



NOAA Research in Mississippi



MS-1 (Goodwin Creek)

Air Resources Laboratory Surface Radiation Measurement Network

The Air Resources Laboratory operates six stations as part of its surface radiation measurement network (SURFRAD). One of these stations is located at Goodwin Creek near Batesville. The station measurements support regional and global weather and climate research with accurate, continuous, long-term measurements of the surface radiation budget over the United States. Solar radiation is the driving energy for geophysical and biological processes that control weather and affect planetary life; understanding the global surface energy budget is therefore key to understanding climate and the environmental consequences to agriculture and other statewide concerns. Because it is impractical to cover the whole earth with monitoring stations, the answer to global coverage lies in reliable satellite-based observations. Accurate and precise ground-based measurements across a range of climate regions are essential to refine and verify the satellite observations. These ground-based measurements also support special research projects on radiation and climate processes in the Mississippi region and serve as important verification for weather forecasts. For more information please visit <http://www.srrb.noaa.gov>

MS-1 (Goodwin Creek)

Air Resources Laboratory Environmental Monitoring Tower

The Air Resources Laboratory's Atmospheric Turbulence and Diffusion Division contributes to the GAPP/GEWEX program by operating five research energy/carbon flux towers in the continental United States. The sites are located at a deciduous forest site in East Tennessee, an agricultural site in central Illinois, a ponderosa pine stand in western South Dakota, and two grassland sites; one in eastern Montana and the other in central Mississippi. These sites are providing data that will be used to improve the representation of land/surface processes in both regional and global weather prediction models. For more information please visit <http://www.ogp.noaa.gov/mpe/gapp/>

MS-1 and 5 (Okolona and Stennis Space Center)

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 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 Missouri include sites operated by NOAA near Okolona and at the Stennis Space Center. For more information please visit <http://www.gpsmet.noaa.gov/jsp/index.jsp>

MS-1 and 5 (Based in University and Ocean Springs - serves entire Mississippi coast)

National Sea Grant College Program

Mississippi-Alabama Sea Grant Consortium

The Mississippi-Alabama Sea Grant Consortium (MASGC) supports scientific research, education, and outreach efforts that foster the conservation, sustainable development and use of oceanic and coastal resources for the benefit of both the economy and the environment in Mississippi and Alabama. MASGC is part of a network of 30 Sea Grant programs in all US coastal and Great Lakes States and Puerto Rico. Recent research projects have targeted marine biotechnology and industrial ecology, open ocean aquaculture, sustainable fisheries, coastal ecosystems and habitats, and marine education and outreach. Citizens, industry and policy makers are kept informed on issues related to commercial and recreational fishing, seafood processing, watershed management, water quality, aquaculture and aquatic nuisance species through the Sea Grant extension programs in both states and MASGC's communications program. MASGC's legal research arm, the MASGC Legal Program, located at the University of Mississippi, provides legal research, outreach and advisory services, and education and training on ocean and coastal law and policies including fisheries, coastal development, marine habitat conservation, and other natural resource issues. The Legal Program has recently been named as the first National Sea Grant Law Center. The purpose of the new center is to integrate efforts of ocean and coastal law research centers nationwide and provide outreach and advisory services to the National Sea Grant College Program and its constituents. Current Mississippi members of MASGC include Jackson State University, Mississippi State University, University of Mississippi, and University of Southern Mississippi. In FY 2001, Mississippi-Alabama Sea Grant projects received funding of approximately \$1.6 million from the National Sea Grant College Program. For more information please visit <http://www.masgc.org>

MS-5 (coastline)

Atlantic Oceanographic and Meteorological Laboratory Hurricane Research

The Atlantic Oceanographic and Meteorological Laboratory's Hurricane Research Division (HRD) conducts an annual field program during peak hurricane season, flying NOAA's two WP-3D

Hurricane Hunter aircraft into all hurricanes threatening US coastlines. Dropsondes and onboard radar are used to profile hurricane winds and storm structure. HRD scientists then transmit real-time information to the National Hurricane Center (NHC) at the Tropical Prediction Center, one of NOAA's National Centers for Environmental Prediction (NCEP). An HRD workstation at NHC processes the aircraft data to generate products for hurricane specialists. NOAA's G-IV jet is also used in the field program to profile wind currents surrounding and influencing the storm's track. HRD scientists incorporate these and other data to create wind analyses of hurricanes. These analyses are crucial in identifying regions of strong winds in the storm and are distributed to local emergency managers for hurricane warning and evacuation determinations. HRD scientists are also studying the characteristics of hurricane winds before and after landfall to help determine expected wind impacts as a hurricane moves over land. For more information please visit <http://www.aoml.noaa.gov/hrd/index.html>

MS-5 (Gulf of Mexico)

National Undersea Research Program

National Undersea Research Center for the Southeastern U.S. and Gulf of Mexico

The National Undersea Research Center for the Southeastern U.S. and Gulf of Mexico is located at the University of North Carolina at Wilmington. It is one of six regional centers supported by the National Undersea Research Program (NURP). The center supports and conducts undersea research throughout the South Atlantic Bight (NC to FL), Florida Keys, and Gulf of Mexico. The Center provides research support for in situ oceanography conducted by divers, submersibles and remotely operated vehicles. Key research includes studies of the health of coastal reef systems in the Florida Keys, studies of marine fisheries population dynamics and recruitment processes, support of research on lithospheric resources and processes (including those related to offshore oil drilling, gas hydrates, climate change, sea level history, and sea floor evolution) and carbon cycling as it concerns the air-sea interaction in global warming. In FY 2001, the Center at Wilmington received funding of \$2.64 million. For more information please visit <http://www.uncwil.edu/nurc/>

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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