

## NOAA In Your State

# California

**NOAA** is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.

The following is a summary of NOAA facilities, staff, programs, or activities based in, or focused on, your state or territory: Starting with highlights, then by [congressional districts and cities or towns](#), [coastal programs](#), and then [statewide programs](#).

### Highlights of NOAA in California

<a href="#">Cordell Bank National Marine Sanctuary</a>	Point Reyes Station	CA-2
<a href="#">San Francisco Bay National Estuarine Research Reserve</a>	San Francisco, San Rafael, Suisun	CA-11,2,8
<a href="#">Greater Farallones National Marine Sanctuary</a>	Bodega Bay, Pt. Reyes, San Francisco	CA-2,11,4,9
<a href="#">Russian River Watershed Habitat Focus Area</a>	Santa Rosa	CA-4
<a href="#">Monterey Bay National Marine Sanctuary</a>	Monterey	CA-19
<a href="#">Channel Islands National Marine Sanctuary</a>	Santa Barbara and Ventura	CA-24
<a href="#">NOAA Ship Reuben Lasker</a>	San Diego	CA-50

<a href="#">La Jolla Shores Drive Laboratory</a>	La Jolla	CA-50
<a href="#">Bipartisan Infrastructure Law (BIL) / Inflation Reduction Act (IRA) Projects</a>	Project Specific	CA

The state of California also has two Cooperative Institutes, six Weather Forecasting Offices, two Regional Offices, three Labs and Field Offices, ten Science on a Sphere® exhibitions, four National Marine Sanctuaries, three National Estuarine Research Reserves, and one Habitat Focus Area.

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### [Weather Forecast Offices](#)

Eureka	CA-2
Sacramento	CA-7
San Francisco	CA-11
San Joaquin Valley/Hanford	CA-13
Los Angeles	CA-34
San Diego	CA-50

[National Weather Service \(NWS\) Weather Forecast Offices \(WFO\)](#) are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of California. There are 122 [WFOs nationwide](#) of which six are in California. Highly trained forecasters issue warnings and forecasts for weather events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including wireless emergency alerts, social media, [weather.gov](#), and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods, chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction [centers](#) and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current California weather, visit [www.weather.gov](#) and, on the national map, click on the relevant county or district.

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### [Science On a Sphere®](#)

Modesto	CA-5
San Francisco	CA-11
San Jose	CA-18

Berkeley	CA-12
Apple Valley	CA-23
Sylmar	CA-29
Lake Forest	CA-40
Santa Ana	CA-46
Long Beach	CA-42
Costa Mesa	CA-47

[Science On a Sphere \(SOS\)](#) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. They are located at the Great Valley Museum and Modesto Junior College, The Climate Corporation in San Francisco, Tech Museum of Innovation in San Jose, Lawrence Hall of Science in Berkeley, Discovery Cube Los Angeles in Sylmar, Panasonic Avionics Corporation in Lake Forest, Discovery Science Center in Santa Ana, Lewis Center for Educational Research, and Aquarium of the Pacific in Long Beach.

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#### **CA-1** **Redding**

##### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

#### **Yreka**

##### **National Marine Fisheries Service (NMFS) - [West Coast Region California Coastal Area Office](#)**

The California Coastal Area Office is part of the NMFS West Coast Region and includes five offices located in Arcata, Santa Rosa, Yreka, Santa Cruz, and Long Beach. Our responsibilities focus on protecting species and their habitats along the California coastline and its associated watersheds, including the entire Klamath River Basin. We work to protect species listed under the Endangered Species Act by evaluating the impacts of proposed federal actions, developing and implementing recovery plans, ensuring safe fish passage through federal and some private dams and seeking conservation partnerships with local governments and landowners. Using local, on-the-ground knowledge, our priorities focus on land use practices and other threats that limit particular recovery and restoration activities. We work with local communities and a diverse group of stakeholders to ensure that mutually beneficial conservation strategies are realized.

#### **CA-1, 7** **Thermalito, Twitchell Island**

##### **Office of Oceanic and Atmospheric Research (OAR) - [MOA CA Department of Water Resources](#)**

The NOAA Physical Sciences Laboratory operates and maintains two atmospheric river observatories upwind of the Oroville Dam in California to provide observations of moisture transport through the San Francisco Bay area up into the

north central valley where it rises over the Sierra Nevada and causes heavy precipitation. The data are used in research to advance NOAA predictive capabilities through the evaluation of key processes in forecast system models as well as to support nowcasting and real-time applications. The California Department of Water Resources requested that these observatories be installed in response to the Oroville Dam flood mitigation crisis in February 2017.

## **CA-2**

### **Arcata**

#### **National Marine Fisheries Service (NMFS) - [Northern California Pacific Coast Ocean Observing System Coordination Office](#)**

Located at the Humboldt State University Marine Laboratory, the Northern California Pacific Coast Ocean Observing System Coordination Office, part of the Southwest Fisheries Science Center's Fishery Ecology Division, is charged with leading and facilitating ocean observing activities and research on fisheries and oceanography off the North Coast of California, a historically understudied region of the California Current System. This collaborative effort between the Southwest Fisheries Science Center and Humboldt State University also provides opportunities for graduate student training and enhances educational programs directly linked to the NMFS mission.

#### **National Marine Fisheries Service (NMFS) - [West Coast Region California Coastal Area Office](#)**

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#### **National Ocean Service (NOS) - [Humboldt Bay PORTS®](#)**

A Physical Oceanographic Real-Time System (PORTS®) in Humboldt Bay, California operates through a partnership with the Humboldt Bay Harbor, Recreation and Conservation District and the Center for Operational Oceanographic Products (CO-OPS). The system in Humboldt Bay collects oceanographic data from two current meters, one water level station and one wave buoy.

### **Bodega Bay**

#### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

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### **Bodega Bay, Cazadero**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Weather-Climate Connection Measurements](#)**

The NOAA Physical Sciences Laboratory supports long term measurements of coastal weather phenomena at three sites: Bodega Bay, Cazadero, and Chico. These sites measure key phenomena associated with winter weather, fog, fire weather, air quality, and a host of other applications at the interface of weather and climate. Observations from these sites are made available to the public on the internet and they have led to dozens of research publications in the peer-reviewed literature.

### **Eureka**

**National Weather Service (NWS) - [Weather Forecast Office](#)**- See [Page 2](#) for details.

### **Trinidad**

**Office of Oceanic and Atmospheric Research (OAR) - [Global Greenhouse Gas Reference Network: Halocarbon/Ozone Measurements](#)**

NOAA's Global Monitoring Laboratory (GML) operates a small aircraft-based North American network of sampling sites to measure vertical profiles of important greenhouse gas concentrations. Air is sampled bi-weekly above the surface up to approximately 25,000 feet above sea level using a relatively small, light, and economical automated system developed by GML researchers. These air samples are delivered to GML in Boulder, Colorado for measurements of CO<sub>2</sub>, CH<sub>4</sub>, other greenhouse gases, and ozone depleting substances. These data improve our understanding of the distribution of greenhouse gases and models of the global carbon cycle. The measurements of ozone depleting substances help determine the effectiveness of efforts to protect and restore the ozone layer, which protects the surface from the sun's ultraviolet radiation.

### **Petaluma**

**National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Central and Northern California Ocean Observing System\)](#) and [\(Southern California Coastal Ocean Observing System\)](#)**

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. Information is readily available via a state-of-the-art data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS works interactively with its neighboring IOOS Regional Association to the north, the Central and Northern California Ocean Observing System (CeNCOOS) to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

SCCOOS support to seven California and two external partner institutions is critical to ensuring the SCCOOS mission and vision are realized. Many of the supported projects are cost-shared with CeNCOOS to leverage our support to the CalOOS system. Operational production of a multivariate index of environmental conditions that drive biological variability in the CA Current System to inform biological measurements of California Giant Kelp population dynamics and coverage is supported by an award to the **Farallon Institute**

### **CA-2, 8, 11**

#### ***San Rafael, Suisun, San Francisco***

**National Ocean Service (NOS) - [San Francisco Bay National Estuarine Research Reserve](#)**

The National Estuarine Research Reserve System is a network of protected areas focused on long-term research, monitoring, stewardship, education, and training. NOAA's Office for Coastal Management provides funding and national guidance, and each site is managed on a daily basis by a lead state agency or university with input from local partners. . Designated in 2003, the San Francisco Bay research reserve is managed by a partnership between San Francisco State University, California State Parks, and the Solano Land Trust. The reserve's 3,710 acres are comprised of two of the most

pristine wetlands in the San Francisco Bay estuary, spread across two sites: China Camp State Park and Rush Ranch Open Space Preserve in the Suisun Marsh.

**National Ocean Service (NOS) – [Margaret A. Davidson Graduate Fellowship](#)**

The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at San Francisco Bay National Estuarine Research Reserve will focus their research on the relative importance of plasticity and adaptation for eelgrass success in low light environments.

**CA-2, 4**

**[Coastal Marin and Sonoma Counties](#)**

**National Ocean Service (NOS) - [Cordell Bank National Marine Sanctuary](#) (NMS)**

Cordell Bank National Marine Sanctuary, established in 1989 and expanded to 1,286 square miles in 2015, protects and conserves an area of extraordinary ocean productivity and coastal upwelling off northern California. Cordell Bank and Greater Farallones National Marine Sanctuaries are two sanctuary sites overseen by one management unit and work with the West Coast region and the national program, implementing ecosystem based management that considers coastal communities, maritime commerce, ocean habitat, water quality, and a thriving community of resident and migratory fishes, invertebrates, marine mammals, seabirds and turtles. Sanctuary programs include a decades-long monitoring effort to track climate change and ecosystem health, cooperative research with local universities to understand critical ocean issues, education and outreach programs for teachers, schools and local communities to increase ocean awareness and stewardship, and resource protection efforts to educate and enforce sanctuary regulations. Seafloor surveys examine multiple habitat types within the sanctuary, including continental shelf, slope, and Cordell Bank, which is covered with corals and sponges. The Cordell Bank and Greater Farallones National Marine Sanctuaries staff and with partners survey open water habitat, including important feeding grounds for resident and migratory seabirds and marine mammals such as endangered and threatened blue and humpback whales. Cordell Bank National Marine Sanctuary relies on input from a citizen advisory council representing sanctuary constituent groups who provide advice on sanctuary activities and management actions. By addressing current management issues and anticipating future challenges, we strive to maintain a healthy marine environment for this and future generations. The sanctuary office is co-located with the offices for Point Reyes National Seashore in Point Reyes Station, CA. [Exhibits at partner locations allow visitors to get to know Cordell Bank National Marine Sanctuary.](#)

**CA-2,11,49**

**[Bodega Bay, Pt. Reyes, San Francisco](#)**

**National Ocean Service (NOS) - [Greater Farallones National Marine Sanctuary](#)**

Greater Farallones National Marine Sanctuary protects 3,295 square miles off the North-central California coast, from Point Arena in Mendocino County, south to Half Moon Bay in San Mateo County. It also has administrative jurisdiction over the northern sector of Monterey Bay National Marine Sanctuary. In 2021, Greater Farallones and Cordell Bank NMS management were consolidated into one unit. Greater Farallones National Marine Sanctuary manages one of the most biologically productive and diverse regions in the world, consisting of open ocean, tidal flat, rocky intertidal, estuarine wetland, subtidal reef, and sandy beach habitats. It supports 25 threatened and endangered species, 36 marine mammals, white sharks, and the largest seabird rookery in the lower 48 states. Greater Farallones National Marine Sanctuary carries out conservation, research, education, and stewardship programs to protect and manage these waters for resiliency, informed by long-term scientific investigations conducted in conjunction with Cordell Bank National Marine Sanctuary such as the [Applied California Current Ecosystem Studies](#) and [Deep Sea Corals research](#); and its [Beach Watch](#) coastal monitoring program. Through formal and informal education and outreach programs it reaches over 30,000 people each year, and through partner exhibits including the California Academy of Sciences and Pt. Reyes National



Seashore, it reaches 4.3 million annually. In recent years, Greater Farallones NMS has focused on kelp, wetland, sandy beach, eelgrass, and deep sea coral restoration. An advisory council representing commerce, conservation, fisheries, science, recreation, tourism, and other sectors advises sanctuary management. Established in 1981, Greater Farallones National Marine Sanctuary maintains an office, classroom and visitor center in the Golden Gate National Recreation Area's Presidio of San Francisco.

[Get into your Sanctuary Storymap](#) highlights ways visitors can learn about, and experience, the Greater Farallones National Marine Sanctuary.

[Greater Farallones National Marine Sanctuary Visitor Center and Partner Exhibits](#) in the greater Bay Area of California offer opportunities for visitors to learn about the sanctuary in museums, visitor centers, and nature centers.

CA-19

**National Ocean Service (NOS) - [Greater Farallones National Marine Sanctuary Ocean Climate Center](#)**

The Office of National Marine Sanctuaries (ONMS) Center for Collaboration on Ocean Climate Change managed by the Greater Farallones National Marine Sanctuary develops and implements novel approaches to mitigate and address the effects of climate change in marine protected areas (MPA). As part of the ONMS climate change team, staff publish and train MPA managers nationally and internationally on these novel approaches.

**CA-4**

**[Santa Rosa](#)**

**National Ocean Service (NOS), National Marine Fisheries Service (NMFS), Oceanographic and Atmospheric Research (OAR), and National Weather Service (NWS) - [Russian River Watershed Habitat Focus Area](#)**

The Russian River watershed was selected as the first [NOAA Habitat Focus Area](#) (HFA). HFAs are targeted places where NOAA addresses high priority habitat issues by collaborating with partners and communities. Over the past several years, NOAA, led by the [Office of Habitat Conservation](#), has selected 11 HFAs across the country which have achieved significant results for ecosystems and communities. While each HFA focuses on individual habitat conservation goals, the overarching goal is to leverage collective expertise and demonstrate results in a short time period. In the Russian River Habitat Focus Area, multiple offices within NOAA joined an already active community of partners to make significant progress on three major objectives - rebuilding endangered coho and threatened steelhead stocks to sustainable levels through habitat protection and restoration; improving frost, rainfall, and river forecasts in the Russian River watershed through improved data collection and modeling; and increasing community resilience to flooding damage through improved planning and water management strategies.

**NOAA Commissioned Officer Corps ([NOAA Corps](#)) - GIS and Operations Coordinator**

The NOAA Commissioned Officer Corps stations an officer with the California Coastal Office Operations and Policy Branch of the National Marine Fisheries Service (NMFS) West Coast Region in support of NMFS operations requiring Geographic Information Systems (GIS). This officer manages the operations of GIS to support the salmon recovery efforts in the Santa Rosa Office, coordinates with Federal, State, and local partners on GIS requirements for recovery of endangered species act protected species, and responds to other miscellaneous GIS requests for the office. In addition, they serve as both the Vessel Operations Coordinator for seven river research vessels located in both Santa Rosa and Long Beach, and as a NOAA Scientific/Working Diver on the Coastal Office dive team.

**National Marine Fisheries Service (NMFS) - [West Coast Region California Coastal Area Office](#)**

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species listed under the Endangered Species Act by evaluating the impacts of proposed federal actions, developing and implementing recovery plans, ensuring safe fish passage through federal and some private dams and seeking conservation partnerships with local governments and landowners. Using local, on-the-ground knowledge, our priorities focus on land use practices and other threats that limit particular recovery and restoration activities.

#### ***Yosemite Village***

#### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 135 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

#### ***CA-2,4***

#### ***Hopland, Middletown, Cazadero, Santa Rosa,***

#### **Office of Oceanic and Atmospheric Research (OAR) - [NOAA Hydrometeorology Testbed](#)**

In conjunction with the Weather Program Office, NOAA's Physical Sciences Laboratory operates and maintains four precipitation profiling radars to evaluate precipitation processes over complex terrain.

#### ***CA-7***

#### ***Sacramento***

**National Weather Service (NWS) - [Weather Forecast Office](#)**- See [Page 2](#) for details.

#### **National Weather Service (NWS) - [California-Nevada River Forecast Center](#)**

Co-located with the NWS Weather Forecast Office in Sacramento, the NWS California-Nevada River Forecast Center (CNRFC) performs continuous river basin modeling and provides hydrologic forecast and guidance products for rivers and streams and has responsibility for all river basins in California (except for the Colorado River drainage in the south), the Klamath River in southern Oregon, the Quinn River in southeast Oregon, and all river basins in Nevada (except for tributaries to the Snake River in the north, tributaries to the Colorado River in the southeast, and tributaries to the Great Salt Lake and Sevier Lake in the far east portion). These products include forecasts of river stage and flow, probabilistic river forecasts, reservoir inflow forecasts, gridded precipitation estimates and forecasts, spring flood outlooks, and flash flood and headwater guidance. Some of the RFCs in the western and central U.S. also provide water supply forecasts. RFCs work closely with local, state and federal water management agencies, including the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and U.S. Geological Survey, to provide water and flood information for critical decisions (aka Impact-based Decision-Support Services or IDSS).

#### **National Marine Fisheries Service (NMFS) - [West Coast Region](#) California Central Valley Area Office**

The California Central Valley Area Office is part of the NMFS West Coast Region and is located in the heart of California's Central Valley, only a few blocks from the State Capitol. Our responsibilities focus on the Sacramento and San Joaquin River Basins and Sacramento-San Joaquin Delta. We work in these river basins to protect species listed under the Endangered Species Act by evaluating the impact of proposed federal actions, developing recovery plans, seeking conservation partnerships with local governments and landowners, and ensuring safe fish passage past federal and some private dams.

#### **NOAA Commissioned Officer Corps ([NOAA Corps](#)) - [Special Assistant, NMFS California Central Valley Office \(CCVO\)](#)**

The officer primarily serves the office through providing administrative management and technical assistance to the branches within the office, including performing Section 7 biological consultations under the endangered species act.



The NOAA Commissioned Officer Corps stations an officer with the National Marine Fisheries Service California Central Valley Office in support of its mission of conservation and regulatory management. The work of the office focuses on (1) Conservation and recovery of anadromous fish species listed under the federal Endangered Species Act (ESA) including Chinook salmon, steelhead and green sturgeon (2) Conservation and restoration of critical habitat designated under the ESA (3) Water operations in Northern and Central California (4) Implementation of various regulatory processes including the ESA, Magnuson-Stevens Act, National Environmental Policy Act, and Fish and Wildlife Coordination Act and (5) Inter-agency cooperation at federal, state and local levels to implement regulatory processes. This officer leverages their scientific and administrative expertise to fill multiple roles simultaneously, including coordinating inter-agency working groups focused on recovery plans and regulatory/management documents as well as participating directly in field work as needed.

### **Walnut Grove**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Global Greenhouse Gas Reference Network: Halocarbon Measurements](#)**

NOAA's Global Monitoring Laboratory (GML) performs trace gas monitoring on tall towers in eight states, including California. The sites were established to extend GML's monitoring network to aid estimation of the net carbon balance. Because variations of trace gases, especially carbon dioxide (CO<sub>2</sub>), are large near the ground, the collection of measurements at multiple levels on existing tall towers is advantageous to understanding carbon fluxes. GML also operates a sampling network to measure the distribution and trends of the gases most responsible for human-caused depletion of the stratospheric ozone layer. Weekly samples are collected in high-pressure flasks at fixed locations. The air sample flasks are delivered to GML in Boulder, CO for analysis. Halocarbon measurements help determine the effectiveness of efforts to protect and restore the ozone layer - so it can protect us from the sun's ultraviolet radiation.

### **CA-11**

#### **San Francisco Bay Area**

#### **National Ocean Service (NOS) - [San Francisco Bay PORTS®](#)**

A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in greater San Francisco Bay at which real-time data are quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water levels from six stations, meteorological data from fourteen stations, current data from four stations, surface wave data from one station and visibility sensors from three locations.

### **CA-8**

#### **Stovepipe Wells**

#### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

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### **CA-10**

#### **Modesto**

NOAA Office of Education - Science On a Sphere® at - [Great Valley Museum - Modesto Junior College](#). See [Page 2](#) for details.

## **CA-12**

### **San Francisco**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Global Greenhouse Gas Reference Network](#)**

NOAA's Global Monitoring Laboratory (GML) operates trace gas monitoring sites at tall towers in eight states, including California. The sites were established to extend GML's monitoring network to provide data to aid estimation of the net carbon balance of the continent. Variations of trace gases, especially carbon dioxide, are largest near the ground, so we utilize existing tall towers as platforms for in situ and flask sampling for atmospheric trace gases. Flask samples are delivered to GML in Boulder, Colorado for analysis. These data improve models and our understanding of the distribution of greenhouse gases, including sources and sinks of carbon in North America. This Sutro Tower site is operated by Sutro Tower, Inc. and measurements are made in collaboration with Lawrence Berkeley National Laboratory.

**NOAA Office of Education - Science On a Sphere®** at [Climate Corporation](#). See [Page 2](#) for details.

## **CA-12, 13, 17**

### **San Francisco, Santa Clara, Santa Rosa, Oakland**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Advanced Quantitative Precipitation Information System](#)**

NOAA and the Sonoma County Water Agency have signed a MOU in support of the Advanced Quantitative Precipitation Information (AQPI) System project — a four-year, regional multi-agency collaboration to improve monitoring and prediction of precipitation, hydrology, and coastal storm flooding in the San Francisco Bay region. The NOAA Physical Sciences Laboratory and Global Systems Laboratory officially began participation in AQPI in the late summer of 2017 along with partners from Colorado State University, USGS, and Scripps Institution of Oceanography. The project, funded by the California Department of Water Resources, includes installation of five radar systems, and high resolution modeling using a research version of NOAA's operational High Resolution Rapid Refresh (HRRR), National Blend of Models (NBM), and National Water Model (NWM) to better predict storms and their impacts for a variety of water management practices. The first radar was installed in September 2017 in Santa Clara, CA. The project concludes in 2026 with the delivery of an operational precipitation–hydrologic-coastal monitoring and forecast information system tailored to the needs of regional stakeholders. A second radar was installed in Santa Rosa in 2019, and a third near Oakland in 2022. The fourth and fifth radar systems are planned for installation in the fall of 2024 and 2025.

## **CA-13**

### **Fremont**

#### **National Weather Service (NWS) - [Center Weather Service Unit](#)**

Housed in the Federal Aviation Administration's Oakland Air Traffic Control Center (ARTCC) in Fremont, the NWS Center Weather Service Unit (CWSU) staff provides aviation forecasts and other weather information to ARTCC personnel for their use in directing the safe, smooth flow of aviation traffic for most of northern California and western Nevada.

### **San Jose, Berkeley**

**NOAA Office of Education - Science On a Sphere®** at [Tech Museum of Innovation](#) and [Lawrence Hall of Science](#). See [Page 2](#) for details.

### **Oakland**

#### **National Ocean Service (NOS) - [NOAA Marine Debris Program \(MDP\)](#)**

The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) supports national and international efforts to reduce the impacts of marine debris. The MDP California Regional Coordinator, based in Oakland, supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences.

## **CA-15**

### **Livermore**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Program for Climate Model Diagnosis and Intercomparison](#)**

The Geophysical Fluid Dynamics Laboratory (GFDL) is involved in the archiving of its climate model data at the Lawrence Livermore National Laboratory, located in Livermore, CA. Model data is archived for the purpose of intercomparison of climate model data obtained from other national and international climate modeling institutions around the world.

## **CA-16**

### **Merced**

#### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

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## **CA-20**

### **Monterey**

#### **National Ocean Service (NOS) - [Monterey Bay National Marine Sanctuary](#)**

Monterey Bay National Marine Sanctuary, at 6,094 square miles, is the largest national marine sanctuary in the contiguous United States, extending along the coastline from north of San Francisco to the south through five coastal counties to the town of Cambria. A remarkable diversity of marine habitats found nowhere else in North America is within the boundaries of the sanctuary and includes rugged rocky shores, sandy beaches, lush kelp forests, and most significantly, some of the deepest submarine canyons, and Davidson Seamount, the first seamount to be protected within the National Marine Sanctuary System. The nutrient-rich currents traveling through the sanctuary allow for a diverse assemblage of marine life, including marine mammals, seabirds, shorebirds, turtles, hundreds of fish species and thousands of invertebrate species, some of which are listed as threatened or endangered status. Monterey Bay National Marine Sanctuary staff coordinate multiple programs that engage with coastal residents, marine science partners, and businesses as diverse as agriculture, commercial and recreational fishing and recreation and tourism. While the sanctuary's main office is located in Monterey, it operates additional offices and visitor centers in Santa Cruz and in San Simeon.

#### **National Ocean Service (NOS) - [National Marine Protected Areas Center](#)**

The mission of the National Marine Protected Areas Center is to facilitate the effective use of science, technology, training and information in the planning, management and evaluation of the nation's system of marine protected areas. The National Marine Protected Areas Center supports the nation's federal, state and territorial marine protected area (MPA) programs through capacity building, science, information, tools and outreach. MPAs include National Marine Sanctuaries, National Estuarine Research Reserves, National Parks, National Wildlife Refuges, and the state counterparts to these programs. The Center is co-located with the Office of National Marine Sanctuaries West Coast Regional Office in Monterey.

#### **NOAA Commissioned Officer Corps (NOAA Corps) - [Operations Officer](#), Office of National Marine Sanctuaries West Coast Region**

The NOAA Commissioned Officer Corps stations an officer at the Office of National Marine Sanctuaries (NMS) West Coast Regional Office in support of multiple sanctuary offices' operations. This officer performs various duties related to the maintenance and operation of multiple NOAA small vessels, such as the 67' R/V Fulmar, as well as in an administrative capacity, such as helping to plan and execute the Office's budget. They are responsible for training new

hires on the operation of the small vessels, operating the vessels themselves for up to 120 days of the year, in addition to performing various scientific and working dives as needed by the program. As an additional duty, this officer may be called upon to assist operations in the Channel Islands NMS and Olympic Coast NMS.

**National Environmental Satellite, Data, and Information Service (NESDIS) and National Marine Fisheries Service (NMFS)- [The Center for Satellite Applications and Research \(STAR\)](#) - [CoastWatch West Coast node](#) and [PolarWatch, both, collocated with NOAA Fisheries, Monterey and Santa Cruz, California](#)** exists to help people find, choose, access, and use observations from satellites for ocean, coastal and inland water applications that inform and benefit society. Our primary users include federal, state, and local marine scientists, coastal resource managers, and the public, including commercial users. The CoastWatch Program is managed within the Center for Satellite Applications and Research in the National Environmental Satellite, Data, and Information Service (NESDIS) of NOAA in College Park, MD. The program rests on four legs". Three of the legs, the central operations; training and outreach; and research and applications science teams, are located in College Park, MD. The fourth leg is composed of the seven CoastWatch Regional Nodes, maintained in collaboration with other NOAA Line Offices and located across the US.

The [CoastWatch West Coast Node \(WCRN\)](#) provides rapid dissemination of satellite observation data to governmental, academic, commercial, and public users in CA, OR, and WA. The WCRN was established in September 1995. It is hosted by [NOAA National Marine Fisheries Service, Southwest Fisheries Science Center's Southwest Fisheries Science Center's Information Technology and Data Services Division in Monterey, CA](#). Presently, CoastWatch WCRN is housed at the [Fisheries Ecology Division](#) in Santa Cruz, CA.

The [Southwest Fisheries Science Center](#) provides innovative science-based analyses, products, and information on environmental variability to meet the research and management needs of the [Southwest Fisheries Science Center](#), the [National Marine Fisheries Service](#), and [NOAA](#). They conduct research on fishery-related effects of natural environmental variability over a broad range of scientific, management, and operational concerns of the government and the fishing industry. As a part of this work, they develop and maintain an extensive database of environmental observations. This work includes the ocean and coastal waters of CA, OR, and WA. The data activities of the CoastWatch WCRN are fully integrated with the data services provided by the SWFSC.

PolarWatch extends the CoastWatch program by providing high-latitude satellite observation data to governmental, academic, commercial, and public users in support of broad applications in the Arctic and Southern Oceans. PolarWatch was established in September 2017 to advance the priorities outlined in NOAA's Arctic Action Plan by enabling data discovery, easy access, and broader usage of high-latitude satellite data products. It is hosted by NOAA Fisheries, in the Southwest Fisheries Science Center's Information Technology and Data Services Division in Monterey, CA.

### **[Santa Cruz](#)**

#### **National Marine Fisheries Service (NMFS) - [West Coast Region California Coastal Area Office](#)**

The California Coastal Area Office is part of the NMFS West Coast Region and includes five offices located in Arcata, Santa Rosa, Yreka, Santa Cruz, and Long Beach. Our responsibilities focus on protecting species and their habitats along the California coastline and its associated watersheds, including the entire Klamath River Basin. We work to protect species listed under the Endangered Species Act by evaluating the impacts of proposed federal actions, developing and implementing recovery plans, ensuring safe fish passage through federal and some private dams and seeking conservation partnerships with local governments and landowners. Using local, on-the-ground knowledge, our priorities focus on land use practices and other threats that limit particular recovery and restoration activities. We work with local communities and a diverse group of stakeholders to ensure that mutually beneficial conservation strategies are realized.

**National Ocean Service (NOS) - [Monterey Bay National Marine Sanctuary - Sanctuary Exploration Center](#)**

The Sanctuary Exploration Center, the main visitor center for Monterey Bay National Marine Sanctuary and the largest NOAA-dedicated education facility on the west coast, is located just steps from the Santa Cruz Beach Boardwalk and provides state-of-the-art, interactive, interpretive exhibits regarding the sanctuary and its adjoining watersheds to approximately 60,000 visitors annually, from Wednesday through Sunday. The Sanctuary Exploration Center is a model for sustainable, environmentally sensitive design, construction and operation, meeting the U.S. Green Building Council's GOLD standards for Leadership in Energy and Environmental Design (LEED).

**National Ocean Service (NOS) - [Monterey Bay National Marine Sanctuary](#)**

The National Marine Fisheries Service Lab in Santa Cruz houses two Monterey Bay National Marine Sanctuary staff, an education specialist and a senior research scientist. This co-location facilitates collaboration between sanctuary and NMFS scientists.

**NOAA Commissioned Officer Corps (NOAA Corps) - [Operations Officer, Ecology Investigation](#)**

The NOAA Commissioned Officer Corps stations an officer with the Fisheries Ecology Division in support of the division's research on Pacific salmon and groundfish. The officer serves in various roles for the division, including as a member of the groundfish analysis team, Vessel Operations Coordinator for eleven vessels, and as a scientific diver. They participate in field operations with the lab, manage the shore-side support and logistics, and conduct some data analysis for the program. In addition, they perform various administrative duties, such as managing the training and proficiency requirements of the small boat operators, execute various safety programs in the division, and manage the maintenance and inspection of operational equipment.

**CA-19**

San Jose

**National Ocean Service (NOS) – [Climate Resilience Regional Challenge](#)**

In July 2024, NOAA announced \$575 million in funding for the Climate Resilience Regional Challenge, provided by the Inflation Reduction Act, to invest in holistic, collaborative approaches to coastal resilience at regional scales. This grant program focuses on increasing resilience to extreme weather events, such as hurricanes and storm surge, and longer-term, chronic hazards such as sea level rise, drought, wildfire, extreme heat, and coastal erosion. The program awarded 19 grants that are part of NOAA's larger Climate-Ready Coasts initiative to forge new partnerships, protect coastal habitats, and close equity gaps. They will help scale up proven best practices across 17 states and territories to take resilience and adaptation plans off paper and into coastal communities across the country.

A Climate Resilience Regional Challenge grant for \$71,100,000 was awarded to the California Marine Sanctuary Foundation to implement solutions to address chronic climate hazards in California's Monterey Bay region (CA-18, CA-19). The highest priority climate risks for this region are flooding and wildfires—both of which have had devastating impacts on lives, livelihoods, and ecosystems. This project, comprising dozens of agencies and institutions, will implement adaptation strategies that create a regional, collaborative approach for addressing these risks while building capacity through workforce development. These transformative strategies include nature-based approaches designed to strengthen ecosystem and habitat resilience and protect human communities. At the same time—and with an emphasis on meaningful engagement with marginalized communities and tribes—this unified, region-wide approach will create generational impact through building the local knowledge, skills, and workforce necessary to create resilient infrastructure and improve adaptive capacity for current and future climate hazards.

## **CA-20**

### **Santa Cruz**

#### **National Marine Fisheries Service (NMFS) - Santa Cruz Laboratory**

Located adjacent to the University of California - Santa Cruz, Long Marine Laboratory, the Santa Cruz Laboratory houses the [Fisheries Ecology Division](#) of the Southwest Fisheries Science Center (SWFSC) conducts research on Pacific coast groundfish and Pacific Salmon. Results of this research are used by the Pacific Fishery Management Council to manage fisheries and by NMFS to develop recovery plans for threatened and endangered species. Fisheries Ecology Division scientists study causes of variability in abundance and health of fish populations, analyze ecological relations in marine communities, and study the economics of exploiting and protecting natural resources. They also assess the status of stocks targeted by various fisheries and evaluate impacts of human activities on threatened or endangered species. The Santa Cruz laboratory also houses the Data Integration and Analysis Program. Program scientists maintain environmental and fisheries relevant databases and distribute environmental index products and time series databases to cooperating researchers world-wide. The Data Integration and Analysis program also hosts the west coast regional node for the NOAA CoastWatch program, which provides rapid dissemination of satellite observation data to governmental, academic, commercial and public users. The Santa Cruz laboratory engages in educational and public engagement partnerships with the Seymour Science Center at UC Santa Cruz and the Monterey Bay National Marine Sanctuary Exploration Center.

### **Monterey**

#### **National Marine Fisheries Service (NMFS) -**

The Climate and Ecosystem Program of the Southwest Fisheries Science Center's is located in Monterey, CA, to take advantage of its long association with the United States Navy's Fleet Numerical Meteorology and Oceanography Center. The research group was formed in 1969 to develop databases and to conduct research on fishery-related effects of environmental variability and climate change over a broad range of scientific, management, and operational concerns of the government and the fishing industry of the United States.

#### **NOAA Office of Education — [Coastal Ecosystem Learning Centers \(CELC\) network](#)**

In California, NOAA's Office of Education provides support to the [Monterey Bay Aquarium](#) in Monterey as part of the Coastal Ecosystem Learning Centers (CELC) network, which is made up of 25 aquariums and marine science education centers located throughout North America. The CELC network collaborates on a variety of initiatives, ranging from youth summits to multi-institution projects, with the goal of better engaging the public in understanding, appreciating, and protecting marine and freshwater ecosystems. Through the CELC network, the Office of Education provides guidance, resources, and scientific expertise to these institutions, which collectively reach an estimated 20 million people annually across North America. By coordinating with the CELC network, NOAA helps to further its mission of engaging the public in protecting and preserving coastal and marine ecosystems.

**National Weather Service (NWS) - [Weather Forecast Office](#)**-See [Page 2](#) for details.

### **Carmel**

#### **National Marine Fisheries Service (NMFS) - [Granite Canyon Marine Laboratory](#)**

Located at Granite Canyon, eight miles south of Carmel, California, along the Big Sur coast, the Granite Canyon Marine Laboratory has been the site of NMFS' shore-based counts of southbound migrating gray whales since 1967. The University of California-Davis's Marine Pollution Studies Laboratory is also located at the site.

### **Watsonville**

#### **National Ocean Service (NOS) - [Elkhorn Slough National Estuarine Research Reserve](#)**

The National Estuarine Research Reserve System is a network of protected areas focused on long-term research, monitoring, stewardship, education, and training. NOAA's Office for Coastal Management provides funding and national guidance, and each site is managed on a daily basis by a lead state agency or university with input from local partners.



Elkhorn Slough National Estuarine Research Reserve was designated in 1979 and is located on the Central California coast halfway between Monterey and Santa Cruz. The reserve, managed on a daily basis by the California Department of Fish and Game and the Elkhorn Slough Foundation, contains 1,439 acres of wetland and upland habitat, rare and threatened marsh, mudflat, and estuarine habitats, all of which are important for several endangered species.

**National Ocean Service (NOS) – [Margaret A. Davidson Graduate Fellowship](#)**

The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at Elkhorn Slough National Estuarine Research Reserve will focus their research on seaweed bioremediation and the socioeconomic dimensions of coastal management.

**CA-21**

**[San Joaquin Valley/Hanford](#)**

**National Weather Service (NWS) - [Weather Forecast Office](#)** - See [Page 2](#) for details.

**[Hanford](#)**

**Office of Oceanic and Atmospheric Research (OAR) - [Surface Radiation Measurement Network: Ozone Measurements](#)**

This site is one of seven in the NOAA Global Monitoring Laboratory (GML) surface solar radiation (SOLRAD) monitoring network, based in the continental United States, and is a collaboration with NOAA's SURFRAD Network that supports climate research with accurate, continuous, long-term measurements of the surface radiation budget. The site also makes measurements of the column amounts of ozone between the earth's surface and the top of the atmosphere at a number of locations around the United States. The observations are obtained with ground-based spectrometers that measure the attenuation by ozone of ultraviolet light. These observations are part of a global network and used to track recovery of stratospheric ozone layer in compliance with the USA Clean Air act of 1990. The integrated ozone amount is critical in determining the amount of ultraviolet radiation reaching the earth's surface. These long-term measurements help determine the effectiveness of efforts to protect and restore the ozone layer, which shields the surface from the sun's ultraviolet radiation. Excess ultraviolet radiation is responsible for increased incidence of human skin cancer, crop damage, and damage to other biogenic substances.

**CA-23**

**[Apple Valley](#)**

**NOAA Office of Education - Science On a Sphere®** - at [Lewis Center for Educational Research](#). See [Page 2](#) for details.

**CA-24**

**[San Simeon](#)**

**National Ocean Service (NOS) - [Monterey Bay National Marine Sanctuary - Coastal Discovery Center](#)**

The Coastal Discovery Center at San Simeon Bay, is a small visitor center for Monterey Bay National Marine Sanctuary, located at William R. Hearst State Beach, just across the highway from the entrance to Hearst San Simeon State Historical Monument. This center focuses on sanctuary habitats, responsible wildlife viewing, watersheds, deep sea exploration, ocean sounds, and partners in ocean and watershed protection. The facility hosts 14,000 annually and is open Friday through Sunday weekly.

## **CA-24, 26**

### **Santa Barbara and Ventura**

#### **National Ocean Service (NOS) - Channel Islands National Marine Sanctuary**

Often referred to as the “American Galapagos,” the 1,470 square-mile Channel Islands National Marine Sanctuary, surrounding San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara islands, hosts 27 species of whales and dolphins, five species of seals and sea lions, and more than 60 species of seabirds. Rich cultural resources exist as well, such as prehistoric artifacts from early island residents, the remains of more than 100 historic shipwrecks, and the cultural heritage values of contemporary indigenous Chumash people.

Experience the sanctuary first-hand through recreational fishing trips, SCUBA diving and kayak tours, whale watching tours, and excursions to [Channel Islands National Park](#) leaving from Santa Barbara, Ventura or Channel Islands harbors. In Santa Barbara, visitors learn more about the sanctuary through exhibits at the Santa Barbara Maritime Museum, Santa Barbara Sea Center, and Outdoors Santa Barbara Visitor Center. In Ventura County, visitors can learn about the sanctuary, ocean safety and boating options at the Channel Islands Boating Center.

The main office for Channel Islands National Marine Sanctuary staff is located at the University of California, Santa Barbara. The university plans to outfit the publicly-accessible Center for Ocean Advancement of Science and Technology (COAST), co-located with the sanctuary office on campus. Two NOAA research vessels are homeported at Santa Barbara Harbor. Sanctuary programs include protecting sensitive resources, conducting marine science, community involvement, outreach and education programs. Focal issues include climate change, marine debris, non-native species, reducing ship strikes to whales, and marine protected areas. A 21-seat Sanctuary Advisory Council brings together a variety of marine stakeholders and agency partners, meeting publicly every two months to discuss current sanctuary issues and develop management advice to inform agency decision-making.

#### **NOAA Commissioned Officer Corps (NOAA Corps) - Vessel Operations Coordinator, Channel Islands National Marine Sanctuary**

The NOAA Commissioned Officer Corps stations an officer with the Channel Islands National Marine Sanctuary (NMS) office in support of NMS operations in the region. The officer is responsible for the safe operation, inspection compliance, life cycle costs, and material condition of the boats under their supervision, as well as for the planning and execution of both the vessel operations and the Channel Islands NMS budget. In addition, they serve as Operator in Charge, as a crew member, or as a dive team member in various operations on average one week per month. Other duties include coordinating with a variety of Federal and State agencies, as well as universities and NGOs to conduct joint projects on Channel Islands NMS vessels, as well as conducting training to ensure qualified use of NMS assets by all personnel.

### **Oxnard**

#### **National Ocean Service (NOS) - Channel Islands Boating Center**

A consortium of agencies and boaters developed the Channel Islands Boating Center at Channel Islands Harbor in Oxnard. This facility was funded by grants from the California Department of Boating and Waterways and the NOAA Office of National Marine Sanctuaries/ The boating center is operated by California State University, Channel Islands, offering student sailing and watersports activities and educating visitors about boating safety and boating options at the Channel Islands and coastal waters. NOAA's Channel Islands National Marine Sanctuary partners with the boating center to interact with the boating community, Ventura County residents, student groups, other agencies, and the university.

**National Weather Service (NWS) - Weather Forecast Office**- See [Page 2](#) for details.

**CA-24**

***San Luis Obispo, Santa Barbara Counties***

**National Ocean Service (NOS) - [Chumash Heritage National Marine Sanctuary](#)**

Chumash Heritage National Marine Sanctuary covers 4,543 square miles of coastal and offshore ocean waters along 116 miles of coastline in Central California stretching from just south of Diablo Canyon Power Plant in San Luis Obispo County to Naples Reef on the Gaviota Coast in Santa Barbara County. The sanctuary protects and collaboratively manages natural and cultural resources, fascinating maritime historical resources, and rich Indigenous cultural history. Chumash Heritage National Marine Sanctuary's waters contain remarkable marine biodiversity, productive ecosystems, and sensitive species and habitats. Productive fishing grounds and economically-important recreation and tourism activities thrive in sanctuary waters. Special geologic features like Rodriguez Seamount and Santa Lucia Bank, along with an important biogeographic transition zone and upwelling, create unique ecological conditions that support marine biodiversity and productivity. The sanctuary's coast and waters hold deep cultural, spiritual, and historical significance for the Chumash Peoples, as well as for the Salinan Peoples in areas extending north of the sanctuary. These waters and adjacent lands have remained home to coastal, ocean-going Indigenous Peoples since time immemorial. This sanctuary honors the deep cultural and historical importance of this place to the region's Indigenous Peoples. This respect will guide our community-focused efforts to protect the marine environment and ensure long-term care of this treasured ocean place. The sanctuary aims to provide resource protection and ecosystem-based management through applied research, locally-based education and outreach programs, and conservation measures that are community-based and respectfully informed by Indigenous collaborative co-stewardship.

**National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Central and Northern California Ocean Observing System\)](#) and [\(Southern California Coastal Ocean Observing System\)](#)**

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. Information is readily available via a state-of-the-art data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS works interactively with its neighboring IOOS Regional Association to the north, the Central and Northern California Ocean Observing System (CeNCOOS) to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

SCCOOS support to seven California and two external partner institutions is critical to ensuring the SCCOOS mission and vision are realized. Many of the supported projects are cost-shared with CeNCOOS to leverage our support to the CalOOS system. The Automated Shore Station Program (SASS) node and the Harmful Algal Bloom Monitoring and Alert Program (HABMAP) projects at Cal Poly Pier are supported through funding from SCCOOS and CeNCOOS to **California State Polytechnic University, San Luis Obispo**.

## **CA-24**

### **San Simeon**

#### **National Marine Fisheries Service (NMFS) - Piedras Blancas Field Station**

Since 1994, scientists from the Southwest Fisheries Science Center's Marine Mammal and Turtle Division have been monitoring the northbound migration of gray whale cows and calves from Piedras Blancas, a point of land just north of San Simeon, and just south of the Big Sur coast. The field site, once used as a lookout point to spot animals during the whaling era, is also home to the Piedras Blancas Light Station and is situated on Bureau of Land Management property. The site is ideal because the whales generally pass within 200 m of the point and often stop to nurse their young in the lee of the rocky point. The survey data has been used to assess variability in annual calf production and to investigate the relationship of this variability to environmental conditions in the Arctic where these whales feed.

### **Santa Barbara**

#### **National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Central and Northern California Ocean Observing System\)](#) and [\(Southern California Coastal Ocean Observing System\)](#)**

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. Information is readily available via a state-of-the-art data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS works interactively with its neighboring IOOS Regional Association to the north, the Central and Northern California Ocean Observing System (CeNCOOS) to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

SCCOOS support to seven California and two external partner institutions is critical to ensuring the SCCOOS mission and vision are realized. Many of the supported projects are cost-shared with CeNCOOS to leverage our support to the CalOOS system. The Automated Shore Station Program (SASS) node at Stearns Wharf is supported by funding to the **University of California, Santa Barbara**, along with the Harmful Algal Bloom Monitoring and Alert Program (HABMAP), the National HAB Observing Network (NHABON), and HFR Surface Current Mapping Network support.

#### **Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

## **CA-25**

### **Palmdale**

#### **National Weather Service (NWS) - [Center Weather Service Unit](#)**

Housed in the Federal Aviation Administration's Los Angeles Air Traffic Control Center (ARTCC) in Palmdale, the NWS Center Weather Service (CWSU) staff provides aviation forecasts and other weather information to ARTCC personnel for their use in directing the safe, smooth flow of aviation traffic in Southern California and parts of Arizona, Nevada and Utah.

## **CA-27**

### **Mt. Wilson**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Global Greenhouse Gas Reference Network](#)**

NOAA's Global Monitoring Laboratory (GML) operates trace gas monitoring sites at tall towers in eight states, including California. The sites were established to extend GML's monitoring network to provide data to aid estimation of the net carbon balance of the continent. Variations of trace gases, especially carbon dioxide, are largest near the ground, so we utilize existing tall towers as platforms for in situ and flask sampling for atmospheric trace gases. Flask samples are delivered to GML in Boulder, Colorado for analysis. These data improve models and our understanding of the distribution of greenhouse gases, including sources and sinks of carbon in North America.

## **CA-29**

### **Sylmar**

**NOAA Office of Education - Science on a Sphere-** at [Discovery Cube Los Angeles](#). See [Page 2](#) for details.

## **CA-36, 37, 46**

### **Los Angeles and Long Beach**

#### **National Marine Fisheries Service (NMFS) - [West Coast Region](#) California Coastal Area Office**

The California Coastal Area Office is part of the NMFS West Coast Region and includes five offices located in Arcata, Santa Rosa, Yreka, Santa Cruz, and Long Beach. Our responsibilities focus on protecting species and their habitats along the California coastline and its associated watersheds, including the entire Klamath River Basin. We work to protect species listed under the Endangered Species Act by evaluating the impacts of proposed federal actions, developing and implementing recovery plans, ensuring safe fish passage through federal and some private dams and seeking conservation partnerships with local governments and landowners. Using local, on-the-ground knowledge, our priorities focus on land use practices and other threats that limit particular recovery and restoration activities.

#### **National Ocean Service (NOS) - [Los Angeles/ Long Beach PORTS®](#)**

A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in the metropolitan Los Angeles/Long Beach area at which real-time data are quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water levels from one station, meteorological data from ten stations, surface wave data from three stations, and bridge air gap data from two stations.

## **CA-42**

### **Los Angeles**

#### **National Ocean Service (NOS) - U.S.Integrated Ocean Observing System (Central and Northern California Ocean Observing System) and (Southern California Coastal Ocean Observing System)**

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. Information is readily available via a state-of-the-art data portal to ensure that products are useful and

easy to access while preserving the necessary detail to support the scientific and educational communities. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS works interactively with its neighboring IOOS Regional Association to the north, the Central and Northern California Ocean Observing System (CeNCOOS) to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

SCCOOS support to seven California and two external partner institutions is critical to ensuring the SCCOOS mission and vision are realized. Many of the supported projects are cost-shared with CeNCOOS to leverage our support to the CalOOS system. SCCOOS supports the Harmful Algal Bloom Monitoring and Alert Program (HABMAP) and the National HAB Observing Network (NHABON) projects as well as a node of the HFR Surface Current Mapping Network at the University of Southern California. The HABMAP and NHABON programs at Newport Beach Pier are supported by projects at University of California, Los Angeles along with Regional Ocean Model System (ROMS) development for more accurate nearshore physics and wave dynamics. The Automated Shore Station Program (SASS) node at the Santa Monica Pier in Los Angeles is supported through funding to California State University Northridge.

#### **Office of Education - [Coastal Ecosystem Learning Centers \(CELC\) network](#)**

In California, NOAA's Office of Education provides support to the [Aquarium of the Pacific](#) in Los Angeles County as part of the Coastal Ecosystem Learning Centers (CELC) network, which is made up of 25 aquariums and marine science education centers located throughout North America. The CELC network collaborates on a variety of initiatives, ranging from youth summits to multi-institution projects, with the goal of better engaging the public in understanding, appreciating, and protecting marine and freshwater ecosystems. Through the CELC network, the Office of Education provides guidance, resources, and scientific expertise to these institutions, which collectively reach an estimated 20 million people annually across North America. By coordinating with the CELC network, NOAA helps to further its mission of engaging the public in protecting and preserving coastal and marine ecosystems.

#### **Office of Oceanic and Atmospheric Research (OAR)- [National Integrated Heat Health Information System \(NIHHIS\) Center for Heat Resilient Communities](#)**

The National Integrated Heat Health Information System (NIHHIS) Centers of Excellence, made available through funds appropriated to NOAA by the Inflation Reduction Act, allow NIHHIS to enhance community science observations and data collection on extreme heat, and provide assistance to communities planning for and evaluating equitable heat resilience projects. The Center for Heat Resilient Communities will be based at University of California, Los Angeles (UCLA) Luskin Center for Innovation. It will support communities in determining the best strategies for local heat mitigation and management, leveraging federal investments to enhance heat resilience, and using decision-support tools to develop data-driven and equity-centered heat strategies. This center will also develop and implement a Heat Resilient Communities Framework that brings together diverse expertise and knowledge-sharing hubs to identify and evaluate policies, protocols and lessons for heat resilience. With additional support from Arizona State University and the University of Arizona, this center will directly fund communities and tribal entities across the U.S. It will also develop knowledge and lessons learned that can apply in the U.S. and internationally. NIHHIS is an integrated information system supporting equitable heat resilience run out of NOAA's Climate Program Office. The NIHHIS Centers of Excellence will work alongside community members and community-based organizations to advance place-based heat information and decision-making, so they can reduce heat-related illness and death, harmful infrastructure impacts and other heat risks.



**CA-45**

**Lake Forest**

**Office of Education - Science on a Sphere®** at [Panasonic Avionics Corporation](#). See [Page 2](#) for details.

**CA-46**

**Santa Ana**

**Office of Education - Science on a Sphere®** at Discovery Cube Orange County. See [Page 2](#) for details.

**CA-47**

**Long Beach**

**Office of Education - Science on a Sphere®** at the [Aquarium of the Pacific](#). See [Page 2](#) for details.

**National Marine Fisheries Service (NMFS) - [Southwest Inspection Branch](#) and Los Angeles Lot Inspection Office**

NOAA's Seafood Inspection Program conducts a voluntary inspection program for fishery products on a fee-for-service basis. The office offers a wide range of services to the seafood industry (fishermen, wholesalers, processors, retailers, importers and exporters) including process and product inspection, product grading, lot inspection, laboratory analysis, and training. Export health certificates as required by most countries are issued for U.S. exporters. All edible foodstuffs, ranging from whole fish to formulated products, as well as fishmeal and animal feeds, are eligible for inspection and certification.

**National Marine Fisheries Service (NMFS) - [West Coast Region Long Beach Office](#)**

NOAA Fisheries is dedicated to protecting and preserving our nation's living marine resources through scientific research, fisheries management, enforcement, and habitat conservation. The West Coast Region of NOAA Fisheries administers fisheries programs along the coasts of Washington, Oregon and California; and in the vast inland habitats of Washington, Oregon, California and Idaho. We work to conserve, protect, and manage salmon and marine mammals under the Endangered Species Act and Marine Mammal Protection Act, and sustainably manage West Coast fisheries as guided by the Magnuson-Stevens Fisheries Conservation Act. To achieve this mission and advance sound stewardship of these resources, we work closely with tribes, local, state and federal agencies, our stakeholders, and partners to find science-based solutions to complex ecological issues.

**National Marine Fisheries Service (NMFS) – [Regional Aquaculture Coordinator - West Coast Region - Long Beach Office](#)**

The aquaculture coordinators lead regional efforts to foster sustainable aquaculture across the region. The West Coast Region/California has a vibrant commercial marine aquaculture industry supported by a world class research and technology sector. Regional priorities include shellfish, seaweed, finfish farming, and restoration aquaculture. Aquaculture coordinators support regulatory efficiency, aquaculture outreach and education, and serve as liaisons with state and local agencies, tribes, non-government organizations, academia, and industry. These coordinators also work as part of NOAA's Aquaculture Program to foster sustainable U.S. marine aquaculture to increase production of seafood and support business and employment opportunities."

**National Ocean Service (NOS) - [U.S.Integrated Ocean Observing System \(Central and Northern California Ocean Observing System\)](#) and ([Southern California Coastal Ocean Observing System](#))**

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. Information is readily available via a state-of-the-art data portal to ensure that products are useful and

easy to access while preserving the necessary detail to support the scientific and educational communities. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS works interactively with its neighboring IOOS Regional Association to the north, the Central and Northern California Ocean Observing System (CeNCOOS) to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

SCCOOS support to seven California and two external partner institutions is critical to ensuring the SCCOOS mission and vision are realized. Many of the supported projects are cost-shared with CeNCOOS to leverage our support to the CalOOS system. The California White Shark Telemetry Network is partially supported by funding to the **California State University Long Beach**.

#### **CA-48**

##### **Costa Mesa**

**Office of Education** - [Science On a Sphere®](#) at the [Orange Coast College Planetarium](#). See [Page 2](#) for details.

#### **CA-49, 52**

##### **La Jolla**

**National Ocean Service (NOS)** - [California Spatial Reference Center](#)

In a model partnership with NOAA, the California Spatial Reference Center (CSRC) serves as a way of providing a spatial referencing liaison between Federal and local authorities. The Center is a non-profit organization affiliated with the Scripps Institution of Oceanography of the University of California-San Diego. The mission of the Center is to provide the necessary geodetic services to ensure the availability of accurate, consistent, and timely spatial referencing data for California. In partnership with several other organizations, CSRC has developed a plan to establish and maintain a state-of-the-art network of GPS control stations necessary for a reliable spatial reference system in California.

**NOAA Commissioned Officer Corps (NOAA Corps)** - [Southwest Fisheries Science Center Support](#)

The NOAA Commissioned Officer Corps stations multiple officers within the various programs of the Southwest Fisheries Science Center (SWFSC) in support of their operational needs. Officers hold positions as the Center Chief of Staff, Antarctic Logistics coordinator, Cetacean Photogrammetry Specialist, Uncrewed Aircraft Systems Operations Coordinator, Ecosystem Science Division Operations Manager, Ecology Investigation Operations officer, and as Advanced Survey Technology Officer. In these positions, officers perform duties including planning and managing budgets; coordinating with State, Federal, and industry partners to perform scientific research; maintain the equipment in use by the programs; participating in field expeditions and coordinating small boat and autonomous operations.

#### **CA-50**

##### **Fallbrook**

**Office of Oceanic and Atmospheric Research (OAR)** - [U.S. Climate Reference Network](#)

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

## **CA-51**

### **Imperial Beach**

#### **National Ocean Service (NOS) - [Tijuana River National Estuarine Research Reserve](#)**

The National Estuarine Research Reserve System is a network of protected areas focused on long-term research, monitoring, stewardship, education, and training. NOAA's Office for Coastal Management provides funding and national guidance, and each site is managed on a daily basis by a lead state agency or university with input from local partners. The Tijuana River research reserve was designated in 1982 and is jointly managed by California State Parks, the U.S. Fish and Wildlife Service and the Southwest Wetlands Interpretive Association. The 2,293-acre site is located in Imperial Beach, Calif., 15 miles south of San Diego and immediately adjacent to Tijuana, Mexico. The reserve is a home to eight threatened and endangered species of plants and birds and is recognized as a 'wetland of international importance' by the Ramsar Convention.

#### **National Ocean Service (NOS) – [Margaret A. Davidson Graduate Fellowship](#)**

The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at Tijuana River National Estuarine Research Reserve will focus their research on reimagining access through reciprocal relationships.

### **San Diego**

#### **National Marine Fisheries Service (NMFS) - [San Diego Port Facility](#)**

The NOAA San Diego Port Facility provides storage for sea-going sampling equipment, berthing for the Southwest Fisheries Science Center's (SWFSC) small boat fleet and provides office space and parking for sea-going personnel and activities. The facility is located within the Port of San Diego's 10th Avenue Marine Terminal and also serves as the homeport for NOAA Ship *Reuben Lasker*.

#### **National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Central and Northern California Ocean Observing System\)](#) and ([Southern California Coastal Ocean Observing System](#))**

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. Information is readily available via a state-of-the-art data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS works interactively with its neighboring IOOS Regional Association to the north, the Central and Northern California Ocean Observing System (CeNCOOS) to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

SCCOOS support to seven California and two external partner institutions is critical to ensuring the SCCOOS mission and vision are realized. Many of the supported projects are cost-shared with CeNCOOS to leverage our support to the CalOOS system. Five projects are supported at **Scripps Institution of Oceanography at University of California, San Diego** (host institution). These include the SCCOOS Program Office, the High-Frequency Radar Surface Current Mapping

Network, California Underwater Glider Network, California Flood Network, Harmful Algal Bloom Monitoring and Alert Program (HABMAP), the National HAB Observing Network (NHABON), the Automated Shore Station Program (SASS), and the Coastal Data Information Program (CDIP) buoys at the Ports of Los Angeles and Long Beach.

**Office of Oceanic and Atmospheric Research (OAR) - [Cooperative Institute for Marine, Earth, and Atmospheric Systems](#)**

The Cooperative Institute for Marine, Earth, and Atmospheric Systems (CIMEAS) was awarded to the Scripps Institution of Oceanography at the University of California, San Diego. CIMEAS serves as a mechanism to promote collaborative research between university scientists and those in NOAA. The mission of CIMEAS is to develop and consolidate leading research and educational programs across its member institutions in support of NOAA's mission "to understand and predict changes in the Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social and environmental needs". CIMEAS research is largely partnered with the NOAA Southwest Fisheries Science Center. CIMEAS conducts research across four themes: (1) science to support ecosystem-based management of living marine resources; (2) research, development, and technology innovation for global ocean observations and monitoring; (3) coastal and oceanic observations, analysis, and prediction; and (4) weather, water and climate research.

**Office of Marine and Aviation Operations (OMAO) - [NOAA Ship Reuben Lasker](#)**

NOAA's newest Fishery Survey Vessel, NOAA Ship *Reuben Lasker*, is homeported in San Diego within the Port of San Diego's 10th Avenue Marine Terminal and is managed by the OMAO Marine Operations Center-Pacific (MOC-P) in Newport, Oregon. The fifth of the Oscar Dyson class vessels, the *Lasker* primarily supports fish, seabird, marine mammal, and turtle surveys off the U.S. West Coast and in the eastern tropical Pacific Ocean. The vessel supports NOAA's mission to protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management. NOAA Ship *Reuben Lasker* is operated under the direction of officers from the NOAA Commissioned Officer Corps in concert with NOAA Professional Mariners. The NOAA Corps today provides a cadre of professionals trained in engineering, earth sciences, oceanography, meteorology, fisheries science, and other related disciplines. Officers operate ships, fly aircrafts, conduct diving operations, and serve in other NOAA staff positions. NOAA Professional Mariners perform the deck, engineering, steward, and survey tech functions aboard NOAA vessels, providing critical support to NOAA missions.

**[CA-52](#)**  
**[La Jolla](#)**

**National Marine Fisheries Service (NMFS) - [Southwest Fisheries Science Center La Jolla Laboratory](#)**

La Jolla is the headquarters for the Southwest Fisheries Science Center (SWFSC) and the location of the Director's Office, Information Technology and Data Services, the Marine Mammal and Turtle Division, Ecosystem Science Division and Fisheries Research Division, as well as the Operations and Management Division. Center scientists conduct marine biological, economic and oceanographic research, observations and monitoring of living marine resources and their environment throughout the Pacific Ocean and in the Southern Ocean around Antarctica. The La Jolla Laboratory is an award-winning, LEED Gold-certified facility located on the campus of Scripps Institution of Oceanography, University of California - San Diego. The facility is a focal point for ecosystem-based fisheries research, surveys and monitoring programs. In addition to 35 state-of-the-art laboratories, the new facility houses a unique, multi-story Ocean Technology Development Test Tank. The SWFSC engages in educational partnerships and public engagement partnerships throughout the city, including the Ocean Discovery Institute.

**National Weather Service (NWS) - [Weather Forecast Office](#)**- See [Page 2](#) for details.

**Office of Oceanic and Atmospheric Research (OAR) - [Global Ocean Monitoring and Observing Program \(GOMO\)](#)**

The Global Ocean Monitoring and Observing Program supports research conducted at the Scripps Institution of Oceanography, University of California, San Diego. NOAA-funded scientists here work on a variety of research activities to sustain, expand and improve global ocean observations that inform weather and climate forecasts and help scientists understand how the ocean is changing over annual to decadal timescales from the surface to the seafloor. Scripps is a member of the NOAA OneArgo Consortium, and houses an Argo Lab where scientists build and test floats as well as coordinate operations for the U. S. Argo Program. Scripps is also home to the Lagrangian Drifter Lab, a component of NOAA's Global Drifter Program, where scientists build, test and deliver innovative drifters that can be deployed at sea or by plane. NOAA also funds research for the ocean time-series moorings CORC and CCE which collect observations to build a more comprehensive understanding of the dynamics of the California Current.

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**[Coastal](#)**

**Office of Oceanic and Atmospheric Research (OAR) - [Ocean Acidification Observing Network \(NOA-ON\)](#)**

The NOAA Ocean Acidification Observing Network (NOA-ON) is a sustained investment in ocean chemistry observing networks in U.S. waters and abroad. There are currently 16 buoys sponsored by the [NOAA OAR Ocean Acidification Program](#) in coastal, open-ocean and coral reef waters that contribute to this network. The long-term datasets collected from these moorings are key to understanding how ocean chemistry and other ocean conditions are changing over time, and their impacts on marine and coastal ecosystems. These buoys are located in Alaska ([Gulf of Alaska](#), [Bering Sea](#)), American Samoa ([Fagatele Bay](#)), California (California Current Ecosystem [1](#) & [2](#)), [Chesapeake Bay](#) (MD, VA), Louisiana ([Coastal LA](#)), Florida ([Cheeca Rocks](#)), Georgia ([Grays Reef](#)), Hawaii ([Kāne'ohe Bay](#) and [CRIMP-II](#), both in O'ahu) Oregon ([Coos Bay](#)), Maine ([Gulf of Maine](#)), Puerto Rico ([La Parguera](#)), Washington ([Cha'ba](#)), and Lake Huron ([Thunder Bay](#)).

**National Marine Fisheries Service (NMFS) - [Deep-Sea Coral Research and Technology Program](#)**

NOAA's Deep Sea Coral Research is administered by NOAA Fisheries' [Office of Habitat Conservation](#). Mandated by the Magnuson-Stevens Fishery Conservation and Management Act, it is the nation's only federal research program dedicated to increasing scientific understanding of deep-sea coral ecosystems. Deep-sea corals occur off of every coastal state in the country, and create important habitats for countless species, including many fish species. The Program collaborates closely with partners, including other NOAA offices, to study the distribution, abundance, and diversity of deep sea corals and sponges. This work then informs critical management decisions in the waters of the United States and its territories. These decisions enhance the sustainability of deep-sea fisheries and other ocean uses, while conserving deep-sea coral and sponge habitats.

The Program works with partners to complete multi-year regional fieldwork initiatives, as well as smaller projects around the country, centered on integrating new and existing information on these vulnerable and biologically diverse habitats. The first research initiative took place from 2009 to 2011 in the U.S. South Atlantic region and provided valuable information to help decision-makers refine protected area boundaries. To date, the Program has completed one or more initiatives in each region of the United States.

**National Marine Fisheries Service (NMFS) - [Cooperation with States Program](#) and [Species Recovery Grants](#)**

Under the authority of section 6 of the Endangered Species Act, the Cooperation with States Program brings states, NMFS, and other partners together to recover threatened and endangered species. A total of 25 U.S. territories and coastal states, including California, currently participate in this program. Competitive grants are awarded to states through the Species Recovery Grants to States Program to support management, monitoring, research and outreach efforts for species that spend all or a portion of their life cycle in state waters. The funded work is designed to prevent extinctions or



reverse the decline of species, and restore ecosystems and their related socioeconomic benefits. The California Department of Fish and Wildlife has received multiple awards through this program, including grants to support projects focused on white abalone, black abalone, and the southern distinct population segment of green sturgeon.

**National Marine Fisheries Service (NMFS) - [National Marine Mammal Stranding Network](#) and [John H. Prescott Marine Mammal Rescue Assistance Grant Program](#)**

The National Marine Mammal Stranding Network and its trained professionals and volunteers respond to dead or live marine mammals in distress that are stranded, entangled, out of habitat or otherwise in peril. Our long-standing partnership with the Network provides valuable environmental intelligence, helping NOAA establish links among the health of marine mammals, coastal ecosystems, and coastal communities as well as develop effective conservation programs for marine mammal populations in the wild. NOAA Fisheries funds eligible members of the Stranding Network through the competitive John H. Prescott Marine Mammal Rescue Assistance Grant Program.

**National Marine Fisheries Service (NMFS) - [Pacific Coastal Salmon Recovery Fund | NOAA Fisheries](#)**

The Pacific Coastal Salmon Recovery Fund (PCSRF) was established by Congress in 2000 to reverse the declines of Pacific salmon and steelhead by advancing the protection, restoration, and conservation of Pacific salmon and their habitats. The Fund is essential to prevent the extinction of 28 salmon species protected under the Endangered Species Act and also plays a vital role in supporting the economies of local communities from California to Alaska, upholding Tribal Treaty fishing rights and subsistence fishing traditions, and restoring all salmon populations to productive and viable levels along the entire West Coast. Several studies suggest that a \$1 million investment in watershed restoration creates between 13 and 32 jobs and between \$2.2 and \$3.4 million in economic activity.

**National Marine Fisheries Service (NMFS) - [Wetlands Recovery Project](#)**

NMFS West Coast Region has been an active participant in the Southern California Wetlands Recovery Project. The Wetlands Recovery Project is a broadly based partnership with 18 state and federal agencies working in concert with scientists, local governments, and environmental organizations, as well business leaders and educators to increase the pace and effectiveness of wetlands recovery efforts in southern California. Major projects include coastal bay and lagoon habitat restoration, increasing fish passage opportunities, stream restoration, and invasive species eradication and control.

**National Ocean Service (NOS) – [Bipartisan Infrastructure Law](#)**

The Bipartisan Infrastructure Law is helping coastal communities build the future they want to see. The legislation provides a historic investment in coastal protection and restoration that will increase community resilience to climate change and extreme weather events, and improve how we manage our ocean resources. Projects funded under this law protect and restore ecologically significant habitats, including conserving lands that play a critical role in helping communities become more resilient to natural hazards. California received funding for two projects in FY22 and two projects in FY23, as well as funds to build the state's capacity to protect its coastal communities and resources.

**National Ocean Service (NOS) - [Office for Coastal Management](#)**

The NOAA Office for Coastal Management practices a partner-based, boots on the ground approach to coastal management. The organization currently has staff in the eight regions to provide assistance to local, state, and regional coastal resource management efforts and facilitate customer feedback and assessments. Assistance is provided to local, state, and regional coastal resource management efforts. The central West Coast staff office is located in Oakland, California, with additional staff based in Portland, Bend, and Medford, Oregon, Seattle, Washington, and Anchorage, Alaska



**National Ocean Service (NOS) - [National Coastal Zone Management Program](#)**

Through a unique federal-state partnership, NOAA's Office for Coastal Management works with the California Coastal Commission, the San Francisco Bay Conservation and Development Commission, and the California Coastal Conservancy to implement the National Coastal Zone Management Program in California. NOAA provides these three state agencies with financial and technical assistance to further the goals of the Coastal Zone Management Act to protect, restore, and responsibly develop our nation's coastal communities and ensure coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

**National Ocean Service (NOS) - [Coastal Management Fellowship](#)**

This program matches postgraduate students with state and territory coastal zone programs to work on two-year projects proposed by the state or territory. The California Coastal Commission is hosting a fellow from 2024-2026, who is helping to develop policy guidance documents, identify mitigation strategies, and plan and implement outreach strategies critical to the long-term implementation of the California Coastal Commission's offshore wind program in concert with the agency's existing environmental justice and tribal consultation policies. Additionally, The San Francisco Bay Conservation and Development Commission is hosting a fellow from 2024-2026 who is helping to ensure that environmental justice principles are implemented into the San Francisco Bay Conservation and Development Commission's permitting process, reducing the probability of future harm to disadvantaged communities

**National Ocean Service (NOS) – [Digital Coast](#)**

The Digital Coast is a focused information resource developed to meet the unique needs of coastal communities. Developed and maintained by NOAA's Office for Coastal Management, content comes from hundreds of organizations, including federal, state, and local agencies, plus private sector and non-profit contributors. The Digital Coast website provides not only site-specific coastal data, but also related tools, training, and information needed to make these data useful for coastal decision makers. The Digital Coast Act authorizes the Digital Coast as a standing national program and supports NOAA's efforts to increase access to authoritative data, tools, and training that enable coastal communities to plan for long-term resilience, manage water resources, and respond to emergencies.

**National Ocean Service (NOS) – [National Coastal Resilience Fund](#)**

The National Coastal Resilience Fund restores, increases, and strengthens natural infrastructure to protect coastal communities while also enhancing habitats for fish and wildlife. The National Fish and Wildlife Foundation (NFWF) executes this program in partnership with NOAA to invest in conservation projects that restore or expand natural features, such as coastal marshes and wetlands, dune and beach systems, oyster and coral reefs, forests, coastal rivers and floodplains, and barrier islands, which minimize the impacts of storms and other naturally occurring events on nearby communities. In California, 36 projects have been funded: three in FY18, four in FY19, three in FY20, five in FY21, 11 in FY22, and 10 in FY23.

**National Ocean Service (NOS) – [Emergency Coastal Resilience Fund](#)**

The Emergency Coastal Resilience Fund is a partnership effort between NOAA and the National Fish and Wildlife Foundation (NFWF) to increase the resilience of coastal communities within federally-declared disaster areas impacted by hurricanes and wildfires in 2018, 2020, and 2021. California received funding for three projects in 2019 and one in 2021.

**National Ocean Service (NOS) - [Coastal and Estuarine Land Conservation Program](#)**

The Coastal and Estuarine Land Conservation Program brings conservation partners together to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. Subject to availability of funding, the program provides state and local governments with matching funds to purchase coastal and estuarine lands or obtain conservation easements for important lands threatened by development. Since 2002, the program has protected more than 110,000 acres of coastal land nationally, including over 16,000 acres

protected as in-kind matching contributions. Fourteen projects have been successfully completed in California, and these lands are protected in perpetuity.

**National Ocean Service (NOS) - Regional Ocean Partnerships: [West Coast Ocean Alliance](#)**

NOAA's Office for Coastal Management is the federal co-lead for the West Coast Ocean Alliance, which includes involvement and support from other NOAA offices (NMFS and ONMS). The partnership is a state, tribal, and federal forum for fostering dialogue on ocean health. The goal is to work together to create shared visions and implementation opportunities. Members include the three west coast states and several west coast tribes and federal agencies, including the Department of Interior which co-leads with NOAA. The partnership's focus includes data delivery and coordination, improving intergovernmental, especially tribal, coordination, and ocean uses such as offshore energy and aquaculture. With funding provided through the Bipartisan Infrastructure Law, NOAA is investing approximately \$56 million over five years to enhance and support the priorities of established regional ocean partnerships nationwide, including coordinating interstate and intertribal management of ocean and coastal management issues, and enhancing sharing and integration of data.

**National Ocean Service (NOS) - [Regional Ocean Partnership Tribal Awards](#)**

With funding provided through the Bipartisan Infrastructure Law, NOAA supports Federally-recognized tribes to participate or engage with established regional ocean partnerships on shared ocean and coastal management issues, including enhancing tribal capacity to engage, supporting development of partnerships between tribes and regional ocean partnerships, and increasing consideration and inclusion of tribal data as appropriate in regional ocean partnership work. In FY 23-24 one project was awarded in California.

**National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) - [Montrose Settlements Restoration Program](#)**

From the late 1940s to the early 1970s, the Montrose Chemical Corporation discharged millions of pounds of DDT and PCBs onto the Palos Verdes Shelf off the Southern California coast. These hazardous chemicals persist in the environment and continue to affect marine life and birds in Southern California. NOAA and other natural resource trustees formed the Montrose Settlements Restoration Program (MSRP) to oversee restoration of bald eagles, peregrine falcons, seabirds, fishing, and fish habitat. Restoration of these resources has been ongoing since the release of the MSRP Phase 1 Restoration Plan in 2005.

**National Ocean Service (NOS) - [National Water Level Observation Network](#)**

NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) operates 14 long-term, continuously operating tide stations in the state of California, which provide data and information on tidal datums, relative sea level trends, and are capable of producing real-time data for tsunami and storm surge warning. These stations are located at San Diego, La Jolla, Los Angeles, Santa Monica, Santa Barbara, Port San Luis, Monterey, San Francisco, Alameda, Point Reyes, Port Chicago, Arena Cove, North Spit, and Crescent City. Each station is associated with a set of tidal benchmarks installed in the ground that is used to reference the height of the water levels and helps connect the water level to land. Station data feeds into many CO-OPS products that are used to support safe navigation, mitigate coastal hazards, and protect communities. Such products include:

- Coastal Inundation Dashboard - view water levels in real-time and during storms
- High Tide Flooding Outlooks
- Sea level trends and maps
- Real-time current measurements
- Hydrodynamic models
- Tidal and water level datums

**National Ocean Service (NOS) - [U.S. Integrated Ocean Observing System \(Central and Northern California Ocean Observing System\)](#) and ([Southern California Coastal Ocean Observing System](#))**

The U.S. Integrated Ocean Observing System, or IOOS®, is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. Within the state, there are two Regional Coastal Observing Systems: the Southern California Coastal Ocean Observing System (SCCOOS) and the Central and Northern California Ocean Observing System (CeNCOOS). SCCOOS and CeNCOOS continuously collaborate to address the needs of state agencies and to support coastal management activities.

The Central and Northern California Ocean Observing System (CeNCOOS), with a region extending from Point Conception north to the California-Oregon border, covers some of the nation's most spectacular yet imperiled coastline. CeNCOOS was established in 2004 and continues to evolve with emerging drivers and stakeholder needs to deliver a more efficient, timely, reliable and useful observing system. CeNCOOS employs a 'systems approach' to information handling across the full data 'life cycle' that extends from the collection of observations to data management and product development, through to delivery of information to end-users. We coordinate a broad network of collaborators to expand the set of physics, biogeochemistry, biology and ecosystem variable observations collected from a comprehensive set of platforms, sensors and models.

The Southern California Coastal Ocean Observing System (SCCOOS) has developed the capabilities to support short-term decision-making and long-term assessment by implementing and leveraging biological, chemical and physical observations and models, many of them in the near real-time. The principal goal of the SCCOOS is to provide observations and products to a diverse stakeholder community of managers and planners, operational decision makers, scientists and the general public. The geographic extent of SCCOOS overlaps with that of CeNCOOS and extends beyond the U.S./Mexico border. For this reason SCCOOS and CeNCOOS work interactively to make information readily available via a state-of-the-art CalOOS data portal to ensure that products are useful and easy to access while preserving the necessary detail to support the scientific and educational communities. SCCOOS and CeNCOOS also partner to build capacity for biogeochemical and biological observations for ecosystem management and prediction. Taken together, their activities are integral to California's economy, health and safety. Marine transportation, aquaculture, commercial fishing, recreational boating and many other industries rely on the data provided to operate successfully.

**National Ocean Service (NOS) - [Office of National Marine Sanctuaries West Coast Regional Office](#)**

The Office of National Marine Sanctuaries, West Coast Regional Office oversees management of and fosters coordination among the five national marine sanctuaries of the west coast, which together protect 15,333 square miles of ocean and coastal waters from Washington to southern California. The West Coast Regional Office also closely collaborates with federal, state, local and tribal entities in shared management responsibilities. The West Coast Regional Office is located in Monterey, CA; each sanctuary office and visitor center is noted geographically below for individual congressional districts. The West Coast Regional Office also manages B-WET Pacific Northwest; see Oregon and Washington "NOAA in your State" for a description of that program. The West Coast Regional Office also maintains and operates two research vessels to support the three north-central California national marine sanctuaries; these vessels are homeported at Monterey Harbor.

**National Ocean Service (NOS) - [NOAA Ocean Guardian School Program](#)**

A NOAA Ocean Guardian School makes a commitment to the protection and conservation of its local watersheds, the world's ocean, and special ocean areas, like national marine sanctuaries. Funds are provided to schools at \$4,000 per year if the school makes this commitment by proposing and then implementing a school- or community-based

conservation project. Once the school has completed its project, the school receives official recognition as a NOAA Ocean Guardian School. To date, the Ocean Guardian School Program has reached more than 88,797 students and 3,599 teachers.

#### **National Ocean Service (NOS) - [NOAA Ocean Guardian Youth Ambassador Program](#)**

Youth aged 13-18 from across the United States and its territories that are committed to ocean conservation and stewardship of our blue planet can apply to become a NOAA Ocean Guardian Youth Ambassador. This year-long program looks for enthusiastic youth with new ideas and a unique perspective who want to learn more about [America's underwater treasures](#) and share their passion with others. Youth learn how to become a leader at their school or in their local community to make a difference in the conservation of the ocean through marine protected areas.

#### **National Ocean Service (NOS) - Students for [Zero Waste Week](#)**

Students are inviting their local communities to "Go Green and Think Blue" by joining them in the annual *Students for Zero Waste Week campaign*. During this campaign led by the Office of National Marine Sanctuaries, students focus on reducing land-based waste in order to protect the health of local marine environments. These young leaders are raising awareness of how single-use plastic and other types of litter affect the health of local watersheds, national marine sanctuaries, and the ocean. In addition, some schools are looking at ways to reduce their energy use on campus with hopes of raising awareness of how the burning of fossil fuels also impacts the health of the ocean.

#### **National Ocean Service (NOS) - [OR&R Preparedness, Response, and Restoration Coordinators](#)**

NOAA's Office of Response and Restoration (OR&R) is a center of expertise in preparing for, evaluating, and responding to threats to coastal environments, including oil and chemical spills, releases from hazardous waste sites, disasters, and marine debris. To fulfill its mission of protecting and restoring NOAA trust resources, OR&R provides scientific and technical support to prepare for and respond to environmental threats that coastal communities face; determines damage to natural resources from those releases; protects and restores marine and coastal ecosystems; and works with coastal communities to address critical local and regional coastal challenges.

- Eleven regionally based **Scientific Support Coordinators (SSC)** harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental trade-offs, best practices, resources at risk, and chemical hazard assessment to reduce risks to coastal habitats and resources. In California, the SSC is colocated with the USCG in Alameda with support staff in Long Beach, and is further supported by a NOAA Corps Regional Response Officer in Seattle.
- OR&R identifies and quantifies environmental injury caused by releases of oil and hazardous materials. Our network of **Regional Resource Coordinators** work with multidisciplinary scientific, economic, and legal teams with the goal of securing the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use. We collaborate with NMFS Restoration Center and NOAA General Council through the Damage Assessment, Remediation, and Restoration Program (DARRP) to ensure the process is efficient, legally defensible and restoration focused. The RRC serving the West Coast/Pacific region are based in Seattle, Washington and Anchorage, Alaska.
- The **Regional Preparedness Coordinator (RPC)** is strategically placed within the region to ensure that NOS and our partners are able to effectively prepare for, respond to, and recover from all hazards, including coastal disasters. The RPC serves as a liaison between NOS and its federal, state, and local disaster preparedness and emergency response partners. A key role of the RPC is to better understand the needs and opportunities within the region and to ensure partners have the tools and resources necessary to inform decision-making. The RPC has expertise across the spectrum of emergency management and provides preparedness, response, and recovery services including planning, training, exercises, response coordination, continuous improvement, and

long-term recovery. The RPC, based in San Diego, California, serves the West Coast & Pacific Islands region – California, Oregon, Washington, Hawaii, American Samoa, Guam, and Northern Mariana Islands

**National Ocean Service (NOS) - OR&R [Southwest Environmental Response Management Application](#) and [Response Tools for Oil and Chemical Spills](#)**

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Southwest Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as ship locations, weather, and ocean currents, providing an easy-to-use common operating picture for environmental responders and decision makers. In addition to ERMA, the Office of Response and Restoration (OR&R) offers a suite of [tools](#) to support emergency responders dealing with oil and chemical spills. From Environmental Sensitivity Index (ESI) maps and data which provide concise summaries of coastal resources including biological resources and sensitive shorelines to GNOME, a trajectory and fate model that predicts the route and weathering of pollutants spilled on water, and so much more, these tools provide easy-access to critical data that support a wide range of needs for emergency responders, ultimately supporting our coastal communities.

**National Ocean Service (NOS) - NOAA [Marine Debris Projects and Partnerships in California](#)**

The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) leads national and international efforts to reduce the impacts of marine debris. The program supports marine debris removal, prevention, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. The MDP California Regional Coordinator, based in Oakland, supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences. The MDP is working with the National Marine Sanctuary Foundation in partnership with California State Parks, using funds provided under the Bipartisan Infrastructure Law, to remove large marine debris from five national marine sanctuaries in Washington, California, Texas, and Louisiana, including Channel Islands National Marine Sanctuary, Channel Islands National Park, Greater Farallones National Marine Sanctuary, and Monterey Bay National Marine Sanctuary in California. Additionally, the MDP is using funds provided under the Bipartisan Infrastructure Law to work with the California Department of Parks and Recreation to improve an existing trash boom that captures debris entering the Tijuana River National Estuarine Research Reserve from Mexico. Bipartisan Infrastructure Law funding was also awarded to the City of Oakland to remove abandoned and derelict vessels and other large debris items, including appliances, furniture, and a large debris pile from the Oakland Alameda Estuary, and to the Ocean Conservancy to administer a competitive grant program for the removal of large marine debris in select states, provide funding to California fishers, find solutions to ghost gear challenges, create tools to better understand the issue of derelict fishing gear, and identify solutions to prevent future gear loss. Further, through the National Marine Sanctuary Foundation's Ocean Odyssey Marine Debris Awards for Diversity, Equity, Inclusion, Justice, and Accessibility (DEIJA), MDP provided funding to San Diego Bird Alliance to support the engagement of more than 100 residents of San Diego's underserved South Bay communities helping to remove 450 pounds of marine debris from the wetland habitat in San Diego Bay. These funds were provided to support initiatives that investigate and prevent the adverse impacts of marine debris in communities that are underserved, underrepresented, or overburdened. In partnership with the California Ocean Protection Council, the MDP is working with stakeholders to implement the California Ocean Litter Prevention Strategy: Addressing Marine Debris from Source to Sea. The Strategy was developed through a collaborative process with stakeholders and serves as a guiding document to making California, its coasts, people, and wildlife free from the impacts of marine debris. The MDP also provides support for local communities and organizations to prevent, remove, and research marine debris. One Cool Earth is working with K-12 students, in both English and Spanish, at 24 public schools in San Luis Obispo County to reduce marine debris, and the Southwest Wetlands Interpretive Association and Tijuana River National Estuarine Research Reserve are repurposing and upcycling debris items to prevent and remove marine debris from the Tijuana River watershed and Pacific Ocean. The MDP is also working with San Diego State University to



understand and compare the amount of debris entering the San Diego River from stormwater systems, unhoused communities, and illegal dumping.

**National Ocean Service (NOS) - [Phytoplankton Monitoring Network](#)**

The Phytoplankton Monitoring Network (PMN) is a nationwide community-based volunteer program of citizen scientists monitoring for the presence of organisms that can lead to Harmful Algal Bloom (HAB) formation. Volunteers serve as data collectors for marine and freshwater blooms at more than 200 coastal and inland sites in the U.S. and Caribbean. Monitoring is conducted year-round and volunteers are trained to measure salinity, air and water temperatures, and how to collect phytoplankton samples using a plankton net. Samples are then analyzed for any HAB organisms via microscopy. Data collected by PMN volunteers enhances the Nation's ability to respond to and manage the growing threat posed by HABs by collecting important data for species composition and distribution in coastal and freshwater environments and creating working relationships between volunteers and professional marine biotoxin researchers. Event monitoring can assist state and federal agencies to issue timely warnings about shellfish consumption and other public health concerns.

**National Ocean Service (NOS) - [Mussel Watch Program](#)**

The National Oceanic and Atmospheric Administration (NOAA) Mussel Watch Program (MWP) monitors the status and trends of chemical contaminants and biological stressors in the nation's coastal waters. MWP began in 1986, and is based on the periodic collection and analysis of bivalves (oysters and mussels) and sediment from a network of more than 300 monitoring sites nationwide. Contaminants monitored at each site include the EPA's Priority Pollutant List of toxic substances and a suite of chemicals of emerging concern such as flame retardants, PFAS, pharmaceuticals, and current use pesticides.

**National Ocean Service (NOS) - [Navigation Manager](#)**

OCS navigation managers are strategically located in U.S. coastal areas to provide regional support to federal and state agencies in order to assist with navigational challenges. NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in California. They help identify the navigational challenges facing marine transportation in California and provide NOAA's resources and services that promote safe and efficient navigation. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies. The Office of Coast Survey has a navigation manager in Santa Barbara to support mariners and stakeholders in California.

**National Ocean Service (NOS) - [Navigation Response Team](#)**

The Office of Coast Survey (OCS) maintains the nation's nautical charts and publications for U.S. coasts and the Great Lakes. The Office of Coast Survey's Navigation Response Branch (NRB) conducts routine and emergency hydrographic surveys; and working with the regional Navigation Managers, navigation response teams (NRT) work around-the-clock after storms to speed the reopening of ports and waterways. During emergency response, the NRTs provide time-sensitive information to the U.S. Coast Guard or port officials, and transmit data to NOAA cartographers for updating the Coast Survey's suite of navigational charts. NRT-Seattle is homeported in Seattle, WA and is able to respond within 48-72 hours.

**National Weather Service (NWS) - [National Data Buoy Center Buoys](#)**

The National Weather Service (NWS), through its National Data Buoy Center (NDBC), develops, deploys, operates, and maintains the current national data buoy network of moored and drifting weather buoys and land stations that serve all of the Nation's coastal states and territories. Within this network, 110 of the buoys and 51 of the land stations are maintained directly by NDBC. Located at NASA's Stennis Space Center in Mississippi, supports weather and marine warning and forecast services in real time by providing deep ocean and coastal meteorological and oceanographic observations. These data provide valuable information used by NWS supercomputers to produce computer-generated model forecasts



of the atmosphere and climate. NDBC manages the Volunteer Observing Ship program to acquire additional meteorological and oceanographic observations supporting NWS mission requirements. NDBC also supports operational and research programs of NOAA and other national and international organizations. NDBC also operates NOAA's network of Deep-ocean Assessment and Reporting of Tsunami (DART®) stations, for the early detection and real-time reporting of tsunamis in the open ocean. Data from the DART®s are used by the National Weather Service Tsunami Warning Centers in Alaska and Hawaii to provide tsunami forecasts, warnings, and information. NDBC also operates the Tropical Atmosphere Ocean Array of buoys in the tropical Pacific. The TAO/TRITON array consists of approximately 70 moorings in the Tropical Pacific Ocean, telemetering oceanographic and meteorological data to shore in real-time via the Argos satellite system. The array is a major component of the El Niño/Southern Oscillation (ENSO) Observing System, the Global Climate Observing System (GCOS) and the Global Ocean Observing System (GOOS). These data provide valuable information used by NWS supercomputers to produce computer generated model forecasts of the atmosphere, and climate.

**NOAA Office of Education - [Science on a Sphere](#)**- See [Page 2](#) for details.

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### **Statewide**

#### **National Ocean Service (NOS) - [California Bay Watershed Education and Training Program](#)**

NOAA Bay Watershed Education and Training (B-WET) program is a competitive grants program that provides funding for locally relevant environmental education projects for K-12 audiences. The California B-WET program is managed by NOAA's Office of National Marine Sanctuaries on behalf of NOAA's Office of Education. The California B-WET program currently serves the counties of Alameda, Contra Costa, Del Norte, Fresno, Humboldt, Lake, Kern, Kings, Madera, Marin, Mendocino, Merced, Monterey, Napa, Sacramento, San Benito, San Francisco, San Luis Obispo, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Trinity, Tulare, Ventura. The California B-WET program recognizes that knowledge and commitment built from firsthand experience, especially in the context of one's community and culture, is essential for achieving environmental stewardship. California B-WET regional grant competitions are responsive to local education and environmental priorities. Please see the funding opportunities for specifics.

#### **National Marine Fisheries Service (NMFS) - [West Coast Region](#)**

NOAA Fisheries is dedicated to protecting and preserving our nation's living marine resources through scientific research, fisheries management, enforcement, and habitat conservation. The West Coast Region of NOAA Fisheries administers fisheries programs along the coasts of Washington, Oregon and California; and in the vast inland habitats of Washington, Oregon, California and Idaho. We work to conserve, protect, and manage salmon and marine mammals under the Endangered Species Act and Marine Mammal Protection Act, and sustainably manage West Coast fisheries as guided by the Magnuson-Stevens Fisheries Conservation Act. To achieve this mission and advance sound stewardship of these resources, we work closely with tribes, local, state and federal agencies, our stakeholders, and partners to find science-based solutions to complex ecological issues.

#### **National Marine Fisheries Service (NMFS) – [Aquaculture Coordinators](#)**

The aquaculture coordinators lead regional efforts to foster sustainable aquaculture across the region. The West Coast has a vibrant commercial marine aquaculture industry supported by a world class research and technology sector. These positions support permit streamlining, aquaculture outreach and education, and serve as liaisons with state and local agencies, tribes, non-government organizations, academia, and industry.

### **National Marine Fisheries Service (NMFS) - [Office of Law Enforcement](#)**

NOAA's Office of Law Enforcement is the only conservation enforcement program (Federal or State) that is exclusively dedicated to Federal fisheries and marine resource enforcement. Its mission is to protect global marine resources by enforcing domestic laws and international treaties and obligations dedicated to protecting wildlife and their natural habitat. Our special agents and enforcement officers ensure compliance with these laws and take enforcement action if there are violations. Additionally, the Cooperative Enforcement Program allows NOAA the ability to leverage the resources and assistance of 27 coast states and U.S. territorial marine conservation law enforcement agencies in direct support of the Federal enforcement mission.

Effective fisheries law enforcement is critical to creating a level playing field for U.S. fishermen and enabling sustainable fisheries to support vibrant coastal communities. The Office of Law Enforcement's West Coast Division is headquartered in Seattle, Wash., with California field offices in Alameda, Long Beach, San Diego, Monterey, Sacramento, Santa Rosa and Arcata.

### **National Marine Fisheries Service (NMFS) - [Restoration Center](#)**

The [NOAA Restoration Center](#), within the [Office of Habitat Conservation](#), works with partners across the nation to restore habitat to sustain fisheries, recover protected species, and maintain resilient coastal ecosystems and communities. We have over 30 years conducting habitat restoration through competitive funding opportunities and technical assistance. We also work to reverse habitat damage from disasters like oil spills, ship groundings, and severe storms. In addition, the Restoration Center, along with NMFS Habitat Protection and the West Coast Regional Office, are working on implementing the Russian River Watershed Habitat Focus Area. Working with four other NOAA Line offices (National Weather Service, National Ocean Service, Office of Research and Program Planning and Integration) we are conserving habitat in the Russian River at a watershed scale. See the interactive [Restoration Atlas](#) to find habitat restoration projects near you. Site visits to see habitat projects may be available in your state, please inquire if interested.

In addition, the Office of Habitat Conservation is responsible for executing an unprecedented \$1.4 billion in funding under [Bipartisan Infrastructure Law and Inflation Reduction Act for habitat restoration and fish passage](#). We are working with our partners to do this through our expert technical assistance and four funding competitions: Fish Passage, Tribal Fish Passage, Transformational Habitat Restoration, and Habitat Restoration for Tribes and Underserved Communities. We have funded 214 awards totaling \$985M in rounds one and two with more to come in round 3. We are funding work all over the country, [explore them on our interactive map](#).

### **National Marine Fisheries Service (NMFS) - [Southwest Fisheries Science Center](#)**

The Southwest Fisheries Science Center (SWFSC) is the research arm of NOAA's National Marine Fisheries Service (NOAA Fisheries) in the Southwest Region. Center scientists conduct marine biological, economic and oceanographic research, observations on living marine resources and their environment throughout the Pacific Ocean and the Southern Ocean off Antarctica. This scientific information supports the sustainability of the region's fisheries and fishing communities and the recovery and conservation of protected species. Guided by the Magnuson-Stevens Fisheries Conservation Act, Endangered Species Act and Marine Mammal Protection Act, research is conducted in support of several regional and international fisheries councils, commissions, conventions and agreements. The Science Center is based in La Jolla with laboratories located in Santa Cruz and Monterey, a field office in Arcata, a field station at Granite Canyon, and two field camps on the Antarctic Peninsula. The SWFSC engages in educational and public engagement partnerships, including with the Exploratorium (San Francisco), Seymour Science Center (UC Santa Cruz), Monterey Bay National Marine Sanctuary Exploration Center (Santa Cruz) and Ocean Discovery Institute (San Diego).

**National Marine Fisheries Service (NMFS), National Ocean Service (NOS), and NOAA General Counsel - [Damage Assessment, Remediation, and Restoration Program](#)**

NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) assesses and restores habitat, fisheries, protected species and recreational uses that have been harmed by oil spills, chemical releases, and ship groundings. Working with federal, state, and tribal entities, and responsible parties, we have recovered funding from responsible parties for restoration of critical habitats, fisheries, protected species, and recreational uses nationwide. These projects promote recovery of the ecosystem and provide economic benefits from tourism, recreation, green jobs, coastal resiliency, property values, and quality of life. California is a co-trustee with NOAA for assessment and restoration after pollution incidents in California. For more information about our work in California, visit: [DARRP in Your State](#) (and use the top menu to navigate to "California") and this [interactive map](#).

**National Ocean Service (NOS) – [Regional Geodetic Advisor](#)**

The Regional Geodetic Advisor is a National Ocean Service (NOS) employee that resides in a region and serves as a liaison between the National Geodetic Survey (NGS) and its public, academic and private sector constituents within their assigned region. NGS has a Regional Geodetic Advisor stationed in La Jolla, CA serving the Pacific Southwest region – California and Nevada. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

**National Weather Service (NWS) - [NEXRAD \(WSR-88D\) Systems](#)**

NEXRAD is used to warn the people of the United States about dangerous weather and its location. This radar technology allows meteorologists to warn the public to take shelter with more notice than ever before. The NEXRAD network provides significant improvements in severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal. NEXRAD radar has a range of up to 250 nautical miles, and can provide information about wind speed and direction, as well as the location, size, and shape of precipitation. There are 159 operational NEXRAD radar systems deployed throughout the United States and overseas, of which 10 are in California.

**National Weather Service (NWS) - [Automated Surface Observing Systems Stations](#)**

The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations while supporting the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations 24/7/365 observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, thunderstorms, and fog. There are 69 ASOS stations in California.

**National Weather Service (NWS) - [Cooperative Observer Program Sites](#)**

The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS.

The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars' worth of decisions. For example, the energy sector uses COOP data to calculate the Heating and Cooling Degree Days which are used to determine individuals' energy bills monthly. There are 380 COOP sites in California.

**National Weather Service (NWS) - [Incident Meteorologists](#)**

The NWS, as mandated by Congress, provides fire weather forecast products and services to the fire and land management community for the protection of life and property, promotion of firefighter safety, and stewardship of America's public wildlands. Since 1928, this effort has included providing critical on-scene support to wildfire managers via specially-trained NWS forecasters called Incident Meteorologists (IMETs). When a fire reaches a large enough size, IMETs are rapidly deployed to the incident and set-up a mobile weather center to provide constant weather updates and forecast briefings to the fire incident commanders. IMETs are very important members of the firefighting team, as changes in the fires are largely due to changes in the weather.

**National Weather Service (NWS) - [NOAA Weather Radio All Hazards Transmitters](#)**

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural, environmental and public safety. Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 35 NWR transmitters in California.

**Office of Oceanic and Atmospheric Research (OAR) - [MOA California Department of Water Resources](#)**

NOAA is in the midst of a new 5-year MOA with the California Department of Water Resources that provides state-of-the-art observations, display systems, and decision support tools to address water resource and flood protection issues. The project utilizes an existing network of GPS receivers to retrieve water vapor measurements at 37 sites across the state. Because the amount of rainfall absorbed by the ground can be the deciding factor for flooding, soil measurement systems are being deployed at 43 sites across the state. Ten low-powered S-Band radars (designed by CIRES and the Physical Sciences Laboratory specifically for this project) deployed at key reservoirs around the state will help detect snow level. Four coastal atmospheric river observatories will measure the conditions associated with land-falling atmospheric rivers; a key component of winter storms that are responsible for flooding and can sometimes lead to dangerous debris flows.

**Office of Oceanic and Atmospheric Research (OAR) - [California Sea Grant College Program](#)**

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. The California Sea Grant College Program, based at the University of California's Scripps Institution of Oceanography in La Jolla, annually funds 60 concurrent research projects, which are peer-reviewed and competitively selected to address a wide range of problems and opportunities. The program supports an additional 25 outreach and applied research projects through its Extension Specialists. Current projects focus on healthy marine ecosystems, sustainable use of coastal and marine resources, sustainable coastal community development, fisheries and fisheries habitat, seafood safety and quality, coastal water quality, aquatic nuisance species, wetland and salmonid habitat restoration, aquaculture, new technologies, marine reserves, and education, training and

public information. Administrative offices are located in La Jolla and Los Angeles. Get involved with Sea Grant through state and national opportunities like the John A. Knauss Marine Policy Fellowship program at [seagrant.noaa.gov](https://seagrant.noaa.gov).

**Office of Oceanic and Atmospheric Research (OAR) - [University of Southern California Sea Grant Program](#)**

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. The Southern California Sea Grant Program, based at the University of Southern California in Los Angeles, concentrates on "The Urban Ocean" -- issues arising out of the necessity of managing people and natural resources in an intensely urban and developed coastline. USC Sea Grant focuses its research, outreach and education programs on the most pressing issues along the urban coastline, including: water quality impacts from land-based inputs into the coastal ocean, harmful algal blooms, invasive species, marine protected areas, seafood safety, ports and harbors, and climate change planning and adaptation. In addition, K-12 education programs increase science literacy among urban students and encourage teachers to adopt science education curricula. Many California institutions receive research funding through the Sea Grant College Program, including the University of Southern California and other private institutions, and University of California and California State University campuses. Any academic institution may apply for funding for projects addressing issues pertaining to the "urban ocean." Get involved with Sea Grant through state and national opportunities like the John A. Knauss Marine Policy Fellowship program at [seagrant.noaa.gov](https://seagrant.noaa.gov).

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**[Bipartisan Infrastructure Law \(BIL\) / Inflation Reduction Act \(IRA\) Projects](#)**

The National Oceanic and Atmospheric Administration (NOAA) was entrusted with billions of supplemental federal funding dollars with passage of the Bipartisan Infrastructure Law on November 15, 2021 and the Inflation Reduction Act on August 16, 2022. This historic infrastructure funding has been invested in communities across the nation to build resilience in the face of climate change. NOAA distributed funding to communities, tribal, state and local governments, higher education programs, businesses, non-profit organizations, and facilities in need. NOAA funded billions of dollars in grants and cooperative agreements across the country to fund projects that enhance climate resilience, restore coastal and marine habitats, improve safety, and create jobs. For an interactive map of NOAA BIL and IRA investments in your state, visit <https://www.noaa.gov/bil-ira-awards-explorer>.

**[BIL](#)**

**California Department of Fish and Wildlife's Fisheries Restoration Grant Program (FRGP), \$3,250,000**

The California Department of Fish and Wildlife and Fisheries Restoration Grant Program will fund large-scale process-based habitat restoration projects for salmon and steelhead throughout the state. The projects aim to improve the spawning success of adult salmon and steelhead, and increase the health and survival of all life stages of salmon and steelhead.

**Execution and Expansion of Eel River Pikeminnow Management Plan, \$150,000**

The Wiyot Tribe will build tribal capacity to conduct fisheries research, monitoring, and future restoration projects along the Eel River. The project outcomes are to reestablish the Tribe's role as stewards of their ancestral territory by engaging with restoration partners and developing future restoration projects.

**Rowdy and Dominie Creek Fish Passage Improvement Project, \$1,963,950**

The Tolowa Dee-ni Nation will remove and replace the Rowdy Creek Fish Hatchery diversion weir to restore fish passage to 13.1 stream miles, the highest priority barrier for removal on the state's Fish Passage Priorities List.



**The Argo Program - Global Observations for Understanding and Prediction of Ocean and Climate Variability, \$519,449**

Scripps Institution of Oceanography (SIO) is one of the 5 members of the U.S. ArgoFloat Consortium, responsible for sustaining, improving, and expanding the U.S. component of the international Argo Program (<http://www.argo.ucsd.edu>), a global array of autonomous profiling floats. In the next two years, SIO Argo proposes to build and deploy 19 core SIO SOLO-II Argo floats, supplementing the primary SIO Argo NOAA 5 year award with the additional equipment for the extra floats. These floats will contribute to the overall SIO deployment plan, enhancing global coverage.

**Acquisition of a Drift-Corrected Seafloor Pressure Sensor for the MOVE Array - BIL, \$119,449**

The meridional overturning circulation in the Atlantic Ocean is one of the major oceanic climate drivers, with demonstrated impacts and control on climate in the northern hemisphere and globally. Variations in this circulation and the associated heat transport, both due to natural and man-made effects, are of utmost importance but have been impossible to observe directly until recently. The primary objective of this project is to continue the ongoing measurements, thereby lengthening the observational record of the meridional overturning circulation. The data collected by the survey are made freely available through the OceanSITES data portals.

**California Department of Fish and Wildlife's Fisheries Restoration Grant Program (FRGP), \$4,850,000**

The California Department of Fish and Wildlife and Fisheries Restoration Grant Program will fund large-scale process-based habitat restoration projects for salmon and steelhead throughout the state. The projects aim to improve the spawning success of adult salmon and steelhead, and increase the health and survival of all life stages of salmon and steelhead.

**High Priority Barrier Removal for California North Coast Salmon, \$6,222,830**

This project will support the removal of nine barriers on the Eel, Noyo, Navarro, and Big Rivers by constructing seven projects and designing two additional projects. The work will benefit endangered Central California Coast coho salmon, a NOAA Species in the Spotlight, as well as threatened Southern Oregon/Northern California Coast coho, California Coastal Chinook, and Northern California steelhead.

**Engaging Community and Reconnecting Anadromy in Ótakim Séwi (Big Chico Creek, Sacramento River Watershed), \$9,949,441**

This project will plan and design the removal of a rockfall barrier and obsolete fishway in Big Chico Creek. The project will reconnect access to more than 8 miles of high-quality habitat for Central Valley Spring Run Chinook and Central Valley steelhead, including cold water habitat that is critical for climate resilience.

**Lower Jalama Creek Fish Passage Implementation Project, \$2,076,247**

This project will address two barriers on Jalama Creek that are high priority for Southern California steelhead. They will completely remove a weir at one site. At a second site, they will build a roughened channel to address passage at Jalama Road bridge. The effort will open access to more than 12 miles of habitat.

**Santa Margarita River Bridge Replacement and Fish Passage Project, California, \$3,257,851**

This project will remove and replace a bridge on the Santa Margarita River. The new, 575-foot bridge will be sized to accommodate a 500-year flood event, increasing community climate resilience. The new bridge will also provide access to 12 miles of upstream habitat for endangered Southern California steelhead.

**Salmonid Passage Remediation and Tribal Capacity Building on the Eel River, California, \$1,270,299**

This project will support building tribal capacity to engage in the decommissioning process and dam removal at the Potter Valley Project on the Eel River. The river is a historic tribal source of livelihood, sustenance, and connection to the

landscape. The effort will improve tribal participation in the decommissioning process and ensure outcomes are aligned with tribal objectives.

**Restoring Rearing Habitat for Juvenile Coho Salmon, Smith River, California, \$5,471,614**

This project will restore habitat in the Smith River watershed to support one of the largest runs of salmon and steelhead in California. This work will also help improve the climate resilience of local communities. For example, an existing bridge will be relocated and replaced with a new structure that will withstand stronger storms and maintain access for emergency services, helping protect Del Norte County communities against future flood and wildfire risk.

**Restoring Kelp Forest Habitat in Greater Farallones National Marine Sanctuary, \$4,925,173**

This project will restore bull kelp at four locations along the Sonoma County coastline in Greater Farallones National Marine Sanctuary. They will restore nearly 47 acres of kelp forest by planting bull kelp and removing purple sea urchins to protect new kelp growth and restore balance to the ecosystem. Bull kelp is a foundational species, but has been in serious decline over the past decade. Restoring this habitat will help build ecological and community resilience within the sanctuary and along the northern California coast.

**Priority Coho Salmon and Steelhead Watershed Restoration, Northern Santa Cruz Mountains, \$5,160,792**

This project will advance 18 projects to restore estuary, stream, and floodplain habitat in two high-priority watersheds in San Mateo County. This work on Pescadero and San Gregorio Creeks will benefit endangered Central California Coast coho salmon, a NOAA Species in the Spotlight. The work will also reduce flooding in a rural community and improve community access to a clean, reliable water supply.

**Mendocino Coast Transformational Habitat Restoration for Coho Salmon Recovery, \$8,349,909**

This project will restore high-priority floodplain and stream habitat on three rivers in coastal Mendocino County. This work will significantly benefit endangered Central California Coast coho salmon, a NOAA Species in the Spotlight, and other threatened species, building on more than 10 years of previous efforts. It will also benefit downstream communities through reduced flooding.

**Red Cap Creek Floodplain Restoration Project, \$519,489**

This project will partner with the Karuk Tribe to restore habitat in Red Cap Creek, a tributary of the Klamath River located on Karuk Tribal ancestral lands. They will implement high-priority restoration needed for the recovery of coho salmon, a species central to the diet and culture of local indigenous communities. Hands-on opportunities for young people, such as internships, will help engage the next generation in environmental stewardship.

**Salmon River Tributary Salmonid Habitat Enhancement Project, \$457,230**

This project will advance habitat restoration planning efforts in three tributaries of the South Fork and Mainstem Salmon River in the Klamath Basin, near to the remote rural communities of Sawyers Bar, Forks of Salmon, Cecilville, and Somes Bar, California. The restoration sites are located in the ancestral territory of the Karuk Tribe, who will provide direct input throughout all levels of the project.

**Baldwin Hills Parklands Community Connection: Habitat Restoration/Climate Resiliency, \$928,484**

This project will engage community members in South Los Angeles in habitat restoration through nature hikes, field trips, workshops, and hands-on restoration activities. They will restore habitat at two parks in the Baldwin Hills—Baldwin Hills Scenic Overlook State Park and Kenneth Hahn State Recreation Area—that are the closest no-cost, open space recreational areas available to local residents.

**Implementation of the Infrastructure Investments and Jobs Act: Improving and Enhancing the Southern California Coastal Ocean Observing System, \$1,169,000**

We propose to grow and enhance components of our four thematic focus areas: 1) Marine Operations, 2) Coastal Hazards, 3) Ecosystems, Fisheries, and Water Quality, and 4) Climate Variability and Change. While the impacts of climate change cut across the first three thematic areas in profound ways, Southern California Coastal Ocean Observing System (SCCOOS) has prioritized its treatment as a unique focus area in keeping with legacy and in order to emphasize the societal gravitas associated with sustaining climate-quality datasets of broad intrinsic value. Significant observing system enhancements and their contributing focus area in this proposal include: 1) Updating aging infrastructure in support of the California Surface Current Mapping Network (Marine Operations, Coastal Hazards, and Ecosystems, Fisheries, and Water Quality). 2) Upgrading the operational California Underwater Glider Network with next-generation gliders and BGC sensors.

**Habitat Restoration: Assessment and Project Integration, \$300,000**

This funding will build the capacity of the Tijuana River National Estuarine Research Reserve, supported through a partnership between the CA Department of Parks and Recreation and the Southwest Wetlands Interpretive Association (SWIA), to plan for and implement habitat restoration and conservation projects proposed through funding opportunities connected to the Bipartisan Infrastructure Law. Specifically, Tijuana River National Estuarine Research Reserve will use these funds to hire external contracts as well as funding for SWIA staff. The initial assessment and scoping work will be done by CONCUR, a consulting firm led by Dr. Scott McCreary, who was instrumental in the establishment of TRNERR over 40 years ago.

**Elkhorn Slough NERR Capacity Building for North Marsh Restoration, \$300,000**

This funding will build the capacity of the Elkhorn Slough National Estuarine Research Reserve, supported through a partnership between the CA Department of Fish and Wildlife and the State Coastal Conservancy, to plan for and implement habitat restoration and conservation projects proposed through funding opportunities connected to the Bipartisan Infrastructure Law. Specifically, Elkhorn Slough National Estuarine Research Reserve will use these funds to build capacity within the Elkhorn Slough NERR and their land management partners to support the program's ability to plan for and implement habitat restoration and conservation projects. The NERR staff will conduct outreach and stakeholder engagement with key stakeholders, such as landowners and community members.

**NERRS Infrastructure Capacity Building Funds, \$300,000**

This funding will build the capacity of the San Francisco Bay National Estuarine Research Reserve within San Francisco State University to plan for and implement habitat restoration and conservation projects proposed through funding opportunities connected to the Bipartisan Infrastructure Law. Specifically, San Francisco Bay National Estuarine Research Reserve will use these funds to provide professional development opportunities for their staff, hire a Coastal Resilience Specialist, create pre- and post- restoration monitoring plans, conduct pre- and post- restoration monitoring, and host project-specific engagement and educational activities to support stakeholder capacity.

**Application for Assistance for the California Coastal Zone Management Program's Infrastructure, Investment and Jobs Act (IIJA) Cooperative Agreement Non-Competitive Capacity Building grant, \$450,000**

This funding will build the capacity of the state of California's federally-approved coastal management program to plan for and implement habitat restoration and conservation projects proposed through funding opportunities connected to the Bipartisan Infrastructure Law. Specifically, the California Coastal Commission, the San Francisco Bay Conservation and Development Commission, and the California State Coastal Conservancy will use these funds to build the California Coastal Management Program's staff capacity to learn and coordinate together on key issues impacting all three agency's work through the development and implementation of training.

**Enhancing climate resilience through coastal ecosystem restoration in Elkhorn Slough, \$2,249,711**

This shovel-ready project will restore three iconic coastal habitats within the Elkhorn Slough Research Reserve, significantly increasing the extent of tidal marsh vegetation, native grassland, and oyster habitat. The funding will allow research reserve staff and partners to invest heavily in restoration, monitoring, and stakeholder engagement at the reserve's Hester Marsh restoration site, adding value to existing investments. This project will significantly increase tidal marsh vegetation, native dominated grassland, and native oyster habitat, as well as engage a number of community groups, including local Native American tribal members and the broader coastal management community.

**Optimizing Interception Technology through Upgrades, Maintenance, and Outreach at Tijuana River NERR, \$268,881**

The California Department of Parks and Recreation and project partners will install innovative debris interception technology at the Goat Canyon Sediment Basins to better capture marine debris entering the Tijuana River National Estuarine Research Reserve from Mexico.

**Low-Cost, Low-Power Sensor Nodes for Monitoring Air Quality Impacted by Wildfire Smoke, \$847**

The impact of wildfires on air quality in the surrounding hundreds of miles has been discussed since the '70s. There have been a number of studies investigating the severity of the impact of wildfire smoke on the health of people in affected areas that have shown that hundreds of thousands of people die as a consequence of smoke-tainted air. Current available air quality assessment methods are not sufficient to properly warn people of wildfire emission tainted air. Additionally, there are certain areas where the density of air quality monitoring stations is not high enough and models are used to predict air quality.

**Low SWaP, UxS-Mounted System for In-Situ Monitoring of Harmful Algal Blooms, \$142,000**

The brevetoxins (PbTx) produced by *Karenia brevis* cause harmful algal blooms (HAB) or red tide in seawater. Currently, the only available ways of detecting PbTx are laboratory tests such as enzyme-linked immunosorbent assays, which are expensive and slow, and require complex instrumentation and multiple processing steps. We propose to incorporate our PbTx probes into a miniaturized fluid delivery system with an in-situ readout unit, and leverage our experience in optoelectronic design and uncrewed system (UxS) integration to merge a low size, weight and power system onto a COTS UxS for the real-time, in-situ detection of HABs.

**HydroForecast Seasonal: Improving operational water supply forecasts to enable risk-based decisions and planning, \$174,990**

Climate change causes a breakdown in traditional approaches that use the past to predict future streamflow on a seasonal (10 day to one year) horizon. Water managers planning on this seasonal timescale need help advancing models, tools, and transforming model results into actionable information for making decisions. In this Phase I effort, Upstream Tech proposes to expand its HydroForecast Seasonal prototype by achieving three technical objectives: 1) improve methodology and data used for generating weather forecast inputs, 2) integrate a new weather forecasting source to improve accuracy at longer lead times, and 3) benchmark performance in critical basins that benefit customers and society.

**In-Situ Space Weather Analysis, \$12,424**

Orbotic Systems is developing an instrument called WIND (Wind Ion Neutral Density). The WIND instrument builds on the earlier success of the space-qualified WINCS instrument (Wind Ion Neutral Composition Suite), flown on the following missions: GPIM, STPSat-3, SENSE (CubeSat), Politech.1 (CubeSat), CADRE (CubeSat). The goal is to prove the feasibility of generating in-situ, global, ionospheric thermospheric neutral density and wind ion data on a near real-time basis.

**Commercially Scalable End-Of-Life Solutions for Agriculture Field Plastic Films used in Watersheds draining to National Marine Sanctuaries, \$2,732,837**

The California Sea Grant was awarded \$2,732,838 to develop technologies and best management practices that will maximize the removal of polyethylene mulch film and make it an attractive feedstock for recyclers. This project aims to involve historically excluded communities in California in creating innovative solutions to address plastic pollution and marine debris resulting in a collaborative effort to transform growing techniques and processes that work with industry to prevent marine debris from entering the Monterey Bay National Marine Sanctuary, Channel Islands National Marine Sanctuary, and the proposed Chumash Heritage National Marine Sanctuary.

**Expanding the Argo Array to Improve Ocean Observing, \$455,934**

The 5-institution U.S. Argo Float Consortium proposes to leverage Bipartisan Infrastructure Law funding to sustain, improve, and expand the U.S. component of the international Argo Program, a global array of autonomous profiling floats. As the largest partner in the International Argo Program, the U.S. Float Consortium plays leadership roles that include technology improvement in profiling floats, sensor testing and validation, production and commercial acquisition of floats, deployment planning and logistics, float communications, data management and distribution, scientific data analysis, international coordination, and education and outreach.

**California Department of Fish and Wildlife Fisheries Restoration Grant Program (FRGP), \$4,600,000**

The California Department of Fish and Wildlife and Fisheries Restoration Grant Program will fund large-scale process-based habitat restoration projects for salmon and steelhead throughout the state. The projects aim to improve the spawning success of adult salmon and steelhead, and increase the health and survival of all life stages of salmon and steelhead.

**Napa River Watershed Fish Passage Restoration Project, \$6,676,482**

This project will work towards improving fish passage at 7 sites in Napa County, collectively reopening 15 miles of river habitat for threatened Central California Coast steelhead. They will also develop an assessment document for the remaining dozens of barriers in the county, and begin design and permitting for the three highest ranking barriers from that assessment.

**Sunol Valley Fish Passage Project, \$4,281,494**

This project will address the last major fish passage barrier in Alameda Creek, opening nearly 22 miles of habitat for threatened Central California Coast steelhead and other migratory fish. Currently, a concrete erosion control structure blocks fish passage on the creek. This project will remove the barrier, working in conjunction with an already planned effort to move a utility pipeline.

**Pacific Coast Ocean Restoration Initiative (PCOR): Transformational Habitat Restoration for Subtidal Rocky Reef Ecosystems, \$18,000,000**

This project will bring together a diverse array of partners to launch the Pacific Coast Ocean Restoration Initiative, which will catalyze a large-scale restoration of rocky reef and kelp forest habitats in California. They will advance efforts to restore habitats important to the recovery of endangered white abalone. They will also pilot a workforce program to support rocky reef ecosystem restoration projects and increase the capacity of historically underserved communities.

**The String of Pearls: Restoring Landscape Resilience for Sacramento River Salmon, \$10,000,000**

This project will work with partners to implement landscape-scale floodplain habitat projects in the Sacramento River watershed. These projects will benefit endangered Sacramento River Winter-run Chinook salmon, which hold cultural significance for local tribes. By creating floodplain habitat and increasing the frequency and duration of floodplain inundation, these projects will also help address land subsidence caused by severe drought in the Sacramento Valley.



**Rancho Cañada Floodplain Restoration Project, \$6,000,000**

The project is focused on restoring a 1-mile section of the Carmel River so that natural geomorphic processes will reconnect the river with historic floodplain habitat and create a mosaic of self-sustaining riparian habitat types and instream complexity to benefit juvenile and adult federally threatened South-Central California Coast Steelhead (*Oncorhynchus mykiss*, SCCC steelhead) and other aquatic and riparian species. The project will construct approximately 40 acres of connected floodplains.

**Elk River Estuary Restoration: Final Design, Permitting, and Construction, \$6,000,000**

The proposed work will restore hydrologic and ecological functions of the Elk River, which has been degraded by timber harvest and other land uses. This work is part of the Elk River Stewardship Program, which aims to restore beneficial uses of the river, including municipal and agricultural water supplies, water contact recreation, cold freshwater habitat, rare, threatened, and endangered species, migration of aquatic organisms, spawning, reproduction, and early development. Juvenile salmonid rearing habitat is a key limiting factor for sensitive salmonid species in the Elk River, and the early emigrant life history, which benefits from lower mainstem and stream-estuary ecotone non-natal rearing habitat, is crucial for population viability. It will also redistribute flood flows and sediment deposition in the project reach, directing flows away from sensitive infrastructure and valuable agricultural lands and into areas where they will create critical habitat and assist with marsh accretion to keep pace with sea level rise.

**CAPACITY BUILDING FOR CHUMASH TRIBAL ENGAGEMENT IN THE WEST COAST OCEAN ALLIANCE AND THE PROPOSED CHUMASH HERITAGE NATIONAL MARINE SANCTUARY, \$266,473**

The ancestors of the autochthonous people—now known as Chumash—were able to sustain their customs, cultural beliefs, and maritime societies for thirteen thousand years. The diverse Chumash Tribes have inhabited the traditional lands and watersheds of the Santa Ynez and Santa Clara River watersheds and the marine system that includes the northern Channel Islands. The only federally recognized Chumash Tribe is the Santa Ynez Band of Chumash Mission Indians (SYBDMI). The project's goal is to strengthen the institutional capacity and capability of the SYBDMI so that the Tribe can cultivate a collaborative relationship and partnership with the members of the West Coast Ocean Alliance (WCOA). The proposed project will provide resources to hire a SYBDMI liaison to engage with the WCOA Director and Staff, the Tribal Caucus, and federal and state partners who are members of the alliance.

**Oakland Estuary Marine Debris Removal and Regional Stewardship Project, \$3,164,649**

The City of Oakland will work with community partners to remove abandoned and derelict vessels and promote prevention efforts in the Oakland Estuary.

**Advancing Water Purification Solutions for a Resilient America, \$174,769**

Water reuse is gaining support as a local, resilient solution. Pure Spun Innovations (PSI) is proposing a new methodology and technology to address the problem of water contamination by Per- and polyfluoroalkyl substances (PFAS) via an efficient and effective phase-change system. PSI's novel phase-change water/fluid purification technology uses a NASA-validated vapor compression distillation (VCD) unit, uniquely coupled with parallel concentric rotary-boilers/condensers. VCD systems are scalable from portable hand-carried purifiers up to industrial sized configurations to fulfill a critical unmet need in wastewater PFAS removal. The PSI's system will substantially reduce or eliminate PFAS into the environment through wastewater effluent.

**Feasibility Study for GNSS Radio Occultation from an Integrated Sensing and Communications Platform, \$84,270**

This AnySignal solution will optimize coverage, revisit rate, data timeliness, and volume in Earth observation satellite systems, focusing on radio occultation data. Our novel hardware will be deployed on large satellites (200kg+), merging communication and RF sensing. This Phase I effort will yield a feasibility study for GNSS-RO data capture, including a data processing architecture and cost analysis. Iris enhances NOAA's weather products and has commercial potential in

sectors like weather forecasting and agriculture, with a near-term market estimated at \$200M and long-term potential exceeding \$300B.

**In-Situ Space Weather Analysis, \$26,250**

Orbotic Systems aims to enhance the WIND (Wind Ion Neutral Density) instrument, capable of generating real-time global ionospheric-thermospheric neutral density and wind ion data.

Recent discussions with NOAA's Space Weather Prediction Center highlight the need for real-time density data in the 200–700 km range. The WIND instrument will improve spacecraft orbit analysis, mitigate space debris risks, and support various sectors, including aerospace and academia.

**Cultivating a trinational marine debris leadership coalition to find solutions to complex cross-border land-based marine debris, \$299,996**

This project aims to create a Marine Debris Leadership Coalition of cross-boundary (border, sector) leaders who will initiate lasting and transformative solutions to cross border pollution. This goal will be met by 1. Identifying and recruiting coalition members (2023 MDLA participants and new contacts) and include assessing and beginning to address barriers to participation, and building connections with interested tribes; and 2. Supporting connection, knowledge transfer and continuity within the coalition, including developing curriculum and providing opportunities for in-person leadership training and technical assistance, maintaining continuity and momentum between in- person convenings, and developing and implementing a communications strategy for dissemination of outcomes.

**Detection and Conversion of Marine Debris to Make High Value Products as a Tool to Protect Coastal Communities, \$1,999,255**

This project will transform ocean-sourced plastics into eco-friendly dyes for fashion and enzymes for environmentally friendly laundry detergents. It will also develop a peptide-based solution to survey marine microplastics, addressing foundational chemistry questions about their distribution and movement in the water column. By identifying selective binders for microplastics, we aim to quantify pollution levels and inform regulatory policymaking. Additionally, we will explore social barriers to adopting these technologies and conduct educational outreach to raise public awareness.

**Differential community needs and uses of fire weather and smoke information, \$1,420,000**

This project will study community needs and uses of fire weather and smoke information to inform the response to wildfires and evacuation decisions. The research will expand on existing theories and approaches to explore perceptions of wildfire behavior among individuals, and smoke predictions for communities occupying wildfire-prone landscapes in the United States. The focus will be on regions with recent incidences of extreme fire weather-producing or large wildfire events, with study sites in California, OR, Colorado, and Tennessee. Three steps will be utilized during the project: interview case studies, surveys, and agent-based models to better understand and inform resident wildfire response.

**Incorporating Principles of Environmental Justice into Forecast Informed Reservoir Operations, a Climate and Flood Adaptation Strategy, \$474,343**

Under Forecast Informed Reservoir Operations (FIRO), improved forecasts can provide reservoir operators greater flexibility. With sufficient forecast skill, water can be strategically pre-released ahead of storms, reducing flood risk and allowing operators to store more water throughout the wet season. The U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC) is currently screening sites for FIRO viability assessments to expand FIRO across the country.

**High-Impact and Large Marine Debris Removal throughout the National Marine Sanctuary System, \$14,999,292**

The National Marine Sanctuary Foundation is leading a multi-site project to remove large marine debris and foster partnerships within the National Marine Sanctuary System that will benefit coastal and marine habitats and communities throughout the nation.

**CeNCOOS Infrastructure Investment, \$1,169,000**

The four objectives of this project are: 1. High frequency radar: Recapitalize aging high frequency radar equipment and systems in support of sea surface current data for predicting ocean weather and climate variability and change, and supporting safe and efficient transportation and commerce; 2. Gliders: Recapitalize aging glider systems and improve access to biogeochemical data. predicting ocean weather and climate variability and change and healthy ecosystems; 3. Coastal Obs. Network: Recapitalize shore station sensor, logging and telecommunications systems including for supporting health ecosystems and water quality, as well as preparedness and risk reduction for coastal communities; 4. Animal telemetry: Procure and use animal tags and telemetry equipment in support of needs for National Marine Sanctuaries, fisheries and related needs for supporting healthy ecosystems and predicting ocean weather and its impacts.

**Regional Ocean Partnership Funding To Support the Work of the West Coast Ocean Alliance, \$3,926,120**

The West Coast Ocean Alliance will use these funds to develop and begin implementation of a five-year strategic plan, coordinate and enhance tribal engagement in the West Coast Ocean Alliance, convene regional government partners to support information exchange and regional planning around offshore wind energy and other shared ocean management interests.

**Regional Ocean Partnership Funding to Support the West Coast Ocean Alliance, \$1,835,196**

The Coastal States Stewardship Foundation, serving as fiscal sponsor for the West Coast Ocean Alliance (WCOA) Regional Ocean Partnership will use these funds to coordinate and enhance tribal engagement in the West Coast Ocean Alliance, to convene regional government partners to support information exchange and regional planning around shared ocean management interests, to maintain and promote regional use of the West Coast Ocean Data Portal and a new ocean health dashboard, and to conduct a cumulative impacts assessment on ocean ecosystem stressors.

**BIL: Integrating social and meteorological data to assess the dynamics of flood hazards and impacts: An interdisciplinary approach leveraging AI, risk communication, and data sciences, \$1,034,942**

This project consists of three research activities that integrate research in artificial intelligence (AI), risk communication, and data sciences to advance scientific methods for learning about the dynamics of flood events and to illustrate societal data insights.

**IRA**

**Prairie Creek Floodplain Restoration Project Phase 4, \$7,000,000**

The project will restore high-priority salmon habitat in northern Humboldt County by reconnecting floodplains, adding channel complexity, and restoring vegetation in Prairie Creek. The work will support recovery of key salmon species and will provide an opportunity for the Yurok Tribe to implement restoration efforts on their ancestral lands. It will also strengthen the climate resilience of both salmon and local communities by helping maintain cool stream temperatures and reducing flooding.

**Lower Russian River Watershed Coho Habitat Restoration Project, \$8,452,211**

This project will lead wetland and floodplain habitat restoration at seven sites in two high-priority tributaries in the lower Russian River watershed. These efforts will significantly improve connectivity between streams and their floodplains, restore and reconnect wetlands, and remove barriers to fish migration. This work will support the recovery of endangered Central California Coast coho salmon, a NOAA Species in the Spotlight, and other salmon and steelhead species. The

work will also help reduce flooding in surrounding communities, which have become more frequently inundated as the region's precipitation comes in larger, less predictable storm events.

**Ackerman Creek Restoration Design Project, \$803,617**

This project will develop a plan for reconnecting Ackerman Creek, a tributary of California's Russian River, to its floodplain. Funding will support tribal staff positions to collaborate with partners and lead the planning effort. A series of collaborative workshops will provide opportunities for tribal members and other community members to provide feedback and share cultural and traditional ecological knowledge throughout the process.

**A Tribal-Scientific Alliance to Restore Red Abalone in Northern California's Kelp Forest Ecosystem, \$1,567,798**

This project will build capacity for the Kashia Band of Pomo Indians of the Stewarts Point Rancheria to participate in and lead abalone restoration on their ancestral lands. They will take steps toward establishing a tribal breeding program for red abalone and will train and employ tribal divers to conduct ecological monitoring. They will also pilot experimental removals of purple sea urchins to help reduce pressure on bull kelp, which provides important habitat for red abalone.

**A path forward; codesigning habitat protection and restoration and community resilience, \$202,896**

This investment will support planning efforts to restore the marsh at China Camp State Park, part of the San Francisco Bay National Estuarine Research Reserve. The project will ultimately reconnect tidal and watershed hydrology to improve ecological functions, as well as to maintain access to the park for recreation, education, subsistence fishing, and tribal and Chinese cultural practices.

**Coastal resilience through actionable science: Evaluation of adaptation strategies to mitigate surface-subsurface flooding in coastal communities, \$499,973**

As communities and other coastal stakeholders nationwide engage in adaptation planning to mitigate the impacts of flooding, site-specific modeling is a critical tool for evaluating the efficacy of proposed projects and policies to improve outcomes for residents and the built and natural environments. This project will implement a mature, coupled groundwater-surface water modeling system developed by the project team through a 2019 EESLR project to evaluate the performance of proposed shoreline adaptation actions and to inform the design and implementation of flood mitigation strategies that enhance coastal resilience. Project outputs will provide coastal managers and other partners with locally relevant guidance on the hydrologic, socioeconomic, and ecological implications of sea level rise.

**Advancing Equitable Resources to Marine Debris Solutions through California's Ocean Litter Strategy, \$298,351**

The California Sea Grant was awarded \$298,351 to strengthen the Diversity, Equity, Inclusion, Justice and Accessibility focus of the California Ocean Litter Prevention Strategy to increase the accessibility, equitability, and justice of litter pollution solutions in California. This project aims to increase involvement of traditionally underserved community-based groups and California Tribes into marine debris conversations and actions that affect the state of California by identifying the needs of local communities and establishing a coalition to inform coordinated investments in community-based marine debris solutions.

**Clean Streets, Clean Seas: Innovating Public Works to Intercept Microplastics in Urban Runoff, \$1,263,302**

The University of Southern California Sea Grant was awarded \$1,263,302 to provide the first measured and reported results on the impacts of trash capture devices on microplastics marine debris in stormwater runoff, specifically in Santa Barbara, California, which transports the bulk of terrestrial microplastic to the sea. The project aims to intercept microplastic between deposition on street surfaces and discharge into the ocean and engage interested groups through outreach to maximize impact and innovation of research approach and findings.

### **Projecting Compound Tropical Cyclone-Heat Extremes in a Changing Climate, \$371,205**

When tropical cyclones (TCs) make landfall, they often cause blackouts and oftentimes severe traffic jams. These blackouts and evacuations create a high vulnerability to coincident extreme heat events. Accurate hazard estimates of this emerging compound extreme are critical to public health and power system resilience with climate change. The GFDL SPEAR modeling system presents an exciting opportunity to better understand and quantify TC-heat events with climate change.

### **Climate-Smart Communities Initiative (CSCI), \$3,731,471**

The Climate Smart Communities Initiative provides financial, technical, and other resources to build climate resilience capacity in U.S. communities on the front lines of the climate crisis. Through training and capacity building, this initiative is also strengthening the workforce of qualified climate adaptation professionals in local government and community leadership positions. Evaluation and learning will ensure that project implementation is based on the best available evidence and that climate resilience-building improves over time. A consortium of partners (the Climate Resilience Fund, EcoAdapt, Fernleaf, Geos Institute, ICF and the NRDC Equity and Justice Center) manage the effort.

### **FCP IRA EDA, \$1,597,558**

UC Santa Cruz-Institute of Marine Sciences (IMS) researchers will work with the National Marine Fisheries Service - Southwest Fisheries Science Center (SWFSC) Collaborative Research Program to conduct research that will broaden the scientific basis for supporting the management and conservation of living marine resources. Specifically, researchers will focus on the following tasks: 1) – Modeling Response of the Pacific Salmon Commercial Ocean Troll Fishery to a Shifting Climate: At-Sea Fishing Location and Resultant; 2) Remote Sensing and Dynamic Ocean Management; 3) In situ target strength studies of coastal pelagic species off the west coast of the US; and 4) Develop advanced analytical methods for echo classification.

### **FCP IRA Protected Species, \$888,305**

This project will use global seasonal forecasts to operationalize dynamic ocean management tools and develop strategic management scenarios to enhance the resilience of protected species in the California Current Large Marine Ecosystem (CCLME) in response to short-term and long-term climate variability and change. There are two tools on the U.S. west coast that are already being used to directly inform management: 1) the Habitat Compression Index (HCI) for whale entanglement issues in the Dungeness crab fishery and 2) the Temperature Observations To Avoid Loggerhead (TOTAL) tool for loggerhead turtle entanglement issues in highly migratory species occurring off southern California.

### **Fish Passage Construction at I-5 and Metrolink Bridges in Orange County, California, \$14,627,332**

This project will construct two nature-like fishways at the Metrolink Railway and Interstate 5 crossings, restoring access to 15 miles of habitat in the Trabuco Creek tributary of San Juan Creek. In conjunction with other ongoing dam removal efforts in the watershed, this effort provides an opportunity to significantly contribute to the recovery of endangered Southern California steelhead. The project will also benefit the surrounding community by stabilizing an aging flood control channel.

### **Activate Oceans Fellowship, \$202,431**

This consortium will deliver Activate Oceans, a collaboration which integrates two best-in-class programs – the Activate Fellowship and Propeller's Ocean MBA – into one comprehensive offering that is tailor-made to support early-stage startups commercializing critical oceans-based climate resilience technologies. The proposed program will support startups developing technologies in ocean renewable energy, coast and ocean carbon sequestration monitoring and accounting, maritime decarbonization, and desalination technologies with the funding, network, mentorship, research facilities, education, and community they need to continue building toward commercial scale. Phase I will include activities related to scoping, planning, and designing Activate Oceans.



**Capitalizing on the strength of the San Diego Blue Economy Ecosystem to accelerate startups through the StartBlue Climate Ocean Resilience Accelerator Launchpad (CORAL), \$250,000**

StartBlue CORAL is an expansion of the highly successful framework and partnerships of the UC San Diego StartBlue accelerator extending the continuum of support from early stage through mid-stage startups to create a one stop shop to connect ocean-based climate resilience startups addressing the four NOAA climate resilience theme areas nationwide. StartBlue CORAL will execute this by leveraging the leadership of Scripps Institution of Oceanography in ocean observations technology and information systems, providing tailored training and mentorship, coordinating the San Diego Blue Economy regional ecosystem assets of expertise, facilities, resources, and networks, and providing the critical non-dilutive funding to ensure their continued growth and success.

**Growing a More Resilient and Equitable Southern California Coastal Ocean Observing System, \$5,000,000**

SCCOOS will use this funding to support resilience and expanded capacity for harmful algal bloom detection and monitoring along the California coast; improvements to the California Underwater Glider Network; increased engagement, training and workforce development with Indigenous groups and expanded, multi-linguistic resources for community engagement and K-12 learning.

**Building Coastal and Climate Resilience & Improving Equitable Service Delivery in the Central and Northern California Ocean Observing System (CeNCOOS CCR), \$4,909,974**

CeNCOOS will use this funding to support expanded water sampling to increase the understanding of climate impacts; next-generation data management and access services; animal tag data processing for place-based management; Ocean Vision AI image data processing and engagement; and model improvements for West Coast Regional Ocean Model System applications. The funding will also support outreach through workshops, equitable service delivery engagement and education programs.

**California's Coastal Zone Management Programs application for \$850,000.00 under the Coastal Zone Management Inflation Reduction Act Non-Competitive Awards, \$875,000**

This funding will build the ability of California's federally-approved coastal management program within the California Coastal Commission and the San Francisco Bay Conservation and Development Commission to implement projects, initiatives, and programs that increase the climate resilience of coastal communities within coastal counties. Specifically, the California Coastal Commission will use these funds to increase capacity to address sea level rise and coastal resources through coastal engineering and geology work and the San Francisco Bay Conservation and Development Commission will use these funds to support the implementation of the Bay Adapt Shoreline Leadership Academies.

**Elkhorn Slough NERR Infrastructure and Conservation Project, \$400,000**

This funding will build the ability of the Elkhorn Slough National Estuarine Research Reserve (NERR) within California to implement projects, initiatives, and programs that increase the climate resilience of coastal communities within coastal counties. Specifically, Elkhorn Slough NERR will use these funds to increase climate resilience for wetland habitats and community access infrastructure on Elkhorn Slough NERR and associated public land through: the creation of a new freshwater pond to restore historic freshwater habitat in that area; continue work to restore tidal wetlands in the Reserve's North Marsh; begin strategic planning with their state partner and engage community stakeholders for the Moss Landing Wildlife Area and planning and design of improved public trails to expand public access to the Reserve.

**TRNERR IRA Noncompetitive Grant, \$400,000**

This funding will build the ability of the Tijuana River National Estuarine Research Reserve within California to implement projects, initiatives, and programs that increase the climate resilience of coastal communities within coastal counties. Specifically, Tijuana River NERR will use these funds to: hire a new Restoration Project Coordinator and implement on-the-ground activities that enhance climate resilience of the Reserve and surrounding communities. These

on-the-ground activities include: the Tijuana Estuary Tidal Restoration Program (TETRP); Nelson-Sloan Quarry Restoration and Beneficial Reuse of Sediment Project; Monument Road realignment project to restore year-round access to cultural resources and recreational experiences on Monument Mesa and Friendship Park and dune restoration throughout the Reserve.

**Inflation Reduction Act Non-Competitive Funding Application San Francisco Bay National Estuarine Research Reserve, \$399,996**

This funding will build the ability of the San Francisco Bay National Estuarine Research Reserve within California to implement projects, initiatives, and programs that increase the climate resilience of coastal communities within coastal counties. Specifically, San Francisco Bay NERR will use these funds to support administration of the pilot Regional Climate Science Consortium, support workforce development with the Nature-Based Strategies EOS Project, support ongoing community resilience projects through funding proposals and pursuing new partnership opportunities and support hiring a Coastal Training Program Coordinator.

**Regional Adaptation for Climate Resilience of Monterey Bay Coastal Communities, \$71,100,000**

The highest priority climate risks for California's Monterey Bay region are flooding and wildfires—both of which have had devastating impacts on lives, livelihoods, and ecosystems. This project, comprising dozens of agencies and institutions, will implement four adaptation strategies that create a regional, collaborative approach for addressing these risks while building capacity through workforce development. These transformative strategies include nature-based approaches designed to strengthen ecosystem and habitat resilience and protect human communities. At the same time—and with an emphasis on meaningful engagement with marginalized communities and tribes—this unified, region-wide approach will create generational impact through building the local knowledge, skills, and workforce necessary to create resilient infrastructure and improve adaptive capacity for current and future climate hazards. *This project was funded through the [Climate Resilience Regional Challenge](#).*

**SOLSTICE Test Program, \$174,976**

L.Garde's SOLSTICE test program aims to elevate its vectored solar sailcraft's Technology and Manufacturing Readiness Levels (TRL & MRL) from 4 to 6, addressing NOAA's needs for solar wind data from 0.98 AU for enhanced storm warnings. This 6-month project will produce a full-scale engineering test unit for ground testing, supporting a future commercial flight program. The SOLSTICE vehicle expands upon NOAA's Uncrewed Systems Strategy of collecting critical and time sensitive data from terrestrial aircraft and maritime systems by placing a UxS able to provide a new commercial solar wind data source at the edge of cislunar space IRA

**California Sea Grant Fellowships Expansion Project, \$183,000**

California Sea Grant (CASG) will partner with NOAA host offices to continue to build on existing educational programs (e.g., California State Fellowship) as well as create new discrete fellowship opportunities (e.g., Extension Fellowship) to achieve our Education Program objectives: 1) undergraduate, graduate, and postgraduate students in California feel encouraged and better prepared to pursue careers in marine and coastal science and/or policy; 2) host agencies and California communities have increased access to available expertise and capacity relevant to use, management and conservation of coastal and marine resources; and 3) the diversity and representation of coastal and marine professionals in California is expanded to mimic the population of California with a focus on diversity, equity, inclusion, accessibility and environmental justice.

**Los Angeles County Climate Ready Employment Council (LACCREC), \$9,500,000**

The Los Angeles County Climate Ready Employment Council will convene key stakeholders to improve the county's climate resilience workforce. This initiative will assess regional workforce needs and develop training and job placement, particularly in solar and water management. The program aims to meet employer needs, enhance climate resilience in

Los Angeles County, and connect underserved workers with quality job opportunities. Expected outcomes include addressing employer demands, strengthening climate resilience, and providing underserved individuals with access to training and jobs.

**Center for HeatReady Communities, \$2,249,990**

The Center for Heat Resilient Communities will support communities across the United States, its territories, and beyond in their efforts to prepare for, mitigate, track, and respond to extreme heat. The central objectives of this project are to: (1) develop a comprehensive Heat Resilient Communities framework; (2) enable and enhance local Heat Resilient Communities; and (3) collaborate with and recommend actionable strategies for NOAA, NIHHS, and federal partners to prioritize and coordinate relevant investments and other evidence-based decision-making.

**Climate impacts on foundational nearshore habitats: status and trends as indicators of sanctuary health, \$385,214**

The project aims to quantitatively link climate and other environmental drivers to the extent, quality, and services of foundational benthic ecosystems, including corals, seagrasses, mangroves, salt marshes, and rocky intertidal, in two National Marine Sanctuaries: the Florida Keys and Greater Farallones. These ecosystems are critical habitats that provide a wealth of benefits, including enhanced biodiversity and significant stores of carbon, and are therefore central to the mission and management of sanctuaries. The project will leverage existing survey data from these two sanctuaries.

**mCDR 2023: Assessing chemical and biological implications of alkalinity enhancement using carbonate salts obtained from captured CO<sub>2</sub> to mitigate negative effects of ocean acidification and enable mCDR, \$875,891**

Energy, manufacturing and deployment costs are critical to the viability of any carbon dioxide removal approach. This research project focuses on a new strategy that promises low energy burden and low manufacturing costs to achieve ocean alkalinity enhancement. Researchers will develop and test a pilot-scale system that captures carbon dioxide from the air and converts it into a mixture of salts that can be used for marine carbon dioxide removal.

**Quantifying Multi-Stressor Driven Climate Shocks to West Coast Marine Ecosystems Using Large Earth System Model Ensembles, \$377,071**

Marine sanctuaries along the US West Coast experience a variety of biophysical stressors which are expected to be exacerbated by climate change, including effects from marine heat waves, harmful algal blooms, and seasonal expansion of oxygen minimum zones. Accurately characterizing the range of climate-driven shocks to US West Coast sanctuary regions in the face of climate change thus requires assessing the impact of large-scale climate variability on ecosystem driver variability.

**Marine Biodiversity Observation Network in the Northern California Current: Dynamic, multiscale assessment of biodiversity and ecosystem function to support emerging science and management needs, \$1,616,213**

This award will advance the science of Marine Biodiversity Observation Network (MBON) through additional technologies and research, and create a test-bed in the Pacific Northwest where elements of the US and Global MBONs can be harmonized. Specifically, this award will support work to: 1) Provide biological and environmental data collected by multiple programs in an integrated synthesis that informs scientists, resource managers, educators, and all community partners about the state of multitrophic level diversity in the Northern California Current and how it is changing. 2) Provide codeveloped near-real time indicators of plankton and nekton community structure to support local management needs for tribes, and regional needs for Integrated Ecosystem Assessment and improved stock assessments. 3) Contribute to best practices and mechanisms to share data, experiences, knowledge, and protocols to understand species and the status and trends of plankton and the ecosystem services they provide. 4) Share innovative technologies, pipelines, and algorithms developed for the observation of plankton between academia, state and federal agencies, and community partners.

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