NOAA Research in California

CA-1 through 52 (Statewide)

Climate and Global Change Program

NOAA is responsible for providing climate information to the nation in order to prepare and protect climate sensitive sectors of society and the economy. To carry out this mission, NOAA's Climate and Global Change Program conducts focused scientific research to understand and predict variations of climate. The Program is comprised of a number of research elements, each focusing on a specific aspect of climate variability. Taken together, this research contributes to improved predictions and assessments of the effects of climate variability and change on different environments over a continuum of time scales from season to season, year to year, and over the course of a decade and beyond. This research is accomplished through the strong support of the academic and private sectors, as well as NOAA and other federal laboratories. In FY 2001, NOAA's Climate and Global Change Program provided approximately $6,429,300 in support of climate research in the State of California. For more information please visit http://www.ogp.noaa.gov

CA-1, 6, 8, 12, 14, 15, 17, 22, 23, 24, 29, 32, 36, 38, 45, 47, 48, 49, and 51 (Based in Los Angeles (District 32) - serves entire California coast)

Office of Oceanic and Atmospheric Research
National Sea Grant College Program
University of Southern California Sea Grant Program

California is served by two Sea Grant Programs, both of which are part of NOAA's National Sea Grant College Program and together make up a statewide network of research, education, and extension services that promote the sustainable use of marine and coastal resources. One of the two programs is the University of Southern California (USC) Sea Grant Program based in Los Angeles. Current research projects in the Program include a study of the causes of chronic beach contamination at Huntington Beach and an evaluation of human impacts and climate changes on marine protected areas in Southern California. USC Sea Grant's "Island Explorers" K-12 education programs aim to increase science literacy among urban students, and encourage teachers to adopt science education curricula. Southern California universities and institutions that receive research funding through the University of Southern California Sea Grant Program include the University of Southern California at Los Angeles, California State University at Fullerton, and California State University at Long Beach. In FY 2001 California Sea Grant projects received total funding of approximately $5.95 million from the National Sea Grant College Program and $114,000 in federal pass through funding. For more information please visit
http://www.usc.edu/org/seagrant/seagrant.html

CA-1, 6, 8, 12, 14, 15, 17, 22, 23, 24, 29, 36, 38, 45, 47, 48, 49, and 51 (Based in La Jolla - serves entire California coast)

National Sea Grant College Program
California Sea Grant College Program

California is served by two Sea Grant Programs, both of which are part of NOAA's National Sea Grant College Program and together make up a statewide network of research, education, and extension services that promote the sustainable use of marine and coastal resources. One of the two programs is the California Sea Grant College Program based in La Jolla at the University of California. The California Sea Grant College Program annually funds approximately 60 concurrent research and outreach projects, which are selected on the basis of competitive, peer-reviewed proposals and address a wide range of problems and opportunities. Current projects focus on fisheries and fisheries habitat, seafood safety and quality, coastal water quality, aquatic nuisance species, wetland and salmonid habitat restoration, marine aquaculture, coastal ocean processes, new marine products, ocean engineering and instrumentation, marine affairs, oyster disease, marine biotechnology, and marine reserves. Citizens, industry representatives, scientists and government policy-makers are kept informed on topics such as fishing vessel fuel efficiency loans, ballast water treatments, and issues facing California fisheries through its Extension program, a variety of publications, email, workshops, consultation, and the program's website. California universities and institutions that received research funding in FY 2001 include several University of California campuses, Stanford University, several California State University campuses, and the Monterey Bay Aquarium Research Institute. California Sea Grant receives funding from NOAA, the State of California, and matching funds from participating universities. For more information please visit http://www-csgc.ucsd.edu

CA-1, 6, 8, 12, 14, 15, 17, 22, 23, 24, 29, 36, 38, 45, 47, 48, 49, and 51 (coastal communities)

Pacific Marine Environmental Laboratory
Tsunami Research Program

The Tsunami Research Program at the Pacific Marine Environmental Laboratory (PMEL) seeks to mitigate tsunami hazards to California, Washington, Oregon, Hawaii, and Alaska. 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. Research and development activities focus on improved tsunami inundation maps for coastal communities and advanced technology to increase the speed and accuracy of tsunami forecasts and warnings. PMEL has developed and deployed an array of early warning buoys in the Pacific to increase the reliability of tsunami warnings. This array consists of six moored buoys located at key deep water sites to improve risk assessment from tsunamis associated with major earthquake hazard areas around the Pacific Basin. One of the primary aspects of this work is the National Tsunami Hazard Mitigation Program, a state/federal partnership created to reduce the risks of tsunamis to U.S. coastal areas. This program was funded at $2.3 million in FY 2001. For more information please visit http://www.pmel.noaa.gov/tsunami/

CA-1, 6, 8, 12, 14, 15, 17, 22, 23, 24, 29, 36, 38, 45, 47, 48, 49, and 51 (coastal waters)

National Undersea Research Program
National Undersea Research Center for the U.S. West Coast and Polar Regions

The NOAA National Undersea Research Program (NURP) funds research in waters off California primarily through the West Coast and Polar Regions National Undersea Research Center. The Center's mission on the West Coast is to promote, facilitate and support quality undersea research along the U.S. West Coast according to programmatic research themes which include fisheries research, shelf and slope ecology, ridge crest processes, subduction zone processes, and seamount research. FY 2001 funding for the West Coast and Polar Regions Center was $2.69 million. For more information please visit http://www.wcnurc.alaska.edu:8000

CA-2 and 49 (Chico, Point Loma, and La Jolla)

Forecast Systems Laboratory
GPS Meteorological Observing Systems

NOAA's Forecast Systems Laboratory (FSL) operates a rapidly expanding network of GPS Meteorological (GPS-Met) Observing Systems to monitor the total quantity of precipitable water vapor in the atmosphere. Currently, there are 93 systems over the contiguous 48 states and Alaska, and plans are being made to extend these observations to Hawaii, Puerto Rico, the Caribbean Islands, and Central America. Water vapor is an important but under-observed component of the atmosphere that plays a major role in severe weather events and the global climate system. GPS-Met systems provide accurate water vapor measurements under all weather conditions, including thick cloud cover and precipitation, and do so at very low cost. The major reason why this system is so economical is that the network is being developed by FSL in cooperation with federal, state and local government agencies, universities, and the private sector. The GPS stations provide high-accuracy surveying and navigation services for National defense, automated agriculture, safe land and marine transportation, government infrastructure management, and 911 emergency response services. Fortuitously, these systems can also be used for meteorology with the addition of surface weather sensors. GPS-Met systems located in California include a site operated by the U.S. Department of Transportation near Chico, with others planned for Lincoln and Bakersfield. The U.S. Coast Guard operates a site near Point Loma and is planning to install others at Vandenberg AFB, Pigeon Point, Point Blunt, and Cape Mendocino. A site is also operated by Scripps Institute of Oceanography in La Jolla. For more information please visit http://www.gpsmet.noaa.gov/jsp/index.jsp

CA-3 and 49 (Davis and La Jolla)

Climate Diagnostics Center
Climate Research

NOAA's Climate Diagnostics Center (CDC) has been studying the impact of El Niño/Southern Oscillation (ENSO) 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. 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. Results have been presented at several

recent workshops that were held in California. CDC works closely with the U.S. Geological Survey, the University of California system, and NOAA's Office of Global Programs California Applications Project (CAP). Efforts to develop a predictive understanding between climatic variability and human diseases such as Western Equine Encephalitis and Kawasaki Disease have begun in collaboration with scientists from the University of California at Davis and San Diego. For more information please visit http://www.cdc.noaa.gov

CA-14 and 40 (Palo Alto and Big Bear Lake)

Space Environment Center
Solare Images

NOAA's Space Environment Center receives images from the solar imagers at the Palo Alto and Big Bear Solar Observatories. This space weather data is used in solar activity forecasts which have the potential to impact health, communication, and power industries. For more information please visit http://www.sec.noaa.gov

CA-17 (Monterey)

Environmental Technology Laboratory
Pacific Landfalling Jets Experiment

PACJET, the Pacific Landfalling Jets experiment, was a field study of winter storms that impact the West Coast. Its aim was to improve the ability to forecast damaging weather on the U.S. West Coast in landfalling winter storms that develop over the Pacific Ocean. Based in Monterey and conducted in January and February of 2001, PACJET was a collaborative effort between NOAA's Office of Oceanic and Atmospheric Research and the National Weather Service, Naval Postgraduate School, Desert Research Institute, U.S. Weather Research Program, and other government and university entities. Researchers made use of the NOAA P-3 research aircraft in flights from the Monterey Airport, as well as instruments on the ground, satellites, and models. For more information please visit http://www.etl.noaa.gov/programs/pacjet2001/

CA-17 (Monterey Bay)

Ocean Exploration

In 2001, with a $4 million appropriation from Congress, NOAA launched a systematic, strategic effort through the Office of Ocean Exploration to search and investigate the oceans for the purpose of discovery. Three voyages were conducted off the California coast. On Pioneer Seamount researchers used passive underwater acoustic monitoring to detect a variety of ocean sounds to understand their impact on marine animals. On the Davidson Seamount, one of the largest in U.S. waters, researchers studied biological communities using two sampling methods – remote operating vehicles (ROVs) and baited traps. In Monterey Bay, laser technology was employed to characterize fish and invertebrate populations in deep water habitats. For more information please visit http://www.oceanexplorer.noaa.gov

CA-20 (Hanford)

Air Resources Laboratory
Integrated Surface Irradiance Study

Solar radiation is the driving energy for the geophysical and biochemical processes that control weather and life on earth. Thus, understanding the global surface energy budget is key to understanding climate. The answer to global coverage lies in reliable satellite-based estimates because it is impractical to cover the earth with monitoring stations. Accurate and precise ground-based measurements in differing climatic regions are essential to refine and verify the satellite-based estimates and to support specialized research. The Integrated Surface Irradiance Study (ISIS) is a continuation of earlier NOAA surface-based solar monitoring programs in the visible and ultraviolet wave bands. ISIS provides consistent and accurate basic surface radiation data. The Air Resources Laboratory (ARL) operates the NOAA national broadband solar radiation network, including a station located in the San Joaquin Valley. For more information please visit http://www.atdd.noaa.gov/isis/isis.htm

CA-22 (Vandenberg Air Force Base)

Environmental Technology Laboratory
Wind Profiler

NOAA's Environmental Technology Laboratory has installed an operational 449-MHz radar wind profiler at Vandenberg Air Force Base to observe how winds change speed and direction from the surface up to the stratosphere. These observations will improve both launch (vs. no launch) decisions and in regional weather prediction. For more information please visit http://www.etl.noaa.gov

CA-27 (Pasadena)

Aeronomy Laboratory
Health of the Atmosphere Program

Researchers at the Jet Propulsion Laboratory in Pasadena are being funded by NOAA's Aeronomy Laboratory to analyze data from the microwave thermal profiler that made measurements onboard a research aircraft during the air quality field study conducted in East Texas during the summer of 2000. The work is being done through NOAA's Health of the Atmosphere Program, which is designed to provide an understanding of the impact of high ozone levels near the Earth's surface. The mission was an intensive study of the meteorological and chemical factors that influence air quality in the Houston area. For more information please visit http://www.utexas.edu/research/ceer/texaqs/

CA-49 (La Jolla)

Joint Institute for Marine Observation

In July 1997, NOAA and its research partner, the University of California at San Diego, agreed to form the Joint Institute for Marine Observation (JIMO) at the Scripps Institution of Oceanography (SIO) in La Jolla. JIMO brings together the research and infrastructure resources of Scripps, the University of California, and NOAA to create a center of excellence where state-of-the-art observation capabilities are used for oceanic and climatic research. As a result of the JIMO partnership, NOAA can capitalize on the strength of SIO's large fleet of surface and subsurface instruments and ships to conduct observation of the oceans and the atmosphere, as well as the resources that the entire University of California system offers. The primary focus of JIMO's research is coupled ocean-atmosphere climate research. JIMO researchers also study marine geology and geophysics, deep-water and coastal oceanography, biological oceanography/marine biology, and ocean technology. Currently four of the ten campuses of the University of California system are working on NOAA research through JIMO. JIMO also enhances the opportunities and breadth of training for students and post-doctoral fellows by providing collaboration with NOAA researchers, team teaching by Scripps and NOAA scientists, and research experience at NOAA facilities. In FY 2001, JIMO was funded at $5 million and supported 32 researchers. For more information please visit http://www.jimo.ucsd.edu

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CA-49 (La Jolla)

Climate and Global Change Program
Experimental Climate Prediction Center

NOAA's Climate and Global Change Program provides support for the Experimental Climate Prediction Center (ECPC) at the Scripps Institution of Oceanography. ECPC is attempting to develop an integrated global-to-regional climate prediction capability by: (1) identifying coupled modes of interannual variability, (2) developing models capable of predicting these modes, and (3) evaluating the predictive capability of the models. Experimental predictions are made routinely to evaluate how well these models can predict at various time scales ranging from days to years. For more information please visit http://ecpc.ucsd.edu

CA-49 (La Jolla)

Climate and Global Change Program
California Applications Project

NOAA's Climate and Global Change Program provides support for the California Applications Project (CAP) at the Scripps Institution of Oceanography. CAP aims to develop improved climate forecasts for interested users in California and the surrounding region. By working directly with users, the program will be able to evaluate forecasts from the user perspective to improve their usefulness and develop new forecast application strategies. The specific objectives of CAP are to: (1) evaluate weather and climate forecasts for California, (2) improve local models and forecasts of water resources and fire risks, and (3) tailor and disseminate forecasts to local users. For more information please visit http://meteora.ucsd.edu/cap/

CA-49 (La Jolla)

Climate and Global Change Program
Consortium on the Oceans Role in Climate

NOAA's Climate and Global Change Program provides support for the Consortium on the Oceans Role in Climate (CORC). The CORC is a partnership between NOAA, the Scripps Institution of Oceanography, and Columbia University's Lamont-Doherty Earth Observatory and includes a number of researchers from other academic institutions. CORC was founded in 1993 as an experiment in alternate ways of bringing the academic community into NOAA's investigation of climate variability and its prediction. The main objective of CORC is to observe, deduce, and model climatically important variations in the global oceans that take place on time scales of a century or less. CORC seeks to understand the causes of both abrupt changes and quasi-periodic changes over periods from years to centuries and to assess their predictability.

CA-49 (La Jolla)

Climate and Global Change Program
Global Drifter Program

NOAA's Climate and Global Change Program provides support for the Global Drifter Program. The program is a joint effort between the Scripps Institution of Oceanography and NOAA's Atlantic Oceanographic and Meteorological Laboratory (AOML) in Miami, Florida. The Program, begun in 1988, deploys more than 500 drifters each year in the world oceans. The objective of the program is to provide global, operational, real-time data sets of sea surface temperature, sea level pressure, and surface velocity. These data are used for analysis and prediction of climate variability and verification of satellite ocean retrievals and coupled ocean-atmosphere global circulation models. For more information please visit http://www.aoml.noaa.gov/phod/dac/gdc.html

For further information about these and other NOAA programs, please contact NOAA's Office of Legislative Affairs at (202) 482-4981.

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