NOAA Research in Oregon

OR-1 through 5 (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 $273,000 in support of climate research in the State of Oregon. For more information please visit http://www.ogp.noaa.gov

OR-1 (Astoria Canyon)

Ocean Exploration
Lewis and Clark Legacy

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. In the spirit of discovery defined by the original Lewis & Clark Expedition, ocean scientists from Oregon State University and the Pacific Marine Environmental Laboratory, working with a private sector fishing firm, explored the little known submarine abyss of Astoria Canyon. Just 10km offshore from the mouth of the Columbia River, the most westward reach of the famous 19th century explorers, scientists used a variety of tools to characterize the canyon. In addition to this voyage, scientists monitored post-seismic activity in the Pacific Ocean off the Oregon coast in April, 2001. For more information please visit http://www.oceanexplorer.noaa.gov

OR-1 (Fort Stevens)

Forecast Systems Laboratory
GPS Meteorological Observing System

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 Oregon include one site operated by the U.S. Coast Guard near Fort Stevens, and one planned by the U.S. Department of Transportation near Klamath Falls. For more information please visit http://www.gpsmet.noaa.gov/jsp/index.jsp

OR-1, 4, and 5 (Based in Corvallis and Newport - serves entire Oregon coast)

National Sea Grant College Program
Oregon Sea Grant

Oregon Sea Grant develops and supports research, outreach, and education programs that help people understand, rationally use, and conserve marine and coastal resources. In more than 30 years of existence, Oregon Sea Grant has built a highly visible and productive program that makes a difference in the way people perceive the ocean and its resources and the way they act to use and conserve those resources. As part of the National Sea Grant College Program, Oregon Sea Grant receives major support from NOAA, in addition to state appropriations and contributions from local governments and industry. Research activities are strategically targeted to respond to critical state, national and global issues in which Sea Grant support can make a difference. Current research and outreach deals with coastal natural hazards, marine pharmaceuticals, seafood production and technology, fish and shellfish disease control, ecosystem health, fisheries management and conservation, coastal community development, and ocean law and public policy. The program has been an innovator in promoting interdisciplinary, cooperative, and collaborative research and development, and in using its marine extension arm to disseminate the results of that research to those who can put it to use. The program also provides opportunities for university graduate students to study important ocean and coastal problems, to take part in state and national fellowships in marine policy and natural resources, and to participate in research administration. The Sea Grant Communications staff produces publications, news releases, digital media and other products in support of the program's research and outreach activities. Sea Grant is also responsible for administering the Visitor Center at the Hatfield Marine Science Center in Newport, where the work of university and agency researchers is showcased in interpretive exhibits that introduce the public to important concepts in ocean and coastal science. The users of Oregon's marine resources are key contributors to the program. An advisory council of marine industry and coastal community leaders provides external review and guidance program emphasis and progress. In FY 2001, Oregon Sea Grant projects received funding of approximately $2.5 million from the National Sea Grant College Program. For more information please visit http://seagrant.orst.edu

OR-1, 4, and 5 (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 Oregon, Washington, Hawaii, California, 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

OR-1, 4, and 5 (coastal waters)

National Undersea Research Program
West Coast and Polar Regions National Undersea Research Center

The NOAA National Undersea Research Program (NURP) funds research in waters off Washington primarily through the West Coast and Polar Regions National Undersea Research Center. The West Coast part of the Center's mission 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.uaf.edu:8000

OR-1, 4, and 5 (Mid-ocean ridge off the Oregon coast)

Pacific Marine Environmental Laboratory
Vents Program

The Pacific Marine Environmental Laboratory (PMEL) Vents Program, established in 1984, conducts research on the oceanic impacts and consequences of submarine volcanoes and hydrothermal venting. The program focuses on understanding the chemical and thermal effects of venting along the northeast Pacific Ocean seafloor spreading centers, which provides the foundation for prediction of the global-scale impact of seafloor hydrothermal systems on the ocean. Research results continue to support the hypothesis that hydrothermal venting at seafloor spreading centers has global significance in terms of the chemical and thermal state of the ocean. Scientists in the PMEL Vents Program, along with colleagues from the Oregon State University and other institutions, are actively studying the microbial biosphere, the living organisms that thrive beneath the ocean's crust

independent of the sun. Some of these bacteria live at temperatures above 100°C. These bacteria and their metabolic by-products have great potential for use in biotechnical and medical applications. Acoustic technology developed by the PMEL Vents Program to locate underwater earthquakes has been adapted in recent years to provide information on the migration patterns of large whales in the Northeast Pacific. $2.1 million was appropriated in FY 2001 for the Vents Program and allowed leverage of research partnerships with relevant non-NOAA and international programs. For more information please visit http://www.pmel.noaa.gov/vents/home.html

OR-1 and 5 (Mid-ocean ridge off northern Oregon coast)

Pacific Marine Environmental Laboratory
New Millennium Observatory

As an outgrowth of the Pacific Marine Environmental Laboratory Vents Program, the New Millennium Observatory (NeMO) sea floor observatory was established on the summit of a mile-deep volcano about 300 miles off the northern Oregon coast in 1998. NeMO monitors an active sea floor venting site on the Juan de Fuca Ridge for hydrothermal and seismic activity and samples thermophilic bacteria. NeMO sends real-time data to shore and plans to accommodate an autonomous underwater vehicle (AUV) to respond to events detected and located within the observatory region by an acoustic monitoring system. For more information please visit http://www.pmel.noaa.gov/vents/nemo/index.html

OR-5 (Newport)

Pacific Marine Environmental Laboratory
Ocean Environment Division

The Pacific Marine Environmental Laboratory (PMEL) carries out interdisciplinary scientific investigations in oceanography, marine meteorology, and related subjects fundamental to NOAA's mission. The lab is headquartered in Seattle, Washington, and maintains a satellite research facility at the Hatfield Marine Science Center in Newport. Studies are conducted to: 1) improve the understanding of the complex physical and geochemical processes operating in the world oceans; 2) define the forcing functions and the processes driving ocean circulation and the global climate system; and 3) improve environmental forecasting capabilities and other supporting services for marine commerce and fisheries. PMEL research and operations are carried out in coordination with other centers in the Pacific region, such as Oregon State University. PMEL is a $14.6 million dollar laboratory ($6.9 million in NOAA base), with a staff of 182, including 90 federal employees, 30 contract employees and 62 university employees. For more information please visit http://www.pmel.noaa.gov

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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