



Long-Term Average Graphs

–by Al Sutherland

OKLAHOMA WEATHER CAN ARRIVE fast and furious. In those moments we are riveted by current conditions, but how can we get a weather depiction over time? How do we compare today with what has happened in the past? A new Oklahoma Mesonet tool does just that.

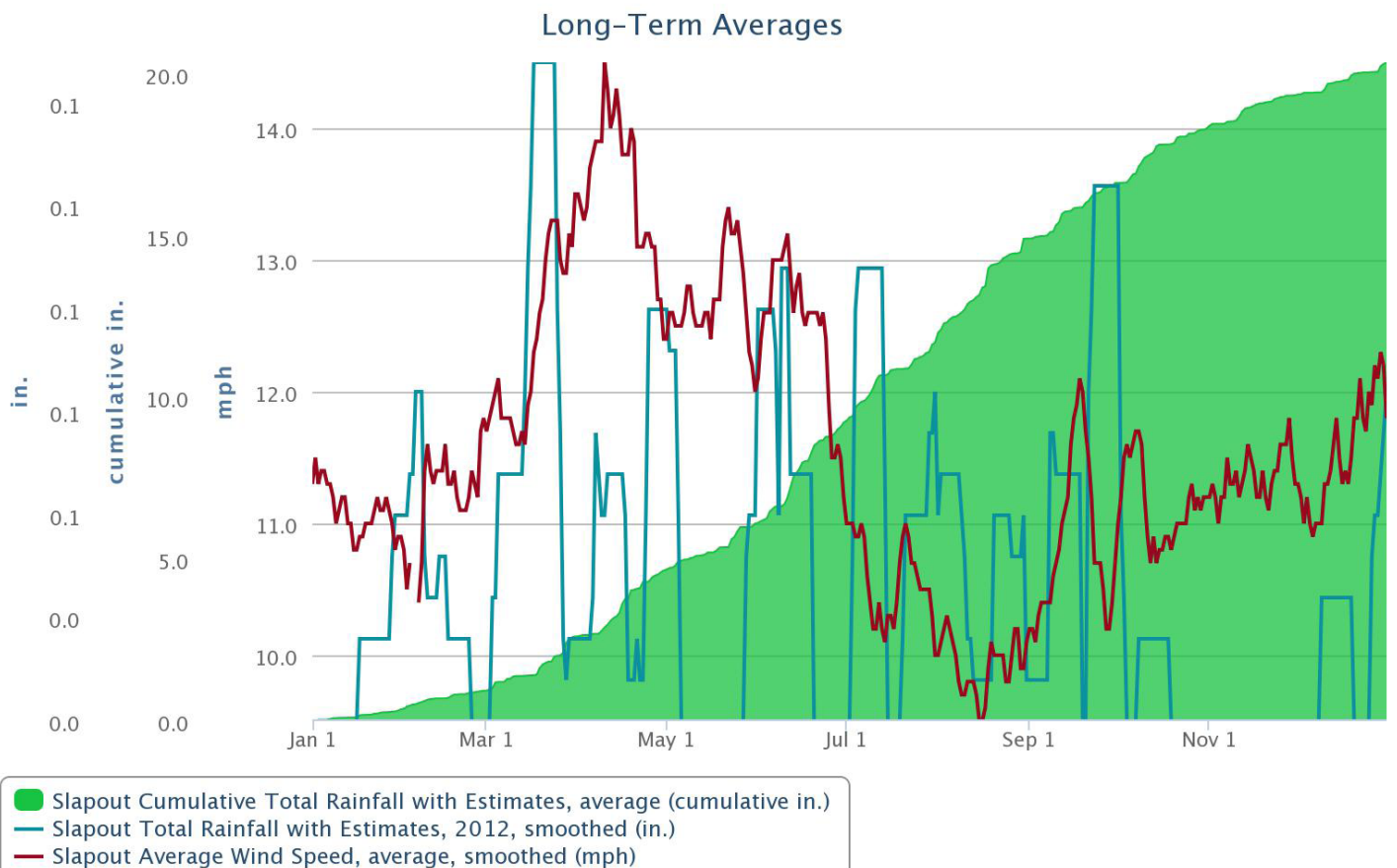
With the new Mesonet graphing tool, you can turn Oklahoma weather data into colorful graphs in seconds. It is easy to chart the incredible variation in Oklahoma’s weather, the difference in weather patterns, the change in recent years, and the extremes between years.

This new, customizable graphing tool is the “Mesonet Long-Term Averages - Graphs” located under “Weather” in “Past Data & Files” on the Mesonet website. Teachers, farmers, and business analysts can quickly generate graphs of weather data. Graphs can be exported for presentations, print or email.

By opening the “Add customized data to graph” tool section, you can pull data from any of the 64 different weather data sets and plot that over the calendar year. With simple clicks, you can customize graph lines with an endless choice of colors, add color fill under any graph line, bold lines, and/or smooth lines.

Data selection and customization is so fast and displayed so quickly you can experiment away. Keep the lines you want, delete the ones you don’t. Oops, did you delete a line you really wanted? No problem, you can generate it again in seconds.

Included data cover the years from 2003 to 2013. Any year’s data can be compared to the 2003-2012 ten-year average or made into a deviation from this ten-year average. ■



MESONET IN PICTURES

Long-Term Averages Graphs Customizable Options

- By opening the “Add customized data to graph” tool section, you can pull data from any of the 64 different weather data sets and plot that over the calendar year. With simple clicks, you can customize graph lines with an endless choice of colors, add color fill under any graph line, bold lines, and/or smooth lines. To view these graphs, go to the “Weather” tab, then “Past Data & Files.” Then click “Mesonet Long-Term Averages - Graphs.”

Mesonet Long-Term Averages - Graphs Show Detail Overlay

Back to Past Data & Files [Share](#) [Tweet](#)

Select a Site: Select a Preset Graph:

Add customized data to graph ▼

Select a Site:

Select a Product:

Select a Year:

Departure from 2003-2012 Avg

Formatting options:

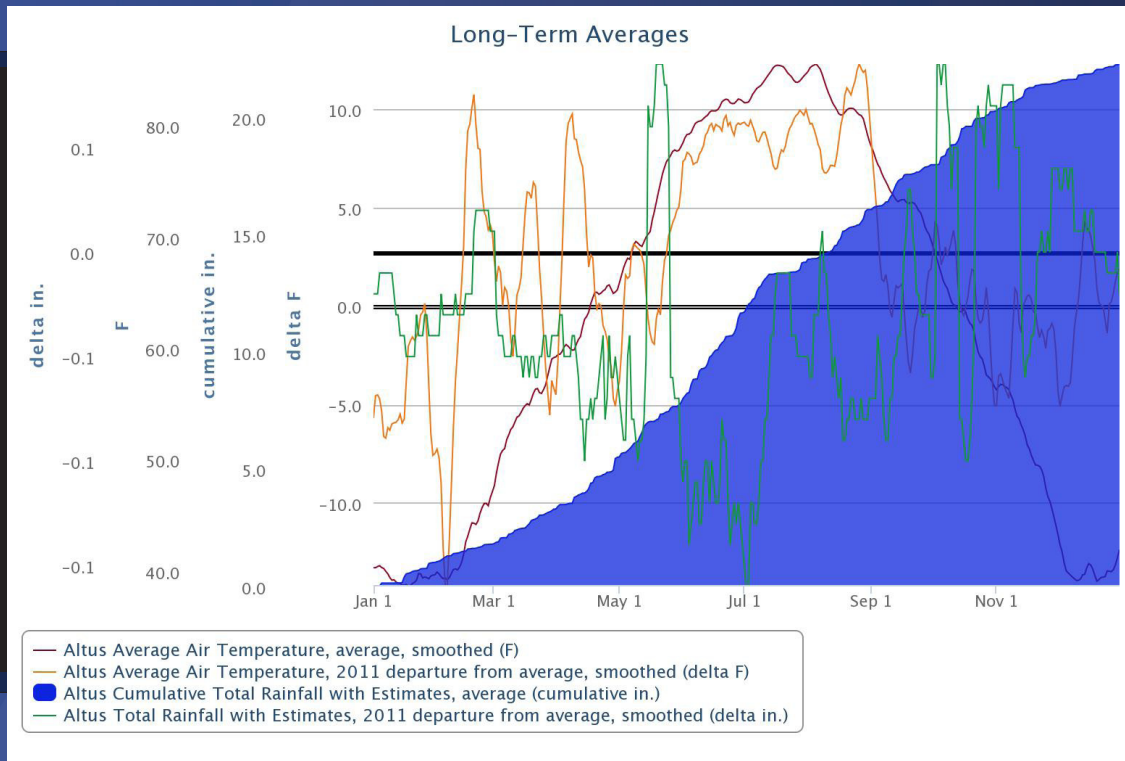
Smoothed Line/Fill Color

Fill Line

Bold Line

Long-Term Averages Graph

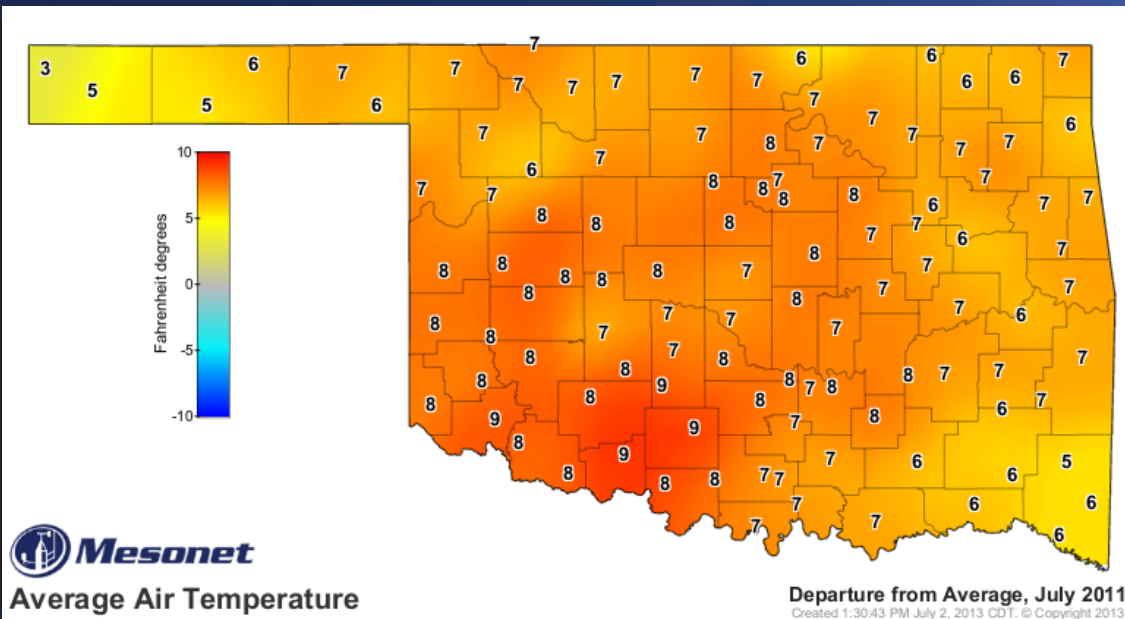
- The graph displays a few of the weather data sets available to you within the Long-Term Averages Graphs. To view these graphs, go to the “Weather” tab, then “Past Data & Files.” Then click “Mesonet Long-Term Averages - Graphs.”



MESONET IN PICTURES

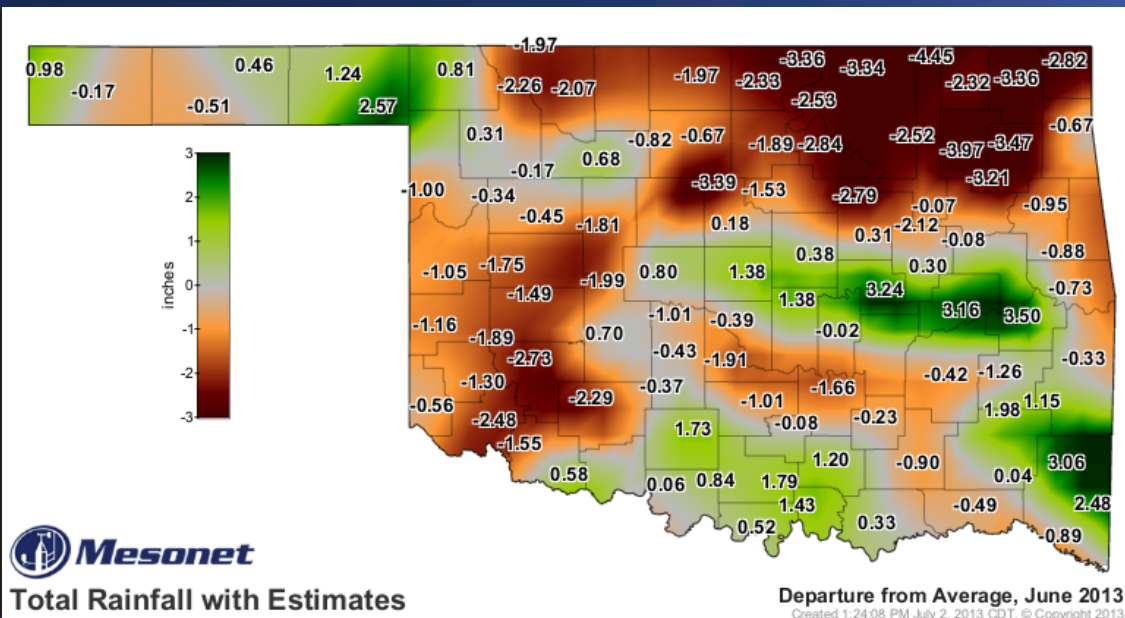
July 2011 - Hottest Month in U.S. History

- The National Climatic Data Center said for July 2011 that, "Oklahoma's statewide average temperature was the warmest monthly statewide average temperature on record for any state during any month." Looking at this long-term average map, you can see July 2011's departure from average, a reflection of how hot that summer really was. To view these maps, go to the "Weather" tab, then "Past Data & Files." Then click "Mesonet Long-Term Averages - Maps."



June 2013 Departure from Average Rainfall

- The June 2013 Departure from Average Map displays how great rainfall varies across the state and how accurately the Mesonet is able to depict it. The Stigler Mesonet station recorded 3.5 inches above average, while the Copan station recorded 4.45 inches below average. Copan is just 154 miles north of Stigler. To view these maps, go to the "Weather" tab, then "Past Data & Files." Then click "Mesonet Long-Term Averages - Maps."



Long-Term Average Maps

—by Stephanie Bowen

SEVERAL MESONET USERS have become more interested in what has happened in the past ten years in regards to the weather. Long-term average maps provided by the Oklahoma Mesonet give a statewide view and show what any given month typically looks like.

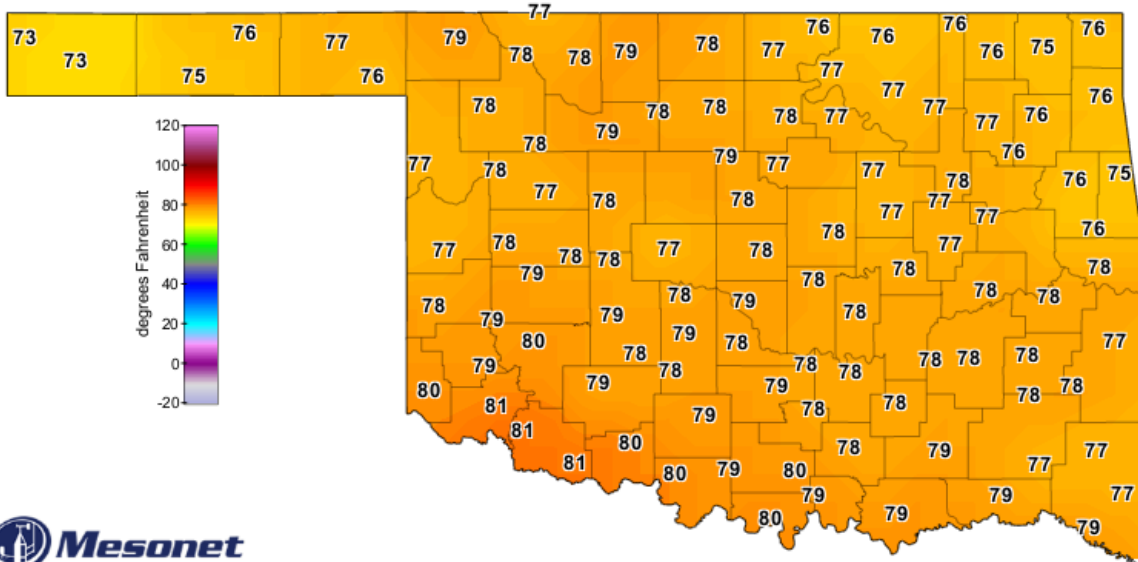
Long-term averages maps are a great tool for educators, both teachers and university faculty alike. The maps provide statewide views for months and years from 2003-2012, including averages and deviations. Customization allows you to view any one of 63 data sets you would like to see.

“This started as an Oklahoma Water Resources Board project,” said Brad Illston, Oklahoma Mesonet Research Associate. “They were interested in looking at long-term averages of precipitation and evaporation. Typically, it is called a long-term average versus ‘climatology’ or ‘normal’

which is usually 30 years. The long-term averages are set to run a 10 year mean and are updated monthly.”

The long-term average maps include all weather variables measured at the Mesonet and derived variables, such as evapotranspiration, for every station and previous ones. By comparing previous years, users can learn what kind of weather to expect during a particular month and make better-informed decisions based on that.

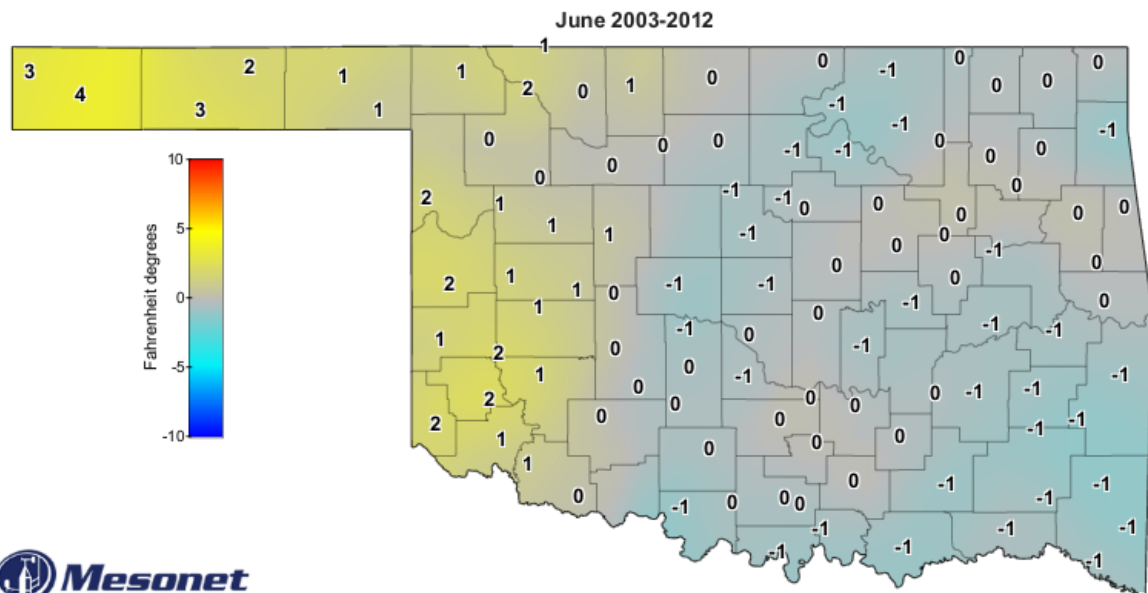
Illston created the data for the long-term averages maps and graphs and did a lot of the initial behind the scenes work. Nathan Bain, Manager of Software Development, and Ada Shih, Graphic Designer, helped develop the online interface for public use and visualizing the data. Illston will highlight the new long-term averages maps and graphs in an upcoming research paper. ■



The Mesonet long-term averages utilize daily data (e.g. daily average, daily maximum/minimum, or daily total) for every current and past Oklahoma Mesonet station. Pictured left is the Average Air Temperature map for June 2003-2012.

Mesonet
Average Air Temperature

For a station's data to be used in one of the maps, at least 90% of the data must be valid during the respective period.. Pictured right is the Departure from Average Air Temperature map for June 2013.



Mesonet
Average Air Temperature

Departure from Average, June 2013



June Weather Follows Script

By Gary McManus, Associate State Climatologist

JUNE WRAP-UP

June followed its normal script almost to the letter with a rainy and stormy first half of the month that gave way to the beginnings of a long hot stretch of Oklahoma summer. Mother Nature did manage to throw in a nice improvisation at the end of the month with a cool front dropping temperatures into the 80s over much of the state. The previous heat was enough to end the state's streak of below normal months at four, however. According to data from the Oklahoma Mesonet, the statewide average temperature came in at 77.9 degrees, 1.4 degrees above normal to rank as the 34th warmest June since records began in 1895. Temperatures climbed into the triple-digits as early as May 3, but really got started at that level on the 10th. Freedom reached the month's highest temperature of 111 degrees on the 27th.

While the average statewide rainfall total fell 0.6 inches below normal at 3.69 inches – the 56th driest June on record – there were still parts of the state that had some hefty rainfall totals for the month. Probably the biggest surprise was the small Panhandle town of Slapout and its 5.7 inches. Okemah led the state with 8.73 inches. Other areas of the state did not fare so well. A large part of southwestern Oklahoma had less than 2 inches for the month. Northeastern Oklahoma and the western Panhandle were also particularly dry during the month. June's first day was merely a continuation of the tumultuous end of May. The tornadoes thankfully ended on May 31, but the flooding rains from those storms continued into June. More than 6 inches fell across parts of east central Oklahoma with more generalized amounts from 2-4 inches. Rain fell somewhere in the state on almost every day through the ninth, and again from the 15th through the 19th.

The rains throughout the first couple of weeks allowed further reduction of drought according to the U.S. Drought Monitor report. Nearly 59 percent of the state was covered by some intensity of drought on the May 28 Drought Monitor, but that number dropped to 53 percent on the June 25 map. The percentage of extreme-to-exceptional drought, the Monitor's two worst categories, remained virtually unchanged at 26 percent. Severe-to-exceptional drought still covers much of the western one-third of the state, and also parts of north central and south central Oklahoma.

The July temperature outlook from the Climate Prediction Center (CPC) indicates equal odds of above-, below- and near-normal temperatures for Oklahoma. So no real clear temperature signal is showing up at this time. The precipitation outlook does show increased odds of above normal rainfall across the western Panhandle, an area that desperately needs moisture. The CPC U.S. monthly Drought Outlook for July shows drought persisting or intensifying across the western third of Oklahoma, including much of the Panhandle. There is some limited improvement possible in the far western Panhandle. Those areas not in drought across central and eastern Oklahoma are expected to remain drought free, at least through July.

77.9°F

average statewide temperature
for June

3.69"

PRECIPITATION

statewide average for June

5.7"

RAINFALL

Recorded at Slapout for June

53

PERCENT

of the state covered by some intensity of
drought according to the U.S. Drought
Monitor on June 25

CALENDAR

JULY

- ▶ 14th-19th: Oklahoma Mesonet Weather Camp for High School
- ▶ 23rd: Grady County OCES and NRCS Meeting, Chickasha
- ▶ 25th: Mesonet Workshops, Oklahoma 4-H Roundup
- ▶ 25th-27th: Oklahoma Cattlemen's Association Convention

AUGUST

- ▶ 8th-9th: Women in Ag Conference, Moore Norman Technology Center
- ▶ 10th: Southern Plains Beef Symposium, Ardmore
- ▶ 19th: OK-First Re-certification class at OEMA conference training day, Norman
- ▶ 26th-29th: OK-First Certification class, Norman
- ▶ 28th: Steering committee meeting, Stillwater

Thank you for 20 years of partnership!

- ▶ Cheyenne - Installed July 7, 1993
- ▶ Hobart - Installed July 7, 1993

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 JULY

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

Chance for above normal precipitation

DISCUSSION: Equal chance for above-, below- and near-normal temperatures for Oklahoma. Increased chance for above normal precipitation across most of the panhandle.

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