

What is the Kentucky Mesonet?



KENTUCKY
MESONET



The Kentucky Mesonet is a high-density, meso-scale network of automated environmental monitoring stations currently being developed across the commonwealth. Funding for the mesonet was secured by U.S. Senator Mitch McConnell through an earmark to the Kentucky Climate Center at Western Kentucky University.

INTRODUCTION

Weather and climate are fundamental to the health, safety, and welfare of residents and communities throughout Kentucky. As a natural resource, Kentucky's climate sustains agriculture and forests and helps to attract people and industry to the commonwealth. Meanwhile, extreme and severe weather pose threats of tornadoes, hail, ice storms, floods, droughts, and other natural disasters. The availability of continuously updated, locally accurate environmental data across the state is vital to decision makers who must be prepared to respond to changing conditions.



Photo provided by the National Weather Service at Louisville

FEATURES

Nearly 100 automated stations will be deployed across the state. Each station will include a set of instruments located on or near a 10-meter-tall tower. Measurements will be packaged into observations every 5 minutes, and then transmitted to the Kentucky Climate Center every 15 minutes, 24 hours per day throughout the year.

Instruments will measure:

- precipitation
- air temperature
- relative humidity
- solar radiation
- wind speed and direction
- soil moisture
- soil temperature

Further, Kentucky Mesonet stations will be platforms to which other critical environmental monitoring sensors can be added as needs arise.

Data will undergo quality assurance checks and become available to customers and the public within minutes. The Kentucky Climate Center and its partners will develop a range of services and outreach activities to meet the needs of people across the state.

BENEFITS

- As Kentucky's agricultural economy diversifies, the mesonet will provide data that can help producers assess the viability of entering new high value markets, while enhancing the efficiency of traditional crop and livestock operations.
- When severe weather threatens, the mesonet will provide data that can help forecasters target watch and warning areas and help emergency responders save lives and property.
- As Kentucky faces the challenge of educating the next generation, the mesonet will provide data that can help teachers challenge their students in math and science through innovative and engaging activities.
- When drought grips the commonwealth, the mesonet will provide data that can help managers of scarce water supplies address the needs of urban and rural communities.
- As Kentucky works to enhance public health and health care for its citizens, the mesonet will provide data to support public health warnings related to air quality, heat stress, and insect- and water-borne disease outbreaks.



Photo provided by the Kentucky Climate Center

OPPORTUNITIES

The Kentucky Climate Center, a partner with the National Weather Service, the National Climatic Data Center, and the Midwestern Regional Climate Center, is actively seeking partnership opportunities with universities, government agencies, and private firms in an effort to develop the best possible mesonet to serve the needs of the people of Kentucky.

CONTACT

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Photo provided by the Kentucky Climate Center