Southern California Coastal Ocean Observing System
FY21-26 Letters of Support

Southern California Coastal Ocean Observing System (SCCOOS) provides high-quality and reliable data, value-added information, and visualization products and tools to meet the needs of a diverse collaborative of marine stakeholders and users, including regional, state, and federal agencies as well as academia, businesses, and non-profit organizations. The following institutions have submitted a Letter of Support (LOS) and/or support statement enthusiastically endorsing the valuable data and services provided by SCCOOS at the Scripps Institution of Oceanography, University of California San Diego.

In an effort to condense the LOS provided to SCCOOS, the key elements of the formal LOS are listed below. Links to the full LOS are provided and can also be found on the SCCOOS Partners Program Page (https://sccoos.org/partner-programs/).

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1. AltaSea at the Port of Los Angeles (MOU & Support Statement)
SCCOOS is an essential educational partner of AltaSea at the Port of Los Angeles; we share a mission to inspire and create a strong ocean-STEM workforce and accelerate young leaders in the Blue Economy, especially in underserved communities. The comprehensive resources of SCCOOS, AltaSea, and our other partners provide strong ocean science content and connections for a range of K-12 education experiences, including in-class instruction, workshops, training, internships and other learning resources. Currently, AltaSea and SCCOOS are joining efforts to create opportunities in STEM for underserved and underrepresented K-12 communities through programs showcasing ocean observing related careers and informal learning. Through this collaboration, we are aspiring to introduce these students to unique learning opportunities with AltaSea tenants and partners, and create lasting connections to Ocean-STEM.

Meredith Brooks, Strategic Grants & Special Projects Manager
AltaSea at the Port of Los Angeles 11/14/2020

2. Baja Aqua Farms (LOS 2019)
We are a company that fattens Bluefin Tuna, we have 19 consecutive years of operation. To satisfy the market we keep tuna throughout the year, solving the challenges that this brings. We currently operate in Isla Coronado South Mexico at 17.5 nautical miles from San Diego CA. We have 350 permanent jobs, 1,200 suppliers with an important social impact in California and Baja California. Every day, we consult on SCCOOS website information to monitor temperature, ocean currents, chlorophyll we cross their indicators with ours. With this information, we project our operation and even modify it. We also use the monthly summaries of HAB and El Nifio as a reference. It is very important for the actual mariculture the constant monitoring of the ocean, it is no longer possible to operate in a responsible way without it. Not having this information tool would stop an industry that has continued growth for 20 years and could result in a significant social impact, worryingly negative. What affects the Southern California Coast directly affects the Baja California Coast.
Not only do we need information from SCCOOS, it is extremely important to add it to other institutions. As a company, we are doing everything possible to help SCCOOS and Baja California institutions like CICESE and UABC together consolidate the monitoring network for HAB.

Javier Vivanco Ocampo, Deputy Director of Operations
Baja Aqua Farms 2/5/2019

3. Birch Aquarium at Scripps (LOS 2020)
For the past ten years, the UCSD Birch Aquarium has displayed a touch screen kiosk with real-time, local SCCOOS data, making a direct connection with the general public. With so much usage, the hardware is worn out and the software needs updating. With SCCOOS, we hope to create new ways to invite people to explore oceanographic data.

Knowing what's happening along our coast supports human livelihoods and leisure.

At Birch Aquarium, we connect understanding to protecting our ocean planet. We draw on scientific and cultural knowledge to inform action, so we can co-create a healthy planet. Public engagement with SCCOOS data advances these goals.

Nan Renner, Ph.D.
Senior Director of Learning Design and Innovation
Birch Aquarium at Scripps Institution of Oceanography
Learning Sciences Advisor, CREATE 11/11/2020

4. Bureau of Ocean Energy Management (LOS 2020)

BOEM, in the Pacific Region, has responsibilities for leasing and plans for energy development on the outer continental shelf (OCS) in Washington, Oregon, California and Hawaii. As part of the leasing and plans processes BOEM conducts environmental analysis to meet the requirements of the National Environmental Policy Act (NEPA) and consultations for the Endangered Species Act (ESA). Subject matter experts within BOEM utilize data provided by SCCOOS for these environmental analyses for the OCS off of California. It is important that BOEM continues to have access to Ocean Observing data for our ongoing operations.

SUSAN ZALESKI Digitally signed by SUSAN ZALESKI Date: 2020.11.10 14:17:16 -08'00'

Susan F. Zaleski, Marine Ecologist
BOEM Pacific Regional Office 11/10/2020

5. California Coastal Commission (LOS 2020)

The California Coastal Commission is a small State agency that is charged with protection and managing coastal resources in California. The mission of the Commission is to implement the Coastal Act, to provide for balanced use of the coastal zone, and to provide for balanced use of the coastal zone and to protect, restore and enhance coastal and marine resources for the continued benefit of current and future generations. It is important that staff has awareness of and access to a broad range of scientific information to help inform the Commission's planning and regulatory processes. The work supported through SCCOOS and CeNCOOS greatly helps by providing the best available science on oceanographic conditions. Information from these OOS partners has helped with the understanding of shoreline change, and rapid identification of resources that might be at-risk from oil spills, to name but a few.

Kate Huckelbridge

Kate Huckelbridge, Ph.D., Deputy Director
California Coastal Commission 11/16/2020

6. CDFW, Office of Spill Prevention and Response (LOS 2020)

In the event of a significant marine oil spill, and in support of drills and exercises to

maintain preparedness for such events, OSPR and the National Oceanic and Atmospheric Administration (NOAA) utilize the HF radar data as a tool to understand and forecast the movement of spilled oil based on the local currents in the spill area. Currents and wind are the primary influences of the trajectory of spilled oil in a marine setting. High quality HF radar data helps OSPR and NOAA to: 1) more accurately forecast where spilled oil will be carried; 2) develop and implement appropriate response strategies to protect our natural resources; and 3) effectively contain and recover spilled oil. While large offshore oil spills are fortunately very rare events, when they do happen it is important that we are able to rely upon the SCCOOS HF radar to better predict trajectories and plan response operations.

Thomas M. Cullen Jr., Administrator
CDFW, Office of Spill Prevention and Response 11/12/2020

7. CDFW, Office of Spill Prevention and Response (LOS 2020)
At CDFW-OSPR, the Ocean Observing data within Southern California is an extremely valuable resource for oil spill preparedness and response. Common practice for our staff is to use NOAA's Environmental Response Management Application for viewing real time buoy and high frequency radar wind data from SCCOOS to develop an oil spill trajectory during an exercise or actual spill. End users such as Surfline and Magicseaweed use SCCOOS data to generate their surf and weather forecasts which are helpful for oil spill response planning. In addition to this, that same SCCOOS data is useful for evaluating real time weather and safety conditions for on-water equipment deployments.

David Lyons, Environmental Scientist
CDFWe, Office of Spill Prevention and Response 11/25/2020

8. CDFW, Office of Spill Prevention and Response (Support Statement 2020)
I use SCCOOS data regularly. When I receive a dispatch notification of an oil spill in the ocean, I use SCCOOS data and products to calculate a back-of-the-envelope trajectory. This trajectory is used to make tactical decisions for resource protection, and I couldn't do my job well without it.

Alice Nash, Environmental Scientist
CDFW, Office of Spill Prevention and Response

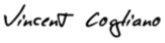
9. CDFW, Marine Wildlife Veterinary Care & Research Center (LOS 2020)
The OSPR-CDFW Seabird Health Program at the Marine Wildlife Veterinary Care and Research Center, employs a goal to monitor the health and pathology of marine birds to support the best achievable care of oiled wildlife and detect emerging threats to seabird populations. Because seabird health and population trends often track in tandem with oceanographic conditions, we believe SCCOOS and CeNCOOS provide invaluable tools to aid our investigations. The benefits of public-facing ocean observing information is

vast, and our uses are multifaceted. We regularly have a need for oceanographic hindcasting, nowcasting, and forecasting to examine seabird mortality events and oiling events statewide. This type of information is also crucial to other regional state biologists and non-profit organizations that examine the causes of morbidity and mortality in marine wildlife populations.

Dr. Corinne M. Gibble, Environmental Scientist
Seabird Program, Marine Wildlife Veterinary Care & Research Center,
CDFW 10/22/2020

10. California Environmental Protection Agency (EPA), Office of Environmental Health Hazard Assessment (OEHHA) (LOS 2020)

The Office of Environmental Health Hazard Assessment has most recently used ocean observations in California to provide general context for our work on assessing health risks and control measures for domoic acid in our fishery program. We are now relying on these ocean observations for harmful algal bloom-related illnesses in marine mammals and birds.



Vincent Cogliano, Deputy Director of Scientific Programs
CA EPA, OEHHA 11/3/2020

11. California Natural Resource Agency, California Ocean Protection Council (LOS 2020)

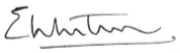
The mission of the OPC is to ensure that California maintains healthy, resilient, and productive ocean and coastal ecosystems for the benefit of current and future generations. The OPC is committed to basing its decisions and actions on the best available science, and to promoting the use of science among all entities involved in the management of ocean resources. SCCOOS and CeNCOOS provide the OPC with data that enables us to make better natural resources management decisions, in particular in the areas of the impacts of sea level rise, fate and transport of contaminant plumes, and harmful algal blooms. As an example, the HAB network, which uses OOS data, is used to make fisheries management (Dungeness crab – our number one fishery in the state) and public health decisions. Also, as we see the growing impacts of ocean acidification and hypoxia, the use of the ocean observing system and the need for additional monitoring has become even more critical.

Mark Gold, D.Env., Executive Director
California Ocean Protection Council, CNRA 2/3/2020

12. California Ocean Science Trust (LOS 2020)

The California Ocean Science Trust is more effective in delivering information on the state of our oceans to policy-makers and managers because of the data collected by programs such as CeNCOOS and SCCOOS. As science-based decision support programs, the California Ocean Observing Systems (CeNCOOS and SCCOOS)

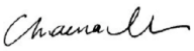
collaborate with local, state and federal agencies, tribes, resource managers, industry, policy makers, educators, scientists and the general public to provide data, models and products that advance our understanding of the current and future state of our coastal and global ocean. SCCOOS and CeNCOOS focus on high-priority regional requirements to provide the information necessary to address marine operations, coastal hazards, climate variability and change, and ecosystems, fisheries, and water quality.



Liz Whiteman, Executive Director
California Ocean Science Trust 11/16/2020

13. California Sea Grant (LOS 2020)

I am writing this letter of support in my role as the Director of California Sea Grant (CASG), a multifaceted program funded by the National Oceanic and Atmospheric Administration (NOAA) with a broad series of mandates which include supporting research, extension and outreach, work-force development, education and communication throughout the state of California to increase the understanding of, responsible interaction with, and use of coastal and marine resources. CASG is jointly supporting an Ecological Model and Indicator Postdoctoral Researcher with the California Ocean Observing Systems, who is supporting the curation of datasets (Seascapes, C-HARM, EcoCAST) that provide the backbone of automated data and model output delivery to the longterm MPA monitoring network. The postdoctoral researcher's contributions will generate the development of spatially explicit view of potential risk to a multitude of stressors and changing conditions (sea surface temperatures, variations in acidity, dissolved oxygen, nutrients, harmful algal blooms and marine disease) at an MPA. This very innovative and collaborative project, which includes managers at California Department of Fish and Wildlife and the California Ocean Protection Council and other marine scientists at California universities, aims to integrate data from various investigators, locations, habitats and methods to produce robust assessments of change in key indicators that are useful for MPA management.



Shauna Oh, Director
California Sea Grant 11/10/2020

14. California Shore and Beach Preservation Association (LOS 2020)

On behalf of the California Shore & Beach Preservation Association (CSBPA) Board of Directors, I enthusiastically endorse the valuable data and services provided by the Southern California Coastal Ocean Observing System (SCCOOS) at the Scripps Institution of Oceanography, University of California San Diego. Our Board members are from along the entire California coast and are very much in support of the entire state-wide collaborative, i.e. including the Central & Northern California Ocean Observing System (CeNCOOS).

CSBPA is an educational and professional association with members from government, academia, industry, and individuals – all of whom are interested in the coast of California.

We promote the prudent management of our coast and preserving, protecting, and enhancing our coasts by merging science and public policy. SCCOOS data are fundamental to our science-based decision making and highly utilized by CSBPA members and affiliates.

Kim Garvey, President
California Shore and Beach Preservation Association 10/6/2020

15. California Wildlife Center (LOS 2020)

On behalf of California Wildlife Center, I enthusiastically endorse the valuable data and services provided by the Southern California Coastal Ocean Observing System (SCCOOS) at the Scripps Institution of Oceanography, University of California San Diego. California Wildlife Center rescues, rehabilitates and returns to their natural environment, marine mammals in the Southern California Bight. Pinnipeds, particularly California sea lions, are rescued suffering from exposure to the neurotoxin causing domoic acid toxicity. We respond to the greatest number of California sea lions each year. Additional information warning of potentially hazardous blooms aids us when planning and allocating resources necessary for their care.

Jennifer Brent, Executive Director
California Wildlife Center 9/30/2020

16. Carlsbad Aquafarm (LOS 2020)

Carlsbad Aquafarm has been sustainably farming shellfish since 1991. Our farm's operating principle is "Restoration Aquaculture," where priority is given to restoring the ecological health of the lagoon where we grow our shellfish. We also participate in Living Shoreline Restoration projects throughout Southern California. The success of these projects depend on oyster settlement, which are impacted by changes in ocean chemistry and nutrient levels. We have found the SCCOOS data to be invaluable in providing real time data on the highly dynamic ocean chemistry in establishing healthy oyster reefs in these vital estuaries and helping inform our farm's shellfish operations.

I truly believe in the great work SCCOOS does, and their undaunted, relentless vigilance in helping tradesmen, such as myself and others who work and farm sea, become more aware of the otherwise invisible threats and challenges and rapidly changing conditions of the modern urban, coastal environment. SCCOOS posts the vital signs of the living ocean, much like the monitors in an OR, except your patient straddles miles of square miles.

Thomas Grimm, CEO and President
Carlsbad Aquafarm 10/29/2020

17. Carnival Cruise Line (LOS 2020)

On behalf of Carnival Cruise Line, I enthusiastically endorse the valuable data and

services provided by SCCOOS. We are a major Cruise line, operating in Long Beach and lately from San Diego and San Francisco. At present we have four vessels operating in the area. Our terminal in Long Beach is exposed to Ocean ground Swell, at certain time of the year. Your data helps tremendously to plan for a safe approach and mooring. Since we use your data, we have reduced the number of mooring lines breakage and unsafe situations, during docking, people transfer on/off the ship and during bunkering operation. We also connect to shore power (clean energy) in Long Beach and San Diego, therefore you can imagine how critical is a safe mooring in presence of ground swell.

SALVATORE RASSELLO

Salvatore Rassello, Director of Nautical Planning
Carnival Cruise Line 1/15/2020

18. Center for Research on Educational Equity, Assessment and Teaching Excellence (LOS 2020)

CREATE's Research & Evaluation team has clear and demonstrated expertise in both qualitative and qualitative education-focused research and evaluation. We have successfully served as evaluators on a long list of projects, including grants from agencies such as the National Science Foundation, the Office of Naval Research, the Department of Defense Education Activities, the U.S. Department of Education, the Carnegie Corporation, the Howard Hughes Foundation, and the Spencer Foundation. I am CREATE's Co-Director of Research and Evaluation, and am a quantitative and developmental psychologist with a long history of education-related research. I also have over 20 years of evaluation experience, and have successfully led dozens of evaluations of externally funded STEM-related education programs and have served in a consulting capacity on dozens more.

The SCCOOS team has asked me, as CREATE's Co-Director of Research and Evaluation, to act in a consulting capacity on their expanded work plan—or more specifically, to consult on their education and outreach assessment and evaluation efforts. I'm excited to do so, and look forward to building a stronger collaborative relationship between SCCOOS and CREATE in the future.

In sum, should the current proposal be selected for funding, it is my intent to act on CREATE's behalf in an evaluation and assessment consulting capacity on the education and outreach components of the project…"

Monica A Sweet, Co-Director of Research and Evaluation
CREATE 11/3/2020

19. Channel Islands Marine and Wildlife Institute (LOS 2020)

CIMWI, a 501c3 nonprofit, is the only organization permitted to rescue and rehabilitate marine mammals along the Southern coast of California's Santa Barbara and Ventura counties which includes 155 miles of coastline. CIMWI sends a monthly report to SCCOOS with marine mammal stranding information regarding suspected domoic acid

cases with details including stranding sight, GPS, species, age class and severity of illness. Domoic acid is of particular interest and concern because it can cause sickness and fatality in humans. Marine mammals are sentinels of both local and widespread ocean environments. They eat what we eat, so information regarding domoic acid strandings and animal health has important implications to public health.

SCCOOS provides a one-of-a-kind service by collecting and making ocean data public knowledge benefiting scientists, researchers and public health officials. CIMWI uses the domoic acid data provided by the monthly SCCOOS report to monitor domoic acid along the California coast in order to be at the ready for heightened stranding volumes and put resources in place to respond to these animals. CIMWI plans to use additional data compiled by SCCOOS in the future to explore trends in local ocean conditions in relation to high stranding events (non-domoic acid related) to enable us to better predict when and where our resources would be most needed.

Ruth Dover, Director
Channel Islands Marine and Wildlife Institute 11/18/2020

20. City of Del Mar (Support Statement 2020)

In my dual roles as policymaker for a coastal California city and as Professor at Scripps Institution of Oceanography, I have great appreciation for the importance of accurate and timely data gathered up and down the California coastline. High quality data gathered over many years provides firm foundations for good policy decisions and long-term planning. High quality data access tools and analytics gives broad access to pose questions and extract predictive patterns. SCCOOS makes both available -- data and data access -- reliably. I strongly endorse SCCOOS's application for renewal funding.

Terry Gaasterland, Deputy Mayor / Professor
City of Del Mar / University of California San Diego 10/15/2020

21. City of Imperial Beach (LOS 2020)

The City of Imperial Beach helped establish the San Diego Coastal Ocean Observing System in 2005 with funding provided by the California Clean Beach Initiative. The coastal monitoring supported by SCCOOS helps the City monitor and respond to impacts of pollution from the Tijuana River and other discharges that occur south of the border. Local government agencies rely on this data to make critical decision about when it is necessary to close the beach or post advisories when elevated pollution impacts public health. Understanding the impacts from pollution plumes also helps inform the development of binational solutions to control the discharge of pollution from Mexico.

Serge Dedina, Mayor
City of Imperial Beach 11/16/2020

22. City of Los Angeles, LA Sanitation and Environment (LOS 2020)

The work conducted by SCCOOS is vital because their focus 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 nearshore waters. This information is useful in studying stormwater dispersion and fate, as well as discharges from wastewater treatment plants. The data served publicly greatly benefits monitoring efforts aimed at protecting public health and the environment.

In 2006, the City of Los Angeles' Hyperion Water Reclamation Plant 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 interior of the 5-Mile Outfall pipe. The diversion lasted approximately three days and approximately 800 million gallons of secondary-treated effluent was discharged through the 1-Mile Outfall. The City of Los Angeles' Environmental Monitoring Division, in conjunction with other researchers, conducted an extensive monitoring effort during this diversion. Our monitoring effort greatly benefited from surface current information provided through 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 (HFR) data. The 2006 5-Mile Outfall pipe inspection determined that important preemptive repairs were required in the Effluent Pumping Plant Header instigating a more extensive six-week diversion of 9,363,000,000 gallons (35,438,955,000 L) into the shallow, nearshore environment and comprehensive monitoring program in fall 2015. Again, the HFR data and related particle dispersion model were extremely critical to our adaptive monitoring and plume tracking effort during 2015, which spanned nearly eight weeks, including pre- and post-diversion monitoring.

SCCOOS also developed and provided a dedicated website for this 1-Mile Diversion Monitoring Program, which operated 24 hours a day, and allowed seven days a week group communication, both scientific partner-restricted and publicly accessible. The website provided a centralized platform to share data from all assets and partners (in most cases real-time), which was critical to developing daily sampling strategies, documenting daily boat-based activities, facilitating project decisions, and functioning as a data archival clearinghouse. The SCCOOS public-access postings consisted of HFR, wind forecasts, plume trajectories, drifter tracks, shoreline (beach) fecal indicator bacteria data, and CTD and Wirewalker graphics. The SCCOOS password-protected postings included scientist contact list, field data sheets, daily notes, various monitoring documents, wave height data, satellite images, and Wirewalker raw data.

The services that SCCOOS provided in 2006 and 2015 were invaluable to our monitoring efforts. We believe improved understanding of dispersion in the surfzone and offshore may similarly benefit our monitoring efforts in the future, as well as those of other monitoring agencies in southern California, for example, the LACSD, Orange County Sanitation Districts (OCSD), and the Southern California Coastal Water Research Project (SCCWRP), academic institutions, among several others.

SCCOOS also works with the California Department of Public Health Marine Biotoxin Monitoring Program to assist in production of the monthly California harmful algal bloom (HAB) bulletin that synthesizes results and issues public health alerts, providing a more complete picture of the regional variability of HABs. Because HWRP's 5-Mile Outfall effluent currently has significant levels of ammonia (i.e., nutrients), the potential for HABs and phytoplankton blooms and their associated adverse impacts on the environment and biological communities are a concern to LASAN.

As a science-based decision support system, SCCOOS works interactively with local, state and federal agencies, resource managers, industry, policy makers, educators, scientists, and the general public to provide data, models, and products that advance our understanding of the current and future state of our coastal and global environment. SCCOOS focuses on coastal observations and product development to provide information necessary to address issues regarding marine operations, coastal hazards, climate variability and change, and ecosystems, fisheries, and water quality.

In summary, the City of Los Angeles shares an interest in better understanding the dynamics of water transport in the surfzone, nearshore, and offshore 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 nearshore waters. Because of this, in addition to its work on ocean acidification, HABs, and temperature anomalies, the City believes it will continue to directly benefit from the ocean observing activities proposed by SCCOOS; the City wholeheartedly endorses SCCOOS and recommends it be funded. Sustained funding will be crucial to the maintenance of the program's ocean observing network and to the continuity of the important data products and services that these observations enable.

Massahiro Dojiri, PhD, BCES, Assistant General Manager
LA Sanitation and Environment, City of Los Angeles 10/27/2020

23. City of Newport, Newport Beach Fire Department (Support Statement 2020)
The Southern California Coastal Ocean Observation System (SCCOOS) has been a valuable partner for the Newport Beach Fire Department - Lifeguards and lifeguards up and down the California coast. The information provided by the SCCOOS Automated Shore Station assists our data-driven decisions for staffing and expected activity levels.

Ocean water temperature is a significant driver of activity, and the SCCOOS data gives our lifeguards up to the minute information to help determine appropriate staffing levels. The chlorophyll levels allow us monitor the precursors of red tide conditions before the condition becomes noticeably visible. The SCCOOS program is significant to the Lifeguards and ocean users, and we support the continuation of this valuable program.

Michael Halphide, Assistant Chief Lifeguard Operations
Newport Beach Fire Department 11/3/2020

24. City of San Diego (LOS 2020)
Briefly, the City conducts a comprehensive ocean monitoring program in order to monitor water quality conditions along the southern California and northern Baja California coasts. Although the program is specifically designed to assess the effects of wastewater discharged to the ocean via the Point Loma Ocean Outfall and South Bay Ocean Outfall, the City engages in additional enhanced monitoring activities to evaluate the influences of other anthropogenic factors or natural climatic events on regional ocean conditions. For example, the City has recently embarked on a multi-year project in collaboration with the Scripps Institution of Oceanography to deploy and operate new real-time ocean observing systems moored near the Point Loma and South Bay outfalls in order to further understand wastewater dispersion and emerging issues such as increasing levels of ocean acidification. Consequently, SCCOOS has become a vital resource to the City's monitoring program and interests, by providing standardized methods support, as well as context and reference for the data we are collecting, and opportunities for collaboration.

R Kempster

Ryan Kempster, PhD,Ocean Monitoring Program Manager
City of San Diego 11/24/2020

25. City of Santa Barbara (Support Statement 2020)
The City of Santa Barbara fully supports the SCCOOS program. The data generated from the Stearns Wharf Automated Shore Station has assisted the City in determining the severity of algae blooms occurring near the desalination facility. Algae blooms cause difficulty in operating the desalination facility and having real time monitoring data available allows the City and its contract operators to make decision on the operations of the plant.

Gaylen Fair, Water Quality Superintendent
City of Santa Barbara 11/11/2020

26. City of Santa Barbara, Santa Barbara Harbor Patrol (Support Statement 2020)
The SCCOOS program provides the SB Harbor Patrol with historic and real time water temperature, chlorophyll and salinity. This information is valuable to the Waterfront and its users, most especially the commercial fishing industry. The long term nature of the program provides valuable insight into environmental changes which cannot be measured or seen in a moment in time.

Monica Broumand

Monica Broumand, Santa Barbara Harbor Patrol Officer
City of Santa Barbara, Harbor Patrol 11/9/2020

27. City of Santa Monica, Santa Monica Police Harbor Patrol (Support Statement 2020)
We at the Santa Monica Harbor Patrol currently actively use the data SCCOOS provides.

This data is useful when we conduct our dive operations around the Santa Monica Pier and Santa Monica Breakwall. For example, knowing the current temperature of the ocean allows us to prepare and plan for our dive(s), whether it is a maintenance dive, training, or rescue dive operation. Having this data is also beneficial because it allows us to answer questions regarding the ocean from the public. If SCCOOS could post the times of the tides during the day, it would be greatly appreciated. We hope to continue to have this data available to us.

Philip Loy, Pier and Harbor Service Officer
City of Santa Monica, Santa Monica Police Harbor Patrol 11/24/2020

28. Coastal Data Information Program (LOS 2020)

CDIP is a wave observing network operated out the Scripps Institution of Oceanography, primarily funded by the US Army Corps of Engineers and California State Parks Division of Boating and Waterways. Quality controlled CDIP wave buoy data are released from each observing station every 30 minutes, including wave height, period, direction, and sea surface temperature. Our partnerships with SCCOOS and CeNCOOS are important for us to disseminate this information to government agencies, stakeholders and the general public effectively, and add value to our observations by placing them in context with other environmental data.

Dr. James Behrens, Program Manager
Coastal Data Information Program 9/30/2020

29. CODAR Ocean Sensors (LOS 2020)

CODAR Ocean Sensors specializes in the research, design, manufacturing and support of SeaSonde® high-frequency (HF) radar systems primarily for ocean current measurement, wave monitoring and tsunami detection. The SeaSonde HF radar system is the backbone of many regional ocean observing systems, including SCCOOS. Representing over 80% of the global oceanographic HF radar market, the SeaSonde has captured and quantified ocean response to many extreme weather events including hurricanes and winter storms, and also provides valuable data in emergency situations such as search and rescue and spill response. SeaSondes operate in over 30 countries with more than 140 in the U.S.. The close collaboration CODAR has with PI's and SeaSonde operators in SCCOOS has helped improve the data quality of the HFR network as well as develop tools to better manage and operate a large, regional scale HFR network.

Chad Whelan, Chief Technology Officer
CODAR Ocean Sensors 11/4/2020

30. Desert Research Institute, Western Regional Climate Center (LOS 2020)

The Western Regional Climate Center is one of six centers funded by the National

Oceanic and Atmospheric Administration (NOAA) with a mission of delivering climate services and improving the coordination of climate-related activities at the national, state, and regional scales. Both CeNCOOS and SCCOOS have been regular contributors to the NOAA West Watch webinar series since 2016 with valuable ocean monitoring updates and insight to the latest research on marine and coastal systems. Stakeholders of the NOAA West Watch such as the National Weather Service, state climatologists, California Department of Water Resources, and universities across the region benefit greatly from these contributions as coastal and marine conditions strongly impact regional weather and climate. Another benefit of the partnership with CeNCOOS and SCCOOS has been learning about where and how to access ocean and coastal data that are unfamiliar to most in the weather and climate communities.

Dan McEvoy, Assistant Research Professor, Regional Climatologist
DRI/WRCC 11/2/2020

31. Elkhorn Slough National Estuarine Research Reserve (LOS 2020)

Here at ESNERR we are at the heart of the Monterey Bay where so many institutions, industries, and communities live, work and play in and among these precious waters. We not only provide space for individuals seeking a quiet stroll among the oaks on the shores of Elkhorn Slough but contribute in many ways to the local community such as professional development workshops for teachers, regional managers, researchers, and the like. Both CeNCOOS and SCCOOS play a vital role in our Coastal Training Program, our Research Program as well as our Education program. All three of our programs have benefited greatly from information provided by CeNCOOS. Our Research Program not only provides data to the system but also is also able to benefit from other sources of data within the system. For example we are often using data from local stations to investigate oceanographic phenomena to what we see in the estuary, in terms of higher water levels causing marsh dieback, warmer southern currents bringing southern species, etc

John Haskins, Water Quality Monitoring Scientist
Elkhorn Slough National Estuarine Research Reserve 11/9/2020

32. Heal the Bay (LOS 2020)

Heal the Bay and the Heal the Bay Aquarium actively rely on ocean water analysis to support our mission in creating healthy waters for both the surrounding human population and the displayed local marine life, respectively. Through a collaboration with SCCOOS and the proposed monitoring upgrades, we would be able to provide even more comprehensive data to support in these goals. The SCCOOS scientific data even further supports our core missions in advocating and educating about critical environmental issues such as ocean acidification and climate change.

Laura Rink
Laura Rink
Associate Director of Aquarium Operations 11/24/2020

33. Jacobsen Pilot Service Inc. (LOS 2020)
Our Pilots have been using this valuable information for many years now. We navigate some of the largest Very Large Crude Carriers (VLCC) that come into American waters and it's critical for us to monitor the swells closely so we can reduce the chance that the vessel will pitch or roll to a point of touching bottom. Also, during storm conditions we use the offshore wave data to predict the wave patterns at our Pilot Boarding area to ensure we can transfer our pilots onto the ships safely.

A successful project that we have completed is the PROTIDE program. This predictive modeling program takes information from CDIP offshore wave buoys and calculates if it is safe for us to bring in deep draft (VLCC's). This project is a partnership between SCCOOS/CDIP, Port of Long Beach, State of California (OSPR), Marathon Oil Company, the Marine Exchange, and our piloting company. The goal is to assure that our under keel clearance along the entire route into the port is safe at any given swell condition. PROTIDE has proven effective and is used continuously on VLCC's and will most likely be expanded to other type of vessels soon.

Captain Thomas A. Jacobsen, President/CEO
Jacobsen Pilot Service Inc. 11/15/2020

34. Los Angeles Waterkeeper (Support Statement 2020)
Los Angeles Waterkeeper would encourage a more in depth water monitoring station be put in place at the Santa Monica Pier. LA Waterkeeper was disappointed in the execution of and the termination of the monitoring program we were enthusiastically involved in at the pier. We have not actually been notified of any plans or updated on the situation there since we took part in a maintenance dive last year and hope to hear more at some time.

Michael Quill, Marine Programs Director
Los Angeles Waterkeeper 11/12/2020

35. Marine Animal Rescue (LOS 2020)
Marine Animal Rescue Specialists respond to and rescue marine mammals in Los Angeles County. We use the Ocean Observing data. to confirm what we sec in the field, which adds a valuable tool to our rescue organization. It is useful to MAR as it helps us respond to the calls, sometimes up to 500 responses/rescues in one year.

Peter Wallerstein, President
Marine Animal Rescue 9/30/2020

36. Marine Exchange of Southern California (LOS 2020)
The Marine Exchange, in partnership with federal, U.S. Coast Guard, state, and local port partners, is a private, non-profit firm that provides maritime information and vessel

traffic services for the maritime community in the waters of Southern California and the ports of Los Angeles and Long Beach. Our firm continually works to anticipate and fully meet the maritime information and vessel traffic requirements necessary to promote a safe, secure, efficient, reliable, and environmentally sound maritime transportation system.

More than 28,000 vessels participated in the Vessel Traffic Service in 2019 and 4,550 large vessels arrived in the Los Angeles and Long Beach port complex. Each day, there are there are approximately 45 movements of some of the largest vessels in the world, and they are getting bigger. Container ships that are 1,300 feet long and carrying 14,000-18,000 containers are now common. Tankers that are 1,100 feet long, weigh 330,000 tons, and have a draft of up to 69 feet have been arriving routinely at the port of Long Beach since April 2017 due to SCCOOS/CDIP products.

In addition to the ports of Los Angeles and Long Beach, 274 vessels arrived at the Chevron Offshore Terminal in El Segundo, 461 arrived in San Diego, and 409 arrived in Port Hueneme in 2019. Bringing these ships safely into port is only possible if there is extremely accurate and reliable wave information such as provided by SCCOOS.

The ports of Los Angeles and Long Beach are the # 1 and #2 container ports in the country and together we are ninth in the world for the past two years. Together, the two ports moved 16.9 million containers in 2019. The value of all cargo moving through the ports is $1.3 billion per day. California only has a 5-day supply of oil ashore, so keeping the tankers moving in and out of the ports and the offshore terminal in El Segundo is critical to preventing fuel shortages.

SCCOOS's products are used by the Marine Exchange and a wide variety of port partners.

1. Water observations such as temperature can help predict and analyze the movements of fish and mammals, which can be used to help prevent whale strikes by ships and other harmful impact to marine life.
2. Flooding and Storm surge models are used to plan future developments in the ports and adjacent coastal waters.
3. Wave buoy information from the Coastal Data Information Program is used by tugboats, barges, ferries, recreational vessels, harbor pilots, very deep draft tankers and container ships, all 5 large Southern California Ports, and the Coast Guard to plan marine construction and conduct safer vessel movements, from the smallest pleasure boats, ferries, and fishing boats to the largest tankers and container ships.
4. Beach Erosion and Inundation information is used to analyze vulnerable areas, plan preventative and protective measures, plan responses, and plan where to best pre-stage equipment to keep it safe.
5. The products of the Center for Climate Change Impacts and Adaptation are critical to making good, science-based decisions based on climate change and resulting impacts such as sea level rise. Do we build sea walls, flood gates, or buildings on stilts? How tall? How strong? What is the impact to the environment for each

alternative? There may be lots of good ideas, but all have pros and cons. The Center provides information that can help guide good decisions.

J. Kipling Louttit, Captain, U.S. Coast Guard, Retired
Executive Director, Marine Exchange of Southern California and VTS LA/LB 10/20/2020

37. Marine Mammal Care Center Los Angeles (LOS 2020)
The Marine Mammal Care Center Los Angeles receives on average 350-400 stranded marine mammals each year. These animals suffer from a variety of maladies, but one of the most debilitating is domoic acid toxicity. The monthly report by SCCOOS on marine mammal strandings associated with confirmed or suspect cases of domoic acid exposure has been invaluable in helping us keep abreast of regional trends associated with harmful algal blooms. This timely assessment and informative format is helpful in our communication and engagement with the public to try to increase understanding and awareness of this environmental condition that has important implications for human and animal health.

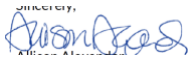
Lauren Palmer, Hospital Director, Veterinarian
Marine Mammal Care Center Los Angeles 9/30/2020

38. Monterey Abalone Company (LOS 2020)
Monterey Abalone Company is an in the ocean abalone farm located on Monterey's Commercial Wharf. Our abalone grow-out cages are suspended in the bay and are subject to the tides, storms, swells, algae blooms and temperature swings of the natural environment. Ocean observing information is crucial for us to have some advance notice of weather and oceanographic conditions. Parameters such as water temperature, pH, dissolved oxygen are very important locally. Because we harvest kelp to feed our abalone, imagery to estimate kelp biomass is very important to us locally and to Fish and Wildlife statewide (CDFW regulates kelp harvesting statewide). While satellite imagery is helpful, the resolution does not enable one to distinguish giant from bull kelp while drone imagery does. Your knowledge of benefits provided by CeNCOOS and SCCOOS to regional marine stakeholders and end-users. Recent concerns about kelp biomass and the explosion of the purple urchin populations have impacted our business and at least a dozen other businesses statewide. Without satellite imagery to assess stands of canopy forming kelps DCFW would not have had the necessary information to regulate the fishery.

Arthur Seavey, Partner
Monterey Abalone Company 10/19/2020

39. National Marine Sanctuary Foundation (LOS 2020)
The National Marine Sanctuary Foundation is the national non-profit partner to the National Marine Sanctuary System, and supports research and related activities in

sanctuaries. Efforts to monitor underwater soundscapes in sanctuaries are already connected to the Foundation in several ways, including through funding from a cooperative agreement between NOAA and the Foundation that supports the West Coast Soundscapes Coordinator staff position (as of November 2020), and in other areas. The West Coast Soundscapes Coordinator is supported through funding awarded through a cooperative agreement with NOAA/NOS/Office of National Marine Sanctuaries (NA17NOS4290190 and NA19NOS4290190A). The Foundation also holds an MOA with NOAA/NOS/ONMS (MOA-2019-075) that states that the two organizations will work collaboratively to "[a]dvance conservation of national marine sanctuaries including through the support and development of scientific research, data collection and monitoring, and use of innovative technologies."



Allison Alexander, Vice-President
National Marine Sanctuary Foundation 11/30/2020

40. Naval Air Weapons Station China Lake (Support Statement 2020)
SCCOOS provides dedicated web space for personnel to get current weather data for the NAWS China Lake range. For customers who are not military affiliated this service is ideal for these people to get weather information for their tests.

Tamera Walters
Tamera Walters, Meteorologist
Naval Air Weapons Station China Lake 10/25/2020

41. NOAA, Channel Islands National Marine Sanctuary (LOS 2020)
While we engage a lot of partners in our own sanctuary-centric research and monitoring projects to understand what is happening in the sanctuary, we and our partners rely heavily on SCCOOS data to understand how physical oceanographic changes across the Southern California Bight are impacting the sanctuary. For example, these changes drive species distributions in space and time, the frequency and intensity of harmful algal blooms, the propensity for successful establishment of noxious invasive species, and the growth and productivity of key species.

We appreciate SCCOOS and CeNCOOS' ability to collaborate with us and to provide data, models and products that advance our understanding of the current and future state of our coastal and global environment. Sustained funding for SCCOOS and CeNCOOS is crucial to the maintenance of the program's ocean observing network and to the continuity of the important data products and services that these observations enable. The expansion of monitoring beyond physical and chemical oceanography to indicators of marine biodiversity trends via MBON is also a very important initiative that is critical to understanding ecosystem trajectories.

I sent a similar letter of support to SCCOOS in January of 2020, but I wanted to update this support with a note regarding some specific Tier 2 proposals that we hope IOOS supports. This includes the Ocean Sound Observation Network proposed along with our

west coast regional partners (including other sanctuaries). It also includes other proposed Tier 2 projects that are particularly relevant to CINMS including CalCOFI, telemetry, and UAS. We strongly support funding of all of these Tier 2 components because they will provide valuable information to support sanctuary research, monitoring, and management. By working together and leveraging our respective core strengths we can deliver timely, accurate, and cutting edge data products and services to the nation.

Chris Mobley, Superintendent
NOAA, Channel Islands National Marine Sanctuary 10/30/2020

42. NOAA, National Geodetic Survey (LOS 2020)

As NOAA's National Geodetic Survey's (NGS) Pacific Southwest Region Geodetic Advisor, I assist the geospatial communities throughout the Pacific South-West—including public- and private-sector ports, surveyors, GIS professionals, engineers, and scientists—with the National Spatial Reference System's proper application. Ocean Observing data within Southern California is tied to our mission through the National Spatial Reference System (NSRS) and has tangible, far-reaching societal benefits. The services provided by these programs are superb outreach programs, as their science and support are easily understandable and community inspiring, for both NOAA's National Ocean Service, as well as Scripps Institution of Oceanography, University of California San Diego.

Dana J. Caccamise II, Pacific Southwest Regional Advisor (CA, NV)
NOAA, National Geodetic Survey (NGS) 11/18/2020

43. NOAA, National Marine Fisheries Service, CCIEA Program (LOS 2020)

Information collected by NANOOS, CeNCOOS and SCCOOS is ideal for the work we do, and is already being incorporated into our efforts, including annual ecosystem status reporting to the Pacific Fishery Management Council and supporting National Marine Sanctuaries with their place based condition reports. Additional information of the sort proposed by the West Coast IOOS RAs would add considerable value to monitoring and ecosystem status and risk assessment: for example, expanded information on anthropogenic sound profiles at the scale of Sanctuaries would enhance their ability to assess conditions within their waters for species such as marine mammals, and may also support CCIEA scientists' assessments of risk for marine mammals that are also being affected by other stressors such as coastal habitat quality change and variability in forage. Further, developing good baselines of sound levels and variability is imperative to assessing changes and impacts that may be brought about by offshore renewable energy projects, deep sea mining, and other potential ocean uses that may affect fishery species and protected species.

Chris Harvey, Research Fisheries Biologist
Co-lead, California Current Integrated Ecosystem Assessment team
NOAA, National Marine Fisheries Service 11/13/2020

44. NOAA, National Weather Service (LOS 2020)

The National Weather Service in San Diego is responsible for protecting lives and property that are impacted by weather, oceanic conditions, hydrological and other natural hazards across extreme Southern California. The products we receive from CDIP and Southern California Coastal Ocean Observing System (SCCOOS) greatly enhance our mission of saving lives and protecting property. The data assists NWS for daily coastal flooding, beach hazards, ocean temperature, ocean currents, wave height, surf, wind, tidal, and tsunami forecasts and warnings for the maritime and beach community. NWS forecasters monitor the online websites and the data directly ingested at our office on a daily basis.

Alex Tardy

Alex Tardy, Warning Coordination Meteorologist
NOAA, National Weather Service, San Diego 11/5/2020

45. NOAA, Office of National Marine Sanctuaries, West Coast Region (LOS 2020)

While we engage many partners in our sanctuary-centric research and monitoring projects, we and our partners rely heavily on SCCOOS and CeNCOOS data to understand how physical oceanographic, and increasingly biological, changes along the west coast are impacting sanctuary resources and ocean health (e.g., sanctuary condition reports). For example, these 2 physical changes drive species distributions in space and time, the frequency and intensity of harmful algal blooms, the propensity for successful establishment of introduced species, and the growth, distribution and productivity of key species.

We appreciate SCCOOS's and CeNCOOS's ability to collaborate with us and to provide data, models and products that advance our understanding of the current and future state of our coastal and global environment. Sustained funding for SCCOOS and CeNCOOS is crucial to the maintenance of the program's ocean observing network and to the continuity of the important data products and services that these observations enable. The expansion of monitoring beyond physical and chemical oceanography to indicators of marine biodiversity trends via MBON is also a very important initiative that is critical to understanding ecosystem trajectories.

Specific Tier 2 proposals that we encourage the Integrated Ocean Observing System (IOOS) to support include the Ocean Sound Observation Network proposed along with our west coast regional partners; CalCOFI; animal telemetry; UAS surveys; kelp canopy cover assessments by satellite; zooplankton, mammal and bird surveys and CTD cast data; development of climate indicators and other critical data for sanctuary Condition Reports; and outreach and engagement initiatives to diverse user group communities.

William J. Douros, West Coast Regional Director
NOAA ONMS West Coast Region 11/9/2020

46. NOAA, Office of Response and Restoration, Emergency Response Division

(LOS 2019)
Our office provides scientific support to the US Coast Guard during marine spills of oil and hazardous materials to inform time-critical response decisions. A key element of that support is contaminant fate and transport modeling. Our staff, including oceanographers and regionally based Scientific Support Coordinators, have worked with SCCOOS and the larger JOOS community for many years to efficiently access coastal ocean observations for incorporation into our response modeling efforts. The SCCOOS' network of established data sources and technical expertise in the fields of surface currents (HF radar), nearshore and subsurface transport, water quality, wave monitoring, telemetry buoys, and unmanned aerial systems have also been instrumental in strengthening our spill response efforts.

Amy MacFadyen, Oceanographer
NOAA, Office of Response and Restoration

Jordan Stout, Scientific Support Coordinator
NOAA, Office of Response and Restoration

2/7/2019

47. NOAA, Southwest Fisheries Science Center (LOS 2020)
SWFSC monitors and reports on environmental conditions for the Pacific Fisheries Management Council (PFMC) by providing an annual ecosystem status report (ESR). In collaboration with the Northwest Fisheries Science Center, the ESR summarizes eastern north Pacific ecosystem indicators, from large scale atmospheric impacts down to regional and local ecosystem influences and includes human impacts. Data are collected from all available sources, and the west coast IOOS Regional Associations (RA) are important partners in this effort. The RA provided surface currents from HF radar, environmental data from the glider array and shore stations data that are important time series data. These data are also helping the SWFSC to move from single species stock assessments to ecosystem-based fishery management.

There are a number of joint efforts between SWFSC and the RA that will strengthen in future years. The RA shore stations extend the inshore CalCOFI sampling lines and a shared data catalog will provide better data access. During this COVID-19 pandemic, SWFSC has had to cancel most of its survey cruises. The glider network has allowed Fisheries to maintain time series and monitor coastal conditions. Bird surveys and the SCCOOS C-HARM HABs tracking software (hosted on SWFSC servers) are examples of other collaborations that benefit both groups.

Going forward, enhancements to the glider and shore station suite of instruments, expansion of eDNA sampling and the proposed addition of Flow Cytobots to the shore stations will all expand the suite of ecosystem data and syntheses that will be incorporated into the ESR. In addition, the proposed west coast Ocean Sound Observation Network (OSON), an effort including NANOOS, will provide the first coast-wide data on ocean noise, an important environmental parameter that presently isn't monitored in a consistent manner.

As a science-based decision support program, the California Ocean Observing Systems (CeNCOOS and SCCOOS) collaborate with local, state and federal agencies, tribes, resource managers, industry, policy makers, educators, scientists and the general public to provide data, models and products that advance our understanding of the current and future state of our coastal and global ocean. SCCOOS and CeNCOOS focus on high-priority regional requirements to provide the information necessary to address marine operations, coastal hazards, climate variability and change, and ecosystems, fisheries, and water quality.

Newell Garfield, Director, Environmental Research Division
NOAA Southwest Fisheries Science Center 10/26/2020

48. Ocean Discovery Institute (LOS 2020)

At Ocean Discovery Institute, we use ocean science to empower young people from underserved urban communities of color to transform their lives, their community, and our world as science and conservation leaders. We integrate real science data into our curriculum to inform our students about relevant coastal and oceanographic issues. We use ocean observing data to teach students about multiple STEM topics, such as physical oceanography and math. Furthermore, discussions about ocean observing data also expose our students, all of whom are from backgrounds historically underrepresented in STEM fields, to a variety of STEM career types. The continued availability of this data is crucial to our ongoing efforts to provide science opportunities to young people from underserved backgrounds.

Joel Barkan, Research and Restoration Manager
Ocean Discovery Institute 10/30/2020

49. Ocean Rainforest, Inc. (LOS 2020)

I have been using the data that SCCOOS currates for more than 5 years. This program has been instrumental for my work as an environmental scientist and manager in the region of the Southern California Bite. I fully support SCCOOS's initiative to integrate pH and dissolved oxygen monitoring into more of their partnered platforms. It's a much needed and sadly lacking addition to environmental and ocean monitoring, particularly in this region. That data would serve to support a great deal of more sound policy decisions especially surrounding our blue economy.

Courtney Schatzman, Ocean Operations Manager
Ocean Rainforest, Inc. 10/22/2020

50. One Health Institute and Karen Drayer Wildlife Health Center (LOS 2020)

At the Karen Drayer Wildlife Health Center, University of California, we monitor wildlife morbidity and mortality events through an online application developed in partnership with a network of wildlife rehabilitation centers across the state. As part of the effort, we collaborate with the California Department of Fish and Wildlife to detect and investigate

unusual health events in live sea birds stranding along the coast of California. Access to HAB data made available through SCCOOS and CeNCOOS and domoic acid toxicosis risk predicated by C-HARM has been beneficial in our investigations of factors potentially influencing these morbidity and mortality events in sea birds.

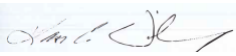
Terra Kelly DVM, PhD, Dipl. ACZM - Senior Scientist
One Health Institute and Karen Drayer Wildlife Health Center, UC Davis 2/8/2020

51. Orange County Sanitation District (LOS 2020)

QC San is the third largest Publicly Owned Treatment Works in Southern California and as an ocean discharger we have considerable interests in research and monitoring of the coastal waters of California, especially those within the Southern California Bight (SCB). OC San conducts an extensive federally and state mandated ocean monitoring program off Orange County, California, but we recognize the interconnectedness of our local monitoring area to the rest of the SCB and, indeed, the entire California Current System. SCCOOS and CenCOOS data and information are used to fill knowledge gaps within our study area and to provide regional context to our local monitoring data.

OC San has collaborated and partnered with SCCOOS since its inception in the early 2000s. The value we see in California's two ocean observation systems justifies our contribution of funding and staff time. Working with SCCOOS to leverage local dollars with federal funding allows both groups to collect data and provide valuable information products applicable to local, state, and national scales more efficiently and cost effectively.

With increasing attention on projected global climate change impacts to California's highly urbanized coast and to its coastal marine ecosystems, continued high-level federal funding of science-based decision support programs-like the CeNCOOS and SCCOOS-is critical to ensuring that local, state and federal decision makers and the public have the best information available as we move into the future.



Lan C. Wiborg, Director of Environmental Services
Orange County Sanitation District 11/18/2020

52. Pacific Coast Federation of Fishermen's Associations (LOS 2020)

PCFFA is a 501(c)(5) nonprofit trade association representing the commercial fishermen and women of the West Coast, advancing on their behalf the sustainability of the fishing way of life and the resources on which they depend. Our members rely on the data generated by SCCOOS and CeNCOOS every day to inform their fishing operations and improve the safety of their operations. The precise weather and oceanographic data generated by these programs as well as the research programs they lead provide a high degree of value as we explore the impacts of ocean warming to fisheries, including the factors that lead to harmful algal blooms that can close crustacean fisheries.

2/7/2020

Noah Oppenheim, Executive Director
Pacific Coast Federation of Fishermen's Associations

53. Pacific Coast Shellfish Growers Association (LOS 2020)
The PCSGA was founded in 1930 and represents approximately 100 private and tri farms, providing over 3,000 jobs in Alaska, California, Hawaii, Washington, and Oreg PCSGA's members are diverse in both farm size and location where oysters, clar mussels, and geoduck are grown for both domestic and export markets at a value of nea $300 million.

The work of SCCOOS contributes significantly to the region's shellfish industry which in t supports coastal economies dependent on the industry for jobs. Shellfish have been essential part of the West Coast communities for over a century. During this time, farmi techniques have evolved in response to environmental do citizens and market deman This current generation of shellfish farmer is reliant upon data and services from SCCOC

Margaret A. Pilaro, Executive Director
Pacific Coast Shellfish Growers Association 11/18/2020

54. Pacific Marine Mammal Center (LOS 2020)
Collaborating with institutions, such as SCCOOS, has been incredibly helpful as we evolve from a reactionary-based organization that solely responds to animal stranding calls to an organization that provides a broad base of services, including being a research partner that supports the scientific community with answering difficult questions that can broadly impact the sustainable health of our marine mammals, the ocean waters that they live in, and the eco-systems that affect us all.

Specifically, we greatly appreciate SCCOOS's collaborative work with CeNCOOS, along with local, state and federal agencies, resource managers, industry, policy makers, educators, scientists and the general public to provide data, models and products that advance our understanding of the current and future state of our coastal and global environment. SCCOOS focuses on coastal observations and science-based decision support products to provide information necessary to address marine operations, coastal hazards, climate variability and change, and ecosystems, fisheries, and water quality, making them a valued partner to so many organizations, including PMMC.

Peter Chang, Chief Executive Officer
Pacific Marine Mammal Center 11/5/2020

55. Port of San Diego (Support Statement 2020)
The Port of San Diego supports the important work, observations, and data that are produced from the SCCOOS program. We support a range of maritime industries that have a nexus to the Port from military, shipping/cargo operations, commercial and recreational fishing and many other types of commerce, all of which benefit from the

information collected from the SCCOOS program.

Paula Sylvia
Paula Sylvia, Program Director-Aquaculture and Blue Technology
Port of San Diego 11/12/2020

56. San Diego Coastkeeper (LOS 2020)
Founded in 1995, San Diego Coastkeeper (Coastkeeper) is a non-profit organization working to protect and restore the San Diego region's bays, beaches, watersheds, and ocean. The data produced as a result of SCCOOS assists us in tracking, and protecting, our coastal resources and planning for sea level rise and the impacts of climate change here in San Diego.

Matt O'Malley
Executive Director and Managing Attorney 11/17/2020

57. San Diego County MPA Collaborative (LOS 2020)
The San Diego County MPA Collaborative is a group of more than 120 stakeholders, representing over 60 affiliations. We advance the management of San Diego County's 11 MPA that make up 17,779 acres of our offshore environment through strategic partnerships, education and outreach, creation of policy and dissemination of accurate science and information. SCCOOS allows our collaborative to remain scientifically accurate and up-to-date with important environmental data that are required for the management of Southern California MPAs.

Cory Pukini, Co-Chair
San Diego County MPA Collaborative 2/4/2020

58. San Diego Regional Water Quality Control Board (Support Statement 2020)
I work for the San Diego Water Board and use the SCCOOS data and products to monitor ambient, natural Ocean conditions. This monitoring data are used as a reference to measure potential impacts such as ocean acidity, hypoxia, nutrients, and salinity from wastewater discharges to the Pacific Ocean. The SCCOOS Automated Shore Stations easily provides us with the important data on ocean conditions at the four southern California piers. The salinity data from SCCOOS Scripps Pier is a reference site used to compare ocean salinity offshore of the Carlsbad Desalination Plant. I support the SCCOOS program to continue providing this important and valuable data of ambient ocean conditions.

Ben Neill, Water Resource Control Engineer
San Diego Regional Water Quality Control Board 10/15/2020

59. Santa Barbara Adventure Company (LOS 2020)
The Santa Barbara Adventure Company offers tours to guests in the local Santa Barbara

area as well as within the Channel Islands National Park. We also offer multi-day outdoor education trips for local schools. Many of the guests & students who participate in our programs have little exposure to the ocean and marine environments. A large part of our mission is educating guests about how they help protect our marine environments and make a difference. We heavily rely on ocean observing data to ensure risk management and safe operations. Additionally, we rely on successful and abundant marine ecosystems to be able to help guests see wild seals, sea lions, dolphins and underwater invertebrates. These sightings on tours help us showcase the personal need to protect and defend marine environments for the animals that rely on & thrive in our oceans. It is invaluable information we need to have to continue to be able to operate tours for guests.

Michael Cohen

Michael Cohen, President
Santa Barbara Adventure Company 10/1/2020

60. Scientific Research and Education Network (SciRen) San Diego (LOS 2020)

Our regional-focused approach not only fosters relationships within our local community but also can result in lesson plans relevant to our own "backyards." We believe that in addition to bringing modern STEM research examples into classrooms, providing connections to research relevant to student's communities can build curiosity and excitement about STEM. Lesson plan development based on SCCOOS research and data is a perfect fit for this approach, and we are extremely excited to coordinate with SCCOOS on developing these plans.

Dr. Molly A Matty, Postdoctoral Fellow, Salk Institute for Biological Sciences

Co-organizer for Scientific Research and Education Network (SciRen) San Diego 11/6/2020

61. SeaTactics LLC (Support Statement 2020)

My organization uses the data provided by SCCOOS to provide accurate wind, weather, and current forecasts to sailors on the coast, including the US Olympic Team. The SCCOOS data are invaluable to my organization due to its high resolution and accuracy - we couldn't provide recreational, commercial, and Olympic forecasts without it.

Chelsea Carlson

Chelsea Carlson, Owner, Meteorologist, Sailor
SeaTactics, LLC 10/23/2020

62. SeaWorld San Diego (LOS 2020)

SeaWorld San Diego has been rescuing marine life since its inception in 1964; this includes over 20,000 animals of over 100 varying species. We have seen a change in the ocean's health in these last 56 years, and the telltale sign is in the animals we rescue, especially those that suffer from ever increasing naturally occurring toxins. The SCCOOS is valuable for us to see trends in algal blooms impacting local wildlife and where they may be impacted. This helps us to prepare to respond to these greater stranding needs

and gather the most up to date biological data to help future populations. We are very aware that what impacts marine wildlife will eventually impact human health.

Jody A. Westberg, Stranding Coordinator
SeaWorld San Diego 10/1/2020

63. Southern California Coastal Water Research Project (LOS 2020)

SCCWRP is a research institute formed by 14 California water quality management agencies to develop the scientific foundation for their water-quality management. Since its founding in 1969, SCCWRP has been a champion of sound interdisciplinary approaches to solving complex challenges in water management. In a similar capacity, SCCOOS is actively engaged in identifying needs of Southern California's water-quality management community by providing data, models and products that advance our understanding of the current and future state of our coastal and global environment.

Beyond providing this letter of support, SCCWRP will continue to assist SCCOOS through participation on the SCCOOS Board of Governors, collaborations with SCCOOS to support coastal water quality monitoring, and facilitation of communication among scientists and the water-quality managers that comprise my organization's membership. It is my hope that NOAA will also continue to support SCCOOS, as sustained funding is crucial to the maintenance of the program's ocean observing network and to the continuity of the important data products and services that these observations enable.

Stephen B. Weisberg, Executive Director
Southern California Coastal Water Research Project 10/26/2020

64. Surfrider Foundation (Support Statement 2020)

The Surfrider Foundation, a national 501(c)3 environmental nonprofit organization dedicated to the protection and enjoyment of our ocean, waves and beaches for all people, is a sincere supporter of the thorough work that SCCOOS accomplishes. Our vast California network depends on the SCCOOS Harmful Algal Bloom (HAB) monitoring and reporting efforts to keep their coastal communities and volunteers informed about the presence of HABs. We also use this data to inform our advocacy efforts for policies that reduce pollution that exacerbate bloom events and protect public health. We look forward to seeing future data regarding pH and ocean acidification collected during their upcoming proposal, as this will contribute to the global knowledge of changes to our ocean chemistry and will inform our policy and advocacy efforts to protect and enhance the marine environment under a changing climate.

Katie Day, Staff Scientist
Surfrider Foundation 10/21/2020

65. The Marine Mammal Center (LOS 2020)

The Center is a non-profit ocean conservation organization that is an internationally

recognized leader in advancing the science of marine mammal health, training veterinary and scientific professionals, and inspiring the public towards great ocean stewardship. In its 45-year history, the Center has treated more than 23,000 marine mammals. Many of these animals traverse the Southern California Bight and are exposed to health and disease threats within the SCCOOS region. Our organization relies on data provided by SCCOOS to better understand how these threats impact marine mammal and ocean health. Most notably, the California Harmful Algal Bloom Bulletin and California Harmful Algae Risk Mapping (C-HARM) data products are incredibly valuable to the Center's scientists and veterinarians because many of our sea lion patients are affected by domoic acid-producing algal blooms.

Dr. Jeff Boehm, Executive Director
The Marine Mammal Center 11/3/2020

66. The Ocean Foundation (LOS 2020)

The Ocean Foundation is a unique community foundation with a mission to support and strengthen those organizations dedicated to reversing the trend of ocean destruction. Our organization has projects and partners on all seven continents and understands and advocates for the value of ocean observations in promoting and ensuring resilient coastal communities and a sustainable blue economy. A number of our projects rely directly on the ocean observing data provided by SCCOOS to inform their research and planning.

Alexis Valauri-Orton, Program Officer
The Ocean Foundation 11/24/2020

67. Tijuana River National Estuarine Research Reserve (LOS 2020)

As the Research Coordinator of the Tijuana River National Estuarine Research Reserve (TRNERR), I enthusiastically endorse the valuable data and services provided by the Southern California Coastal Ocean Observing System (SCCOOS) at Scripps Institution of Oceanography. For our work at TRNERR, SCCOOS continues to be a key resource helping us fulfill our mission. One of our core programs is monitoring of water quality, weather, and biotic indicators within the Tijuana River Estuary, and SCCOOS provides a critical larger context for the information we generate. I especially appreciate the degree to which SCCOOS has been responsive to the needs and ideas voiced by myself and others in helping us further our goals. Such partnerships will be especially useful as we move forward with efforts to better understand the role of oceanic forcing on our estuarine system.

Dr. Jeffrey Crooks, Research Coordinator and Lead Scientist
Tijuana River National Estuarine Research Reserve 10/7/2020

68. TMA BlueTech (LOS 2020)

TMA is the organizer of the San Diego ocean tech community – the largest BlueTech

cluster in the U.S. We have approximately 100 member organizations – the vast majority companies in southern California developing innovative technology and services. As the saying goes “you can't manage what you can't measure” and the work of SCCOOS provides a baseline of high-quality data that is useful for many of our companies. In addition, TMA member companies consider SCCOOS as a valued partner that can provide science-based confirmation of capabilities in those circumstances when it makes sense to collaborate.

Michael B. Jones, President
TMA BlueTech 10/4/2020

69. United States Coast Guard, District Eleven (Support Statement 2020)
The USCG relies on NOAA to provide oil spill trajectories during nearshore and offshore incidents. Trajectory modeling is vital to decision making and equipment deployment during pollution response cases and the SCCOOS system contributes to our ability to safely and effectively remove oil product from the environment.

Denny Ernster
LCDR Denny Ernster, Supervisor, District Response Advisory Team
Coast Guard District Eleven 11/17/2020

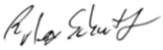
70. United States Coast Guard, Office of Search and Rescue (LOS 2020)
The USCG employs the Search And Rescue Optimal Planning System (SAROPS) operationally for search and planning. The measured and forecasted ocean currents, produced by the California Ocean Observing Systems (SCCOOS and CeNCOOS) and accessed by SAROPS through the Environmental Data Server (EDS), are of enormous benefit to the USCG’s SAR program. The USCG has been using the real-time prediction system for the California state-wide ocean circulation over the past decade. The surface current nowcast and forecast fields from your forecasting system provide key information for reliable and accurate drift modeling during our search for survivors and survivor crafts lost off the California coast.

Furthermore, the expanded data network and advanced numerical ocean modeling system supported by SCCOOS and CeNCOOS have greatly improved the Coast Guard’s ability to optimally plan searches for lost mariners and crafts in the California coastal region, thus saving time and lives. Our ability to accurately and consistently predict trajectories for search and rescue depends on the invaluable uninterrupted delivery of observational data and state-of-the-art predictive modeling and tools.

Dr. Cristina Forbes, Oceanographer
U.S. Coast Guard, Office of Search and Rescue 11/24/2020

71. United States Sailing Team (Support Statement 2020)
The US Olympic Sailing Team is using SCCOOS data to understand the currents and environment in Long Beach, California, the sailing venue for the LA2028 Olympics.

Detailed knowledge of the currents during racing will give American sailors an advantage and help the US Sailing Team win medals in 2028.



Riley Schutt, Innovation, Research, and Development Performance Analyst
United States Sailing Team 10/20/2020

72. University of San Diego, Environment, Health and Safety (LOS 2020)
Integrated information management systems are a critical tool to efficiently assess and manage regulatory programs. Information management systems are needed for integration and public data dissemination so that interrelated biological-physical-chemical processes present in the watershed and marine environment can be assessed and available to a wide range of users. These data requirements span both regulatory and non-regulatory based data collection efforts.

UC San Diego EH&S has worked closely with SCCOOS for many years to develop information management tools required for long-term assessment of Area of Special Biological Significance (ASBS) water quality and related management decisions. An example of this vital collaboration is the ASBS website developed by SCCOOS that allows for various data layers to be viewed together spatially via a central map while providing metadata, specific data values and time series. Data layers are grouped by near-real time observations, static point observations, and spatial observations/models. Meteorological stations along the coast provide wind speed, wind direction, air temperature, relative humidity, barometric pressure, solar radiation, rainfall, and water temperature data. Data is also provided on seawater and storm water outfalls at Scripps Institution of Oceanography that are monitored in accordance with the California Ocean Plan. Data from weekly bacteria monitoring in the surf zone of the ASBS, weekly water samples and net tows to monitor for HAB (Harmful Algal Blooms) species, naturally occurring algal toxins, water temperature, salinity, nutrients, as well as the boundaries of the 34 designated ASBS regions are shown.

Staff from SCCOOS have worked with EH&S for more than 10 years to maintain a seamless flow of data. The programmers continually adapt and respond to the changing requirements and data formats. A long-term goal of this partnership is to promote local and regional information sharing on ASBS water quality and ecosystem health to guide future management decisions.

Sustained funding for SCCOOS will be crucial to the maintenance of the program's ocean observing network and to the continuity of the important data products and services that these observations enable.

Kimberly O'Connell, Clean Water Utility Manager
University of San Diego, Environment, Health and Safety 11/19/2020

73. University of Southern California Sea Grant Program (LOS 2020)

USC Sea Grant contributes to solving the problems of the Urban Ocean, while recognizing the opportunities for coastal commerce, recreation and improving the quality of life in coastal regions such as Southern California. We fund research on the critical issues associated with the influence of massive cities on the sea, promote connections between scientists and the policy-makers who must craft solutions, and broadly distribute information to the electorate through public education outreach efforts. Our staff, researchers, and stakeholders use ocean observing information within California provided by CeNCOOS and SCCOOS to inform research, decision making and even our formal calls for research proposals. The information provided is invaluable to our staff, researchers and stakeholders in multiple ways on a daily basis. The current data is invaluable to the Ports of Los Angeles and Long Beach for the safe movement of their ships. The harmful algal bloom network informs stakeholders of potential contamination of seafood as well as the potential health of marine mammals.

Linda Duguay, Director
USC Sea Grant Program 11/6/2020

74. West Coast Ocean Data Portal (LOS 2020)

The West Coast Ocean Data Portal (WCODP) seeks to increase access to and discovery of critical ocean and coastal data for resource managers and policymakers on the West Coast. The ocean observing information provided by CeNCOOS and SCCOOS are important resources for us to highlight in our data catalog, so that our users (namely the state, tribal and federal agencies represented in the West Coast Ocean Alliance, or WCOA) can access the most up-to-date data and models to inform their decision-making at local and regional levels. The WCODP and WCOA both feel that comprehensive ocean data is extremely important in meeting the needs of this management community. The marine economy contributes over 500,000 jobs and over $40 billion to California's GDP (OceanReports 2020), and the data provided by CeNCOOS and SCCOOS help decision-makers understand how to make tradeoffs between important ocean uses, and provide context to those decisions. Additionally, as the WCODP works on several upcoming data-derived products, the expertise of those at CeNCOOS and SCCOOS has been invaluable, and we expect to continue this working relationship and utilize data from the observing systems they support and maintain well into the future.

Andy Lanier, Co-Chair
Ph.D., Co-Chair
West Coast Ocean Data Portal

Stephen Weisberg,
West Coast Ocean Data Portal

11/10/2020

75. WiLDCOAST (LOS 2020)

WILDCOAST is an international team that conserves coastal and marine ecosystems and addresses climate change through natural solutions. Committed to establishing and managing protected areas and advancing strong policies for coastal and ocean protection, WILDCOAST utilizes SCCOOS tools and observation systems to track issues

regarding climate change, water quality, and coastal hazards. Our on-the-ground projects benefit tremendously from the collaboration, data, models and products that SCCOOS provides as they help advance our understanding of the current and future state of the coast and ocean.

Zach Plopper, Associate Director
WILDCOAST 9/30/2020

76. Wild Neighbors Database Project (LOS 2020)

The Wild Neighbors Database Project is a US 501 (c)3 non-profit organization which promotes international wildlife rehabilitation by developing online data management software and helping implement its use worldwide to gather and exchange wildlife data. We are a small team of dedicated wildlife rehabilitators with the intent of supporting and improving the lives of wild patients everywhere. To date, we have 3 major projects that we have developed including The Wildlife Morbidity and Mortality Alert System (WMME Alert System). In coordination with the Ocean Observing network, our WMME Alert System integrates wildlife incident data in near-real time in order to enable early detection of a number of wildlife morbidity and mortality events in California. Primary data are provided by wildlife rehabilitators, however data from the Ocean Observing network is crucial in confirming unusual coastal wildlife morbidity events.

Devin Dombrowki and Rachel Avilla, Co-Founders
The Wild Neighbors Database Project 2/5/2020