



Climate Science Hub

–by Stephanie Bowen

“FOR GENERATIONS, AMERICA’S farmers, ranchers and forest landowners have innovated and adapted to challenges. Today, they face a new and more complex threat in the form of a changing and shifting climate, which impacts both our nation’s forests and our farmers’ bottom lines,” said Agriculture Secretary Tom Vilsack. “USDA’s Climate Hubs are part of our broad commitment to developing the next generation of climate solutions, so that our agricultural leaders have the modern technologies and tools they need to adapt and succeed in the face of a changing climate.”

Jeanne Schneider, Research Meteorologist for the ARS Grazinglands Research Lab (GRL) and Lead for the Southern Plains Regional Climate Hub (SPRCH) in El Reno, Okla., said she first heard about the creation of the Climate Science Hubs last June in an email calling for applications. After reading over the announcement, she knew the hub was meant for her lab.

“It was consistent with the ongoing climate-related research we do at GRL,” Schneider said. “I was asked to lead the development of a proposal. It looked like a direct extension of the research I’ve been doing since 1999, and would provide a way to inject climate change impacts and responses into decision support for agriculture and forestry. It specifically targets the section of the population not directly served by other federal agencies, the traditional customers of the USDA – the farmers and ranchers. I couldn’t say no.”

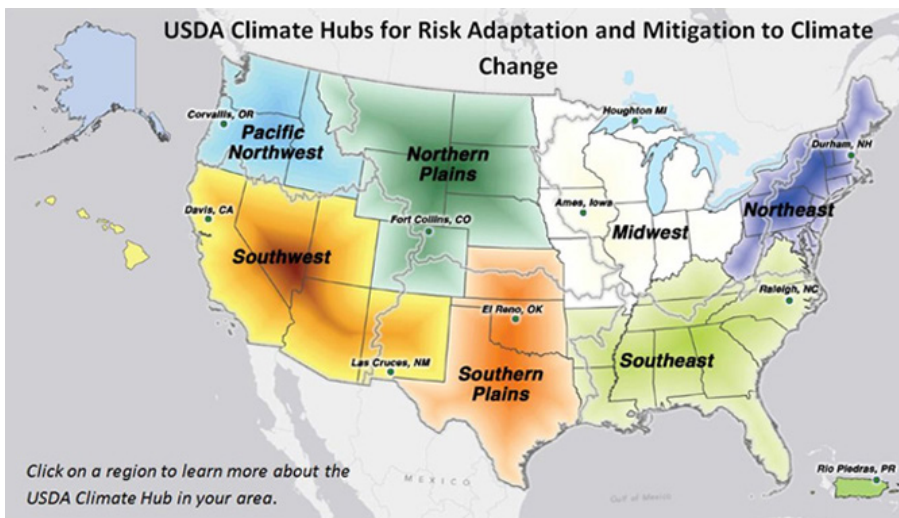
Originally, there was no new funding promised for this project, which is a significant hurdle. With a proposal due date in late August, Schneider was able to put together a writing team with collaborators from Natural Resources Conservation Service, US Forest Service, Climate Science Center, Southern Climate Impacts Planning Program (SCIPP), NOAA and others. Together, they wrote a proposal, and their application was accepted. All together there are seven Science Climate Hubs and three Sub Hubs.

“Each Hub region is different depending on crops, livestock and forests of the area,” Schneider said. “So we each have different needs. My intent here is to be a hub in the sense of connecting – pulling all the info into one place in a manner that anyone can access. For example, if you were a rancher in western Oklahoma in the middle of a drought, and you wanted to know who is doing research for a drought resistant crop for your location, you could go to our website, find a map and click on your county, choose a topic, and find all the people doing related research there. There is no one place to go to for this information right now. We will actively play the connection game with people who have solutions, do the research, and develop climate-savvy decision support.”

So her job will include creating this directory for farmers and ranchers, to support research initiatives, and to provide easy-to-access climate change curriculum.

“I intend to highlight and build on the Mesonet data, agricultural and safety-oriented products, and outreach and training products,” Schneider said. “We will also be looking for opportunities to collaborate on research, including with graduate students at OU. Cooperation in all these areas should be good for both groups.”

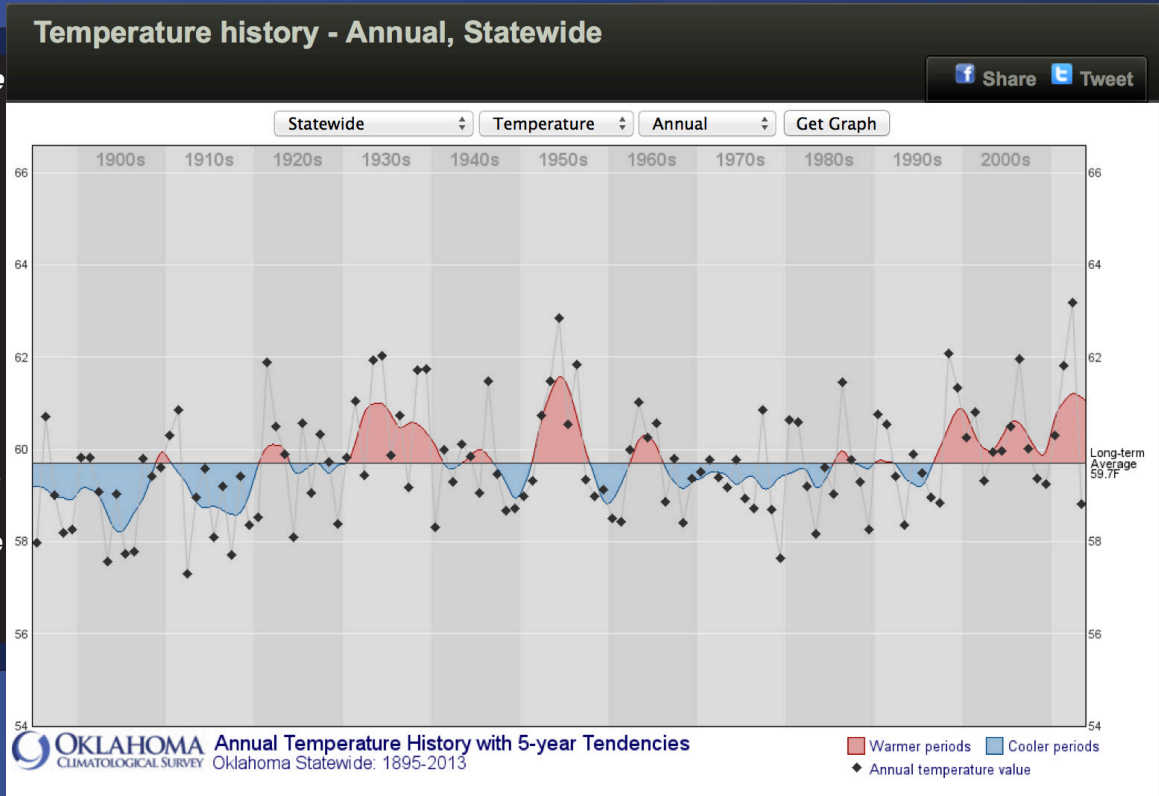
“It will take years to build this Climate Hub, and all of the necessary tools and products,” Schneider said. “But I am happily surprised with the degree of interest across the community we are trying to serve and involve. We put out a call for who would like to partner with us while we were writing,” Schneider said. “The Mesonet stepped forward immediately to express interest. The Mesonet is one of my corner stones, along with the Climate Science Center and SCIPP. Everyone was saying ‘Yes we hear you, there is no money, but we still want to be involved’. The fact that people are interested is gratifying and encouraging. This is clearly the time for an initiative like this. Everyone is ready to step up and collaborate.” ■



MESONET IN PICTURES

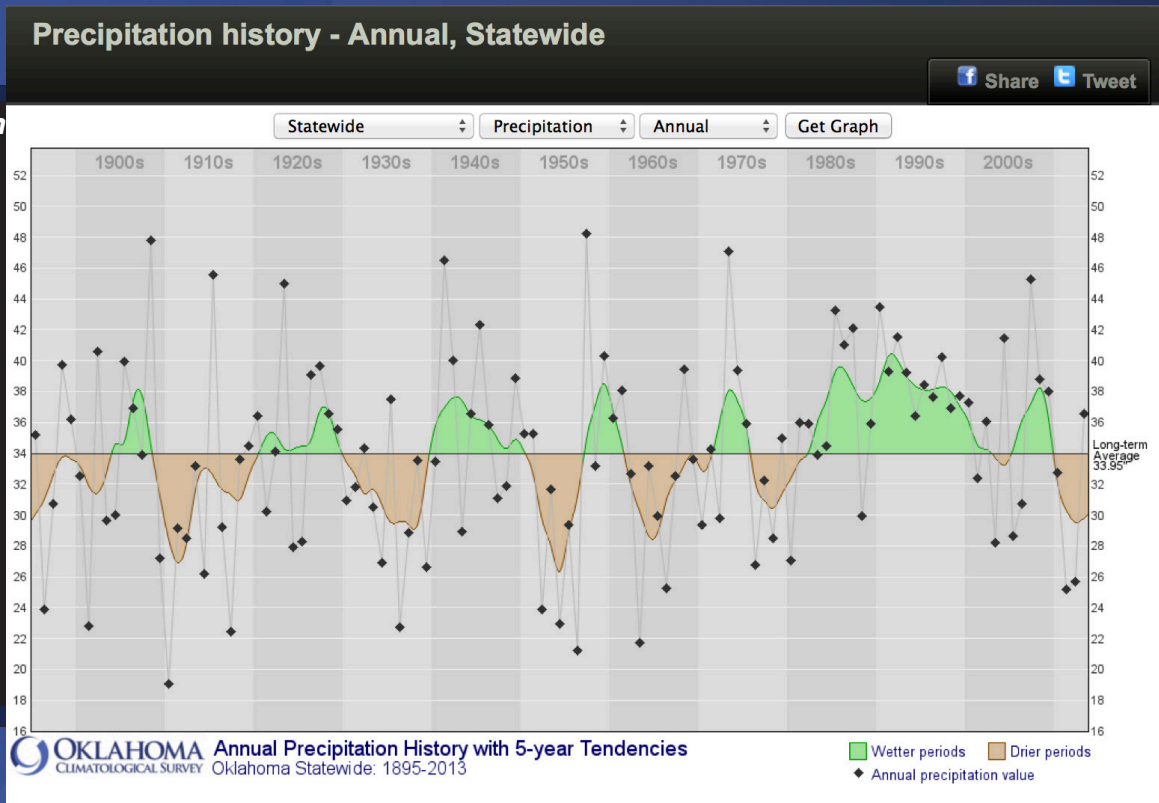
Annual Statewide Temperature History Graph

- This graph was a joint project with collaboration between the Mesonet and the ARS Grazinglands Research Lab. The graph shows the evolution of Oklahoma's temperature history since modern record began in 1895. The diamonds represent the average of the observed in the region for each year. The red-blue trace represents the five-year weighted average of these temperature values over time. The red signifies warmer periods, and the blue is cooler periods.



Annual Statewide Precipitation History Graph

- The graph on the right was a joint project with collaboration between the Mesonet and the ARS Grazinglands Research Lab. The graph shows the evolution of Oklahoma's precipitation history since the modern record began in 1895. The diamonds represent the average of the measured precipitation in the region for each year. The green-brown trace represents the five-year weighted average of these precipitation values over time. The green signifies wetter periods, and the brown is drier periods.



MESONET IN PICTURES

Mesonet ARS Micronet

- Situated between Chickasha and Lawton in southwestern Oklahoma, the Little Washita River watershed comprises 611 square kilometers and covers parts of Caddo, Comanche, and Grady counties. The Little Washita River is a tributary of the Washita River, which drains into the Red River on the Oklahoma-Texas border. Hydrological and meteorological measurements of the watershed have been conducted for decades, providing scientists a long-term data source to study soil and water conservation, water quality, and basin hydrology. Currently, the ARS monitors the environmental conditions of the Little Washita watershed with a 20-station network called the Little Washita Micronet. In addition, three stations in the Oklahoma Mesonet (NINN, ACME, and APAC) are located in the northeast, south, and west areas of the watershed to enhance the observing network.
- The Ft. Cobb Reservoir watershed comprises 813 square kilometers and covers parts of Caddo, Washita, and Custer counties in southwestern Oklahoma. The Ft. Cobb Micronet consists of 15 stations, which measure the same variables as the Little Washita Micronet. Two Oklahoma Mesonet sites (FTCB and HINT) are located on the southern and northern sides of the watershed.



Partnership with USDA Agricultural Research Service

—by Stephanie Bowen

“WHEN WE BEGAN INSTALLING sites in 1992, the Agricultural Research Service (ARS) lab in Oklahoma approached the Mesonet to create a partnership, one that is alive and strong to this day. The Mesonet installed smaller stations, called micronets, at the Little Washita River watershed the following summer.

“The ARS lab had use and need for weather data and saw what we were doing with the statewide network,” said Ron Elliott, Mesonet Steering Committee member. “They were encouraged by that and had their own research watersheds in the Little Washita River watershed. They thought they could best meet their needs for their research sites by having the Mesonet maintain their network and found it to be most efficient to contract with us instead of do things on their own.”

Originally, the ARS lab was called the Water Quality and Watershed Research Laboratory and was located in Durant, Okla. The lab later moved to its current location in El Reno and is now the Grazinglands Research Lab. Since then the micronets have evolved, from 40 stations around the Little Washita River to 20 in the Little Washita Micronet and 15 in the Fort Cobb Reservoir Micronet.

“We have a formal written agreement with them, and we have our responsibilities to carry out as a result,” Elliott said. “They have been very loyal, and we can count on them year after year. There has been a lot of trust built because both parties deliver. ARS is always there for us and we are always there for them. That means a lot to the Mesonet. The fact that ARS trusts us to deliver with research quality data, I think that is an endorsement that a significant government agency would rely on us to operate their network.”

Over the years, the partnership has been mutually beneficial. Scientists have been able to use the data for their research. The data has a higher resolution spatially because the stations are closer together so it adds another layer to the scale of what Mesonet does, added Elliott. Financially, the Mesonet has had the benefit of the ARS lab’s support each year. It has also led to funding opportunities of research grants within the Mesonet. The partnership with ARS has led to many opportunities and has helped the Mesonet grow in its outreach to the agricultural community.

“The Mesonet has always emphasized the importance of agricultural research, and this partnership allows us to play a role in this important sector of Oklahoma’s economy,” said Chris Fiebrich, manager of the Mesonet. ■

Mesonet staff present a thank you to the staff at the ARS Grazinglands Research Lab for 20 years of partnership in August 2012.





Dry, Cold Winter Continues During February

By Gary McManus, State Climatologist

FEBRUARY WRAP-UP

Merely looking at the temperature statistics for February would lead one to believe it was a frigid, wintry nightmare from beginning to end. After all, preliminary statistics from the Oklahoma Mesonet indicate that February finished nearly 6 degrees cooler than normal statewide with an average temperature of 36 degrees – the 15th coolest February for the state since records began in 1895. Most of that cold weather occurred during the month's first dozen days, however, setting a standard that occasional near- to above-normal temperatures throughout the rest of the month could not overcome. February combined with a frosty December and cool January to produce the 12th coldest winter on record in Oklahoma. Climatological winter runs from the first of December through the end of February. The winter's statewide average temperature of 35.5 degrees fell 3.3 degrees below normal. Oklahoma's coldest winter occurred in 1904-05 with a statewide average of 31.1 degrees. February's lowest temperature of minus 2 degrees was recorded on the fifth at both Beaver and Boise City. Boise City only reached a high of 6 degrees that day and at one point registered a wind chill of minus 25 degrees. Hollis managed to climb to 84 degrees on the 18th during a stretch of unseasonable warmth. The lowest winter temperature recorded by the Mesonet was minus 12 degrees at Nowata on January 6.

Unfortunately, there were no extended wet periods during February as dry weather dominated that side of the storyline, although there were a couple of winter storms to break up the monotony. The month's first day saw 4-6 inches of snow fall across southern Oklahoma and some unofficial totals of more than 8 inches reported in the southwest. Northwestern Oklahoma got into the act just a few days later with reports of 5-6 inches in some locations. Regardless of those brief storms, the state remained dry for the most part. The statewide average precipitation total from the Mesonet finished at 0.51 inches, the 16th driest February on record at 1.25 inches below normal. February's story of dry conditions with brief interruptions by periodic wintry weather was a continuation of the previous two months, and the statewide average precipitation total for the winter finished as the fifth driest on record at well over 3 inches below normal. For Northeast Oklahoma, it was their driest winter on record with a December-February average total of 1.56 inches, more than 4 inches below normal. East central and central Oklahoma did not fare much better with their second and fourth driest winters on record, respectively.

The dry weather allowed for uncharacteristic cool-season drought intensification. Normally a time for moisture recharge, this winter had enough dry, windy and occasionally warm days to allow for drought to spread throughout the period. The U.S. Drought Monitor map from December 3, 2013, had 30.9 percent of the map experiencing at least moderate drought, and only 47.3 percent seeing at least abnormally dry conditions. February's final map showed 62.4 percent of the state in at least moderate drought, and 100% of the state in at least abnormally dry conditions. The Drought Monitor's intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification. Abnormally dry, while not a drought intensity itself, can signify areas that are going into or coming out of drought. In this case, it indicates the former.

36°F

average statewide temperature
for February

12th COLDEST

winter since records began in
1895

0.51" PRECIPITATION

statewide average for February

62.4 PERCENT

of the state suffering from at least
moderate drought according to the U.S.
Drought Monitor on February 25

CALENDAR

MARCH

- ▶ 3-6th: OK-First Certification Course, NWC Norman
- ▶ 6th: Panhandle Ag Symposium presentation, Goodwell
- ▶ 7th: OK-FIRE Full Day Workshop, NWC Norman
- ▶ 10-11th: AFRI Grazing CAP Grant Annual Meeting, Ardmore
- ▶ 11-12th: OK-First Assistant Certification Course, NWC Norman
- ▶ 11-12th: Oklahoma No-till Conference, Norman
- ▶ 14th: OK-First Re-certification Course, Muskogee
- ▶ 17th: OK-First Re-certification Course, Stillwater
- ▶ 25th: OK-First Re-certification Course, Durant
- ▶ 27th: OK-First Re-certification Course, Lawton

APRIL

- ▶ 2nd: OK-First Re-certification Course, Elk City
- ▶ 2nd: Tulsa County Master Gardener presentation, Tulsa
- ▶ 3rd: OK-First Re-certification Course, Moore
- ▶ 8th: Pecan Management Course presentation, Perkins
- ▶ 10th: Grape Management Course presentation, Perkins
- ▶ 12th: OSU Extension Whistle Stop & Festival exhibit, Wellston
- ▶ 15th: Tulsa Community College Hort Club presentation, Tulsa
- ▶ 21st-27th: OK-First Online Re-certification Course

Tweet of the Month

Dave Deken @VideoDeke - "The wind began to switch, the house began to pitch." We may not be in Kansas, but KS is on its way here!

Find us on   

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](#)

Earthstorm - K-12 educational outreach

Contact: [Andrea Melvin](#)

OK-First - Public safety outreach

Contact: [James Hocker](#)

OK-FIRE - Fire management outreach

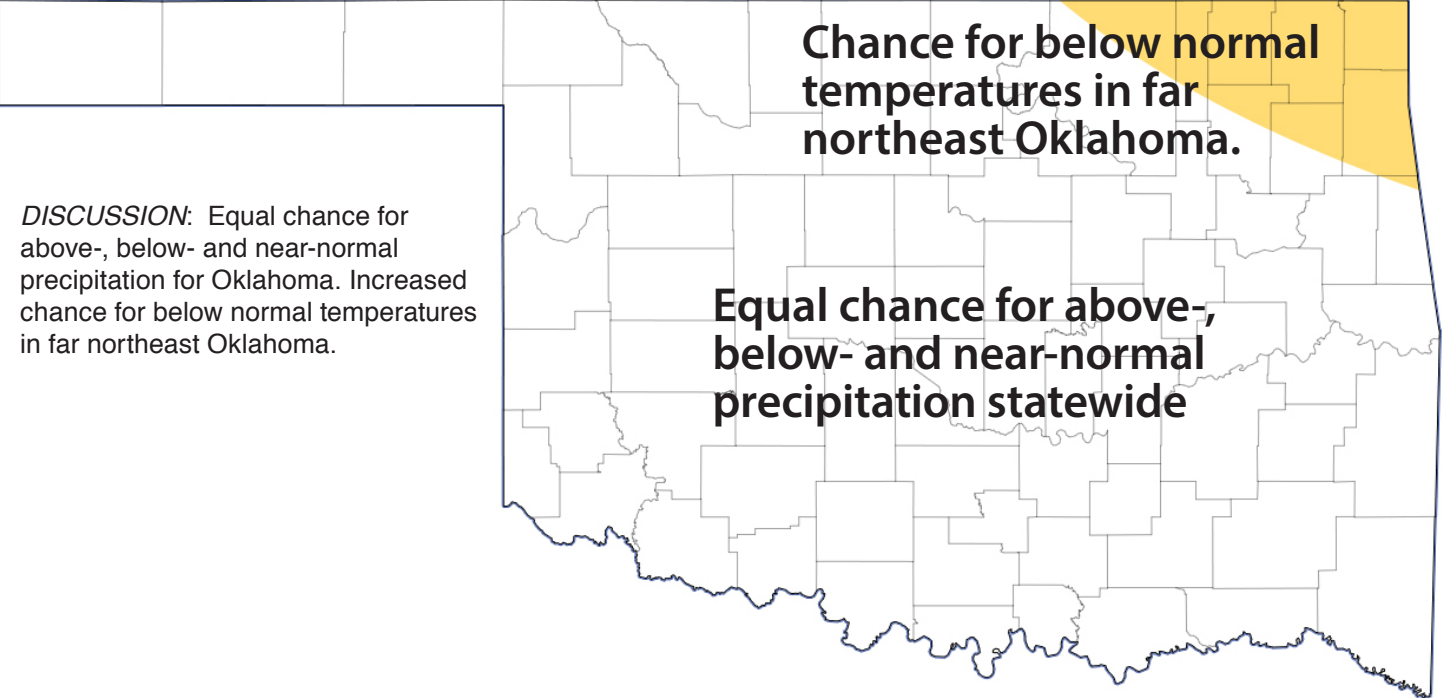
Contact: [J.D. Carlson](#)

Not sure?

Contact: 405-325-2541 or [Chris Fiebrich](#).

FORECAST FOR MARCH

[Click here to view the original maps from the Climate Prediction Center.](#)



**Chance for below normal
temperatures in far
northeast Oklahoma.**

DISCUSSION: Equal chance for above-, below- and near-normal precipitation for Oklahoma. Increased chance for below normal temperatures in far northeast Oklahoma.

**Equal chance for above-,
below- and near-normal
precipitation statewide**