OKLAHOMA CLIMATOLOGICAL SURVEY

Fact Sheet

http://www.ocs.ou.edu/research
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Oklahoma Climatological Survey
Research to Benefit Oklahoma's Citizens

The backbone of research at the Oklahoma Climatological Survey (OCS) is the Oklahoma Mesonet (www.mesonet.org). From testing new sensors, to validating satellite measurements and model output, to participating in specialized field research programs, OCS scientists use Oklahoma Mesonet data for state-of-the-art research focused on Oklahoma. In turn, the knowledge gained from this research is applied to develop new technologies, to more accurately assess and predict the onset of drought conditions, and to improve weather forecasting.

Research Focus

OCS scientists conduct a variety of research projects, including the following:

- Analysis of data collected by the Oklahoma Mesonet, remote sensing platforms (e.g., satellite and radar), and instruments deployed during field projects to conduct cutting-edge research on the physical processes within the soil-vegetation-atmosphere system;

- Application of data to develop and improve technologies in the fields of water resource management, energy management, climate variations, weather forecasting, and numerical modeling;

- Calibration, testing, and the development of quality assurance procedures for new sensor technologies used to measure soil and atmospheric conditions across Oklahoma; and

- Collaboration with and support of environmental field experiments in Oklahoma (e.g., SGP97, SGP99, IHOP, SMEX03).

Projects and Accomplishments

OCS research serves the citizens of Oklahoma by improving our understanding of the state's weather and climate. Research designed to accomplish this goal includes the following:

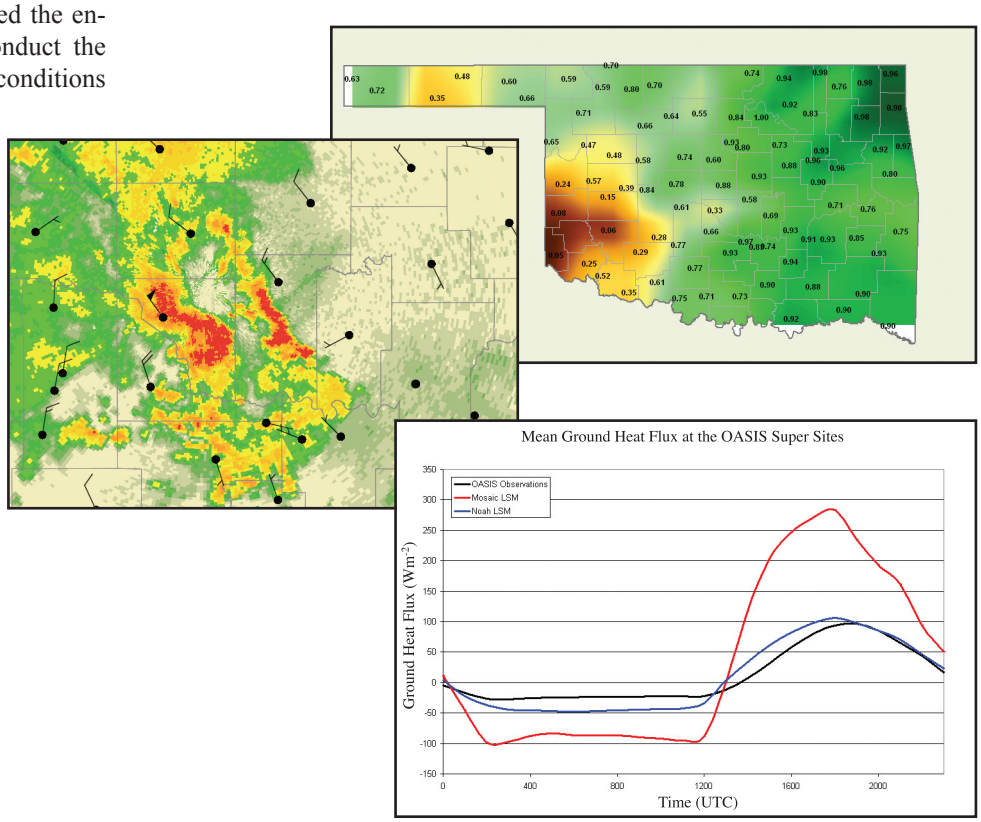
- **Understanding the Role of Soil Moisture and Vegetation in Weather and Climate** – OCS scientists study the annual cycle of soil moisture to determine how soils respond to above and below normal precipitation. Scientists also investigate how Oklahoma's natural vegetation and crops influence near-surface temperature and moisture.

- **The Oklahoma Atmospheric Surface-Layer Instrumentation System (OASIS) Project** – This unique set of sensors was installed at 89 Mesonet sites to provide scientists the data necessary to study the transfer of energy and radiation between the ground and the atmosphere.

- **Joint Urban 2003** – Held in Oklahoma City during July 2003, Joint Urban 2003 was the largest urban dispersion experiment ever conducted (more than 200 national and international scientists and technical experts). OCS provided the enhanced infrastructure needed to conduct the experiment and to monitor weather conditions throughout the experiment.

Research Partnerships and Data

OCS scientists collaborate with local scientists, other universities, and organizations including NASA, the USDA, and the National Center for Environmental Prediction (NCEP) to extend research on Oklahoma's environment to other experts nationwide. In addition, external scientists seek OCS's specialized research data sets that include variables such as latent, sensible, and ground heat fluxes, surface skin temperature, and net radiation.



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