Mesonet
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connection
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Dual Rain Gauges

–by Stephanie Bowen

APRIL SHOWERS BRING MAY FLOWERS. With spring upon us, the Mesonet's rain gauges will likely be hard at work recording spring rainfall amounts. Recently, Mesonet has started installing secondary rain gauges Mesonet stations across the state to better record rainfall.

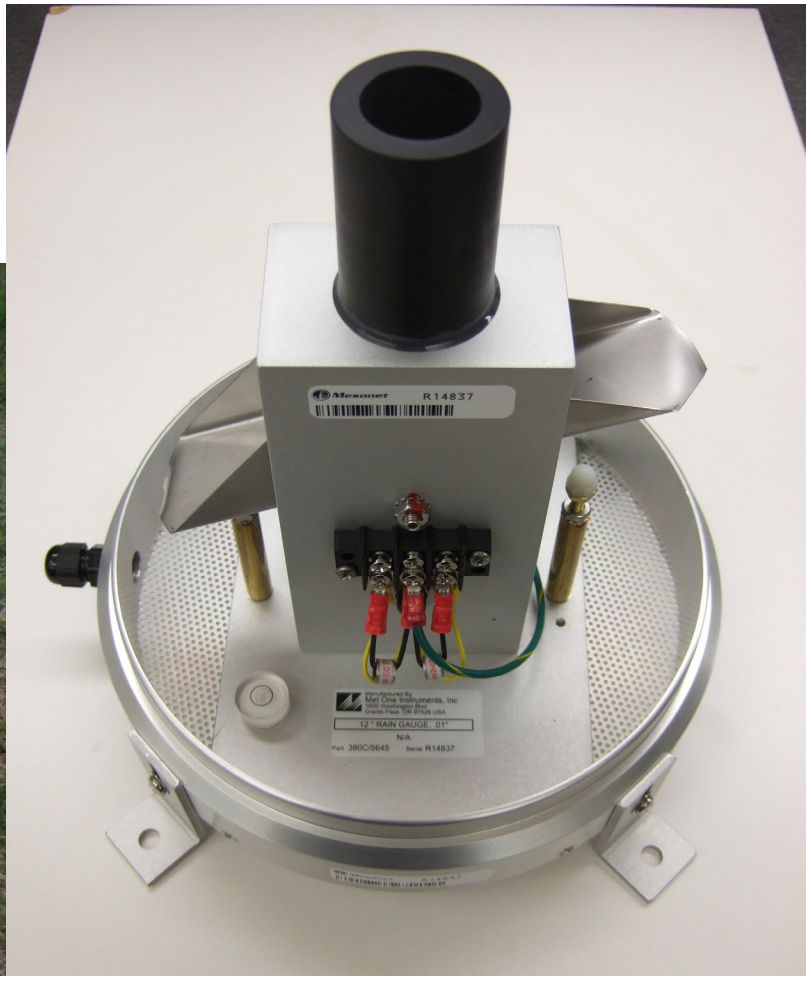
"Rain gauges sometimes have failures due to reasons like clogging from insects or mechanical dysfunctions," said Cindy Luttrell, Lead Mesonet Operator. "When that happens we lose all the data for a rain event. By installing a second rain gauge at a station, we have a backup to capture the event if one fails. This should reduce the amount of missing precipitation data in our archive."

The Mesonet started installing dual rain gauges in July 2014. Currently, 50 have been installed, and the Mesonet plans to have them all installed by the end of this year.

The second rain gauges are identical to the current ones installed. They are a tipping bucket rain gauge. This type of rain gauge has a small bucket that tips and empties whenever a certain amount of rain fills the bucket. The water is collected by a funnel, then it flows into the tipping bucket. The bucket works like a seesaw with a container on each side. A magnetic switch counts the number of tips, which is converted to rainfall accumulation.

"Dual rain gauges will help us identify small errors in precipitation data," Luttrell said. "It helps identify quality assurance issues in a more timely manner." ■

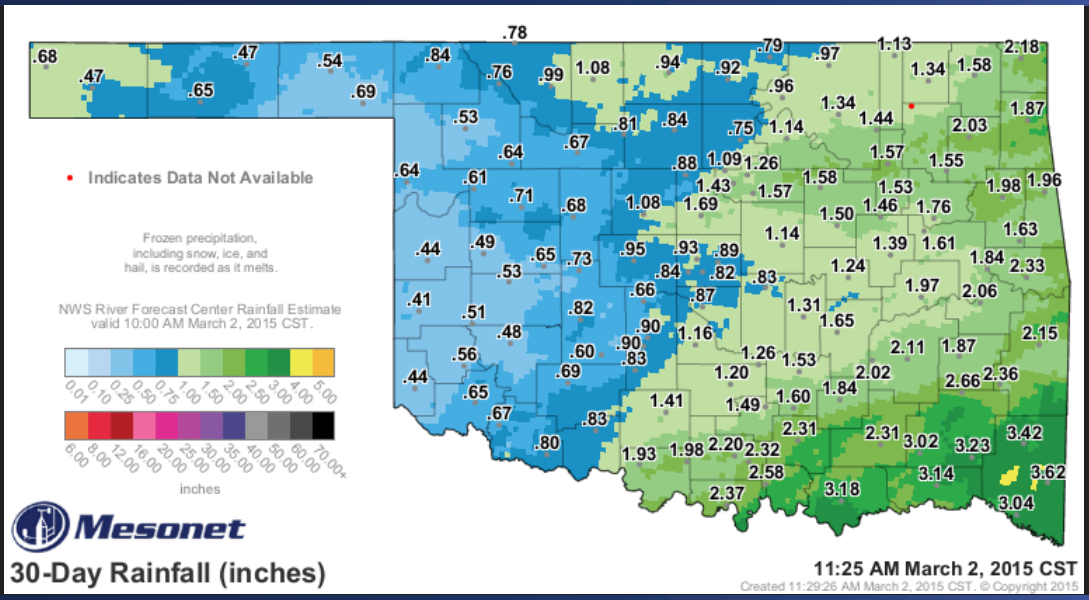
Pictured below: Mesonet's dual rain gauges. Pictured right: The inside of a Mesonet rain gauge. The Mesonet uses tipping bucket rain gauges to measure rainfall across the state.



MESONET IN PICTURES

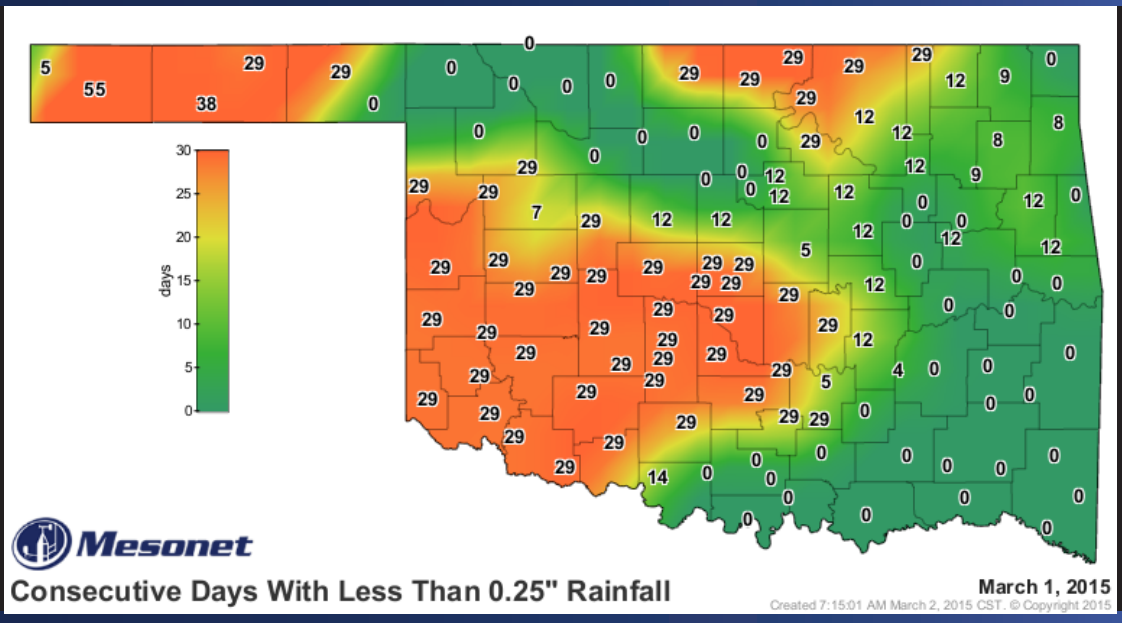
30 Day Rainfall Map

- The 30-Day Rainfall Map gives us a quick snapshot of rainfall across the state for the past 30 days. To view this map, go to mesonet.org, and click on “Weather” in the top menu. Then select “Rainfall” from the side menu, and scroll down to select the “30-day Rainfall Accumulation” map.



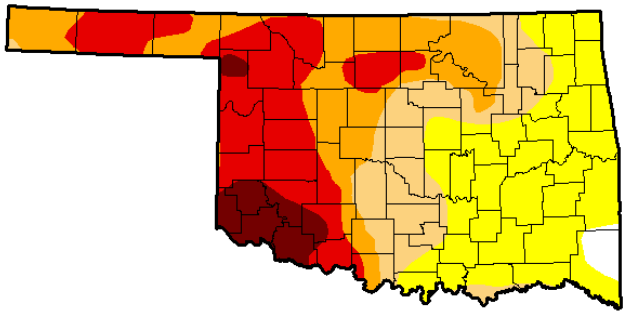
Consecutive Days with less than 0.25” Rainfall Map

- This map gives us an idea of areas in the state that haven’t received much rainfall. We often notice the greatest drought impacts in these areas. To view this map, go to mesonet.org, and click on “Weather” in the top menu. Then select “Rainfall” from the side menu, and select the “Consecutive Days with Less than 0.25 inches” map.



Oklahoma Drought Monitor - February 24, 2015

- To view this map, go to mesonet.org, and click on “Climate” in the top menu. Then select “Drought & Wildfire” from the side menu, and scroll down to select “U.S. Drought Monitor - Oklahoma”.



U.S. Drought Monitor

Oklahoma

February 24, 2015

(Released Thursday, Feb. 26, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	1.48	98.52	65.55	48.46	27.80	5.75
Last Week 2/17/2015	1.48	98.52	65.04	45.54	22.81	5.75
3 Months Ago 11/25/2014	24.48	75.52	59.85	40.85	18.33	5.04
Start of Calendar Year 12/30/2014	25.63	74.37	62.03	40.84	21.74	5.70
Start of Water Year 9/30/2014	8.55	91.45	73.31	58.13	20.92	4.64
One Year Ago 2/25/2014	0.09	99.91	62.41	28.86	13.07	2.40

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

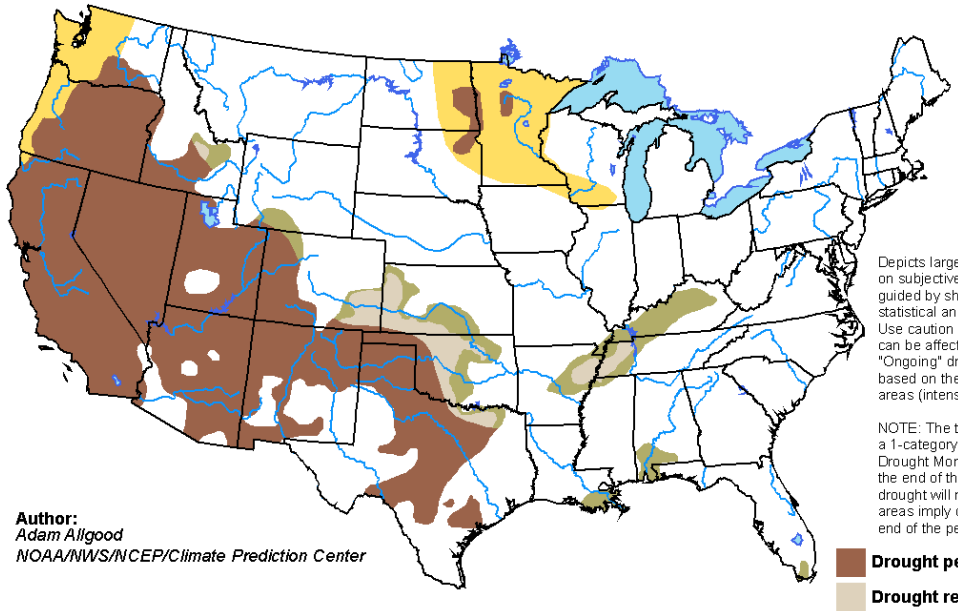
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCDC/NOAA

http://droughtmonitor.unl.edu/

U.S. Seasonal Drought Outlook

- To view this map, go to mesonet.org, and click on “Forecast” in the top menu. Then select “Long Range” from the side menu, and scroll down to select “US Seasonal Drought Outlook”.



U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for February 19 - May 31, 2015
Released February 19, 2015

Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- **Drought persists/intensifies**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

http://go.usa.gov/hHTe

Winter Makes Presence Known During February

By Gary McManus, State Climatologist

FEBRUARY WRAP-UP

The first two weeks of February in Oklahoma were a nice preview of spring with temperatures rising at times into the 70s and 80s with just a few mildly cold days scattered here and there. The final two weeks were a different story altogether, however, as the frigid arctic air ensconced across the eastern half of the country slid its way west and into the state. The forgotten season flexed its muscles at that point with several rounds of wintry weather, punctuated during the month's final few days with several rounds of snow, sleet and freezing rain. Valentine's Day was the turning point as temperatures in the 70s and 80s gave way to 30s and 40s the following day with little relief through the rest of the month. That two week cold snap propelled the month to rank as the 25th coolest on record with a statewide average of 37.1 degrees according to preliminary data from the Oklahoma Mesonet, 5 degrees below normal. Arnett reached 85 degrees on the seventh to mark the month's highest temperature while Kenton fell to 1 degree to claim the lowest reading. The climatological winter season (December-February) ended as the 54th coolest on record, a half-degree below normal.

The month was also drier than normal for most of the state, regardless of the rain, snow and ice that fell. The Mesonet measured a statewide average of 0.7 inches, 1.13 inches below normal to rank as the 24th driest February since records began in 1895. That should be considered an underestimate, however, since the snow and ice on the month's final few days had yet to melt in the Mesonet's precipitation gauges. Nevertheless, radar estimates confirm that for most of Oklahoma, February's totals were from 75 percent to less than 50 percent of normal. More than 10 inches of snow fell across the eastern Panhandle during February, but significant totals fell over all sections of Oklahoma. The National Weather Service (NWS) cooperative observer at Centrahoma in south central Oklahoma reported 7 inches, and totals of 4 inches or greater were common throughout the state. Boise City led all measuring sites across the state for the winter season thus far with 28.1 inches, although Guymon was close behind at 21.3 inches. The climatological winter was the 22nd driest on record with a statewide average of 1.68 inches, 1.71 inches below normal.

The disappointing winter moisture totals, along with the periods of unusually warm and windy weather, led to bad news on the drought front during February and the winter season. The amount of drought in the state increased from 61 percent at the end of January to 66 percent at the end of February according to the U.S. Drought Monitor. At the end of November, 60 percent of the state was considered in drought. The amount of the state in extreme or exceptional drought rose from 18 percent in November to 28 percent at the end of February. The Drought Monitor's intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification. The percent of the state in "abnormally dry" conditions, a precursor to drought, rose from 76 percent to 99 percent over that same period.

37.1°F
average statewide temperature for February

0.7″
average statewide precipitation for February

10 INCHES
of snow fell across the eastern Panhandle during February

66 PERCENT
of the state in drought according to the U.S. Drought Monitor on February 24

CALENDAR

MARCH

- 2nd: OSU Osher Lifelong Learning Institute, Session 3, Oklahoma History Center
- 2nd-5th: OK-First Certification Course, Norman
- 3rd-4th: OSU Vegetation Conference, Midwest City
- 3rd-4th: OSU No-Till Conference, Norman
- 5th: Steering Committee Meeting, Stillwater
- 6th: Okla Assoc Environmental Education 2015 Expo, Norman
- 7th: Severe Weather Awareness Expo, Penn Square Mall
- 9th: OSU Osher Lifelong Learning Institute, Session 4, Oklahoma History Center
- 10th-11th: OK-First Assistant Certification Course, Norman
- 13th: OK Crop Improvement Annual Mtg presentation, OKC
- 16th: OSU Osher Lifelong Learning Institute, Session 5, Oklahoma History Center
- 23rd: OSU Osher Lifelong Learning Institute, Session 6, National Weather Center
- 24th: OK-First Re-Certification Course, Bartlesville
- 26th: OK-First Re-Certification Course, Ponca City
- 28th: Organic Oklahoma 2015 presentation, OSU-OKC
- 31st: Wooland Hills Elementary Visit, Lawton
- 31st: OK-First Re-Certification Course, Elk City

Tweet of the Month

@NWAWxWatch - Feb 18 - Registration is now open for @okmesonet's Weather Camp. We are sponsoring one full scholarship! Check it out at http://tinyurl.com/kjplyjd #arwx

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

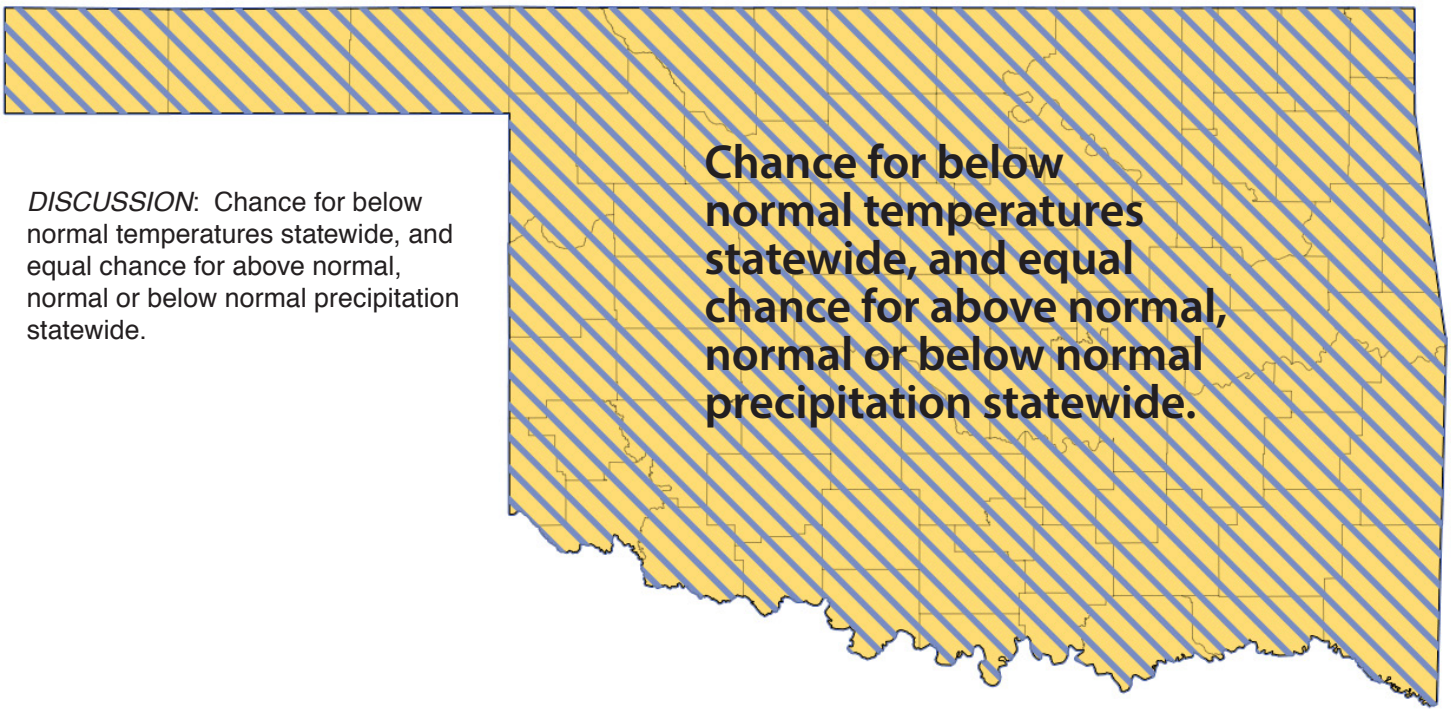
OK-FIRE - Fire management outreach
Contact: J.D. Carlson

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

FORECAST FOR MARCH

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

DISCUSSION: Chance for below normal temperatures statewide, and equal chance for above normal, normal or below normal precipitation statewide.



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