: 1) monitoring for harmful algal blooms; and 2) tracking and modeling of discharge plumes, although it includes other very useful components.

The Los Angeles Regional Water Quality Control Board, the United States Environmental Protection Agency and many other interested stakeholders are concerned about the apparently increasing frequency and severity of harmful algal blooms in our coastal waters. In order to protect public health and assess ecological risks associated with such events, regulatory agencies such as mine need better tools to track the occurrence of bloom events. We also need to understand the mechanisms that trigger such events, particularly if blooms are caused or stimulated by anthropogenic inputs such as stormwater runoff or wastewater treatment plant discharges.

The SCCOOS proposal would include several monitoring elements designed to track harmful algal blooms and monitor for bloom forming conditions. This type of monitoring should greatly enhance our understanding of the factors that trigger blooms and document the spatial and temporal extent of blooms. The harmful algae and red tide regional maps and other related information presented on the SCCOOS website have proven to be quite valuable to my agency and others as we implement our management plans to protect water quality and ensure that beneficial

California Environmental Protection Agency



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Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

uses of the ocean are maintained. We want to ensure that this type of information continues to be available to water quality professionals and interested members of the public.

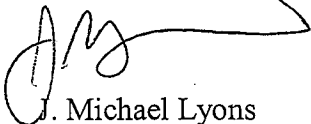
The Los Angeles Regional Board believes that the need to track and model the extent of discharge plumes is critical to our mission. Although we have a general understanding of the spatial distribution of the major wastewater plumes discharged into Santa Monica Bay (City of Los Angeles' Hyperion Treatment Plant) and on the Palos Verdes Shelf (Los Angeles County Sanitation Districts Joint Water Pollution Control Plant), we do not have the ability to track these plumes or predict their location on a day-to-day basis. We have much less information about the extent of stormwater plumes discharged by the major river systems in our region (e.g., San Gabriel River, Los Angeles River, Ballona Creek, Santa Clara/Ventura Rivers). We need a better understanding of plume dispersion from these sources so that we can assess and predict effects on water quality (including sediment quality impacts) and marine organisms.

The SCCOOS proposal would include several monitoring elements designed to improve our understanding of the fate of discharge plumes within the Southern California Bight. This monitoring also will allow validation of how well current models describe and predict the movement of plumes away from their sources. The many maps of SCOOS observations available on the web site are improving the Los Angeles Regional Board's ability to assess likely impacts to water quality and beneficial uses. We would like to ensure that this type of information continues to be available as well.

We look forward to making use of remote sensing techniques to improve our understanding of coastal systems and integrating these methods with more traditional in-situ monitoring efforts. Since this is such an important issue to the Los Angeles Regional Board and many of our local stakeholders, I would encourage you to give strong consideration to approving this proposal for funding.

If you have any questions, please contact me at (213)-576-6718.

Sincerely,



J. Michael Lyons

Manager, Surface Water Ambient Monitoring Program, Los Angeles Region

California Environmental Protection Agency



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.



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Dr. Eric Terrill
COO

Southern California Coastal Ocean Observing System (SCCOOS)
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9500 Gilman Drive #0213 La Jolla, CA 92093

A non-profit organization providing Vessel Traffic Service (VTS) and Maritime Information for Southern California

30 September, 2009

Dear Dr. Terrill:

As a participant in the Southern California Coastal Ocean Observing System (SCCOOS), I wanted to affirm your ongoing efforts in our behalf. With CDIP as the keystone, we have benefited greatly from your present products and your ongoing initiatives.

In the busy Port Complex of Los Angeles-Long Beach Harbor, CDIP has proven itself as a useful tool to many of the commercial waterways operators. Wave model predictions are helpful for trip planning of ferries engaged in the open ocean transits between the Harbor and Catalina Island, particularly during the winter months. Both Ports' pilot organizations board arriving ships outside the Harbor breakwater and must be aware of the expected height and direction of swell. The knowledge it provides of conditions at the breakwater entrances can also be of value to them. The San Pedro Vessel Traffic Service also uses it as a forecaster of conditions in the outer anchorages to guard against dragging and to promote general anchorage safety.

The recent introduction by SCCOOS of an high frequency radar at Point Fermin is providing a real time picture of surface currents in the San Pedro Bay, an additional positive element to the Coast Guard's search and rescue posture. Detracting from its utility is its presentation on a separate website. I look at your effort to combine this with CDIP as a start towards the ultimate goal of integration all oceanographic products into a comprehensive, one site portrayal of oceanographic and atmospheric conditions in a given area of interest. As you know, we sponsored a workshop in September toward that purpose, and we are looking forward to the results of that effort with Ms. Julie Thomas' presentation before our Harbor Safety Committee next week.

I wish you success in your efforts and look forward to the new product. Please let me know if we may help in this unique and exciting project.

Sincerely,

Captain R.B. McKenna
Executive Director
Marine Exchange of Southern California.



CITY OF SOLANA BEACH

FAX (858) 792-6513 / (858) 755-1782

635 SOUTH HIGHWAY 101 • SOLANA BEACH • CALIFORNIA 92075-2215 • (858) 720-2400

October 8, 2009

Ms. Julie Thomas
Executive Director, Scripps Institution of Oceanography
Southern California Coastal Ocean Observing System
University of California San Diego
9500 Gilman Drive #0214
San Diego, CA 92093

Re: Implementation of Regional Integrated Ocean Observing Systems -
The Southern California Coastal Ocean Observing System (SCCOOS)

Dear Ms. Thomas:

On behalf of the City of Solana Beach, I would like to express our support for the Southern California Coastal Ocean Observing System (SCCOOS).

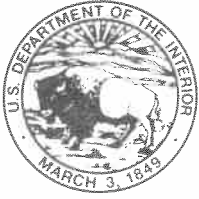
Funding for this program is of critical importance to Solana Beach and other coastal cities in the San Diego region. Currently we are in the planning stages for several beach restoration programs and are participating with SANDAG and other cities to implement a second Regional Beach Sand Project (RBSP) in 2012. This project is intended to be similar in size and scope to the successful 2001 RBSP which placed more than 2 million cubic yards of sand on beaches through the County. The City of Solana Beach also participates in a Regional Shoreline Monitoring Program which has been ongoing since 1996 which is essential for understanding the health of the local shoreline and management of local beach nourishment programs. Solana Beach will be able to utilize SCCOOS data to implement and monitor future efforts to replenish our beaches and will be used by SANDAG to manage the region's shoreline. We are especially interested in obtaining information that will improve coastal hazard planning and management tools and other data products made available by SCCOOS, especially those related to inundation and shoreline change.

If El Nino materializes as projected, energetic sea conditions this winter will challenge coastal management efforts and threaten the safety of coastal residents. Detailed wave, current, and inundation information for our coast will be invaluable. Given the importance of the information SCCOOS provides, additional funding is needed.

I appreciate your attention to this request. If you have any questions, please contact me at (858) 720-2400.

Sincerely,

David Ott
City Manager



United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

IN REPLY REFER TO:

September 10, 2009

Sirs,

I write this letter in support of the Southern California Coastal Ocean Observing System (SCCOOS) program receiving further funds from the National Oceanic and Atmospheric Administration (NOAA). The Minerals Management Service (MMS) understands that SCCOOS is funded by grants from NOAA and the State of California, and we strongly encourage continued support for SCCOOS to maintain, operate, and improve the regional observing system. It is important that SCCOOS retain the ability to generate information and maintain the ability to disseminate it to the public, academia, and government agencies. As we discuss below, the information and data gathered during the grant period will assist MMS in our mission. We strongly endorse SCCOOS's overall efforts and, in particular, this proposal.

The MMS regulates Federal oil and gas operations on the outer continental shelf. In order to fulfill our mission to secure ocean energy in a safe and environmentally sound manner, we use information about the marine environment in making management decisions and during day-to-day operations. Off the Pacific coast, offshore oil and gas operations are concentrated in the Southern California Bight. The SCCOOS provides a valued source of detailed information that improves our ability to perform our mission.

In addition, we anticipate that the Renewable Energy program will become an increasingly important part of our mission. We have developed renewable energy/alternative use regulations and guidance according to the requirements of the Energy Policy Act of 2005 (see 30 CFR 285). The SCCOOS and the Central California Coastal Ocean Observing System (CenCOOS), as well as the Pacific Ocean Observing System, data will be highly valuable since this program will be active over the entire west coast of the U.S.

We are pleased that SCCOOS can provide timely and accurate oceanographic information and data products that are useful to us, including current direction and speed, meteorological data, river plume locations, pollutant sources, and other marine information. We have used SCCOOS data as listed below:

- Response to oil spills – We use near-shore oceanic currents on a small scale as well as wind speeds and directions. The SCCOOS data products such as the Coastal Ocean Dynamics Applications Radar (CODAR), buoy information, and related links greatly enhances our ability to determine spilled oil trajectories. It is also a valuable training tool for drills.
- River plume and pollutant tracking – The use of SCCOOS data products, such as CODAR and buoy information, enable us to follow these episodic events.
- Sea surface temperature and chlorophyll from satellites – The SCCOOS provides a continuous series of information on these critical oceanographic parameters.

- Fish and fisheries – The SCCOOS oceanographic data (current speed and direction) is used to help elucidate patterns of larval fish transport. The MMS will use this kind of information to understand the contribution of offshore structures (such as oil platforms) to fish populations at a regional scale.

It is evident that SCCOOS is providing a one-stop shopping venue through its website and publications. This is unprecedented and is highly beneficial in that MMS scientists can go to one location (the website) and gather either mission-critical data or gain access to web links that provide this information.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. E. Panzer', with a stylized, cursive script.

David E. Panzer



October 1, 2009

Dr. Eric Terrill
Scripps Institution of Oceanography
University of California San Diego
9500 Gilman Drive La Jolla CA 92093

Dear Eric:

I am delighted to write this letter in support of your proposal, *Southern California Regional Coastal Ocean Observing System*. As the SIO Director of the *Center for Ocean Sciences Education Excellence-California* (COSEE-CA) and a Program Scientist at the Birch Aquarium at Scripps (BAS), I am pleased to use the resources and partnerships of both organizations to support education and outreach for your ocean observatory program and to promote the use of SCCOOS data and resources by science educators and students throughout California and the nation. COSEE-CA is part of a National Science Foundation network created to foster scientists' involvement in ocean science education (www.cosee.net). Now in its second five-year funding cycle, COSEE CA includes a new initiative to reach middle school students with online ocean science educational resources. We are working with the San Diego Unified School District's Enhancing Science Education Through Technology program to pilot the educational modules and are delighted to have SCCOOS as a partner in that endeavor. The ability to engage students in using observatory data is one of the goals of our center and the participation of SCCOOS staff, including programmers is essential. This effort is in fact a natural extension of the long-term SCCOOS education and outreach effort conducted in collaboration with the Ocean Institute and will allow us to capitalize on those continuing efforts to reach students first locally and then throughout the nation.

The *Center for Ocean Sciences Education Excellence-California* and the Birch Aquarium at Scripps offer you their full and unqualified support for this innovative proposal. We look forward to hearing that your project has been funded.

Sincerely,

A handwritten signature in cursive script, reading "Cheryl Peach".

Cheryl Peach
SIO Director, COSEE-CA
Scripps Institution of Oceanography

George Robertson
20112 Riverside Drive
Santa Ana Heights, CA 92707

Dr. Eric Terrill
Southern California Coastal Ocean Observing System
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive #0213
La Jolla, CA 92093

September 24, 2009

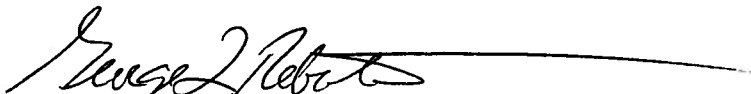
Subject: SCCOOS 2010 NOAA Proposal – Letter of Support

This letter is to support your request to the National Oceanographic and Atmospheric Administration (NOAA) for operational funding for the Southern California Coastal Ocean Observing System (SCCOOS). With over 20 years of professional experience in coastal monitoring and research off Orange County, I believe that the four program components laid out in the SCCOOS 2010 funding request are relevant to better management of this heavily utilized resource.

In particular, information provided by SCCOOS on large-scale spatial and long-term temporal patterns has enhanced my evaluations of potential impacts from a submerged discharge plume on the San Pedro Shelf. Currently the work being done under Ecosystem and Climate Trends allows me to look at local results in the context of regional changes. The Water Quality element, especially the glider work, would allow me to evaluate adopting this technology for routine monitoring work as well as begin to validate the use of models in my analyses (e.g., a coupled initial dilution/ROMS model). I currently use wave data from the CDIP program for my survey work and envision using some of the new products when they are developed, such as the near-real time integration of winds, surface currents and wave models. Finally, the knowledge of extreme events, such as large waves, is important to our ability to sample in shallow water along the open coast.

While local dischargers have mandated long-term monitoring programs, these are usually limited in space and time. Overlaying regional monitoring information, such as that generated and maintained by SCCOOS, on-top of these established programs allows scientists, managers and regulators to place individual discharge findings into the larger environmental context of the Southern California Bight. NOAA's funding will help ensure that the work SCCOOS has begun continues and improves. In closing, I provide my strong support for this funding proposal and for NOAA's continued funding. If you have any questions, please do not hesitate to contact me.

Sincerely,



George L. Robertson, QEP, CSE

Tel: (714) 557-4604
E-mail: g_robertson@roadrunner.com



DEPARTMENT OF FISH AND GAME

<http://www.dfg.ca.gov>

1416 Ninth Street

Sacramento, CA 95814



Dr. Eric Terrill
Southern California Coastal Ocean Observing System
Scripps Institution of Oceanography
University Of California, San Diego
9500 Gilman Drive
La Jolla, CA 92093-0219

Dear Dr. Terrill

Sept. 18, 2009

This letter is in support of the SCCOOS proposal to NOAA for Regional Coastal Ocean Observing Systems funding for additional ship time for CalCOFI's sampling in 9 additional nearshore stations augmenting the CalCOFI grid.

The State of California's, Department of Fish and Game, Marine Region is responsible for the management of the nearshore marine environment. The nearshore is home to thousands of fished invertebrates and fishes. In 2007, commercial fisheries landed more than 172,000 mtons of fishes and invertebrates in California. Top grossing fisheries were market squid, Dungeness crab, chinook salmon, spiny lobster and red sea urchin. The nearshore live fish fishery is worth more than 2 million dollars having grown quickly since its inception in 1993. While many of the stocks in the nearshore are exploited by both commercial and recreational fisheries, little is known about the reproductive capacity of these stocks. CalCOFI with its ability to quantify larval production in space and time is an invaluable partner in managing state fisheries. CalCOFI tows are able to sample larval fishes from rocky substrates such as cabezon and sheephead, and lingcod as well as from sandy substrate such as California halibut, English sole and rex sole. Both cabezon and sheephead are nearshore species. Trends in production can be used to set fishing limits and quantify the impacts of no-fishing reserve areas. Larval production estimates in and around Marine Protected Areas are critical for assessing their effectiveness, productivity and utility. The expansion of CalCOFI sampling methodology into the nearshore combined with sampling of invertebrate larvae will greatly increase our ability to manage and conserve fished and protected resources.

The nearshore CalCOFI Oceanographic sampling program has already enhanced our knowledge of species that are managed by the State of California. In the past 4 years, funding from NOAA fisheries via SCCOOS to CalCOFI has conducted plankton tows in the nearshore capturing a suite of species previously not sampled. Cluster analyses of the larval fishes from these samples reveal that nearshore SCCOOS stations and nearshore CalCOFI stations are substantially different from the offshore CalCOFI stations (R. Goericke pers. comm.). The differences in larval fishes does not appear to be related to physical or chemical parameters such as temperature, salinity or nitrate (R. Goericke pers. comm.). The nearshore stations are able to sample the high production zone as measured by the chlorophyll a concentrations. Therefore, continued funding of CalCOFI sampling in the nearshore is needed to better understand how physical forcing influences the dynamics of the nearshore fishes and invertebrates managed by the State of California.

Sincerely,

A handwritten signature in blue ink, reading "Laura Rogers-Bennett".

Laura Rogers-Bennett, Ph.D.
Senior Biologist Specialist Marine/Fisheries
CalCOFI Representative, California Department of Fish and Game

Conserving California's Wildlife Since 1870



401 B Street, Suite 800
San Diego, CA 92101-4231
(619) 699-1900
Fax (619) 699-1905
www.sandag.org

October 2, 2009

3200200

Julie Thomas
Southern California Coastal Ocean Observing System,
Executive Director, Scripps Institution of Oceanography
University of California San Diego
9500 Gilman Drive, #0214
San Diego, CA 92093

MEMBER AGENCIES

Cities of
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Lemon Grove
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North County
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United States
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Unified Port District
San Diego County
Water Authority
Southern California
Tribal Chairmen's Association
Mexico

Dear Ms. Thomas:

SUBJECT: Implementation of Regional Integrated Ocean Observing
Systems: The Southern California Coastal Ocean Observing
System (SCCOOS)

On behalf of the San Diego Association of Governments (SANDAG), I would
like to express our support for the Southern California Coastal Ocean
Observing System (SCCOOS).

Funding for this program is of critical importance to California coastal
constituents, specifically those in the San Diego region. In 2001, SANDAG
managed the Regional Beach Sand Project (RBSP), which placed 2.1 million
cubic yards of sand on the region's beaches. SANDAG's Regional Shoreline
Monitoring Program, which was initiated in 1996 and continues today, was
essential to the design and evaluation of the RBSP. SANDAG can utilize
SCCOOS data to implement and monitor future efforts to replenish beaches
and manage the region's shoreline. In fact, SANDAG has begun the planning
phase for the RBSP II, scheduled for completion by 2012, and will continue to
make use of improved coastal hazards data products made available by
SCCOOS, especially those related to inundation and shoreline change.

If El Nino materializes as projected, energetic sea conditions this winter will
challenge coastal management efforts and threaten the safety of coastal
residents. Detailed wave, current, and inundation information for our coast
will be invaluable. Given the importance of the information SCCOOS provides,
additional funding is needed.

I appreciate your attention to this request. If you have any questions, please
contact me at (619) 699-6949 or rru@sandag.org.

Sincerely,

ROB RUNDLE
Principal Regional Planner



September 17, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive #0213
La Jolla, CA 92093

Dear Dr. Terrill:

I am writing in support of the SCCOOS proposal for continued funding from NOAA. It is very clear that the entire IOOS system—the backbone and the regional programs—is a critically important addition to the nation's ocean infrastructure. In some areas, such as Southern California, the regional ocean observing system takes on special importance because of the intensity of societal pressures on the ocean, the multiplicity of uses, and economic and public health implications of those uses, and the complex oceanographic processes on a variety of spatial and temporal scales.

The Southern California Bight is surrounded by a population of more than 20 million people—more than the population of the entire State of New York. It is home to the Nation's two largest ports, through which enter more than one-third of all imports to the U.S. It receives more than 1.3 bgd of partially treated wastewater. It is a major recreational outlet for millions of people with some of the nation's, and the world's, most beautiful and popular beaches. It has the potential to be home to a significant offshore aquaculture industry, and the availability of critical oceanographic data will be important in determining whether, or not, this happens. It soon will become the next segment of the California coast for establishment of a series of Marine Protected Areas. The list goes on, and one thing is clear and that is that we need diverse and high quality oceanographic data to generate the kinds of information that are needed to manage this enormously valuable resource for maximum benefit to society while protecting the natural ecosystem.

The next phase in the evolution of SCCOOS, and indeed of all of the regional systems, will be to forge more and stronger partnerships with a diverse set of potential end-users of the data and to work with them to develop an array of informational products. These informational products must be tailored to meet the needs and opportunities of the end users and be delivered on schedules that are sensitive to their needs. SCCOOS is well positioned to grow its customer base and meet the need for tailored and timely products. We also need to make the public more aware of the importance of SCCOOS and other components of IOOS so they will be supportive of the public investments that are needed to sustain this important network.

The Aquarium of the Pacific is the only large aquarium in all of Southern California with an attendance that now exceeds 1.5 million visitors per year, and that has grown in each of the past seven years. We are very interested in strengthening our partnership with SCCOOS to make the public more aware of the power and the promise of ocean observing. We also are very interested in working with SCCOOS to convene groups of potential stakeholders to help shape the portfolio of informational products to serve a variety of end-user needs.

In summary, I, and the Aquarium of the Pacific, are very supportive of SCCOOS efforts and applaud the progress SCCOOS has made in building regional observing capabilities for Southern California. We urge NOAA to support SCCOOS's proposal to continue development of this valuable and needed regional observing system.

Sincerely,

Jerry R. Schubel
President and CEO

100 Aquarium Way, Long Beach, CA 90802
Telephone 562 590 3100 Facsimile 562 590 3109
www.aquariumofpacific.org



SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT
A Public Agency for Environmental Research

September 8, 2009

Dr. Eric Terrill
Southern California Coastal Ocean Observing System (SCCOOS)
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive #0213
La Jolla, CA 92093

Dear Dr. Terrill,

The Southern California Coastal Water Research Project (SCCWRP) wishes to indicate our support for the continued development and operation of the Southern California Coastal Ocean Observation System (SCCOOS) under the National Oceanic and Atmospheric Administration (NOAA). With NOAA funding, we understand you will develop new information products and decision support tools, while continuing to provide timely data and critical observations of the coastal ocean.

The Southern California Coastal Water Research Project (SCCWRP) is a research institute focusing on the coastal ecosystems of southern California, from watersheds to the ocean. SCCWRP was formed in 1969 as a joint powers agency, and our mission is to provide a scientific foundation for the management decisions of our member agencies. In a similar capacity, SCCOOS is actively engaged in identifying needs of the water quality management community in southern California by obtaining and synthesizing coastal observations.

SCCWRP is in a unique position to assist your work by serving as a member of the SCCOOS Board of Governors. We are also able to provide a forum representing various sectors of the water quality management community in Southern California, via the SCCWRP Commission. SCCWRP will continue collaborations with SCCOOS to support coastal water quality monitoring and facilitate communication among scientists and water quality managers.

We look forward to working with you in continued partnership.

Sincerely,

Stephen Weisberg, Ph.D.
Executive Director



City of Encinitas

October 12, 2009

Julie Thomas
Southern California Coastal Ocean Observing System
Executive Director, Scripps Institution of Oceanography
University of California San Diego
9500 Gilman Drive #0214
San Diego, CA 92093

Dear Ms. Thomas,

SUBJECT: Implementation of Regional Integrated Ocean Observing
Systems: The Southern California Coastal Ocean Observing System (SCCOOS)

On behalf of the City of Encinitas, I would like to express our support for the Southern California Coastal Ocean Observing System (SCCOOS).

Funding for this program is of critical importance to California coastal constituents, specifically those in the San Diego region. The City of Encinitas utilizes this data on a daily basis for program planning, monitoring, sea level rise and monitoring the affects from El Nino. Every key project along the coast relies on this data for baseline project planning for sediment transport modeling and nearshore habitat assessments. The wave and buoy data is critical for wave forecasting during program planning. The City utilizes the monitoring data for critical analysis on beach width changes due to seasonal and storm changes and predictions how waves will impact our beaches in the future. The data has been utilized by consultants to predict sea level rise over the next 50 years and how it affects the US Army Corps of Engineers studies in Encinitas and Solana Beach. The wave data is critical while analyzing the affect from the El Nino and how our beaches change and by how much. The City is also participating in the inundation and shoreline change project which will be very helpful in prediction of overtopping the Coast Hwy 101 and how that will affect traffic and public resources during high surf advisory.

If El Nino materializes as projected, energetic sea conditions this winter will challenge coastal management efforts and threaten the safety of coastal residents. Detailed wave, current, and inundation information for our coast will be invaluable. Given the importance of the information SCCOOS provides, additional funding is needed.

I appreciate your attention to this request. If you have any questions, please contact me at (760) 633-2632 or kweldon@ci.encinitas.ca.us.

Sincerely,

Katherine Weldon
Coastal Program Manager