Mesonet

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connection

20 years in the Making: A History Lesson

–by Stephanie Bowen

The Oklahoma Mesonet went live to the public in 1994, but before that happened, a lot of groundwork had to be laid. In fact, Mesonet staff began installing stations in June 1992. This year marks a big occasion for the Mesonet – 20 years of partnership with our landowners – and we are celebrating by recognizing them each month. I am sure this has you wondering though, "how exactly did the Mesonet begin?"

The idea of the Mesonet sprang up during the 1980s. In 1984, Tulsa was hit by the Memorial Day Flood. Back then, Ken Crawford, the Meteorologist-in-Charge of the Norman NWS Forecast Office, had access to radar data indicating heavy rainfall upstream but minimal ground truth observations from rain gauges. From the worst flood in Tulsa history, Crawford saw the need for a comprehensive statewide network collecting real-time data that would help protect all Oklahomans from surprise weather events.

Around the same time, Ron Elliott at Oklahoma State University was heading an effort to install weather stations at Agricultural Experiment Stations. When Elliott and Crawford learned of each others' initiatives, they joined together to create the Mesonet proposal and seek state government support. With Governor Henry Bellmon's help, being a farmer interested in the concept, they were able to find funding.

"The obvious first choices to place Mesonet towers were the OSU Ag Experiment Stations, plus a site at OU," said Mark Shafer, Director of Climate Services at the Oklahoma Climatological Survey. "For these sites, a land-use agreement was negotiated with the universities that gave permission to locate on those sites. J.D. Carlson (Mesonet's OK-FIRE Program Manager) and I worked with the respective ag experiment station superintendents to find a suitable piece of property on each site that met the Mesonet site guidelines as closely as possible."

When Mesonet funding arrived in 1991, Shafer was a service climatologist and began work on the Mesonet. His first project was site selection. He also wrote the initial Quality Assurance code and provided software support. Shafer and Carlson worked together to find landowners willing to host a Mesonet site on their property.

"We worked through local contacts in Extension, NRCS and Emergency Management to help us find local landowners," Shafer said. "We initially targeted public lands because we did not anticipate many private landowners would be willing to let us use their land without compensation. However, this is Oklahoma, and Oklahomans love the weather. It turned out that there were a lot of people eager to let us set up in their pastures, which provided excellent siting, and gave them something to brag about with their neighbors."

Shafer and Carlson met with each of the prospective landowners to select a site. Shafer took western Oklahoma, and Carlson took eastern Oklahoma.

"We would meet with the landowner and when we found a site acceptable to them and suitable for our criteria, we pounded in a wooden stake painted bright orange at the top so the technicians would know where to install it," Shafer said. "We did not have vehicles with the Mesonet logo at the time so I drove one with an OU logo on it, and J.D. drove one with OSU. I remember when I went to visit Mr. Keith Ladd at Camargo, he was coming in from the field driving a forklift with a hay bale spike on it. He said he saw the OU car parked by the house and thought maybe he should just keep going. But even with the rivalry, it was no problem working with all these great people." ■

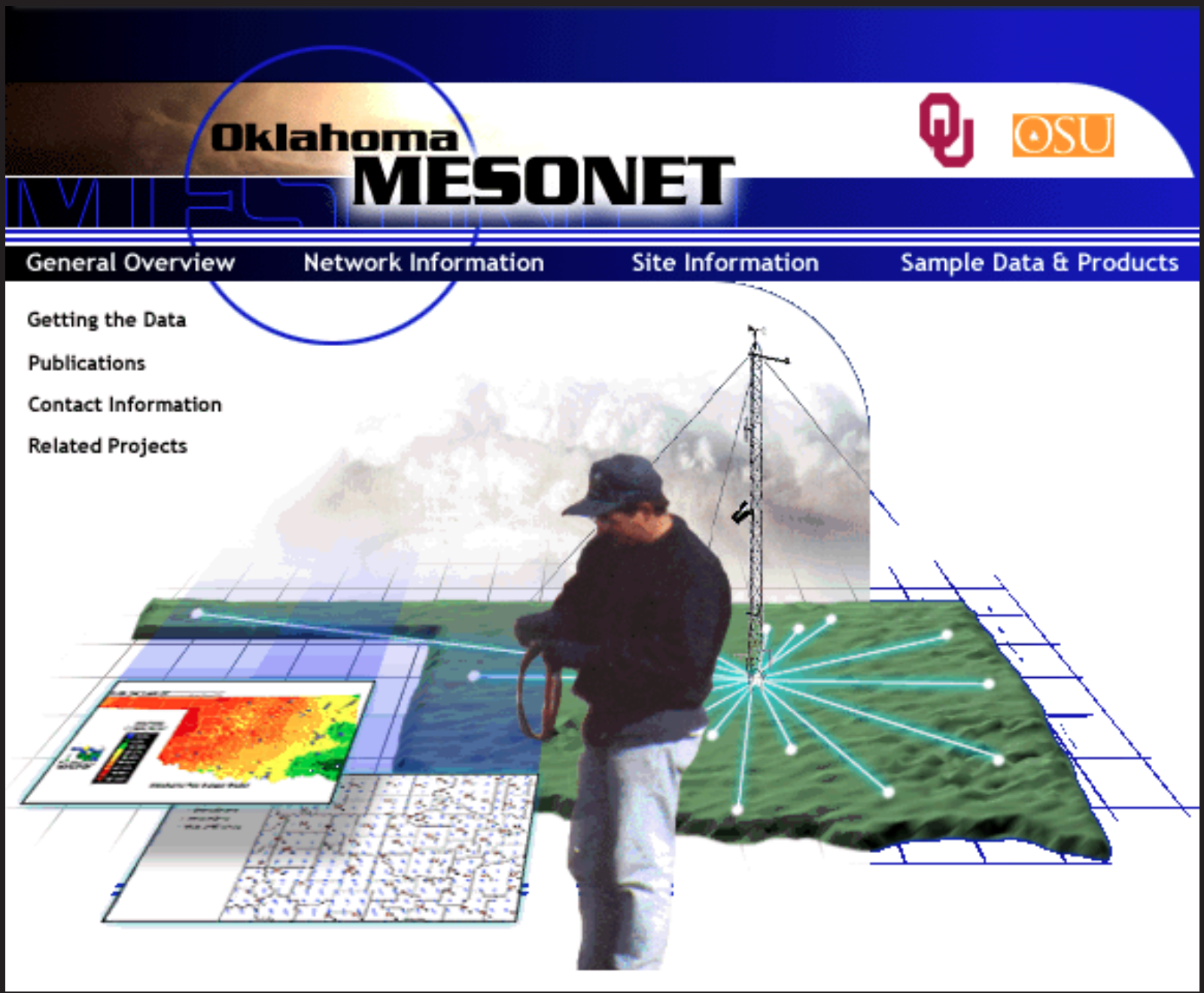
Mesonet
Oklahoma's Weather Network

Thank you for 20 years of partnership!

- Perkins Agricultural Experiment Station - Installed June 4, 1992
- Stillwater Agricultural Experiment Station - Installed June 4, 1992

2002 Mesonet Website

The Oklahoma Mesonet has progressed rapidly over the years. Just look at the difference 10 years can make to our website. Below is the Mesonet website in 2002, and on the next page you will see the current home page of the Mesonet. We now provide an easy-to-use public website with data and products available at no cost to Oklahomans.



Current Mesonet Website

The latest edition of the Oklahoma Mesonet website makes it easier and faster to find weather information. Data is updated every five minutes, so you have access to the critical weather information as events unfold. Included on the website are forecasts, radar and rainfall estimates from the National Weather Service to provide Oklahomans with a total weather picture. We also have a mobile website at http://m.mesonet.org and an iPhone App for free download from the App Store.

A Partnership Benefitting Oklahoma Agriculture

–by Stephanie Bowen

Partnering with the Oklahoma Agricultural Experiment Stations (OAES) – Oklahoma State University's research farms – the Oklahoma Mesonet makes an impact on production agriculture across Oklahoma. The Mesonet established its first sites on OAES farms, and 14 sites are currently located at OAES.

"The Mesonet is a very significant benefit to all of our experiment stations," said Erich Wehrenberg, Superintendent of the OAES Stillwater Agronomy Research Station. "It plays a pivotal role not only in our decision process, but the outcomes and how our data are managed."

Several Mesonet products are used at the research stations. Historical data, such as soil temperature and soil moisture content, give a good indicator of planting conditions for both no-till and conventional methods, Wehrenberg said.

Rainfall accumulation maps are often used because they provide a good gauge of what actually transpired at the farms. During forage baling, humidity and dewpoint measurements are beneficial, Wehrenberg said. Humidity is also used frequently during harvest because the grain needs to be dry. At all the farms, wind speed data are utilized extensively during herbicide applications.

"We have to document everything, especially with experimental crops," Wehrenberg said. "The Mesonet helps us do that."

OAES' mission is to "conduct fundamental and applied research for the purpose of developing new knowledge that will lead to technology improvements addressing the needs of the people of Oklahoma." There are about 20 different crops at the Stillwater Agronomy Research Station alone to meet this mission.

"The activities here, in some measurable form, impact nearly every producer in the state," Wehrenberg said. "Everything that is conducted here for research purposes was derived from necessity in the private sector. Everything that is being studied here has a very significant impact on production agriculture and beyond." ■

Below: The Stillwater OAES is recognized for 20 years of partnership with the Mesonet. From left to right, Randy Raper - Senior Director of the Field and Research Service Units, Kevin Kloesel - Mesonet Steering Committee Co-chair, and Erich Wehrenberg, Stillwater Agronomy Research Station Superintendent

Right: The Stillwater Mesonet site was installed June 4, 1992.

May Ends Warmest Spring in Oklahoma History

By Gary McManus, Associate State Climatologist

MAY WRAP-UP

A pleasantly cool final day and scattered heavy rains during the month's final week were too little and too late, and May entered the record books as one of the warmest and driest in state history. According to data from the Oklahoma Mesonet, the statewide average temperature finished at 72.2 degrees, 4.3 degrees above normal. That ranks May as the fifth warmest on record. Statewide average records date back to 1895. That heat, combined with the state's warmest March and tenth warmest April, propelled the spring season to the warmest on record at 65.1 degrees, 6 degrees above normal. The climatological spring runs from March through May for record purposes. The previous record mark for spring was 62.9 degrees from 2006. The January-May statewide average of 56.3 degrees also tops the record books at 5.2 degrees above normal.

The recent warmth is a continuation of what the state has experienced since early 2010. Of the last 26 months, starting with April 2010, 21 have been warmer than normal. Three of the last 11 months (July and August, 2011, and March 2012) and two out of the last four seasons (summer 2011 and spring 2012) eclipsed their respective all-time heat records as well. Oklahoma's July and summer statewide average temperatures in 2011 were record marks for the United States as well. There were blasts of wintry revenge during that period, of course. Oklahoma saw its all-time lowest minimum temperature and 24-hour snowfall records fall in February 2011. Just prior to the string of warm months, the winter of 2009-10 finished as the eighth coldest – and one of the snowiest – on record at more than 4 degrees below normal.

Scattered heavy rainfall at the end of the month helped May to avoid becoming the driest on record and finished with the rank of fourth driest. The statewide average precipitation total was 1.8 inches, 3.4 inches below normal. Rainfall totals from the Mesonet ranged from around 6 inches in Grady County to a dusty 0.01 inches from both Arnett and Slapout. Much of the northern third of the state had trouble keeping the rain gauge wet and recorded less than an inch for the month. The latest U.S. Drought Monitor report, released on May 31, finds moderate drought creeping back into eastern Oklahoma from Arkansas. A broader area of "abnormally dry" conditions, a drought pre-cursor, covered much of eastern and southern Oklahoma. The Panhandle and southwestern Oklahoma continue with drought conditions labeled from "moderate" to "extreme."

Despite the violent weather during its last week, May was actually one of the quietest on record for tornadoes. Preliminary numbers from the National Weather Service (NWS) estimate May's total at three. While that number could still rise, it would not be by much. The preliminary total for the year currently stands at 51. The average tornado count for May is 22 and the annual average is 55. Accurate tornado statistics date back to 1950.

1st
WARMEST
spring season on record

72.2°F
average statewide temperature for May

1.8"
RAINFALL
average statewide precipitation for May

4th
DRIEST
May since records began in 1895

CALENDAR

JUNE

- 7th: Mesonet OSU Tour, Stillwater
- 10th-15th: Oklahoma Mesonet Weather Camp
- 20th: Career Day, Central Oklahoma Juvenile Center, Tecumseh
- 21st-23rd: OK Pecan Growers' Convention, Norman
- 22nd: Mesonet Steering Committee Meeting, Norman
- 26th: Weather Program at Mustang Library

JULY

- 8th-10th: OAEAA Conference, Bartlesville
- 26th-28th: OK Cattlemen's Convention, Midwest City

AUGUST

- 20th: OK-First Re-certification Course, Oklahoma Emergency Management Association Training Day, Norman
- 20th: OK-FIRE full-day workshop, OEMA Training Day, Norman
- 21st-23rd: OK-First, OEMA Conference, Norman
- 27th-30th: OK-First Full Certification Course, Norman
- 31st: OK-FIRE full-day workshop, National Weather Center, Norman

CONTACTS

Accessing recent (within the past 7 days) Mesonet data
Contact: Mesonet Operator

Instrumentation, telecommunications, or other technical specifications
Contact: Chris Fiebrich

Mesonet agricultural data and products
Contact: Al Sutherland

Mesonet meteorological data
Contact: OCS Data Requests

K-12 educational outreach
Contact: Andrea Melvin

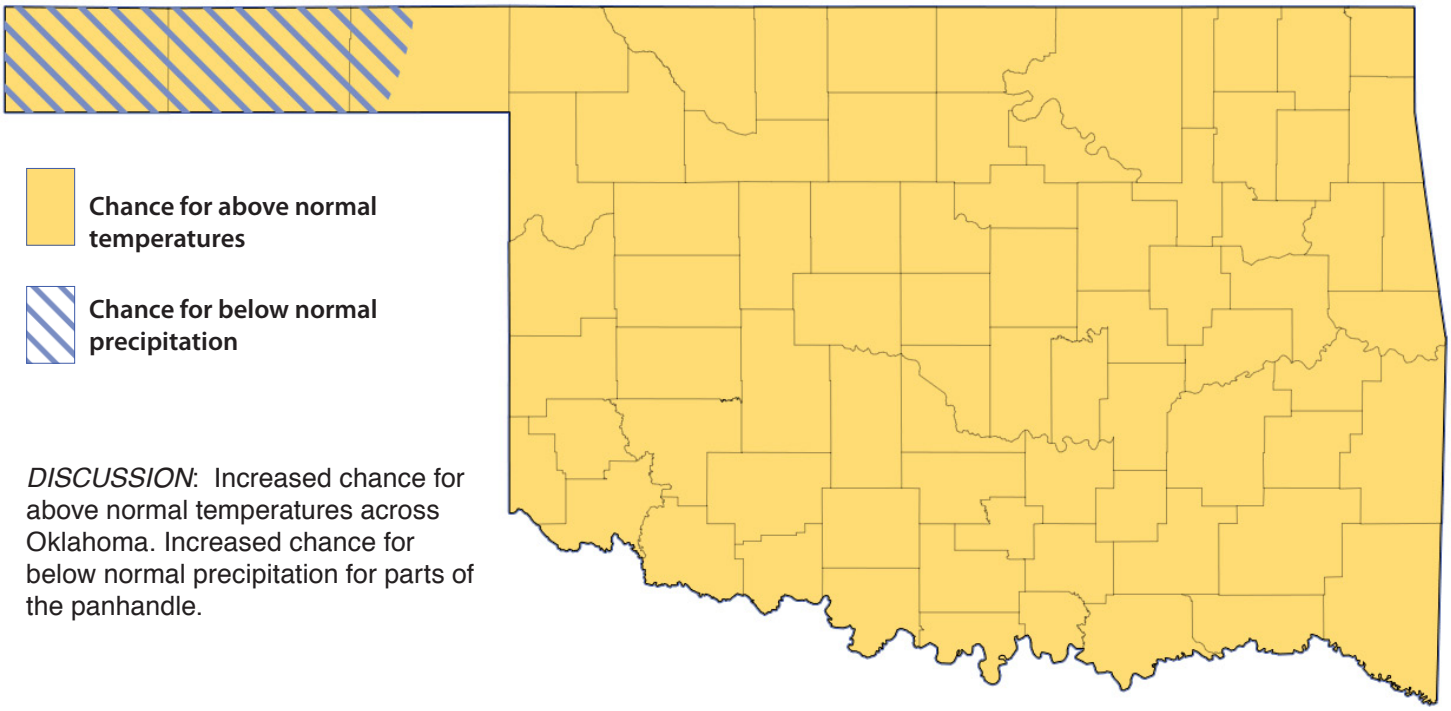
OK-First public safety outreach
Contact: James Hocker

OK-FIRE fire decision support outreach
Contact: J.D. Carlson

Not sure?
Contact: 405-325-2541 or Chris Fiebrich.

FORECAST FOR JUNE

Click here to view the original maps from the Climate Prediction Center.



DISCUSSION: Increased chance for above normal temperatures across Oklahoma. Increased chance for below normal precipitation for parts of the panhandle.

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