

NOAA In Your State California

“NOAA’s work touches the daily lives of every person in the United States and in much of the world. Our products and services are the result of the hard work of NOAA’s dedicated staff and partner organizations located in program and research offices throughout the country. The following is a summary of NOAA programs based in, and focused on, your state. The entries are listed by statewide, region, and then by congressional districts and cities or towns.”

- Dr. Jane Lubchenco
Under Secretary of Commerce for Oceans and Atmosphere
and NOAA Administrator



CA

American River Basin

Office of Oceanic and Atmospheric Research (OAR)

Office of Weather and Air Quality

United States Weather Research Program

The United States Weather Research Program (USWRP) brings together federal agencies with the academic and private sectors to move research ideas and technologies into operational weather forecasts. NOAA, through the USWRP, provides significant funding in California to the NOAA Hydrometeorological Testbed (HMT) to improve forecasts flooding in the American River Basin. The HMT has consisted of a series of field experiments, the results of which are transitioned into NOAA Weather Forecast Offices and NOAA River Forecasting Centers that are leading to improved forecasts of flooding on the American River and its tributaries. It is also helping to improve water level forecasts in reservoirs on the river. The HMT partners with several organizations in California. These include the Scripps Institute, state and county reservoir managers, and local and state emergency managers.

<http://www.esrl.noaa.gov/psd/programs/2008/hmt/>

Coastal

National Marine Fisheries Service (NMFS)

Southwest Region

Wetlands Recovery Project

NMFS Southwest Region has been an active participant in the Southern California Wetlands Recovery Project including providing leadership as the Chair of the Wetlands Manager’s Group. 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. To date, the Wetlands Recovery Project has enhanced over 800 acres of wetland habitat and protected over 2,700 acres of coastal wetlands and watersheds. Major projects include coastal bay and lagoon habitat restoration, increasing fish passage opportunities, stream restoration, and invasive species eradication and control.

<http://www.nmfs.noaa.gov/habitat/>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Coastal Elevation Mapping**

The Center works with state and local officials to collect and distribute high-resolution topographic and bathymetric data sets. The Center worked with the private sector to acquire new light detection and ranging (lidar) and Interferometric Synthetic Aperture Radar (IfSAR) data for coastal management applications such as the analysis of storm surge and storm inundation, erosion, and habitat mapping. The Center also worked with state and federal partners to share costs and find multiple uses for coastal lidar and IfSAR data sets.

<http://www.csc.noaa.gov/crs/tcm/>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Land Cover Mapping**

Nothing provides a big-picture view of land cover status better than these maps, which are developed using remote sensing technology. The Center has baseline land cover data for most of the coastal zone. The goal is to update the imagery every five years to also provide a means of detecting change or trends.

<http://www.csc.noaa.gov/landcover/>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Legislative Atlas**

This Web-based legislative mapping tool provides coastal resource managers with easy access to coastal legislative data and information. In 2008 the Legislative Atlas team added additional legislative information for the three regions represented in the atlas—Hawaii, West Coast, and the Gulf of Maine. This added information included both federal and state regulations. The legislative query tool is also being redesigned according to user input.

<http://www.csc.noaa.gov/legislativeatlas/>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Nonpoint Source Pollution and Erosion Comparison Tool (N-SPECT) Applications**

The Nonpoint-Source Pollution and Erosion Comparison Tool (N-SPECT) is a GIS-based screening tool that models basic hydrologic processes, including overland flow, erosion, and nonpoint source pollution for watersheds. In 2008, assistance was given to Puerto Rico and the states of California, Hawaii, and Texas as they used N-SPECT to estimate runoff in various land cover scenarios. Staff members also work with the Environmental Protection Agency and private-sector groups that want to use N-SPECT with their programs.

<http://www.csc.noaa.gov/crs/cwq/nspect.html>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Northern California Ecosystem Based Management Pilot**

This pilot project underway in and around Humboldt Bay in northern California has local community members, nonprofits, academics, and government agencies working together to build a strong future for the bay and the people and ecosystems in the area. The Center is supporting this project by providing technical assistance and facilitating communication and data collection.

<http://www.csc.noaa.gov/id/norcal.html>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Regional Coastal Water Quality**

Coastal water quality and nonpoint-source pollution are priority watershed issues for coastal communities. Participation from the Center's regional staff plays an important role in many of these efforts. In California, staff members provide key support for the development of a statewide water quality education and technical assistance organization, the California Water and Land Use Partnership. Staff members in other regions also provide strategic planning assistance and promote education efforts.

**National Ocean Service (NOS)
Coastal Services Center (CSC)
San Francisco Bay Subtidal Habitat Goals Project**

As part of a broader effort to create an ecosystem-based management vision for the region, regional partners are participating in a collaborative effort in the development of research, restoration, and management goals for the bay's subtidal habitats. This work provides an opportunity to improve the coordination of research, restoration, and resource management activities in the area.

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Shoreline Data Development, Visualization, and Delivery**

The Center's constituents have identified shoreline data as a priority need, and they look to the Center for related information and guidance. This project addresses that need by continuing to make historical data available and working with the shoreline change community to develop guidebooks and other resources. In California, the Center is working to provide the state and local GIS technical capacity needed to address shoreline erosion and other natural hazards.

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Social Assessment Technical Assistance**

This project documents cultural and historical sites and practices related to traditional lifestyles and identifies social and cultural factors that influence community support for coastal conservation. The project is focused on Humboldt Bay, California, and Carabelle, Florida. A regional roundtable of natural resource management professionals, applied social scientists, and allied stakeholders was convened to identify the needed information, as well as related data gaps and applied social science approaches necessary to integrate social and cultural information into ecosystem-based management.

<http://csc.noaa.gov/regions/documents/NOAA%20Report%20October%2028%202008.pdf>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Training**

The Center provides training to the coastal resource managers of the nation in three focus areas: geospatial technology, coastal management, and building process skills. Training can take place at the Center's training facility for some courses but most often is taken to coastal managers in the field.

<http://www.csc.noaa.gov/bins/resources/training.html>

**National Ocean Service (NOS)
Coastal Services Center (CSC)
Weather and Hazards Viewer**

This Internet mapping tool helps users monitor coastal storms and visualize potential storm impacts and fire-related weather conditions. Regularly updated weather data from the National Weather Service are combined with hazards planning data in a GIS. Users assess hazards by displaying and animating forecasts for weather conditions, including waves, winds, temperature, humidity, and rainfall.

http://maps.csc.noaa.gov/CSP_SoCal/

**National Ocean Service (NOS)
Integrated Ocean Observing System (IOOS) Program
IOOS Regional Association**

The Central and Northern California Ocean Observing System (CeNCOOS) is part of an evolving national framework of integrated coastal observing systems. This national framework is called the Integrated Ocean Observing System (IOOS). Ocean observing uses various physical, biological and chemical sensing technologies to add to our knowledge of changing ocean conditions and to enhance coastal management, allowing for more informed decision-making. The geographic extent of CeNCOOS includes from Point Conception north to the California-Oregon border and from the coastline out to 200 nautical miles (the seaward extent of the Exclusive Economic Zone). CeNCOOS includes bays and estuaries in this region. Within the state, CeNCOOS collaborates closely with its neighboring Regional Association, the Southern California Coastal Ocean Observing System, and the state agencies supporting coastal management activities.

<http://www.cencoos.org/index.html>

**National Ocean Service (NOS)
Integrated Ocean Observing System (IOOS) Program
IOOS Regional Association**

The Southern California Coastal Ocean Observing System (SCCOOS) brings together coastal observations in the Southern California Bight to provide information necessary to address issues in climate change, ecosystem preservation and management, coastal water quality, maritime operations, coastal hazards and national security. As a science-based decision support system, SCCOOS works interactively with local, state and federal agencies, resource managers, industry, policy makers, educators, scientists and the general public to provide data, models and products that advance our understanding of the current and future state of our coastal and global environment.

<http://www.sccoos.org/>

**Office of Oceanic and Atmospheric Research (OAR)
Pacific Marine Environmental Laboratory
NOAA Center for Tsunami Research (NCTR)**

The Tsunami Research Program at the Pacific Marine Environmental Laboratory (PMEL), headquartered in Seattle, Washington, seeks to mitigate tsunami hazards to all U.S. coastal states and territories, including California. A tsunami is a series of very large ocean waves caused by underwater earthquakes, landslides, volcanic eruptions, explosions, and even meteor impacts. Capable of flooding hundreds of meters inland past the typical high-water level, the fast-moving water associated with an inundating tsunami can crush homes and other coastal structures. More common occurrences, and devastating in an economic sense, are false alarms that lead to expensive evacuations of coastal areas. The PMEL NCTR staff conducts research and development activities in close collaboration with the National Weather Service (NWS) Tsunami Warning Centers, National Data Buoy Center (NDBC), and the coastal states. Activities focus on the development of site-specific forecast models for coastal population centers. These models are integrated into a PMEL-developed operational tsunami forecasting system at the Tsunami Warning Centers. PMEL developed the original real-time DART tsunami-measuring buoy, which has been transitioned to NDBC. Engineering development is underway at PMEL to improve the cost-effectiveness of these platforms. Tsunami research at PMEL focuses on model improvements and tsunami hazard mitigation.

<http://nctr.pmel.noaa.gov>

Eureka, Monterey, Sacramento

**Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Global Systems Division
Advanced Linux Prototype System (ALPS)**

ALPS is an innovative tool that builds on NOAA's investment in the Advanced Weather Interactive Processing System (AWIPS). This technology extends AWIPS by implementing a well-defined application programming interface and a distributed data paradigm. User-friendly ALPS integrates and displays a wide variety of environmental data interactively, i.e. drawing and editing of fonts, lines, polygons, weather symbols, and text. ALPS is being used experimentally as a component of the Hydrometeorological Testbed (HMT). The HMT is currently focused on the American River Basin in California in an effort to better protect one of the most flood vulnerable cities in the U.S. – Sacramento.

<http://fxa.noaa.gov/ALPS/>

Statewide

**National Marine Fisheries Service (NMFS)
Southwest Region**

Southwest Regional Office and Fisheries Science Center

NMFS is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water to 200 miles off the seaward boundaries of coastal states). Using the tools provided by the Magnuson-Stevens Act, NMFS assesses and predicts the status of fish stocks, develops and ensures compliance with fisheries regulations, restores and protects habitat and works to reduce wasteful fishing practices, and promote sustainable fisheries. Under the *Marine Mammal Protection Act* and the *Endangered Species Act*, NMFS recovers protected marine species (i.e. whales, turtles).

The Southwest Regional Office (located in Long Beach, CA) is responsible for the management and protection of living marine resources and their habitat in the Southwest. Its marine programs cover California and the tuna fisheries in the eastern Pacific Ocean off the coast of the Americas. The Office is comprised of three divisions: Sustainable Fisheries, Habitat Conservation, and Protected Species Management. La Jolla, CA is the headquarters of the NMFS Southwest Fisheries Science Center. The Center's scientists conduct marine biological, economic and oceanographic research, observations and monitoring on living marine resources and their environment throughout the Pacific Ocean and the Southern Ocean off Antarctica. Due to proximity to an eroding coastal bluff, NOAA has vacated staff from two of the four

buildings at the La Jolla Shores Drive Laboratory into temporarily leased space at Torrey Pines Court pending the construction of a new facility at Scripps Institution of Oceanography, UC San Diego. The Torrey Pines Court Laboratory is the interim location for the Director's Office, staff from three research divisions (Antarctic Ecosystem Research, Protected Resources, and some staff from Fisheries Research) and the Operations, Management and Information Division. Other Science Center locations include: Environmental Research Division (Pacific Grove), Fisheries Ecology Research Division (Santa Cruz), Northern California Pacific Coast Ocean Observing System Coordination Office (Arcata), Granite Canyon Marine Laboratory (Carmel) and Piedras Blancas Field Station (San Simeon).

<http://swr.nmfs.noaa.gov/> and <http://swfsc.noaa.gov>

**National Weather Service (NWS) and Office of Oceanic and Atmospheric Research (OAR)
Incident Meteorologist Program and Earth Systems Research Laboratory
Fire Weather Services and Support**

The National Weather Service (NWS) fire weather forecasters are called Incident Meteorologists (IMETS). When a fire reaches a large enough size the IMETS are called out to the fire to provide constant weather updates and forecast briefings to the fire incident commanders at the fire. The IMETS are very important members of the fire fighting team, as changes in the fires are largely due to changes in the weather. To improve NWS fire weather services to the public, NOAA's Earth System Research Laboratory (ESRL) conducts modeling, instrumentation and data services research. ESRL data dissemination and display systems are designed to be used by trained meteorologists, the US Forest Service, and the Bureau of Land Management. For example, the FX-Net thin client system and the Gridded FX-Net full function system are ESRL-developed software systems that are a critical part of the equipment the IMETS bring with them to the fire. NWS forecasters at fires in all 50 states use these mobile PC-based client software packages. Computer servers that communicate with the mobile PC clients are located in Hawaii, Alaska, Utah, Colorado, Texas and New York. State emergency managers in many of the NWS regional areas also use the PC-base clients. Other collaborators who work to improve NWS fire weather services include the University of Colorado in Boulder (CU), NCAR and private sector instrumentation companies.

**Office of Oceanic and Atmospheric Research (OAR)
Climate Program Office
California Grants**

NOAA is a leading provider of climate, weather, and water information and services to the nation and the world. NOAA's Climate Program Office was established in October 2005. The Office manages the competitive research program by which NOAA funds high-priority climate science to advance understanding of atmospheric, oceanic, land-based, and snow and ice processes, and how they affect climate. It focuses on developing a broader user community for climate products and services, provides NOAA a focal point for climate activities within NOAA, leads NOAA climate education and outreach activities, and coordinates international climate activities. It supports projects across the nation conducted by investigators outside the federal government, such as the through the academic and private sectors, within the federal government, and in NOAA Cooperative Institutes. The Climate Program Office provides climate funding in this state.

<http://www.cpo.noaa.gov/>

**Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Global Systems Division
Exploring New Observational Technologies – Unmanned Aircraft Systems**

ESRL is the home of NOAA's UAS Project, which is organized into three regional test beds including the Arctic (AK), Pacific (CA and HI), and Gulf Coast (FL) test beds. Unmanned Aircraft Systems (UAS) are expected to revolutionize NOAA's ability to monitor the global environment, while increasing national security, individual safety, profits, and economic competitiveness for U.S. companies. UAS have the potential to fill critical observation gaps in climate change research, weather and water resources forecasting, ecosystem monitoring and management, and coastal mapping. This project engages industry affiliates that developed UAS technologies for national defense and now will apply them for the benefit of the global environment.

<http://uas.noaa.gov/>

Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Global Systems Division
FX-Net Fireweather

A meteorological workstation developed by scientists at NOAA's Earth System Research Laboratory is being used by the National Weather Service's Incident Meteorologists (IMETs) deployed to wildfires in California. IMETs are using the FX-Net system as their primary means of getting weather information to the fire incident commanders and emergency managers working on the fires. FX-net is a field-deployable system that has access to the same data sets available to outer NWS forecasters, and offers forecasters flexibility in manipulating the data to meet specific, localized needs.

<http://www-tod.fsl.noaa.gov/fxnet.html>

Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Global Systems Division
Ground-Based GPS Meteorology

The Earth System Research Laboratory maintains the Ground-Based GPS Meteorology project, currently consisting of 400 GPS water vapor observing systems that provide near real-time integrated precipitable water vapor (IPW) measurements for weather forecasting, climate modeling, calibration and validation of satellite and radiosonde water vapor measurements, and research. This project provides water vapor data available to all users.

<http://www.gpsmet.noaa.gov/jsp/raob.jsp>

Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Physical Sciences Division
California Central Valley Air Quality

NOAA's Earth System Research Laboratory (ESRL) operates a small network of meteorological monitoring sites within the Central Valley of California in support of air quality modeling efforts and real time observations by the California Air Resources Board and local air quality districts. Monitoring sites located in Chico, Chowchilla, and Lost Hills have identical instrumentation providing air quality forecasters with valuable meteorological information for assessing meteorological conditions associated with air quality.

Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Physical Sciences Division
Enhanced Flood Response & Emergency Preparedness

NOAA's Earth System Research Laboratory (ESRL) is working with the California Department of Water Resources (DWR) to bring 21st century observation and modeling capabilities to bear on the state's water resource and flood protection issues. Decision support tools will be developed to integrate this new information into flood forecasts. The underlying goal of the Enhanced Flood Response and Emergency Preparedness (EFREP) project –a joint project between DWR, NOAA, and the Scripps Institute for Oceanography– is to improve precipitation forecasts, especially during extreme events. EFREP also will serve as a model for other states to consider, particularly those that are impacted by hazardous weather and where hydrologic disasters are a concern.

Office of Oceanic and Atmospheric Research (OAR)
National Sea Grant College Program
California Sea Grant College System

NOAA's National Sea Grant College Program is a federal-university partnership that integrates research, education, and outreach (extension and communications). 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 and Marine Advisors. Current projects focus on healthy marine ecosystems, sustainable use of coastal and marine resources, sustainable coastal community development, fisheries and fisheries habitat, ballast water management, seafood safety and quality, coastal water quality, aquatic nuisance species, wetland and salmonid habitat restoration, aquaculture, new technologies, oyster disease, marine biotechnology, marine reserves, and education, training and public information.

<http://www.csqc.ucsd.edu>

Office of Oceanic and Atmospheric Research (OAR)

National Sea Grant College Program

University of Southern California Sea Grant Program

NOAA's National Sea Grant College Program is a federal-university partnership that integrates research, education, and outreach (extension and communications). Sea Grant forms a network of 32 programs in all U.S. coastal and Great Lakes states, Puerto Rico and Guam. The Southern California Sea Grant College Program, based at the University of Southern California in Los Angeles, targets issues specific to the urban ocean and densely populated areas of California, including beach contamination, human impacts on protected areas, ports and harbors, and climate change. The Southern California Sea Grant 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, California State University at Fullerton, and California State University at Long Beach.

<http://www.usc.edu/org/seagrant/index.html>

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Arcata

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. The Arcata field office has two special agents who investigate possible violations involving the commercial fishing fleet who operate in the Northern California areas, including marine mammal and Endangered Species Act investigations. The Division is also responsible for the enforcement activities relating to four Fishery Management Plans, three International Management Plans and four National Marine Sanctuaries - the Gulf of Farallones, Cordell Bank, Monterey Bay and Channel Islands National Marine Sanctuaries.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Marine Fisheries Service (NMFS)

Southwest Fisheries Science Center

Fisheries Ecology Division

Located at the Humboldt State University Marine Laboratory, the Northern California Pacific Coast Ocean Observing System Coordination Office 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.

<http://swfsc.noaa.gov/fed.aspx/>

National Marine Fisheries Service (NMFS)

Southwest Region

Arcata Area Office

The Arcata Area Office oversees federal Endangered Species Act (ESA) programs for Salmon and steelhead in Humboldt, Del Norte, Trinity and Siskiyou Counties in Northern California, including the Klamath Basin. Protected Resources staff in the Arcata Office assists staff from other federal and state agencies and the public on how to ensure projects, programs and land use activities are consistent with the requirements of the Endangered Species Act as well as the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson Act). Staff evaluates the effects of proposed actions on anadromous fishes listed as endangered or threatened under the Endangered Species Act, designated critical habitat of these species, and on essential fish habitat described under the Magnuson Act. The Arcata Area Office also develops Endangered Species Act recovery plans, and promotes conservation partnerships with various public and private entities. The office has been actively involved in the Klamath Settlement Agreement, which portends to remove four dams and restore access to hundreds of miles of prime salmon habitat.

Eureka

National Weather Service (NWS)

Weather Forecast Office

Eureka WFO

Located in Eureka, this National Weather Service Weather Forecast Office provides weather and flood warnings, daily forecasts and meteorologic and hydrologic data for northwestern California (Del Norte, Humboldt, Trinity, and Mendocino counties).

<http://www.wrh.noaa.gov/Eureka/>

Point Arena

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Monitoring Division

Monitoring the Surface Atmosphere - Cooperative Global Air Sampling Network

NOAA's Earth System Research Laboratory (ESRL) operates a Cooperative Global Air Sampling Network to measure the distribution and trends of carbon dioxide (CO₂) and methane (CH₄), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected weekly at fixed locations and on several commercial ships. The air samples are delivered to the ESRL laboratory, located in Boulder, CO. The observed geographical patterns and small but persistent spatial gradients are used to better understand the processes, both natural and human induced, that underlie the trends. Samples have been collected from Point Arena, CA, since 1999. Employees of Point Arena Lighthouse Keepers, Inc., a non-profit organization that maintains and operates the lighthouse, collect the samples. The samples collected at Point Arena represent air that has been over the Pacific Ocean, upwind of North America, for days or weeks. These measurements help determine the magnitude of carbon sources and sinks in North America.

<http://www.esrl.noaa.gov/gmd/about/climate.html>

Trinidad

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Monitoring Division

Monitoring the Atmosphere Aloft - Carbon Cycle Gases and Halocarbons

NOAA's Earth System Research Laboratory (ESRL) operates a new and growing small aircraft-based North American network of sampling sites to measure vertical profiles of important greenhouse gas concentrations. Air is sampled above the surface up to approximately 25,000 feet above sea level using a relatively small, light, and economical automated system developed by ESRL researchers. These air samples are delivered to the ESRL laboratory in Boulder, Colorado for measurements of CO₂, CH₄, and other greenhouse gases. This data will improve understanding and models of the global carbon cycle. Sampling is conducted bi-weekly. Some air samples from the small aircraft program are also analyzed for halocarbon gases that can destroy the stratospheric ozone layer. 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.

<http://www.esrl.noaa.gov/gmd/about/climate.html>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Monitoring Division

Monitoring the Surface Atmosphere – Halocarbon Measurements

NOAA's Earth System Research Laboratory (ESRL) 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 the ESRL laboratory, located in Boulder, CO for analysis. Some locations conduct continuous surface measurements on site. 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.

<http://www.esrl.noaa.gov/gmd/hats/>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Monitoring Division

Monitoring the Surface Atmosphere – ozone measurements

ESRL conducts long-term monitoring of ozone at the surface, with aircraft, and with balloons, through cooperative relationships with local partners. The ESRL Tropospheric Ozone Aircraft Measurement program is being done in conjunction with the Carbon Cycle and Greenhouse Gas (CCGG) group's existing aircraft sampling network. Aircraft based in-situ tropospheric ozone measurements provide data relevant to: pollution events, lower atmosphere mixing dynamics, boundary layer stability, ozone trend studies, and the validity of other samples collected in-flight. Near ground level ozone is currently monitored using ultraviolet absorption photometers at eight sites that are generally representative of background conditions. These sites, four of which have records exceeding 25 years in length, provide information on possible long-term changes in tropospheric ozone near the surface and support air quality research.

<http://www.esrl.noaa.gov/gmd/ozwv/>

**Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Global Monitoring Division
Trinidad Head Observatory**

The Trinidad Head Observatory is one of five baseline observatories supported by NOAA's Climate Observations and Analysis Program and operated by the NOAA's Office of Oceanic and Atmospheric Research, Earth System Research Laboratory, located in Boulder, CO. The observatories are located in Barrow, Alaska; Mauna Loa, Hawaii; South Pole, Antarctica; Trinidad Head, California; and Cape Matatula, Island of Tutuila, American Samoa. The Trinidad Head Observatory was installed in 2001 to monitor the air entering the west coast of the United States that is now being impacted by effluents of anthropogenic aerosols and gases from the burgeoning Asian economies. The observatory is operated in cooperation with Humboldt State University. Ozone is measured at the surface at Trinidad Head and in the total column above the observatory.

<http://www.esrl.noaa.gov/gmd/obop/thd>

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Redding**

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Redding Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

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Sacramento**

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Sacramento Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. NMFS' special agents and enforcement officers have specified authority to enforce over 37 statutes, as well as numerous treaties related to the conservation and protection of marine resources and other matters of concern to NOAA.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Marine Fisheries Service (NMFS)

Southwest Region

Sacramento Area Office

The Sacramento Field Office is responsible for the administration of programs, laws and acts that promote and support conservation, protection and recovery of salmonid resources in Central California. The Office's primary emphasis is on the administration of the Endangered Species Act, particularly on Section 4 (Recovery Planning), Section 7 (Consultations) and Section 10 (Habitat Conservation Plans, Scientific Research Permits). The Office provides technical assistance to state agencies, county and local government, and private landowners on issues ranging from forestry to city/county land use practices and ordinances that affect salmonid habitat. Additionally, the Sacramento Office is heavily involved in Sacramento Delta water issues.

<http://swr.nmfs.noaa.gov/sac/index.htm>

National Ocean Service (NOS)

National Geodetic Survey

Geodetic Advisor

The NGS State Geodetic Advisor Program is a cost-sharing program that provides a liaison between NOAA and the host state, usually with a jointly funded NOAA employee residing in the state to guide and assist the state's geodetic and surveying programs. In California, the State Geodetic Advisor is hosted by the California Department of Transportation (Caltrans), and provides geodetic information regarding NOAA data and services, responding to inquiries from governmental agencies and those in private practice.

<http://www.ngs.noaa.gov/ADVISORS/AdvisorsIndex.shtml>

**National Ocean Service (NOS)
Office of Response and Restoration
Regional Resource Coordinator**

NOAA acts on behalf of the Secretary of Commerce as a Federal trustee, under CERCLA and other laws, for natural resources in coastal and marine areas. NOAA's mandate is to protect and restore trust resources that are injured by Superfund site contaminants. NOAA fulfills its responsibilities through an effective network of Regional Resource Coordinators (RRCs) placed in eight EPA regional offices, as well as an interdisciplinary technical support group located in Seattle. The RRC based in Sacramento responds to local technical requirements by identifying risks to natural resources, recommending protective remedial measures, and designing projects to restore injured resources and habitats in cooperation with U.S. EPA Superfund program managers, the State of California, and other trustee agencies. RRCs work with lead cleanup agencies to achieve remedies that protect both human health and natural resources by fostering cooperative, cost-effective problem solving strategies; developing environmentally protective remedies; and minimizing costly litigation. Additionally, RRCs improve coordination among trustee agencies and protect natural resources through participation in settlement negotiations with responsible parties.

<http://response.restoration.noaa.gov/>

**National Weather Service (NWS)
Weather Forecast Office
California-Nevada River Forecast Center**

Located in Sacramento, this National Weather Service Weather Forecast office provides weather and flood warnings, daily forecasts and meteorologic and hydrologic data for most of interior northern California. This area extends roughly from Shasta Dam to Modesto and from the crest of the coastal mountains to the crest of the Sierra Nevada mountains. The collocated California-Nevada River Forecast Center provides operational hydrologic services for California, most of Nevada and a portion of southern Oregon. Operational products generated by the River Forecast Center include flood, general river, recreational, navigation, and reservoir inflow forecasts; water supply and spring flood outlooks; and various types of flash flood guidance.

<http://www.wrh.noaa.gov/Sacramento>

**Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Global Systems Division
Hydrometeorological Testbed**

NOAA's Hydrometeorological Testbed (HMT) is a demonstration program that focuses the use of advanced observational and modeling tools on quantitative precipitation estimation (QPE) and quantitative precipitation forecasting (QPF) for the purpose of improving hydrologic forecasts and warnings. The testbed approach will accelerate transitions from the research and development community to operations, as described in NOAA's Strategic Plan and recommended by the NOAA Hydrology Team's Science and Technology Infusion Plan (STIP) and the U.S. Weather Research Program (USWRP). Project management resides in Boulder, CO. Field instrumentation, system and forecast product development is currently focused on the American River Basin in California in an effort to better protect one of the most flood vulnerable cities in the U.S. – Sacramento. Other areas of California are part of the project, and additional Testbeds are being developed in the Midwest and the Southeastern seaboard.

<http://hmt.noaa.gov/>

**Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Physical Sciences Division
CalWater: Energy, Water, and Regional Climate**

NOAA's Earth System Research Laboratory (ESRL) is planning a joint experiment between NOAA, the California Energy Commission, and Scripps Institute of Oceanography to study the interactions between air quality and the hydrologic cycle in a changing climate. This experiment will address how aerosols from regional and trans-Pacific pollution influence water supply and snowpack in California. The interaction of increased regional and transported pollution and global warming trends will have an unknown affect on California's water supplies. California is interested in finding the most effective way to simultaneously reduce emissions of greenhouse gases, aerosols, other air pollutants and their precursors while maximizing the benefits for air quality, water resources, and climate change.

Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Physical Sciences Division
Hydrometeorological Testbed

NOAA's Hydrometeorological Testbed (HMT) is a national program that implements regional demonstrations focused on the use of advanced observational & modeling tools for the purpose of improving hydrologic forecasts and warnings. The major activities of the HMT are quantitative precipitation estimation (QPE) & forecasting (QPF), snow information, hydrologic applications, decision support systems and verification. The testbed approach will accelerate transitions from the research and development community to operations, as described in NOAA's Strategic Plan and recommended by the NOAA Hydrology Team's Science and Technology Infusion Plan (STIP) & the U.S. Weather Research Program (USWRP). Project management resides in Boulder, CO. Research and development efforts are underway in Boulder, CO and Norman OK as well as with other NOAA and non-NOAA partners. Field instrumentation, system and forecast product development is currently focused on the American River Basin in California in an effort to better protect one of the most flood vulnerable cities in the U.S. - Sacramento. Other areas of CA are part of the project, as well as a site to study the hydrologic forcing of flash flooding in southern Arizona. Active planning for a testbed located in North Carolina has begun with a tentative start date of HMT-SE in 2010. Long-term planning includes additional testbeds in other regions.

<http://hmt.noaa.gov/>

Office of Oceanic and Atmospheric Research (OAR)
Earth System Research Laboratory/Physical Sciences Division
West Coast Storm Center

The NOAA Earth System Research Laboratory (ESRL) and NOAA Hydrometeorological Testbed (HMT) program are leading an effort in California to develop a NOAA-led capability addressing the issue of strong West Coast winter storms that is similar to programs aimed at hurricanes or severe storms/tornadoes elsewhere in the Nation. West Coast storms can be as intense as hurricanes in terms of wind speed and precipitation, can cause extensive damage and flooding, and yet are also the key to the creation of most of the water supply needed during the long summer dry season. NOAA will collaborate with other federal and non-federal agencies using new models, data, instrumentation, and water science, in order to provide better forecasts, improve water resource management, and mitigate risks for the strongest West Coast winter storms.

CA- 6
Olema

National Ocean Service (NOS)
Office of National Marine Sanctuaries
Cordell Bank National Marine Sanctuary

Rising 36 kilometers west of Point Reyes is Cordell Bank, the northernmost seamount on the Pacific coast's continental shelf. Cordell Bank's combination of oceanic currents and undersea topography provides for a highly productive marine environment. This environment has attracted a unique association of subtidal and oceanic species, including an exceptional assortment of algae, sponges and anemones, fishes, sea birds and marine mammals; many of these marine mammals are endangered or threatened species and include right, blue, fin, sei, humpback and sperm whales, Steller sea lions, and green, leatherback, Olive Ridley, and loggerhead sea turtles. Because of Cordell Bank's biological and bathymetric diversity, the sanctuary is a paradise for fishermen and advanced divers.

<http://cordellbank.noaa.gov/>

Santa Rosa
National Marine Fisheries Service (NMFS)
Office of Law Enforcement
Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. Office of Law Enforcement special agents and enforcement officers have specified authority to enforce over 37 statutes, as well as numerous treaties related to the conservation and protection of marine resources and other matters of concern to NOAA. The Santa Rosa field office houses six personnel, one field supervisor, three agents and two enforcement technicians.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Marine Fisheries Service (NMFS)

Southwest Region

Santa Rosa Area Office

Located in Santa Rosa, CA, the Protected Resources Division, Santa Rosa Field Office is responsible for the administration of programs, laws and acts that promote and support conservation, protection and recovery of salmonid resources in Central California. The Office's primary emphasis is on the administration of the *Endangered Species Act*, particularly on Section 4 (Recovery Planning), Section 7 (Consultations) and Section 10 (Habitat Conservation Plans, Scientific Research Permits). The Office provides technical assistance to state agencies, county and local government, and private landowners on issues ranging from forestry to city/county land use practices and ordinances that affect salmonid habitat.

The majority of the Southwest Region's Habitat Conservation Division is housed in Santa Rosa. The Area Office also works with energy companies, conservation groups and federal and state agencies to implement the Feather River Habitat Expansion Agreement, which was created to resolve blockages to migratory fish passage at several hydropower dams on the Feather River.

<http://swr.nmfs.noaa.gov/sro.htm>

CA- 6, 8

Bodega Bay, Pt. Reyes, San Francisco

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Bodega Bay Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

National Ocean Service (NOS)

Office of National Marine Sanctuaries

Gulf of Farallones National Marine Sanctuary

The Gulf of the Farallones National Marine Sanctuary protects an area of 948 square nautical miles (1,255 square miles) off the northern and central California coast. Located just a few miles from San Francisco, the waters within the Gulf of the Farallones National Marine Sanctuary are part of a nationally significant marine ecosystem. Encompassing a diversity of highly productive marine habitats, the Sanctuary supports an abundance of species.

<http://farallones.noaa.gov/>

CA- 6, 10

San Francisco, San Rafael, Suisun

National Ocean Service (NOS)

Office of Ocean and Coastal Resource Management

San Francisco Bay National Estuarine Research Reserve

San Francisco Bay National Estuarine Research Reserve (NERR) is a partnership among NOAA, San Francisco State University, California State Parks, and the Solano Land Trust. The Reserve Headquarters are located at the Romberg Tiburon Center and comprised of two of the most pristine wetlands that remain in the San Francisco Bay estuary. The 3,710 acres composing the reserve are located at two sites, China Camp State Park and Suisun Marsh. Designated in 2003, the San Francisco Bay NERR promotes scientific research, education, and stewardship of these remaining wetlands to better manage and successfully restore these important areas of the San Francisco Bay Estuary.

<http://www.nerrs.noaa.gov/SanFrancisco/welcome.html>

CA- 7

Vallejo

National Marine Fisheries Service (NMFS)

National Seafood Inspection Program

Northern California Inspection Service

The National 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 area's fishermen and fish processors including process and product inspection, product grading, lot inspection, laboratory analysis, and training. All edible foodstuffs, ranging from whole fish to formulated products, as well as fishmeal used for animal foods, are eligible for inspection and certification.

<http://seafood.nmfs.noaa.gov/>

CA- 7 through 13

San Francisco Bay Area

National Ocean Service (NOS)

Center for Operational Oceanographic Products and Services

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 five stations, meteorological data from six stations, and current data from three stations.

<http://tidesandcurrents.noaa.gov>

National Ocean Service (NOS)

Office of Response and Restoration

Regional Coordinator

The Office of Response and Restoration provides strategic environmental assessment in San Francisco Bay to help ensure that the Bay's marine-based economic activities can continue to expand while its invaluable ecological resources are protected and managed wisely for future generations. The goal of this project is to help support navigation and coastal resource management and protection activities in the Bay in three ways. First, provide the marine transportation community with real-time, accurate, and detailed tide and water level information for planning and controlling vessel transits. Second, create a common geo-spatial framework for Bay management agencies. Third, provide data and models to researchers to promote in-depth investigations of fundamental Bay ecosystem processes and support restoration efforts.

<http://response.restoration.noaa.gov/>

CA- 8

San Francisco

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. Office of Law Enforcement special agents and enforcement officers have specified authority to enforce over 37 statutes, as well as numerous treaties related to the conservation and protection of marine resources and other matters of concern to NOAA. With the recent formation of the Pacific Island Division, the Southwest Division has the opportunity to focus solely on California issues. Nearly 1,340 miles of coastline, over 263,000 square miles of open-ocean and 30,000 miles of rivers and streams are located within the Southwest Division. The Division is also responsible for the enforcement activities relating to four Fishery Management Plans, three International Management Plans, seven National Marine Sanctuaries, the South Pacific Tuna Treaty; and the Gulf of Farallones, Cordell Bank, Monterey Bay and Channel Islands National Marine Sanctuaries.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Ocean Service (NOS)

Office of Ocean and Coastal Resource Management

California Coastal Management Program

The California Coastal Program is administered by the California Coastal Commission (manages development along the California coast except for San Francisco Bay), and the San Francisco Bay Conservation and Development Commission. A third agency, the California Coastal Conservancy, purchases, protects, restores, and enhances coastal resources, and provides access to the shore. The California coastal zone generally extends 1,000 yards inland from the mean high tide line. In significant coastal estuarine habitat and recreational areas it extends inland to the first major ridgeline or five miles

from the mean high tide line, whichever is less. In developed urban areas, the boundary is generally less than 1,000 yards. The Coastal Program uses a variety of planning, permitting, and non-regulatory mechanisms to manage its coastal resources. Both the California Coastal Commission and the San Francisco Bay Conservation and Development Commission implement well established permitting and planning programs.

The Coastal Commission's activities range from helping local communities develop local coastal plans that address water quality, cumulative and secondary impacts, coastal habitat, and other issues to developing regional public access guides. The San Francisco Bay Conservation and Development Commission (BCDC) is currently identifying the risks associated with climate change over the next 100 years and developing strategies for adapting to a changing climate. BCDC is also a partner in the effort to restore over 15,000 acres of former salt ponds in the South Bay. The Conservancy focuses on restoration, land acquisition, and public access projects.

<http://coastalmanagement.noaa.gov/mystate/ca.html>

**National Ocean Service (NOS)
Office of Response and Restoration
Regional Resource Coordinator**

NOAA acts on behalf of the Secretary of Commerce as a Federal trustee, under CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) and other laws, for natural resources in coastal and marine areas. NOAA's mandate is to protect and restore trust resources that are injured by Superfund site contaminants. NOAA fulfills its responsibilities through an effective network of Regional Resource Coordinators (RRCs) placed in eight EPA regional offices, as well as an interdisciplinary technical support group located in Seattle.

The RRCs based in Sacramento and San Francisco respond to local technical requirements by identifying risks to natural resources, recommending protective remedial measures, and designing projects to restore injured resources and habitats in cooperation with U.S. EPA Superfund program managers, the State of California, and other trustee agencies. RRCs work with lead cleanup agencies to achieve remedies that protect both human health and natural resources by fostering cooperative, cost-effective problem solving strategies; developing environmentally protective remedies; and minimizing costly litigation. Additionally, RRCs improve coordination among trustee agencies and protect natural resources through participation in settlement negotiations with responsible parties.

<http://response.restoration.noaa.gov/>

**National Ocean Service (NOS)
Office of Response and Restoration
Regional Resource Coordinator**

The Regional Resource Coordinator (RRC) based in San Francisco is responsible for determining and quantifying injuries to natural resources through identification of a hazardous materials release, determination of a pathway, definition of the injury, and demonstration of causal mechanisms. RRCs document the severity, geographic extent, and likely duration of the injury. Potential causes are evaluated according to the significance of injury, casual link to the potentially responsible party, cost effectiveness, statute of limitation, liability of the responsible party, litigation risks, geographic location, and restoration potential. RRCs also provide timely response to an oil or chemical spill to collect information, samples, and evidence that are time dependant and critical to support natural resource damage assessments.

<http://response.restoration.noaa.gov/>

**CA-10
Livermore**

**Office of Oceanic and Atmospheric Research (OAR)
Geophysical Fluid Dynamics Laboratory
Program for Climate Model Diagnosis and Intercomparison (PCMDI)**

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. Archived data will also be used in the next Intergovernmental Panel on Climate Change report.

Walnut Grove

Office of Oceanic and Atmospheric Research (OAR) Earth System Research Laboratory/Global Monitoring Division Monitoring the Atmosphere – Tall Tower Carbon Measurements

NOAA's Earth System Research Laboratory (ESRL) operates trace gas monitoring sites at tall television transmitter towers in six states, including California. The sites were established to extend ESRL's monitoring network into the interior of North America in order 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 (> 400 meter) transmitter towers as platforms for in situ and flask sampling for atmospheric trace gases.

<http://www.esrl.noaa.gov/gmd/ccgg/towers/>

Office of Oceanic and Atmospheric Research (OAR) Earth System Research Laboratory/Global Monitoring Division Monitoring the Surface Atmosphere - Cooperative Global Air Sampling Network

NOAA's Earth System Research Laboratory (ESRL) operates a Cooperative Global Air Sampling Network to measure the distribution and trends of carbon dioxide (CO₂) and methane (CH₄), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected weekly at fixed locations and on several commercial ships. The air samples are delivered to the ESRL laboratory, located in Boulder, CO. The samples collected at Walnut Grove represent air that has been over the Pacific Ocean, upwind of North America, for days or weeks. These measurements help determine the magnitude of carbon sources and sinks in North America.

<http://www.esrl.noaa.gov/gmd/about/climate.html>

Office of Oceanic and Atmospheric Research (OAR) Earth System Research Laboratory/Global Monitoring Division Monitoring the Surface Atmosphere – Halocarbon Measurements

NOAA's Earth System Research Laboratory (ESRL) 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 the ESRL laboratory, located in Boulder, CO for analysis. Some locations conduct continuous surface measurements on site. 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.

<http://www.esrl.noaa.gov/gmd/hats/>

CA-13

Alameda

National Ocean Service (NOS) Office of Response and Restoration Scientific Support Coordinator

NOAA's Emergency Response Division (ERD) strives to reduce risks to coastal habitats and resources from oil and hazardous chemical spills. ERD's multi-disciplinary Scientific Support Team has decades of experience in responding to oil spill emergencies. Led by its nine regionally based Scientific Support Coordinators (SSCs), ERD's response to spill emergencies has gained a reputation for rapid, well thought out, yet cost effective environmental protection decisions. The SSC based in Alameda works directly with U.S. Coast Guard spill response teams by providing critical scientific support to the federal On-Scene Coordinator (OSC) during spills of oil or hazardous materials. SSCs use oil spill trajectory estimates, chemical hazards analyses, and assessments of the sensitivity of biological and human-use resources to help the OSC make timely operational decisions. SSCs provide guidance, experience, and resources to develop spill preparedness plans that help identify the spill response action with the greatest environmental benefit.

<http://response.restoration.noaa.gov/>

Fremont

National Weather Service (NWS) Central Weather Service Unit Fremont ARTCC

Housed in the Federal Aviation Administration's Fremont Air Traffic Control Center (ARTCC), the Central Weather Service Unit (CWSU) Fremont staff provides forecasts and other weather data for most of northern California and western Nevada. This is an integral part of the Air Route Traffic Control Center (ARTCC) operation and is tasked with providing meteorological consultation and forecasts to traffic managers and planners in an effort to ensure safe and efficient flow of air traffic through the National Airspace System (NAS).

<http://aviationweather.gov/>

Oakland

National Weather Service (NWS) Center Weather Service Unit Oakland ARTCCC

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

<http://www.wrh.noaa.gov/zoa>

CA-15

San Jose, La Jolla, Berkeley

Office of Oceanic and Atmospheric Research (OAR) Earth System Research Laboratory/Global Systems Division Science On a Sphere®

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 what are sometimes complex environmental processes, in a way that is simultaneously intuitive and captivating.

<http://www.sos.noaa.gov/>

CA-17

Carmel

National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center Granite Canyon Marine Laboratory

Located at Granite Canyon, 8 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 facility was used for shellfish mariculture for many years by the California Department of Fish and Game and is of renewed interest by Southwest Fisheries Science Center Abalone Research Program, which is responsible for monitoring the endangered white abalone and other abalone of concern. The University of California-Davis's Marine Pollution Studies Laboratory is located at the site.

<http://www.envtox.ucdavis.edu/GraniteCanyon/GraniteCanyon.htm>

Monterey

National Marine Fisheries Service (NMFS) Office of Law Enforcement Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. The Monterey office houses a field supervisor, an agent and uniform enforcement officer and who investigate possible violations occurring within the boundaries of the Monterey Bay National Marine Sanctuary. The office is located within the United States Coast Guard office where joint surface and aerial patrols are scheduled in an effort to monitor activities occurring around the MBNMS area. The Division is also responsible for the enforcement activities relating to four Fishery Management Plans and three International Management Plans.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Ocean Service (NOS) Office of National Marine Sanctuaries Monterey Bay National Marine Sanctuary

Monterey Bay National Marine Sanctuary is located south of San Francisco along the north central California coast. A remarkable diversity of marine habitats found nowhere else in North America is within the boundaries of the sanctuary and include rugged rocky shores, sandy beaches, lush kelp forests, and most significantly, some of the deepest submarine canyons found on the Pacific continental shelf. The nutrient-rich currents that nourish the area make possible a diverse assemblage of marine life comprised of sea otters, seals, shorebirds, squids, sardines and thousands of other species, including many that are threatened or endangered. While Monterey Bay National Marine Sanctuary's main office is located in Monterey, it also has offices in Half Moon Bay, Santa Cruz and San Simeon.

<http://montereybay.noaa.gov/>

Monterey and San Francisco Bay Area

National Weather Service (NWS)

Weather Forecast Office

Monterey WFO

Located in Monterey, this National Weather Service Weather Forecast Office provides weather and flood warnings, daily forecasts and meteorologic and hydrologic data for 11 counties of coastal California (Napa, Sonoma, San Francisco, Marin, Contra Costa, Alameda, Santa Clara, Santa Cruz, San Benito, San Mateo and Monterey).

<http://www.wrh.noaa.gov/monterey>

Monterey and Santa Cruz

National Ocean Service (NOS)

Office of Ocean and Coastal Resource Management

National Marine Protected Areas Center (CA)

The National Marine Protected Areas Center provides a bridge between the science and policy of MPAs by fostering targeted research, assessing threats to vital habitats and resources, measuring the effectiveness of existing management approaches, and analyzing socioeconomic factors that may affect MPAs. The Monterey office also supports activities that support the implementation of *California's Marine Life Protection Act* and other West Coast MPA planning efforts, including the California Ocean Uses Atlas, and a regional gap analysis for the West Coast.

<http://www.mpa.gov/>

Pacific Grove

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. Office of Law Enforcement special agents and enforcement officers have specified authority to enforce over 37 statutes, as well as numerous treaties related to the conservation and protection of marine resources and other matters of concern to NOAA. With the recent formation of the Pacific Island Division, the Southwest Division has the opportunity to focus solely on California issues. Nearly 1,340 miles of coastline, over 263,000 square miles of open-ocean and 30,000 miles of rivers and streams are located within the Southwest Division. The Division is also responsible for the enforcement activities relating to four Fishery Management Plans, three International Management Plans, seven National Marine Sanctuaries, the South Pacific Tuna Treaty; and the Gulf of Farallones, Cordell Bank, Monterey Bay and Channel Islands National Marine Sanctuaries.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Marine Fisheries Service (NMFS)

Southwest Fisheries Science Center

Environmental Research Division

The Environmental Research Division of the Southwest Fisheries Science Center is located in Pacific Grove, CA. 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. In addition to its research mission, the Division distributes environmental index products and time series databases to cooperating researchers, taking advantage of its long association with the United States Navy's Fleet Numerical Meteorology and Oceanography Center.

The Pacific Grove facility also houses 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. A public mural, "Green Seas, Blue Seas: the California Current, Climate Change and Sustainable Fisheries" now adorns the building.

<http://swfsc.noaa.gov/erd.aspx>

Pt. Sur

Office of Oceanic and Atmospheric Research (OAR) Earth System Research Laboratory/Physical Sciences Division Pt. Sur Debris Flow Project

NOAA's Earth System Research Laboratory (ESRL) is operating several state-of-the-art research instruments at Pt. Sur, California to provide atmospheric measurements of land-falling winter storms upstream of the Basin and Indian wildfire burn areas. A consequence of these enormous wildfires is increased risk for devastating debris flows to occur. There is serious concern among forecasters that much of the shallow rain clouds caused by moist airflow up the coastal mountain slopes could go undetected by the National Weather Service (NWS) radar network. With the addition of ESRL's research instrumentation, the NWS' San Francisco/Monterey Weather Forecast Office (SFO) will be able to issue more accurate warnings to help mitigate effects from flooding and debris flows.

Santa Cruz

National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center Fisheries Ecology Division

Located adjacent to University of California Santa Cruz's Long Marine Laboratory and a growing complex of marine research facilities, the Fisheries Ecology Research Division of the Southwest Fisheries Science Center conducts research on Pacific coast groundfish and anadromous fishes. 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.

<http://swfsc.noaa.gov/fed.aspx/>

Watsonville

National Ocean Service (NOS) Office of Ocean and Coastal Resource Management Elkhorn Slough National Estuarine Research Reserve

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 encompasses over 1600 acres of wetland and upland habitat, and Elkhorn Slough represents rare and threatened marsh, mudflat, and estuarine habitats - important for several endangered species. The Reserve conducts education programs for school groups, teachers, influential decision makers, and the public. It also supports a thriving volunteer program, fosters and conducts environmental monitoring and research by providing a "living laboratory" to gauge ecosystem health. A large-scale tidal wetland restoration project is a focus for current research, monitoring, and management.

<http://nerrs.noaa.gov/ElkhornSlough/>

CA-18

Merced

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Merced Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

CA-19

Yosemite Village

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Yosemite Village Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

CA-20

Hanford

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Monitoring Division

Total Column Ozone Measurements

NOAA's Earth System Research Laboratory (ESRL) 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, including Hanford, CA. The observations are obtained with ground-based spectrometers that measure the attenuation by ozone of ultraviolet light. This integrated ozone amount is critical in determining the amount of ultraviolet radiation reaching the earth's surface. Excess ultraviolet radiation is responsible for human skin cancer and is also harmful to other biogenic organisms. Column ozone measurements monitor changes in the stratospheric ozone layer resulting from human-produced chlorine and bromine compounds that destroy ozone. With controls now in place on the manufacture and use of these ozone-destroying compounds, it will be important to monitor the ozone layer for the expected recovery and determine whether other factors such as long-term climate change are influencing this recovery.

<http://www.esrl.noaa.gov/gmd/about/ozone.html>

CA-21

San Joaquin Valley/Hanford

National Weather Service (NWS)

Weather Forecast Office

San Joaquin Valley / Hanford WFO

Located at Hanford Municipal Airport, this National Weather Service Weather Forecast Office provides weather and flood warnings, daily forecasts and meteorologic and hydrologic data for the central California interior.

<http://www.wrh.noaa.gov/Hanford>

CA-23

Los Angeles Basin

National Weather Service (NWS)

Weather Forecast Office

Oxnard WFO

Located in the City of Oxnard, this National Weather Service Weather Forecast office provides weather and flood warnings, daily forecasts and meteorologic and hydrologic data for southwestern California, which includes the counties of Los Angeles, Ventura, Santa Barbara and San Luis Obispo.

<http://www.nwsla.noaa.gov/>

San Nicolas Island

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Physical Sciences Division

Wind Profiling to Support NAVAIR

NOAA's Earth System Research Laboratory (ESRL) will install a 449-MHz wind profiling radar on San Nicolas Island off the coast of southern California to support operations of the Naval Air Systems Command (NAVAIR). NAVAIR provides unique engineering, development, testing, evaluation, in-service support, and program management capabilities to deliver airborne weapons systems that are technologically superior and readily available.

San Simeon

National Marine Fisheries Service (NMFS)

Southwest Fisheries Science Center

Piedras Blancas Field Station

Since 1994, scientists from the Southwest Fisheries Science Center's Protected Resources 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, California, 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.

<http://swfsc.noaa.gov/prd.aspx>

Santa Barbara

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Santa Barbara Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

National Ocean Service (NOS)

Office of National Marine Sanctuaries

Channel Islands National Marine Sanctuary

The fertile waters and giant kelp forests of the Channel Islands National Marine Sanctuary, located approximately 40 kilometers off the coast of Santa Barbara, provide an exceptional breeding ground for a variety of plants, fish and invertebrates. Over 27 species of whales and dolphins -several endangered -visit or inhabit the sanctuary. Five species of seals and sea lions and over 60 species of birds breed within the sanctuary's boundaries. Cultural resources such as prehistoric artifacts from the Chumash Indians and the remains of over 100 historic shipwrecks compliment the biological diversity of the island archipelago. There is also a Sea Center, an aquarium and marine education facility, and Los Marineros, a marine education program for children.

<http://channelislands.noaa.gov/>

Office of Oceanic and Atmospheric Research (OAR)

National Severe Storms Laboratory

Debris Flow Research

USGS Debris Flow Project - NSSL's Shared Mobile Atmospheric Research and Teaching Radar (SMART-R) team participates in the Demonstration Flash Flood and Debris Flow Early Warning System Project each winter to determine how more detailed measurements aid forecasters in issuing flash flood and debris flow warnings. Our mobile radars provide real-time close-up radar data during radar events near areas burned by wildfires that are especially susceptible to mudslides.

<http://www.nssl.noaa.gov/debrisflow08/>

Santa Maria

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Field Office

NOAA's Office of Law Enforcement is dedicated primarily to the enforcement of laws that protect and regulate our nation's living marine resources and their natural habitat. Office of Law Enforcement special agents and enforcement officers have specified authority to enforce over 37 statutes, as well as numerous treaties related to the conservation and protection of marine resources and other matters of concern to NOAA.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

CA-24

Vandenberg AFB

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Global Systems Division

Lockheed Range Standardization and Augmentation (RSA)

The numerical weather prediction and forecast applications system, RSA, has been accepted and is now integrated into the USAF system, meeting coding standards for the modeling and analysis infrastructure developed in Boulder at NOAA's Earth System Research Laboratory with Lockheed.

<http://www-sdd.fsl.noaa.gov/RSA/>

CA-25

Palmdale

National Weather Service (NWS)

Center Weather Service Unit

Los Angeles ARTCC

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

<http://www.wrh.noaa.gov/zla>

CA-35

Stovepipe Wells

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Stovepipe Wells Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

CA-36, 37, 46

Los Angeles and Long Beach

National Ocean Service (NOS)

Center for Operational Oceanographic Products and Services

Los Angeles/Long Beach Harbor PORTS®

A Physical Oceanographic Real-Time System (PORTS) is operated cooperatively with the Los Angeles/Long Beach Pilots Association and 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 eight stations, and air gap data from one station.

<http://tidesandcurrents.noaa.gov>

CA-46

Long Beach

National Marine Fisheries Service (NMFS)

National Seafood Inspection Program

Long Beach Lot Inspection Office

The National 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 US exporters. All edible foodstuffs, ranging from whole fish to formulated products, as well as fishmeal and animal feeds, are eligible for inspection and certification.

<http://seafood.nmfs.noaa.gov/>

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Field Office

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The Southwest Division is comprised of California, Arizona and Nevada. The Long Beach Divisional office has five field offices spread throughout California: Arcata, Santa Rosa, Monterey, Santa Maria, and San Diego. The Division is also responsible for the enforcement activities relating to four Fishery Management Plans, three International Management Plans and four National Marine Sanctuaries - Cordell Bank, Gulf of the Farallones, Channel Islands and the Monterey Bay National Marine Sanctuary.

http://www.nmfs.noaa.gov/ole/sw_southwest.html

National Ocean Service (NOS)

Office of Response and Restoration

Damage Assessment Center

The Regional Resource Coordinator (RRC) based in Long Beach is responsible for determining and quantifying injuries to natural resources through identification of a hazardous materials release, determination of a pathway, definition of the injury, and demonstration of causal mechanisms. RRCs document the severity, geographic extent, and likely duration of the injury. Potential causes are evaluated according to the significance of injury, causal link to the potentially responsible party, cost effectiveness, statute of limitation, liability of the responsible party, litigation risks, geographic location, and restoration potential. RRCs also provide timely response to an oil or chemical spill to collect information, samples, and evidence that are time dependant and critical to support natural resource damage assessments.

<http://response.restoration.noaa.gov/>

CA-49

Fallbrook

National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR)

Climate Reference Network

Fallbrook Station

The U.S. Climate Reference Network (USCRN) is an operational network of climate stations. Data from the USCRN will be used in operational climate monitoring activities and for placing current climate anomalies into an historical perspective. NOAA's National Climatic Data Center (NCDC) manages the USCRN. The USCRN will also provide the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). NOAA's National Environmental Satellite, Data, and Information Service and NOAA's Office of Oceanic and Atmospheric Research jointly manage USCRN.

<http://www.ncdc.noaa.gov/oa/climate/uscrn/>

CA-49, 53

La Jolla

National Ocean Service (NOS)

National Geodetic Survey

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.

<http://csrc.ucsd.edu/>

Office of Marine and Aviation Operations (OMAO)

Homeport

NOAA Ship *David Starr Jordan*

The NOAA ship *David Starr Jordan* is managed by the Marine Operations Center-Pacific in Seattle, Washington. The ship supports the science and research missions of the Southwest Fisheries Science Center Laboratory at La Jolla and berths at the Scripps Institution of Oceanography, located in San Diego harbor.

<http://www.moc.noaa.gov/ds/>

Office of Oceanic and Atmospheric Research (OAR)

Cooperative Institute

Joint Institute for Marine Observation (JIMO), University of California at San Diego

JIMO, located on the Scripps La Jolla campus, is a joint institute between NOAA and the University of California's Scripps Institution of Oceanography. JIMO is collocated with the NOAA Southwest Fisheries Center. The overall goal of JIMO is to create a center of excellence in which state-of-the-art observation capabilities such as platforms (surface, subsea, and air/spaceborne), sensors, and systems architecture of both NOAA and Scripps are utilized to fill pressing research needs.

The specific themes reflect the particular strengths at Scripps in the areas of coupled ocean-atmosphere climate research, blue water and littoral oceanography; marine biology, geology, and geophysics; and ocean technology. JIMO also attempts to enhance the educational opportunities and breadth of training for students by providing close collaboration with NOAA's Office of Oceanic and Atmospheric Research, team teaching by Scripps and NOAA scientists, and research experience at one of NOAA's facilities.

<http://www.jimo.ucsd.edu/>

Office of Oceanic and Atmospheric Research (OAR)

Earth System Research Laboratory/Physical Sciences Division

El Niño Research

NOAA's Earth System Research Laboratory (ESRL) has been studying the impact of El Niño/Southern Oscillation on the U.S. Pacific West Coast (where the effect is known to be large) and is seeking to improve seasonal precipitation forecasts for this region. ESRL's role in detecting, predicting and understanding the impacts of El Niño has enhanced seasonal climate outlooks, and resulted in more timely assessments which can be used by various user communities (water, energy and transportation managers, farmers, etc.) and the general public to prepare for and mitigate these impacts.

This research is being conducted jointly with the National Weather Service staff who are responsible for operational seasonal forecasts and with scientists at the Scripps Institution of Oceanography. ESRL works closely with the U.S. Geological Survey, the University of California system, and NOAA's Climate Program Office California Applications Project. Efforts to develop a predictive understanding between climatic variability and human diseases such as western equine encephalitis and West Nile encephalitis represent a continuing collaboration with scientists from the University of California at Davis and UC-San Diego.

<http://www.cdc.noaa.gov/ENSO/>

CA-50

San Diego

National Weather Service (NWS)

Weather Forecast Office

San Diego WFO

Located in San Diego, this National Weather Service Weather Forecast Office provides weather and flood warnings, daily forecasts and meteorologic and hydrologic data for extreme Southwest California, including Orange, San Diego, southwest San Bernadino and western Riverside counties.

<http://www.wrh.noaa.gov/sgx/>

CA-53

Imperial Beach

National Ocean Service (NOS)

Office of Ocean and Coastal Resource Management

Tijuana River National Estuarine Research Reserve

Tijuana River National Estuarine Research Reserve is an intertidal coastal estuary that straddles the international border between California and Baja California, Mexico. Totaling 2500 acres in area, the salt marsh dominated habitat of the Reserve is characterized by extended periods of drought punctuated by heavy floods during wet years. Known for its bilingual environmental education curriculum for grades 4-6, the Reserve also offers other education services for school

groups such as nature classes, walking tours and teacher training courses. The NERR was designated in 1982 and is jointly managed by the California Department of Parks and Recreation, U.S. Fish and Wildlife Service, San Diego County and NOAA. The Pacific Estuarine Research Laboratory located at nearby San Diego State University utilizes the Reserve extensively for scientific research.

<http://nerrs.noaa.gov/TijuanaRiver/>

La Jolla

National Marine Fisheries Service (NMFS)

Southwest Fisheries Science Center

La Jolla Shores Drive Laboratory

Located at Scripps Institution of Oceanography on the UC San Diego campus, Southwest Fisheries Science Center's La Jolla Shores Drive Laboratory houses most of the Fisheries Resources Division. Scientists assess coastal pelagic and highly migratory fishes and evaluate biological and environmental factors affecting their distribution, abundance, and survival. Scientists also conduct research on abalone, fisheries and conservation economics, and Advanced Survey Technologies. The laboratory houses staff from NOAA's National Satellite and Information Service, the Inter-American Tropical Tuna Commission, and California Department of Fish and Game. Currently in the design phase, the La Jolla Laboratory Consolidation project will replace the facilities at Torrey Pines Court and La Jolla Shores Drive. It will be located across La Jolla Shores Drive from the existing facility and constructed around a large sea- and fresh-water test tank facility, which will expand NOAA's ability to develop and apply advanced survey technologies and to foster collaborations on fisheries management issues.

<http://swfsc.noaa.gov>

San Diego

National Marine Fisheries Service (NMFS)

Office of Law Enforcement

Field Office

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http://www.nmfs.noaa.gov/ole/sw_southwest.html