Nebraska Mesonet

“Nebraska’s network of weather stations for recording the truth of our climate legacy”

Stonie Cooper, Nebraska Mesonet Manager
Mesonet: portmanteau of “mesoscale” and “network”, is a network of automated weather and environmental monitoring stations designed to observe mesoscale meteorological phenomena.

Most notable first use was by tornado researcher Dr. Ted Fujita in the early 1960’s when describing the surface observations necessary to accurately predict tornadoes.
Anatomy of a 3m Nebraska Mesonet Station
Under Vegetation Temperature and Moisture
1m Warm Season Liquid Precipitation
2m Temperature and Humidity
2.5m Incoming Shortwave Solar Radiation
Welcome to the Nebraska Mesonet

History
Beginning in 1981 with five observing locations, the statewide weather monitoring network has now grown to 68 stations in 49 Nebraska counties. The mesonet was initially designed with the agricultural community in mind but is now broadened in scope to serve as an environmental monitoring program.

Instrumentation
Mesonet stations are equipped to observe hourly conditions for the following variables: air temperature, humidity, liquid precipitation, wind speed and direction, solar radiation, barometric pressure, soil temperature and soil moisture.

Photos
As part of station installation and routine maintenance, images of the weather station and surrounding area are taken. Click on the map here to view images of the stations and their surroundings.

Support
The network is supported by the State of Nebraska in conjunction with the UNL Research Foundation and the National Science Foundation (NSF).

https://mesonet.unl.edu
Real-time Maps

https://mesonet.unl.edu
https://cropwatch.unl.edu/cropwatchprecipitation
Current Upgrades Underway:

1) increase data capture from 5 minute to 1 minute;

2) increase collection time from 20 minutes to 1 minute;

3) add redundancy for each sensor above ground.
Future Goals:

1) increase network density to better represent entire state;

2) move from 3m tripods to 10m towers;

3) improve data delivery and representation.
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