

OKLAHOMA WEATHER HISTORY
Monthly Climatology Series
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NORMAN - Summer's heat fades as precipitation increases across most of Oklahoma during September. The statewide-averaged normal temperature for the month, 73.0 degrees, makes September the 4th warmest month of the year. As such, climatologists consider it to be the first month of the autumn transitional season. Monthly precipitation decreases in extreme northwestern portions of the state, even as the rest of the state enjoys a second rainy season. Normal monthly precipitation, averaged statewide, is 3.80 inches, an increase of more than one inch over either of the two previous months.

An increasing frequency of fronts, bringing cooler air from the northern plains, leads to the lower temperatures, an effect that often isn't apparent before the middle of the month. Statewide-averaged temperatures for the month since 1892 have ranged from 65.4 degrees Fahrenheit in 1974 to 80.6 degrees in 1931. Normal monthly temperatures across the state vary between Boise City's 68.0 degrees and Waurika's 76.8. Normal daily maximum temperatures for the month are bounded by 81.9 degrees at Stilwell and 89.0 degrees at Chickasha. Normal daily minimum temperatures in September are between 52.3 degrees at Boise City and 64.8 degrees at Waurika. The September record high temperature for the state is 115 degrees, attained at Alva twice, both on September 3; occurred in 1939 and the other in 1947. Boise City holds the record for the lowest September temperature, 25 degrees reported on September 30, 1985.

Freezes are uncommon in September, but stations in the extreme northwest experience a freeze before the end of September in about 10 percent of years. The earliest reported freeze is September 15, in 1993 at Freedom (28 degrees), Gage (30 degrees), and Hammon (30 degrees), and in 1947 at Kenton (31 degrees). Hot weather is most evident in the southwest. Chattanooga averages 16 days in September with a high temperature of 90 degrees or more, including four days in which the temperature reaches 100 degrees or more. Conversely, Kansas and Stilwell each average only six September days with the high temperature in the 90s. Triple digit temperatures occur only about once every third year at Miami, Kenton, and Boise City.

Statewide-averaged precipitation has varied between 0.27 inch in 1956 and 7.86 inches in 1945. A second notable wet September occurred in 1936 when the great drought of that summer was broken by a statewide-averaged total precipitation of 7.68 inches, most of which fell during the last half of the month. The northeastern Oklahoma community of Kansas has the greatest normal precipitation during the month (5.56 inches). Regnier with normal precipitation of 1.44 inches is the state's September dry

spot. Wyandotte recorded 16.82 inches in September 1945 to hold the monthly state record. The record daily precipitation at a regular reporting station is the 10.42 inches reported at Barnsdall on September 29, 1986. Snow is rare in September, But Boise City reported 4 inches for the month in 1984 and Kenton recorded 3 inches on September 17, 1971, the earliest snowfall in the state since at least 1910.

Tornadoes are slightly more frequent in September, averaging 2.1 each year, than they are during the previous two months. The most tornadoes reported in the state during September is 16 in 1992. No tornadoes were reported in the state during September in 18 of 53 years from 1950 through 2002 (the period of comprehensive records). Two people killed in Pottawattomie County on September 14, 1957 are the only tornado-related deaths recorded in September during that period.

A series of microbursts (concentrated strong winds generated by a collapsing thunderstorm) hit Oklahoma City on September 29, 1986, causing about one million dollars worth of damage. A hailstorm that hit Oklahoma City on September 12, 1950 resulted in over one million dollars worth of damage from “unusually large and jagged” hailstones, some larger than “hens’ eggs.” A line of severe thunderstorms hit central Oklahoma on the night of September 5, 1992 leaving extensive wind damage at Norman’s airport and the surrounding area. Included in the \$2.7 million damage estimate was extensive damage to the National Weather Service office at the airport. The same system of thunderstorms produced hailstones 3.5 inches in diameter in north Oklahoma City. On September 10, 1999, the anemometer at Ardmore Industrial Park near Gene Autry recorded a peak gust of 102 miles per hour.

Floods present a more common weather hazard than tornadoes in September. Residual moisture from tropical disturbances, usually from the Gulf of Mexico but occasionally from the Pacific Ocean, interacts with slow moving frontal systems in the state from time-to-time during the autumn months. Widespread heavy downpours are the typical result, frequently leading to flooding on larger rivers and streams. On other occasions, a frontal system will stall within the state and successive thunderstorms will form along the frontal boundary and follow each other along a narrow path, thereby producing intense rain over a limited area and causing dangerous flash flooding.

Notable hurricane-induced flooding events in September include rains associated with remnants of the deadly Galveston hurricane of 1900 that produced widespread flooding in eastern Indian Territory. Moisture earlier associated with Hurricane Paine produced the Barnsdall precipitation event of September 29, 1986 that is listed above. Flooding on the Arkansas and its tributaries affected 52 counties with total damages estimated at \$350 million. Hurricanes Carla (1961), Gilbert (1988), and Fausto (a Pacific storm in 1996) each provided moisture that led to significant flooding in the state.

Sapulpa recorded 15.50 inches of rain on September 3 and 4, 1940, the second greatest 24-hour precipitation event ever recorded at an established rain gauge station in the state. This highly localized event, extending across two separate reporting days: 7.80 inches on the 3rd and 7.70 inches on the 4th, produced flooding locally and along the

Arkansas River near Tulsa that caused \$1,135,000 of damage. Yet, the river gauge at Tulsa was the only one to record flow above a flood stage. As much as 16 inches of rain inundated a small area southwest of Tulsa on September 4-6, 1971, causing Polecat Creek to crest more than 7 feet above flood stage at Sapulpa. Flooding was reported from just below Heyburn Dam to the confluence of Polecat Creek with the Arkansas River near Jenks.

September is mostly a pleasant month. Early season football games are more pleasant when played at night, but most of the weather is pretty benign. Drought can also be a factor in September. Welcome rains in September broke a multi-year drought in 1918. Heat, low humidity, and a dry summer contributed to a pair of wildfires (both probably started by humans) in September 2000. A fire in the Arbuckle Mountains south of Davis burned 11,500 acres from the 8th through 19th. A fire south of Guthrie on the 19th consumed 35 homes before being extinguished.

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