



NOAA Research in Oklahoma



OK-1 through 6 (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 \$593,100 in support of climate research in the State of Oklahoma. For more information please visit <http://www.ogp.noaa.gov>

OK-2, 4, and 6 (Haskell, Purcell, Lamont, and Vici)

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. Fortunately, these systems can also be used for meteorology with the addition of surface weather sensors. NOAA operates GPS-Met systems near Lamont, Vici, Haskell, and Purcell. About 12 additional sites throughout the state to be operated by the U.S. Department of Energy and the University of Oklahoma are planned in the near future. For more information please visit <http://www.gpsmet.noaa.gov/jsp/index.jsp>

OK-3 (Stillwater)

Climate Observations and Services Initiative Climate Reference Network

The U.S. Climate Reference Network (CRN) is a network of new climate stations now being developed by the National Climatic Data Center (NCDC) as part of NOAA's Climate Observations and Services Initiative. The Air Resources Laboratory's Atmospheric Turbulence and Diffusion Division in Oak Ridge, Tennessee, is heavily involved with the development, deployment, and maintenance of the network. The primary goal of the CRN is to provide long-term high-quality climate observations and records of surface air temperature and precipitation with minimal time-dependent biases affecting the interpretation of decadal to centennial climate variability and change. The CRN will provide the nation with a first-class long-term (50-100 years) observing network that will serve as the nation's benchmark Climate Reference Network. The CRN will also provide the United States with a network that meets the requirements of the international Global Climate Observing System (GCOS). Data from the CRN will be used in climate monitoring activities and for placing current anomalies into historical perspective. Data will also be used to provide the best possible information about long-term changes in surface air temperature and precipitation, including means and extremes. These data will be distributed hourly to National Weather Service sites via NOAAPort and posted online for no-cost access by anyone worldwide. CRN sites are currently deployed in Stillwater, as well as in North Carolina, Nebraska, Montana, Rhode Island, New Hampshire, Illinois, and Tennessee. Within the next 5 years there will be a total of 250 stations spread throughout the United States. For more information please visit <http://lwf.ncdc.noaa.gov/oa/climate/research/crn/crnmain.html>

OK-4 (Norman)

National Severe Storms Laboratory

Scientists at the National Severe Storms Laboratory (NSSL), in Norman, are exploring new ways to use weather information to save lives, lessen property damage, and improve the national economy. NSSL scientists conduct research to improve accurate and timely forecasts and warnings of hazardous weather events such as blizzards, ice storms, flash floods, tornadoes, and lightning. NSSL accomplishes this goal through a balanced program of research to advance the understanding of weather processes, research to improve forecasting and warning techniques, development of operational applications, and transfer of understanding, techniques, and applications to the National Weather Service and other agencies. NSSL is a \$15M laboratory (NOAA base is \$5.8M) with 133 employees, including 48 federal and 85 university employees. For more information please visit <http://www.nssl.noaa.gov>

OK-4 (Norman)

Cooperative Institute for Mesoscale Meteorological Studies

The Cooperative Institute for Mesoscale Meteorological Studies (CIMMS), established in Norman in 1978, is a cooperative venture between the University of Oklahoma and NOAA. CIMMS provides a mechanism to bring together university and NOAA scientists to develop a center of research

excellence in mesoscale meteorology, regional climate studies, and related subject areas. CIMMS research areas include basic convective and mesoscale research; forecast improvements; climatic effects of/controls on mesoscale processes; socioeconomic impacts of mesoscale weather systems and regional scale climate variations; Doppler weather radar research and development; and climate change monitoring and detection. CIMMS collaborates with the National Severe Storms Laboratory, several Norman National Weather Service (NWS) units - the Storm Prediction Center, the Radar Operations Center, the Norman NWS Forecast Office - and soon the NWS Southern Region Headquarters (Fort Worth, Texas) and the National Climatic Data Center (Asheville, North Carolina). CIMMS supports nearly 150 researchers, postdoctoral students, students, and staff. In FY 2001 CIMMS received approximately \$9.6 million in funding from NOAA. For more information please visit <http://www.cimms.ou.edu>

OK-6 (Lamont)

Environmental Technology Laboratory Long-Term Climate Observations

NOAA's Environmental Technology Laboratory (ETL) has developed cornerstone instrumentation for the Department of Energy's long-term climate observing facility in north-central Oklahoma near Lamont. These instruments include a millimeter wavelength cloud radar, radar wind profilers, and microwave radiometers for measuring total water liquid and vapor in the overhead skies. The instruments all run continuously and autonomously. ETL also participates in Intensive Observing Periods about once a year by bringing additional instrumentation to Lamont for a period of about one month and coordinating with other efforts, including aircraft and satellite overflights. For more information please visit <http://www.etl.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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