

## 2016 Ends With Memorable December Jan. 2, 2017

December was a cold month for many Oklahomans, a dry month for most, and a memorable one for all. Normally, snow would be the big news during the first month of winter, but drought intensification, one of the more memorable cold snaps in recent memory, and one of the warmest Christmas Days on record captured the headlines this year. According to preliminary data from the Oklahoma Mesonet, the statewide average temperature was 38.4 degrees, 0.5 degrees below normal and the 50<sup>th</sup> coolest December since records began in 1895. The frigid air was a more persistent visitor to the northwestern third of the state while the southeastern third managed to keep the cold at bay for the most part. The Panhandle fell over 2 degrees below normal for their 28<sup>th</sup> coolest December on record. On the opposite side of the state, southeastern Oklahoma was 2.2 degrees above normal to rank as their 36<sup>th</sup> warmest. The first two weeks were generally cool-to-cold, but it was the last two weeks that featured the thermometer roller coaster ride.

A powerful blast of arctic air entered northwestern Oklahoma on the 16<sup>th</sup> and ushered in the coldest weather experienced by the state since February 2011. Many areas saw their temperatures drop 50-70 degrees in a 24-hour period after the front's passage. Lows ranged from the single digits to below zero from the 17<sup>th</sup> through the 19<sup>th</sup> while high temperatures struggled to escape the 20s. Winds gusting to 40-60 mph combined with the frosty air to produce wind chills from near zero degrees to the minus 30s on the 18<sup>th</sup>. The Mesonet sites at Eva and Hooker recorded lows of minus 18 degrees on the 18<sup>th</sup> and wind chills of minus 36 degrees and minus 35 degrees, respectively. All are the lowest such readings in the state since Feb. 10, 2011. Temperatures quickly moderated into the 50s and 60s following the arctic intrusion and remained that way through the rest of the month. The warmth culminated on Christmas Day with widespread 60s and 70s. Oklahoma City went from a record low of 4 degrees on the 18<sup>th</sup> to its highest temperature of the month, 73 degrees, on the 25<sup>th</sup>. That mark also tied their record high for Christmas Day, first set back in 1922. Similarly, Tulsa rose from a record low of 3 degrees on the 18<sup>th</sup> to its monthly high of 71 degrees on the 25<sup>th</sup>. The month's highest temperature, 81 degrees, was recorded at Altus and Hollis on the 16<sup>th</sup>. The statewide average for 2016 was 62.3 degrees, 2.4 degrees above normal and the third warmest year on record for the state. Oklahoma's warmest year came in 2012 at 63.2 degrees. The year's highest temperature of 108 degrees was recorded at Goodwell on July 11, although Bixby recorded a humidity-aided heat index of 118 degrees on June 15.

Not only was Christmas Day warm, it was also the wettest day of a very dry month. A narrow band of strong-to-severe thunderstorms formed in western Oklahoma and marched across the state on the 25<sup>th</sup>, producing wind gusts to nearly 70 mph and brief heavy downpours. Amounts were light, generally less than a quarter-inch, although several stations managed to receive more than half an inch. Those totals did little to alleviate the month's deficit, however. According to the Mesonet, the statewide average was 0.82 inches, 1.24 inches below normal to rank as the 26<sup>th</sup> driest December on record. Broken Bow led all 121 Mesonet sites with 2.4 inches. Boise City came in with 0.12 inches for the lowest total. Eighty-eight Mesonet sites recorded less than an inch of moisture during December. The year finished as the 44<sup>th</sup> driest on record with an average statewide deficit of 5.14 inches, and an average total of 31.36 inches. The fortunes varied across the state, however. Southwestern Oklahoma, which bore the brunt of the 2010-15 drought, finished with an average of 32.91 inches, more than 2.5 inches above normal and the 28<sup>th</sup> wettest year for that region. East central Oklahoma had the worst outcome with an average of 34.5 inches, 11.64 inches below normal and a rank of 20<sup>th</sup> driest. Hooker had the driest 2016 with a total of 15.1 inches. Mt. Herman led the state with 61.7 inches.

Drought continued to intensify throughout December. Oklahoma Mesonet personnel received reports of failed crops and pastures, dry stock ponds and flagging state reservoirs. According to the U.S. Drought Monitor, the hazard increased from 57 percent of the state at the end of November to 72 percent at the end of December. Severe-to-extreme drought increased from 18 percent to 46 percent. The Drought Monitor's intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification. Oklahoma was drought free as late as June 21, 2016.

According to preliminary numbers from the National Weather Service (NWS), Oklahoma saw a total of 57 tornadoes during 2016, one more than the 1950-2015 average of 55.8. All but one of those tornadoes occurred during the primary severe weather season of March-May. The other twister touched down near Stillwater on July 3. Two people were killed and 13 injured due to tornadoes according to NWS reports. The strongest tornado was an EF4 that touched down on May 9 near the town of Katie in Garvin County, killing one. The other fatality occurred with an EF3 twister southeast of Connerville in Johnston County.

The January temperature and precipitation outlooks from the Climate Prediction Center (CPC) are mostly benign for Oklahoma, although there is a slightly increased chance of above normal temperatures across far southern Oklahoma. Drought is also expected to persist across the state through January where it currently exists, with development likely in north central Oklahoma and the far western Panhandle.

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