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NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION • US DEPARTMENT OF COMMERCE

Contact: John Leslie
301-713-2087, ext. 174

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NOAA Employing New Tools to Accurately Measure Climate Change

NOAA today announced it will install the last nine of the 114 stations as part of its new, high-tech climate monitoring network. The stations track national average changes in temperature and precipitation trends. The U.S. Climate Reference Network (CRN) is on schedule to activate these final stations by the end of the summer.

NOAA also is modernizing 1,000 stations in the Historical Climatology Network (HCN), a regional system of ground-based observing sites that collect climate, weather and water measurements. NOAA's goal is to have both networks work in tandem to feed consistently accurate, high-quality data to scientists studying climate trends.

Climate Reference Network - Making a Difference

The CRN is helping to pinpoint the shifts in America's changing, often unpredictable, climate. "We're entering a new age of understanding climate change, by adding more sound, reliable data about what's really happening in the atmosphere and on the ground," said Dr. Tom Karl, director of NOAA's National Climatic Data Center in Asheville, N.C. Karl, one of the world's leading experts on climate change, helped spearhead the new climate network's development.

"Very high accuracy in the data collected is the key to getting a feel for the national trend. That's what the Climate Reference Network is doing."

Karl said the placement of each CRN station is crucial to obtaining accurate information on current - and likely future - conditions. "All the stations are strategically placed in rural environments away from the influences of nearby urban areas that would confound the interpretation of any changes observed," he said.

Each CRN station logs real-time measurements of surface temperature, precipitation, wind speed and solar radiation. NOAA's geostationary satellites relay the data from these ground-based stations to NCDC, which posts the observations online at http://www.ncdc.noaa.gov/crn.

Historical Climatology Network - Modernization Underway

The modernization of the HCN's aging equipment will enhance the extent of America's premiere data source for tracking regional climate variations and trends. The modernization, which began November 2006, will follow a "climate-region" approach, starting with a pilot project in the Southwest, where 140 sites will be revamped. HCN sites will be equipped with a new temperature and precipitation sensor that will complement the CRN, with precise regional climate data.

Data gathered by those existing HCN stations that were located in less-than-ideal areas have been statistically corrected in the analysis of climate trends routinely reported by NOAA. Though some individual stations were placed in less-than-ideal areas, these data anomalies did

not significantly alter overall climate measurements. The modernization will relocate these stations in areas that are closer to ideal.

In one critical example, this dense, spatial coverage will provide more timely and accurate regional data to support the National Integrated Drought Information System, a collaboration among federal agencies and several state governments geared to provide a dynamic and accessible drought-risk information system.

“Monitoring and understanding climate is a long-term endeavor. We need to have updated systems, such as the Historical Climatology Network, in place for the long haul,” said David Caldwell, director of the Office of Climate, Water and Weather Services at NOAA’s National Weather Service in Silver Spring, Md.

Caldwell added that a modernized HCN will give NOAA scientists more information to “help explain what’s happening with the climate at the regional and local level and serve as a baseline for evaluating other meteorological data.”

The National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 70 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.

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