Oklahoma Monthly Climate Summary

# APRIL 2011

OKLAHOMA CLIMATOLOGICAL SURVEY

Name a weather hazard and Oklahoma probably experienced it during April. Tornadoes, softball size hail, 90 mph winds, wildfires, floods and severe drought – all showed their faces during the fourth month of the year. The eastern half of the state received the storms and therefore the lion's share of the severe weather and moisture. Meanwhile, western Oklahoma saw drought conditions intensify in the absence of any significant rainfall, replaced instead by wildfires and blowing dust. The statewide average rainfall total came in at a deceptive 3.44 inches, the 50th wettest April since 1895, and masked the divide between the "haves" in eastern Oklahoma and the "have-nots" in the west. The statewide average temperature of 62.2 degrees, more than 3 degrees above normal, ranked April as the 20th warmest on record. Unlike the rainfall numbers, the entire state was consistently warmer than normal. Preliminary numbers indicate more than 35 tornadoes touched down during April, nearing the month's record of 40 set in 1957. The majority of the twisters occurred in eastern Oklahoma on the stormy day of April 14. A probable EF-3 tornado swept through the small town of Tushka in Atoka County that evening, damaging homes and businesses, injuring dozens and taking two lives.

### April 2011 Statewide Extremes

| Description | Extreme | Station | Day |
|---|---|---|---|
| High Temperature | 103°F | Altus | 3 |
| Low Temperature | 23°F | Camargo | 5 |
| High Precipitation | 14.91 in. | Westville | -- |
| Low Precipitation | 0.09 in. | Hollis | -- |

## PRECIPITATION

Interstate 35 served as a demarcation line between abundant rainfall in the east and a scarcity of moisture in the west. The totals reported by the Oklahoma Mesonet range from a whopping 14.91 inches in the ironically named eastern border town of Westville to 0.09 inches at Hollis in the southwest. Of the 120 Mesonet sites, 30 recorded more than 6 inches of rain while 35 received less than an inch. East central Oklahoma received an average of 9.67 inches, more than 5 inches above normal and the fourth wettest April on record for that area. In contrast, west central Oklahoma had an average of 0.60 inches, 2 inches below normal for their seventh driest April on record. It was the 27th driest March-April period on record across the state with an average of 4.11 inches and the 14th driest January-April at 5.71 inches.

## TEMPERATURE

Areas in the northeast and east central Oklahoma were within a degree of normal, but for the most part the state was 3-4 degrees above normal. Waurika had the highest average temperature for the month at 67.7 degrees. Boise City and Kenton were leaders on the cool end of the scale at 54.7 degrees. The highest temperature of the month of 103 degrees occurred at Altus on the third while Camargo recorded the lowest temperature of 23 degrees on the fifth. March and April were 2.5 degrees above normal across the state for the 14th warmest such period on record. The January-April temperature of 47.2 degrees was 0.4 degrees above normal with a ranking of 40th warmest.

### April 2011 Statewide Statistics

Temperature

| | Average | Depart. | Rank (1895-2011) |
|---|---|---|---|
| Month (April) | 62.2°F | 3.1°F | 20th Warmest |
| Season-to-Date (Mar-Apr) | 57.1°F | 2.5°F | 14th Warmest |
| Year-to-Date (Jan-Apr) | 47.2°F | 0.4°F | 40th Warmest |

Precipitation

| | Average | Depart. | Rank (1895-2011) |
|---|---|---|---|
| Month (April) | 3.44 in. | 0.08 in. | 50th Wettest |
| Season-to-Date (Mar-Apr) | 4.11 in. | -2.36 in. | 27th Driest |
| Year-to-Date (Jan-Apr) | 5.71 in. | -3.97 in. | 14th Driest |

Depart. = departure from 30-year normal

## APRIL DAILY HIGHLIGHTS

**APRIL 1-7:** The month's first week was mostly warm and dry. Several dry storm systems moved through and brought strong gusty winds with them. Combined with low relative humidities and heat, those conditions produced an active period for wildfires. The month's highest temperature of 103 degrees occurred on the third at Altus. Walters saw 100 degrees on the sixth. Very little rain fell during this time. Showers dropped a little rain in the southeast on the third and fourth, but amounts were very light and brought little relief to the area.

**APRIL 8-11:** A stalled warm front helped to kick off storms on the eighth that lasted well into the early morning hours of the ninth. The storms were confined to the northern third of Oklahoma. Numerous large hail reports were associated with the storms. The hail reached to softball size in Kay County. A powerful storm brought 94 mph winds to Ponca City. The winds were determined to be rear-flank downdraft winds and not associated with a tornado. Thousands were left without power in Ponca City after the storm and heavily damaged structures and trees. The storms eventually moved out of Oklahoma to the northeast and temperatures soared on the southerly winds on the ninth. Winds gusted to more than 40 mph in the western parts of the state and highs rose into the 90s. Hollis reached 100 degrees that afternoon. A cold front moved through the state on the 10th and more storms formed that afternoon, mostly in the southeast. Those storms were not quite as severe as those that previously occurred in this period, but large hail and strong winds were reported nonetheless. Wind damage was reported in Holdenville with hail drifts of 6-8 feet. High pressure at the surface the afternoon of the 11th followed the storms and temperatures were much more seasonable in the 70s.

**APRIL 12-14:** The 12th and 13th were glorious spring-like days with cool starts and high temperatures rising into the 70s and 80s. A strong storm system approached from the west and southerly winds brought a surge of low-level moisture from the Gulf of Mexico on the 14th. Thunderstorms fired in the afternoon and quickly became severe. Preliminary data indicate 31 tornadoes touched down, mostly in eastern Oklahoma. A large EF-3 multiple vortex twister touched down near Tushka in Atoka County. The tornado killed two and injured many more while also causing significant damage. The tornado then continued through the south and southeast portions of Tushka. Three other significant (EF-2) tornadoes were reported on the 14th. The remaining tornadoes were rated EF-0 or EF-1. Large hail and severe winds were common with the storms and reports of damage were plentiful. A storm in Pushmataha County dropped softball size hail with wind gusts estimated at 85 mph. The storms also provided beneficial rains of nearly 3 inches in southeastern Oklahoma and nearly 2 inches in the northeast. The storms moved northeast out of the area overnight.

**APRIL 15-18:** No rain fell during this period, which saw the return of southerly winds and above normal temperatures. By the 18th, highs in southern Oklahoma had reached into the 90s and even a few 100s. A low pressure system developed in western Oklahoma that kept the southerly wind machine working overtime.

**APRIL 19-21:** A cold front divided the state early on the 19th. Low temperatures that day dropped into the 40s and 50s behind the front but managed to stay in the 70s ahead of the front. Cooler and drier air filtered in behind the front while severe storms were erupting along the front in southeastern Oklahoma. The storms came complete with hail to the size of softballs and severe winds. Four tornadoes touched down in Pushmataha and LeFlore counties. More storms formed late on the 20th and into the 21st. Idabel was hit hard with softball size hail and severe winds. Rains over this three-day period totaled 1-2 inches in the far eastern parts of the state. Amounts diminished rapidly to the west.

**APRIL 22-25:** Extreme rainfall was the big story during this period. A stalled front was the focus for showers and storms that lingered for days. Rainfall amounts between 6-12 inches were common in east central Oklahoma, with surrounding areas receiving 2-6 inches. Walters in south central Oklahoma received over 5 inches in just a few hours while surrounding areas received less than an inch. There were 23 reports of flash flooding through the 25th. The Oklahoma Mesonet site at Westville led the totals at 12.1 inches. Much of western Oklahoma received less than a quarter of an inch. Severe weather was still an issue. Numerous reports of large hail and severe winds were scattered about the state during this period. Three preliminary tornado reports came in from Garvin and McClain counties.

**APRIL 26-30:** The northwest received very beneficial rainfall on the 26th and 27th after missing the previous bounty. More than an inch of rain fell from Texas County in the Panhandle to north central Oklahoma. Southwestern Oklahoma continued to miss the rain. Following those showers, the weather calmed and warmed through the 29th when another strong cold front moved in from the northwest. Strong winds of over 50 mph were common on the month's last two days. Just a few showers fired along the front in the southeast before midnight.

# APRIL 2011 SEVERE WEATHER

## Hail (2 inches in diameter or greater)

| Size (in.) | Location | County | Day |
|---|---|---|---|
| 4.25 | 3 SE Braman | Kay | 8 |
| 3.00 | 4 W Ceres | Noble | 8 |
| 2.75 | 2 S Billings | Noble | 8 |
| 2.75 | Billings | Noble | 8 |
| 2.75 | 5 W Jet | Alfalfa | 8 |
| 2.50 | 3 S Breckenridge | Garfield | 8 |
| 2.50 | 6 N Fairmont | Garfield | 8 |
| 2.50 | 1 SSW Medford | Grant | 8 |
| 2.00 | Newkirk | Kay | 8 |
| 2.00 | 4 S Billings | Noble | 8 |
| 2.00 | 8 W Red Rock | Noble | 8 |
| 2.00 | 1 N Ceres | Noble | 8 |
| 2.50 | 4 SE Avant | Osage | 9 |
| 2.00 | Baron | Adair | 10 |
| 4.25 | Sulphur | Murray | 14 |
| 4.25 | Roff | Pontotoc | 14 |
| 4.25 | Tishomingo | Johnston | 14 |
| 4.25 | 9 W Dunbar | Pushmataha | 14 |
| 4.25 | 2 NNW Clayton | Pushmataha | 14 |
| 4.00 | Fillmore | Johnston | 14 |
| 2.00 | N Davis | Murray | 14 |
| 4.25 | 5 E Stringtown | Atoka | 19 |
| 2.50 | 5 S Talihina | Pushmataha | 19 |
| 2.00 | Achille | Bryan | 19 |
| 2.00 | 8 W Eubanks | Pushmataha | 19 |
| 4.25 | Idabel | McCurtain | 20 |
| 2.75 | Idabel | McCurtain | 20 |
| 2.00 | Idabel | McCurtain | 20 |
| 2.75 | 2 S Tecumseh | Pottawatomie | 22 |
| 2.75 | 2 W Lindsay | Garvin | 22 |
| 2.75 | 5 W Walters | Cotton | 22 |
| 2.75 | 1 W Lindsay | Garvin | 22 |
| 2.50 | 4 NE Bray | Stephens | 22 |
| 2.50 | Bixby | Tulsa | 22 |
| 2.00 | 5 S Pink | Pottawatomie | 22 |
| 2.00 | Geronimo | Comanche | 22 |
| 2.00 | 4 SE Broken Arrow | Wagoner | 22 |
| 2.50 | Tulsa | Tulsa | 23 |
| 2.00 | 2 WNW Byars | McClain | 23 |
| 2.75 | 1 NW Waurika | Jefferson | 24 |

## Wind Gusts (70 mph or greater)

| Speed (m.p.h) | Location | County | Day |
|---|---|---|---|
| 94 | 1 NW Ponca City | Kay | 8 |
| 70 | Hominy | Osage | 14 |
| 85 | 9 W Dunbar | Pushmataha | 14 |
| 73 | 3 ENE Wister | LeFlore | 14 |
| 70 | Gage | Elllis | 15 |
| 71 | 6 SW Cheyenne | Roger Mills | 15 |
| 70 | 8 W Slapout | Beaver | 15 |
| 70 | 3 WNW Stigler | Haskell | 22 |
| 70 | McAlester | Pittsburg | 22 |
| 70 | 2 E Spiro | LeFlore | 26 |

## Flooding

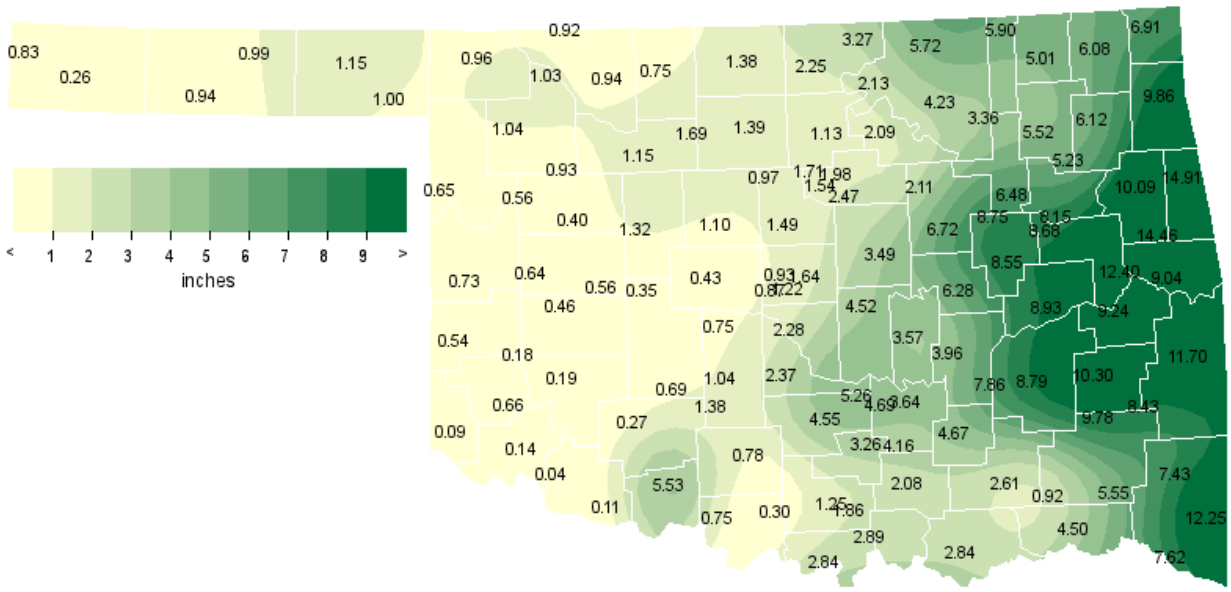
| Location | County | Day |
|---|---|---|
| 2 W Walters | Cotton | 22 |
| 1 W Meeker | Lincoln | 24 |
| Beggs | Okmulgee | 24 |
| Morris | Okmulgee | 24 |
| Haskell | Muskogee | 24 |
| Proctor | Adair | 24 |
| Roland | Sequoyah | 24 |
| Tahlequah | Cherokee | 24 |
| Arkoma | LeFlore | 24 |
| Poteau | LeFlore | 24 |
| Sallisaw | Sequoyah | 24 |
| Stigler | Haskell | 24 |
| Eufaula | McIntosh | 24 |
| Pocola | LeFlore | 25 |
| Panama | LeFlore | 25 |
| Stillwell | Adair | 25 |
| Eufaula | McIntosh | 25 |
| Miami | Ottawa | 25 |
| Blanco | Pittsburg | 25 |
| Checotah | McIntosh | 25 |
| Broken Bow | McCurtain | 25 |
| 3 SW Broken Bow | McCurtain | 25 |
| 4 WSW Haworth | McCurtain | 25 |

## APRIL 2011 SEVERE WEATHER (CONT.)

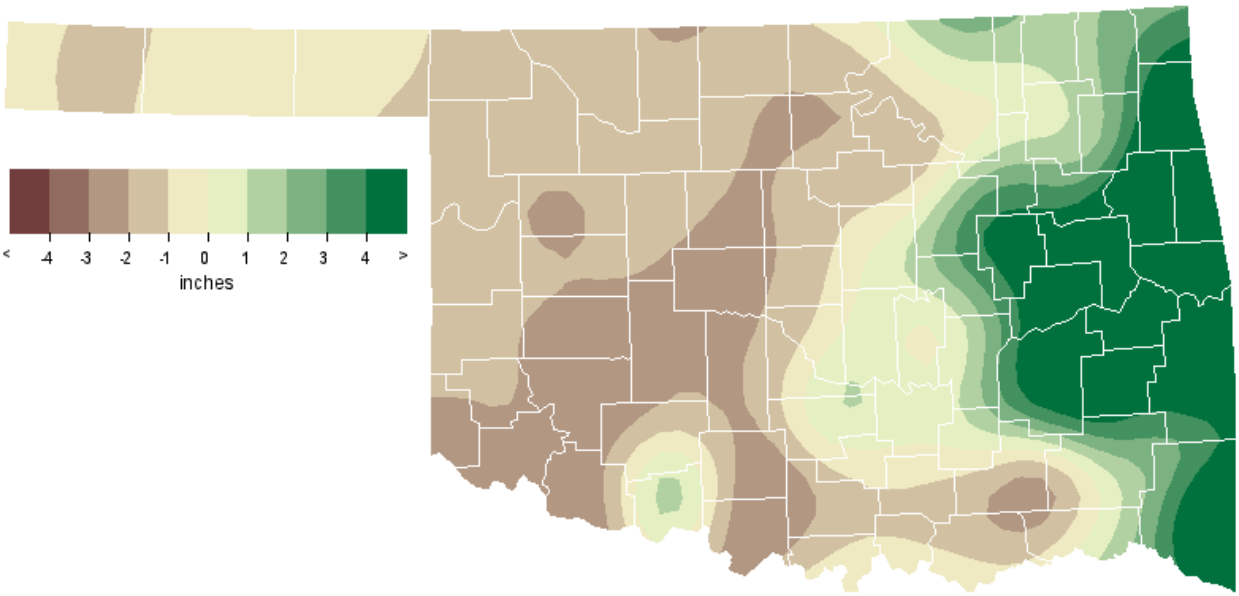
### Significant Tornadoes (EF2 or greater)

| EF-rating | County | Day |
|---|---|---|
| 2 | Osage | 14 |
| 3 | Atoka | 14 |
| 2 | Delaware | 14 |
| 2 | Pushmataha | 14 |

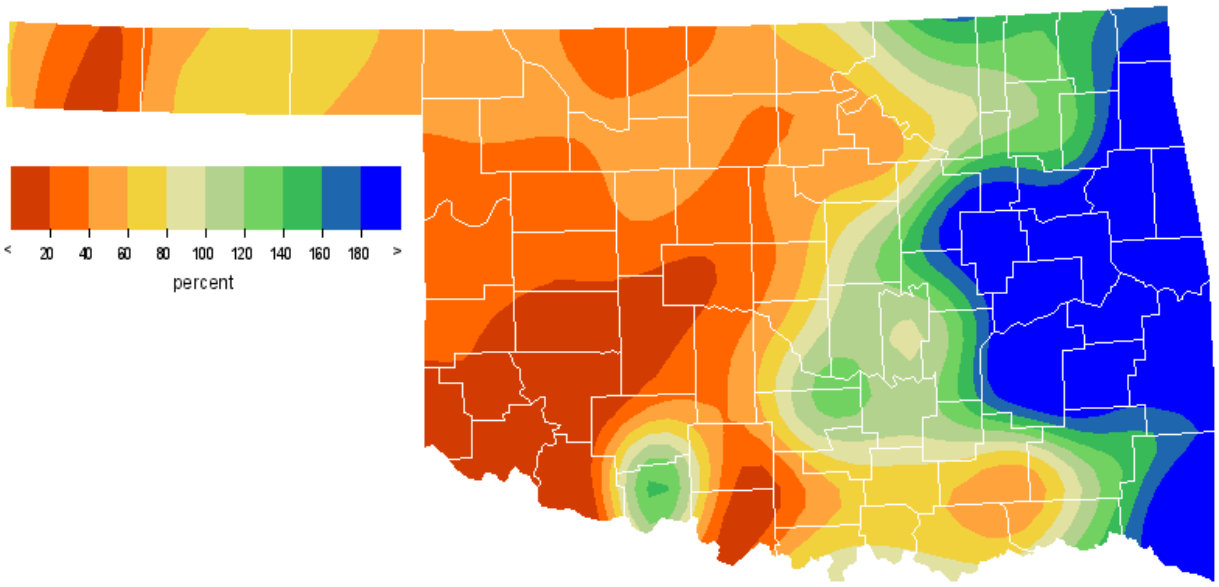
## APRIL 2011 OBSERVED PRECIPITATION



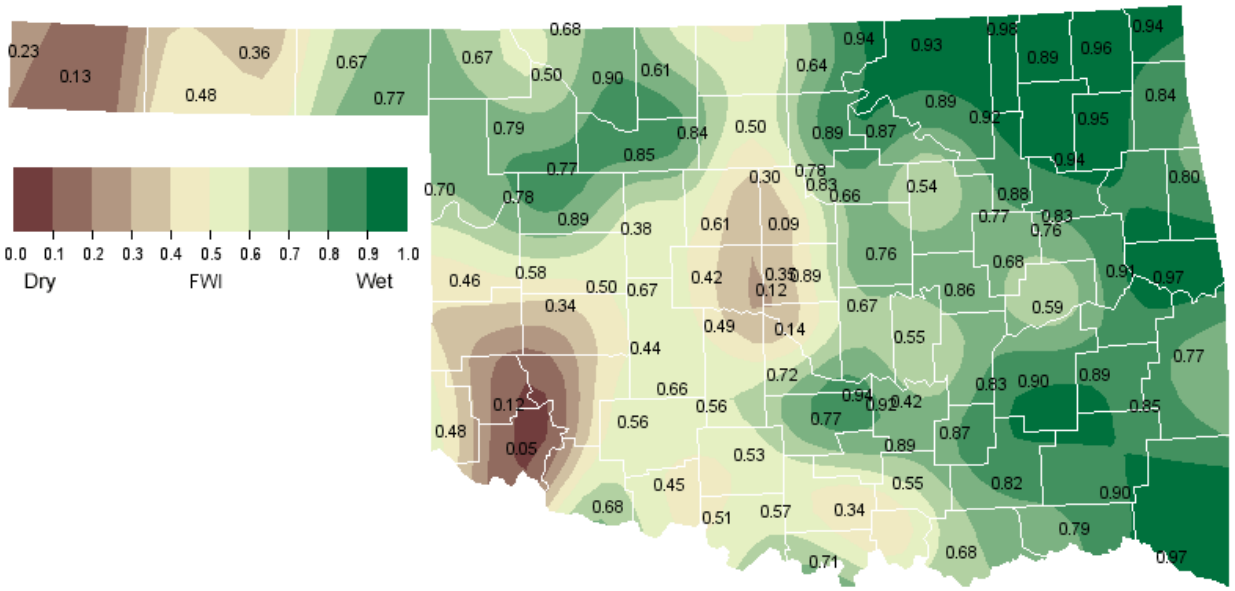

## APRIL 2011 DEPARTURE FROM NORMAL PRECIPITATION



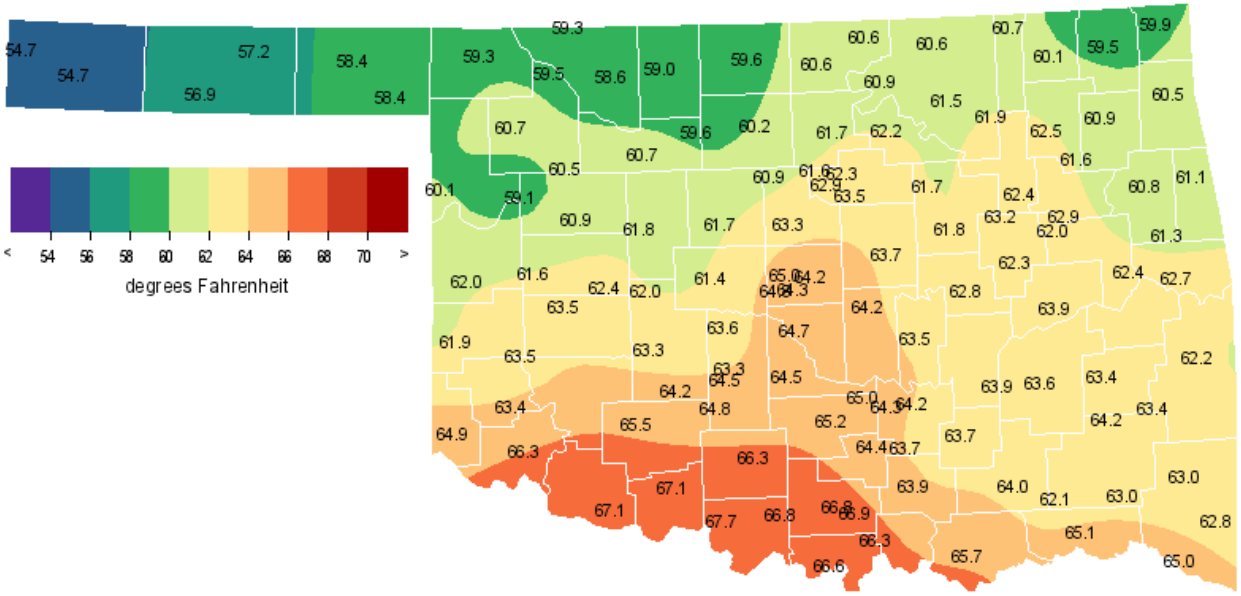
## APRIL 2011 PERCENT OF NORMAL PRECIPITATION



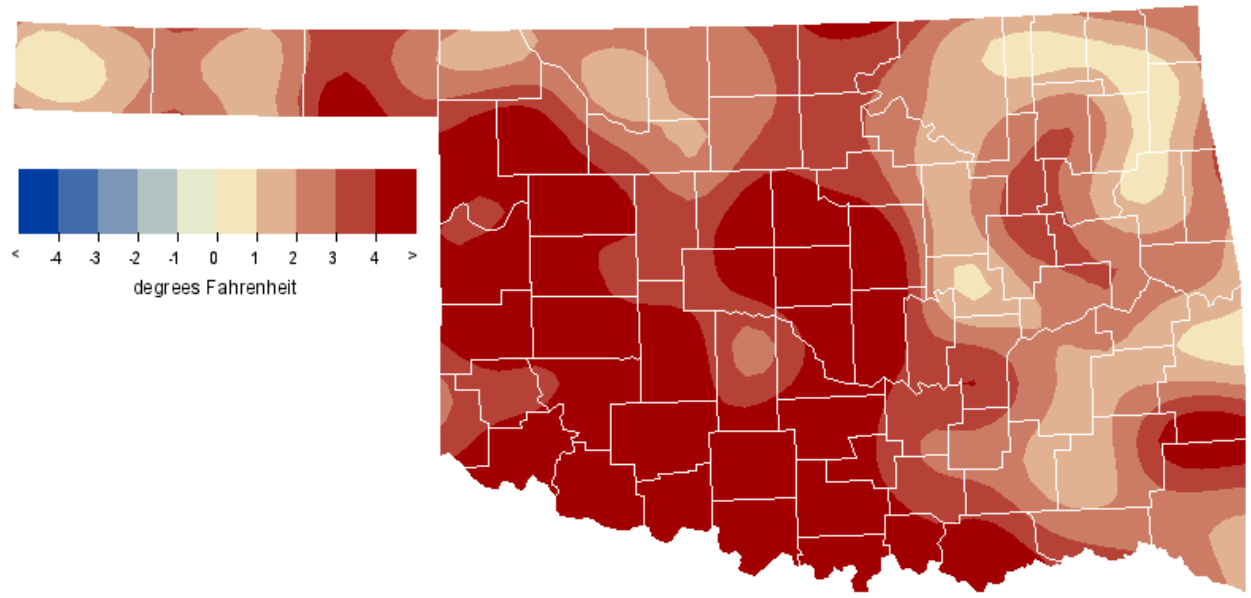

## APRIL 2011 AVERAGE SOIL MOISTURE AT 25CM



## APRIL 2011 AVERAGE TEMPERATURE




## APRIL 2011 DEPARTURE FROM NORMAL TEMPERATURE

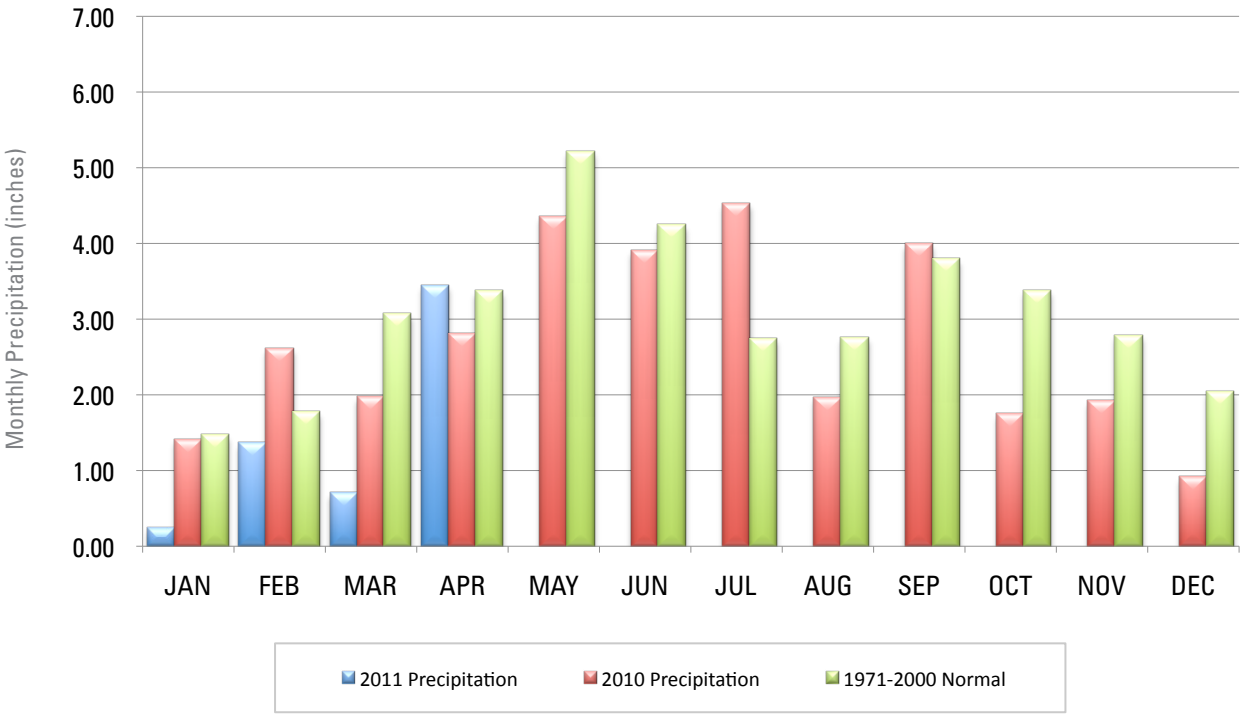


# MESONET MONTHLY SUMMARY FOR APRIL 2011

| NAME | MEAN TEMP | HIGH TEMP | HIGH DAY | LOW TEMP | LOW DAY | HDD | CDD | TOT PPT | HIGH 24-HR | HIGH DAY |
|---|---|---|---|---|---|---|---|---|---|---|
| **PANHANDLE** | | | | | | | | | | |
| Arnett | 60.1 | 96 | 3 | 30 | 16 | 186 | 40 | .65 | .52 | 26 |
| Beaver | 58.4 | 96 | 9 | 26 | 16 | 223 | 24 | 1.15 | .55 | 26 |
| Boise City | 54.7 | 90 | 29 | 25 | 16 | 313 | 4 | .26 | .13 | 24 |
| Buffalo | 59.2 | 97 | 3 | 31 | 5 | 205 | 32 | .96 | .55 | 27 |
| **NORTH CENTRAL** | | | | | | | | | | |
| Alva | 58.6 | 97 | 3 | 30 | 4 | 219 | 26 | .94 | .78 | 27 |
| Blackwell | 60.5 | 90 | 9 | 28 | 5 | 185 | 51 | 2.25 | 1.19 | 8 |
| Breckinridge | 60.1 | 90 | 9 | 28 | 5 | 190 | 44 | 1.39 | .55 | 27 |
| Cherokee | 58.9 | 91 | 3 | 30 | 5 | 211 | 28 | .75 | .58 | 27 |
| Fairview | 60.7 | 94 | 3 | 34 | 4 | 170 | 42 | 1.15 | .79 | 27 |
| Freedom | 59.6 | 99 | 3 | 33 | 5 | 197 | 35 | 1.03 | .49 | 27 |
| Lahoma | 59.6 | 91 | 9 | 28 | 5 | 192 | 30 | 1.69 | .70 | 27 |
| **NORTHEAST** | | | | | | | | | | |
| Bixby | 62.3 | 90 | 22 | 29 | 5 | 151 | 70 | 6.48 | 3.71 | 24 |
| Burbank | 61.0 | 90 | 9 | 28 | 5 | 179 | 58 | 2.13 | .56 | 24 |
| Claremore | 62.5 | 89 | 22 | 37 | 5 | 142 | 67 | 5.52 | 2.18 | 24 |
| Copan | 60.7 | 88 | 3 | 32 | 5 | 173 | 44 | 5.90 | 2.59 | 25 |
| Foraker | 60.5 | 89 | 9 | 31 | 5 | 180 | 46 | 5.72 | 2.89 | 25 |
| Inola | 61.6 | 89 | 8 | 29 | 5 | 165 | 64 | 5.23 | 1.94 | 24 |
| Jay | 60.5 | 88 | 8 | 30 | 5 | 190 | 57 | 9.86 | 2.63 | 24 |
| Miami | 59.9 | 88 | 8 | 29 | 5 | 196 | 43 | 6.91 | 1.54 | 14 |
| **WEST CENTRAL** | | | | | | | | | | |
| Bessie | 63.5 | 99 | 3 | 35 | 16 | 124 | 78 | .46 | .29 | 27 |
| Butler | 61.6 | 100 | 3 | 29 | 5 | 162 | 58 | .64 | .27 | 24 |
| Camargo | 59.2 | 97 | 3 | 23 | 5 | 208 | 34 | .56 | .30 | 27 |
| Cheyenne | 62.0 | 96 | 3 | 37 | 16 | 144 | 54 | .73 | .26 | 24 |
| Erick | 61.9 | 99 | 3 | 28 | 16 | 154 | 62 | .54 | .23 | 25 |
| **CENTRAL** | | | | | | | | | | |
| Acme | 64.8 | 94 | 22 | 31 | 4 | 124 | 118 | 1.38 | 1.07 | 24 |
| Bowlegs | 63.5 | 90 | 18 | 28 | 5 | 129 | 84 | 3.57 | 2.70 | 24 |
| Bristow | 61.8 | 91 | 22 | 27 | 5 | 167 | 71 | 6.72 | 5.11 | 24 |
| Lake Carl Blac | 61.6 | 91 | 18 | 28 | 5 | 176 | 75 | 1.71 | 1.32 | 24 |
| Chandler | 63.7 | 92 | 22 | 34 | 5 | 134 | 94 | 3.49 | 3.11 | 24 |
| Chickasha | 63.4 | 92 | 3 | 26 | 5 | 142 | 93 | ***** | ***** | *** |
| El Reno | 61.3 | 92 | 9 | 31 | 4 | 175 | 64 | .43 | .34 | 24 |
| Guthrie | 63.3 | 92 | 9 | 36 | 5 | 143 | 92 | 1.49 | 1.42 | 24 |
| Kingfisher | 61.8 | 93 | 9 | 27 | 5 | 164 | 67 | 1.10 | .95 | 24 |
| Marena | 62.8 | 91 | 18 | 35 | 5 | 151 | 84 | 1.54 | 1.22 | 24 |
| Minco | 63.6 | 91 | 3 | 33 | 5 | 127 | 84 | .75 | .65 | 24 |
| Marshall | 60.9 | 92 | 9 | 27 | 5 | 185 | 63 | .97 | .50 | 24 |
| **EAST CENTRAL** | | | | | | | | | | |
| Cookson | 61.3 | 86 | 9 | 29 | 5 | 156 | 45 | 14.46 | 4.36 | 24 |
| Eufaula | 63.9 | 87 | 9 | 34 | 5 | 110 | 77 | 8.93 | 3.34 | 24 |
| Haskell | 62.0 | 87 | 9 | 30 | 5 | 152 | 61 | 8.68 | 6.77 | 24 |
| Hectorville | 63.2 | 89 | 22 | 34 | 5 | 131 | 76 | 8.75 | 5.74 | 24 |
| Holdenville | 63.9 | 89 | 9 | 34 | 5 | **** | **** | 3.96 | 2.11 | 24 |
| McAlester | 63.6 | 88 | 9 | 29 | 5 | 119 | 78 | 8.79 | 2.62 | 24 |
| Okmulgee | 62.3 | 87 | 22 | 28 | 5 | 157 | 77 | 8.55 | 6.76 | 24 |
| **SOUTHWEST** | | | | | | | | | | |
| Altus | 66.4 | 103 | 3 | 32 | 16 | 88 | 129 | .14 | .09 | 25 |
| Apache | 64.2 | 95 | 3 | 35 | 5 | 115 | 90 | .69 | .47 | 24 |
| Fort Cobb | 63.3 | 96 | 3 | 31 | 5 | 135 | 85 | ***** | ***** | *** |
| Grandfield | 67.1 | 101 | 18 | 31 | 5 | 84 | 147 | .11 | .04 | 24 |
| Hinton | 62.0 | 93 | 3 | 35 | 5 | 154 | 65 | .35 | .26 | 27 |
| Hobart | 64.1 | 99 | 3 | 32 | 16 | **** | **** | .19 | .10 | 27 |
| **SOUTH CENTRAL** | | | | | | | | | | |
| Ada | 64.2 | 90 | 18 | 30 | 5 | 114 | 91 | 3.64 | 2.07 | 24 |
| Ardmore | 66.9 | 93 | 18 | 32 | 5 | 77 | 133 | 1.86 | .71 | 14 |
| Burneyville | 66.6 | 94 | 18 | 26 | 5 | 89 | 136 | 2.84 | 1.22 | 23 |
| Byars | 65.0 | 92 | 18 | 35 | 5 | 100 | 100 | 5.26 | 2.70 | 24 |
| Centrahoma | 63.7 | 88 | 9 | 28 | 5 | 121 | 82 | 4.67 | 1.99 | 14 |
| Durant | 65.7 | 88 | 9 | 33 | 5 | 84 | 107 | 2.84 | .66 | 11 |
| Fittstown | 63.7 | 87 | 18 | 30 | 5 | 119 | 81 | 4.16 | 2.08 | 14 |
| Ketchum Ranch | 66.3 | 98 | 18 | 30 | 5 | 93 | 131 | .78 | .36 | 24 |
| Lane | 64.0 | 89 | 9 | 28 | 5 | 118 | 89 | 2.61 | .70 | 11 |
| **SOUTHEAST** | | | | | | | | | | |
| Antlers | ***** | *** | *** | *** | *** | **** | **** | ***** | ***** | *** |
| Broken Bow | 62.8 | 88 | 19 | 28 | 5 | 138 | 72 | 12.25 | 4.23 | 25 |
| Clayton | 64.2 | 88 | 9 | 30 | 5 | 110 | 87 | 9.78 | 2.82 | 14 |
| Cloudy | 63.1 | 86 | 9 | 29 | 5 | 126 | 68 | 5.55 | 1.62 | 14 |
| Hugo | 65.0 | 88 | 9 | 34 | 5 | 89 | 90 | 4.50 | 1.30 | 25 |

| NAME | MEAN TEMP | HIGH TEMP | HIGH DAY | LOW TEMP | LOW DAY | HDD | CDD | TOT PPT | HIGH 24-HR | HIGH DAY |
|---|---|---|---|---|---|---|---|---|---|---|
| Goodwell | 56.9 | 92 | 29 | 27 | 5 | 255 | 12 | .94 | .63 | 26 |
| Hooker | 57.2 | 94 | 3 | 25 | 5 | 251 | 16 | .99 | .42 | 26 |
| Kenton | 54.7 | 88 | 18 | 28 | 24 | 309 | 1 | .83 | .47 | 24 |
| Slapout | 58.4 | 96 | 9 | 30 | 5 | 221 | 22 | 1.00 | .56 | 26 |
| May Ranch | 59.3 | 97 | 3 | 35 | 16 | 200 | 28 | .92 | .63 | 27 |
| Medford | 59.6 | 90 | 3 | 31 | 5 | 199 | 36 | 1.38 | .82 | 8 |
| Newkirk | 60.5 | 90 | 9 | 34 | 5 | 177 | 43 | 3.27 | 2.29 | 8 |
| Red Rock | 61.7 | 91 | 9 | 28 | 5 | 173 | 74 | 1.13 | .40 | 24 |
| Seiling | 60.4 | 98 | 3 | 30 | 5 | 183 | 45 | .93 | .67 | 27 |
| Woodward | 60.7 | 98 | 3 | 35 | 16 | 173 | 44 | 1.04 | .60 | 27 |
| Nowata | 60.1 | 87 | 8 | 30 | 5 | 195 | 47 | 5.01 | 1.37 | 24 |
| Pawnee | 62.2 | 92 | 9 | 30 | 5 | 166 | 81 | 2.09 | .84 | 24 |
| Porter | 62.9 | 89 | 9 | 32 | 5 | 134 | 71 | 8.15 | 5.51 | 24 |
| Pryor | 61.0 | 90 | 8 | 29 | 5 | 180 | 59 | 6.12 | 2.67 | 24 |
| Skiatook | 61.9 | 88 | 22 | 36 | 5 | 152 | 60 | 3.36 | 1.07 | 24 |
| Vinita | 59.4 | 87 | 8 | 31 | 5 | 203 | 36 | 6.08 | 1.61 | 24 |
| Wynona | 61.4 | 91 | 9 | 29 | 5 | 167 | 60 | 4.23 | 1.76 | 14 |
| Putnam | 60.8 | 96 | 3 | 31 | 16 | 175 | 50 | .40 | .26 | 27 |
| Retrop | 63.6 | 100 | 3 | 34 | 16 | 123 | 81 | .18 | .12 | 27 |
| Watonga | 61.8 | 94 | 3 | 34 | 16 | 163 | 66 | 1.32 | .83 | 24 |
| Weatherford | 62.5 | 97 | 3 | 33 | 16 | 150 | 74 | .56 | .46 | 27 |
| Ninnekah | 64.5 | 94 | 22 | 27 | 5 | 124 | 109 | 1.04 | .85 | 24 |
| Norman | 64.7 | 93 | 22 | 35 | 5 | 123 | 113 | 2.28 | 2.14 | 24 |
| Oilton | 61.6 | 92 | 22 | 27 | 5 | 176 | 74 | 2.11 | 1.54 | 24 |
| OKC East | 64.3 | 92 | 22 | 32 | 5 | 128 | 107 | 1.22 | 1.12 | 24 |
| OKC North | 64.9 | 91 | 18 | 40 | 5 | 111 | 108 | .93 | .84 | 24 |
| OKC West | 64.8 | 91 | 3 | 36 | 5 | 116 | 109 | .87 | .78 | 24 |
| Okemah | 62.7 | 88 | 9 | 28 | 5 | 149 | 81 | 6.28 | 3.55 | 24 |
| Perkins | 63.5 | 94 | 18 | 33 | 5 | 144 | 97 | 2.47 | 2.25 | 24 |
| Shawnee | 64.1 | 95 | 18 | 35 | 5 | 123 | 98 | 4.52 | 3.95 | 24 |
| Spencer | 64.1 | 91 | 18 | 39 | 4 | 127 | 102 | 1.64 | 1.51 | 24 |
| Stillwater | 62.4 | 92 | 9 | 29 | 5 | 161 | 83 | 1.98 | 1.65 | 24 |
| Washington | 64.5 | 93 | 18 | 32 | 5 | 119 | 103 | 2.37 | 1.64 | 24 |
| Sallisaw | 62.7 | 90 | 9 | 28 | 5 | 130 | 61 | 9.04 | 2.96 | 24 |
| Stigler | 63.0 | 87 | 9 | 30 | 5 | **** | **** | 9.24 | 3.71 | 24 |
| Stuart | 63.9 | 88 | 9 | 34 | 5 | 105 | 73 | 7.86 | 3.13 | 24 |
| Tahlequah | 60.8 | 87 | 8 | 28 | 5 | 179 | 52 | 10.09 | 3.46 | 24 |
| Webbers Falls | 62.4 | 87 | 19 | 30 | 5 | 130 | 52 | 12.40 | 4.67 | 24 |
| Westville | 61.1 | 86 | 8 | 30 | 5 | 165 | 46 | 14.91 | 4.43 | 24 |
| Hollis | 64.9 | 101 | 3 | 33 | 16 | 101 | 97 | .09 | .08 | 25 |
| Mangum | 63.3 | 102 | 3 | 27 | 5 | 133 | 83 | .66 | .62 | 25 |
| Medicine Park | 65.5 | 96 | 3 | 36 | 5 | 96 | 111 | .27 | .13 | 27 |
| Tipton | 66.0 | 99 | 3 | 31 | 16 | **** | **** | .04 | .02 | 24 |
| Walters | 67.1 | 101 | 18 | 30 | 5 | 81 | 144 | 5.53 | 5.27 | 22 |
| Madill | 66.3 | 91 | 19 | 28 | 5 | 88 | 126 | 2.89 | 1.36 | 23 |
| Newport | 66.7 | 93 | 18 | 32 | 5 | 77 | 129 | 1.25 | .50 | 20 |
| Pauls Valley | 65.2 | 95 | 18 | 32 | 5 | 100 | 106 | 4.55 | 2.53 | 22 |
| Ringling | 66.9 | 97 | 18 | 31 | 5 | 74 | 131 | .30 | .11 | 23 |
| Sulphur | 64.3 | 90 | 18 | 27 | 5 | 118 | 97 | 3.26 | 1.65 | 24 |
| Tishomingo | 63.9 | 89 | 19 | 27 | 5 | 121 | 88 | 2.08 | .58 | 10 |
| Vanoss | 64.3 | 90 | 18 | 28 | 5 | 120 | 100 | 4.69 | 2.98 | 22 |
| Waurika | 67.7 | 100 | 18 | 32 | 5 | 70 | 151 | .75 | .38 | 24 |
| Idabel | 65.0 | 90 | 19 | 29 | 5 | 101 | 102 | 7.62 | 2.83 | 25 |
| Mt Herman | 63.0 | 85 | 19 | 29 | 5 | 130 | 69 | 7.43 | 2.06 | 25 |
| Talihina | 63.4 | 87 | 9 | 27 | 5 | 135 | 86 | 8.43 | 1.65 | 21 |
| Wilburton | 63.4 | 88 | 9 | 26 | 5 | 127 | 79 | 10.30 | 2.90 | 24 |
| Wister | 62.2 | 88 | 9 | 24 | 5 | 155 | 72 | 11.70 | 3.26 | 24 |

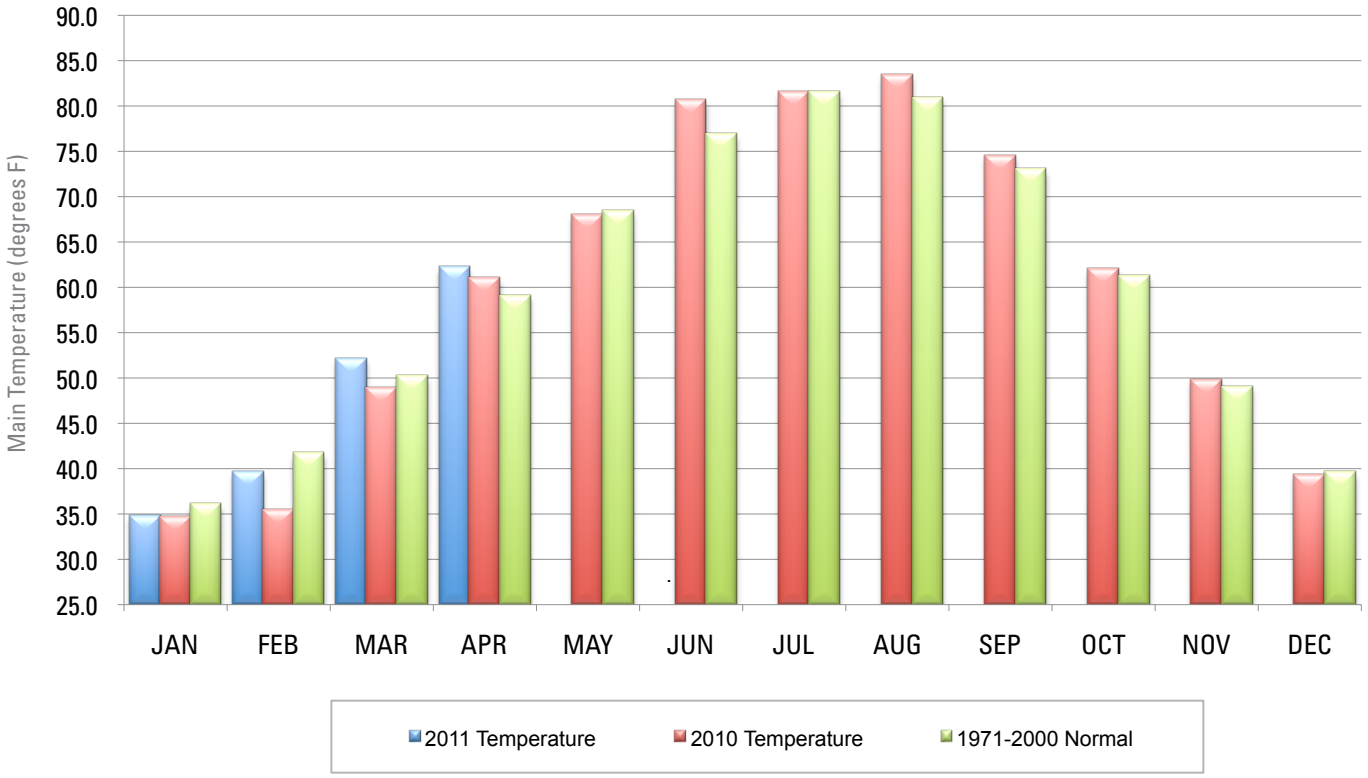
## 2010 AND 2011 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL




### April 2011 Mesonet Precipitation Comparison

| Climate Division | Precipitation (inches) | Departure from Normal (inches) | Rank since 1895 | Wettest on Record (Year) | Driest on Record (Year) | Apr-10 |
|---|---|---|---|---|---|---|
| Panhandle | 0.85 | -1.00 | 30th Driest | 5.28 (1942) | 0.00 (1909) | 1.85 |
| North Central | 1.37 | -1.59 | 19th Driest | 7.43 (1999) | 0.55 (1989) | 2.46 |
| Northeast | 5.52 | 1.52 | 22nd Wettest | 9.67 (1942) | 0.17 (1989) | 1.80 |
| West Central | 0.60 | -2.00 | 7th Driest | 8.73 (1997) | 0.15 (1996) | 3.43 |
| Central | 2.21 | -1.32 | 33rd Driest | 9.49 (1942) | 0.24 (1989) | 2.83 |
| East Central | 9.67 | 5.34 | 4th Wettest | 11.82 (1957) | 0.75 (1989) | 2.73 |
| Southwest | 0.81 | -1.86 | 12th Driest | 7.30 (1997) | 0.14 (1989) | 3.22 |
| South Central | 2.85 | -0.91 | 44th Driest | 11.43 (1942) | 0.53 (1989) | 2.83 |
| Southeast | 7.85 | 3.36 | 12th Wettest | 12.79 (1957) | 0.53 (1987) | 2.32 |
| Statewide | 3.44 | 0.08 | 50th Wettest | 8.50 (1942) | 0.58 (1989) | 2.58 |

## 2010 AND 2011 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL




## April 2011 Mesonet Temperature Comparison

| Climate Division | Average Temp (F) | Departure from Normal (F) | Rank since 1895 | Hottest on Record (Year) | Coldest on Record (Year) | Apr-10 (F) |
|---|---|---|---|---|---|---|
| Panhandle | 57.5 | 2.3 | 28th Warmest | 62.2 (1981) | 48.2 (1926) | 57.6 |
| North Central | 60.0 | 2.4 | 31st Warmest | 65.0 (1981) | 50.8 (1983) | 61.1 |
| Northeast | 61.2 | 2.3 | 28th Warmest | 66.1 (1981) | 52.5 (1907) | 61.1 |
| West Central | 61.9 | 4.0 | 17th Warmest | 64.8 (2006) | 52.1 (1926) | 60.4 |
| Central | 63.3 | 3.7 | 19th Warmest | 66.4 (2006) | 53.6 (1983) | 62.4 |
| East Central | 62.5 | 2.3 | 27th Warmest | 67.0 (2006) | 53.9 (1907) | 63.2 |
| Southwest | 64.9 | 4.5 | 12th Warmest | 67.1 (2006) | 54.2 (1926) | 61.0 |
| South Central | 65.4 | 4.1 | 15th Warmest | 67.6 (2006) | 55.9 (1983) | 62.6 |
| Southeast | 63.4 | 2.8 | 20th Warmest | 66.7 (1954) | 55.3 (2007) | 60.8 |
| Statewide | 62.2 | 3.1 | 20th Warmest | 65.5 (2006) | 53.2 (1983) | 61.2 |

## RECORD EVENT REPORTS

| Description | Day | Location | Record | Previous Record | Year |
|---|---|---|---|---|---|
| Maximum Temperature | 3 | Tulsa | 88 | 88 | 1965 |
| Minimum Temperature | 4 | McAlester | 30 | 30 | 1987 |
| Maximum Temperature | 8 | Oklahoma City | 89 | 88 | 1905 |
| Maximum Temperature | 8 | Tulsa | 89 | 88 | 1965 |
| Highest Minimum Temperature | 9 | Oklahoma City | 67 | 66 | 1927 |
| Maximum Temperature | 9 | Oklahoma City | 92 | 90 | 1930 |
| Maximum Temperature | 9 | Tulsa | 90 | 90 | 1930 |
| Daily Rainfall | 14 | McAlester | 2.49 inches | 2.06 inches | 1993 |

## MESONET EXTREMES FOR APRIL 2011

| Climate Division | High Temp (F) | Day | Station | Low Temp (F) | Day | Station | High Monthly Rainfall (inches) | Station | High Daily Rainfall (inches) | Day | Station |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Panhandle | 97 | 3rd | Buffalo | 25 | 5th | Hooker | 1.15 | Beaver | 0.63 | 26th | Goodwell |
| North Central | 99 | 3rd | Freedom | 28 | 5th | Red Rock | 3.27 | Newkirk | 2.29 | 8th | Newkirk |
| Northeast | 92 | 9th | Pawnee | 28 | 5th | Burbank | 9.86 | Jay | 5.51 | 24th | Porter |
| West Central | 100 | 3rd | Retrop | 23 | 5th | Camargo | 1.32 | Watonga | 0.83 | 24th | Watonga |
| Central | 95 | 18th | Shawnee | 26 | 5th | Chickasha | 6.72 | Bristow | 5.11 | 24th | Bristow |
| East Central | 90 | 9th | Sallisaw | 28 | 5th | Tahlequah | 14.91 | Westville | 6.77 | 24th | Haskell |
| Southwest | 103 | 3rd | Altus | 27 | 5th | Mangum | 5.53 | Walters | 5.27 | 22nd | Walters |
| South Central | 100 | 18th | Waurika | 26 | 5th | Burneyville | 5.26 | Byars | 2.98 | 22nd | Vanoss |
| Southeast | 90 | 19th | Idabel | 24 | 5th | Wister | 12.25 | Broken Bow | 4.23 | 25th | Broken Bow |
| Statewide | 103 | 3rd | Altus | 23 | 5th | Camargo | 14.91 | Westville | 6.77 | 24th | Haskell |

# MAY OUTLOOK

Oklahoma's weather reaches something of a crescendo in May as springtime comes to full flower. May is Oklahoma's wettest (statewide-averaged precipitation of 5.13 inches) and certainly its stormiest month (an average of 19.9 tornadoes, more than one-third of the annual average, occurring on 5.5 days, statewide). Its position in the spring transition season is confirmed by a monthly mean temperature, averaged statewide, of 68.4 degrees that ranks fifth highest among the months. Vestiges of winter are occasionally seen in the far northwestern portions of the state, but mostly May is a time for flowering of most plants, full leafing of deciduous trees, planting of row crops, and the maturing and ripening of the winter wheat that was sowed the previous fall.

## Temperature

| | |
|---|---|
| **Mean** | 68.4 degrees |
| **Warmest May** | 1896, 75.8 degrees |
| **Coolest May** | 1907, 62.3 degrees |
| **Hottest recorded** | 114 degrees, Weatherford, May 25, 2000 |
| **Coldest recorded** | 19 degrees, Hooker, May 1, 1909 |

May usually is characterized by a pleasant range of temperatures across the state, although there are times most years when it is evident that the hot Oklahoma summer is drawing near. Monthly mean temperatures since 1892 have ranged from 62.3 degrees in 1907 to 75.8 degrees in 1896. Normal daily maximum temperatures across the state vary from 84.6 degrees at Waurika to 76.5 degrees at Arnett. Normal daily minimum temperatures fall between 61.2 degrees at Ardmore and 46.8 degrees at Boise City. Historical extremes of temperature during the month are 114 degrees at Weatherford, reported on May 25, 2000 and 19 degrees at Hooker on May 1, 1909. Temperatures in southwestern Oklahoma, the state's hot spot, reach 100 degrees an average of slightly more than once each May. Freezing temperatures are also rare, occurring less than once per year in the panhandle, rarely elsewhere. Freezes have occurred in the state's most northerly regions as late as the end of the month.

The Oklahoma panhandle's climate differs from the rest of the state in that its primary precipitation season is shifted toward summer, being tied to the patterns of the High Plains, of which it is a part. Elsewhere in the state, May is the month of maximum precipitation and May is, in fact, the panhandle's second wettest month by a small margin. May has produced statewide-averaged monthly precipitation totals ranging from 10.68 inches in 1957 to 1.30 inches in 1988. Extremes of individual station-normal precipitation for the month are 7.06 inches in the southeast at Smithville and 2.29 inches in the western panhandle at Regnier. Miami recorded the greatest May monthly total precipitation, 23.95 inches, in 1943. The record-breaking 1957 statewide-averaged precipitation was amplified by the May total of 22.38 inches of rain recorded at Hennessey, most of which fell during the drought-breaking, flood-producing deluge that hammered much of the state on the 15th and 16th. Purcell apparently holds the single reporting-day precipitation record for May, measuring 13.68 inches of rain on May 11, 1950. Interestingly, the events that produced the Purcell and Hennessey precipitation records (and the widespread flooding that occurred after each) bracket the state's driest ever 7-year period.

## Precipitation

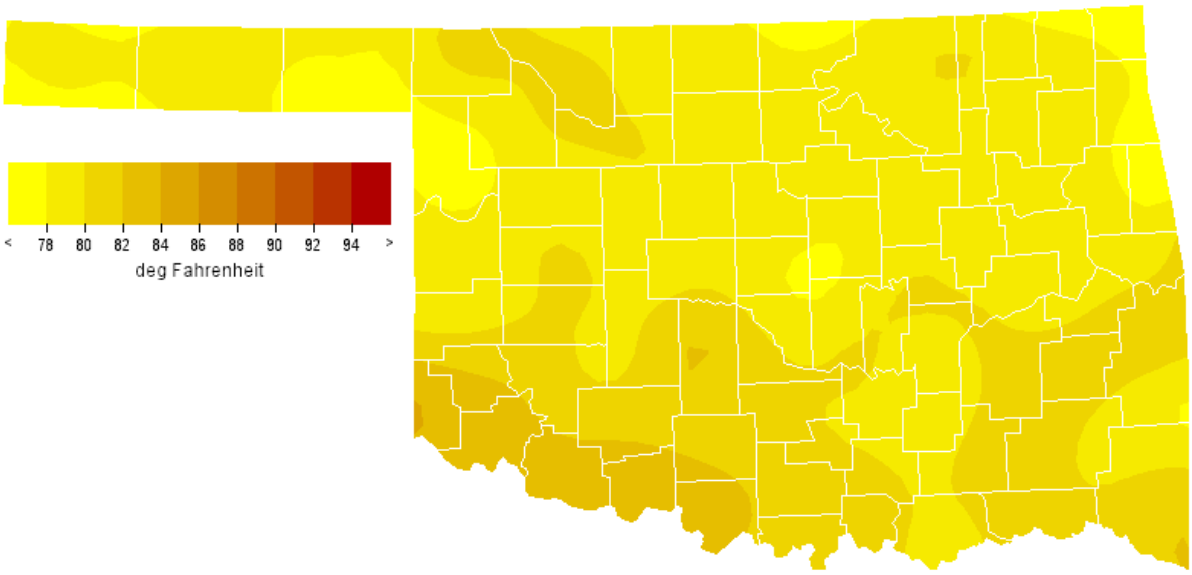
| | |
|---|---|
| **Mean** | 5.13 inches |
| **Wettest May** | 1957, 10.68 inches |
| **Driest May** | 1988, 1.30 inches |
| **Wettest location** | Smithville, 7.06 inches |
| **Driest location** | Regnier, 2.02 inches |
| **Most recorded** | 22.38 inches, Hennessey, 1957 |

## Tornadoes

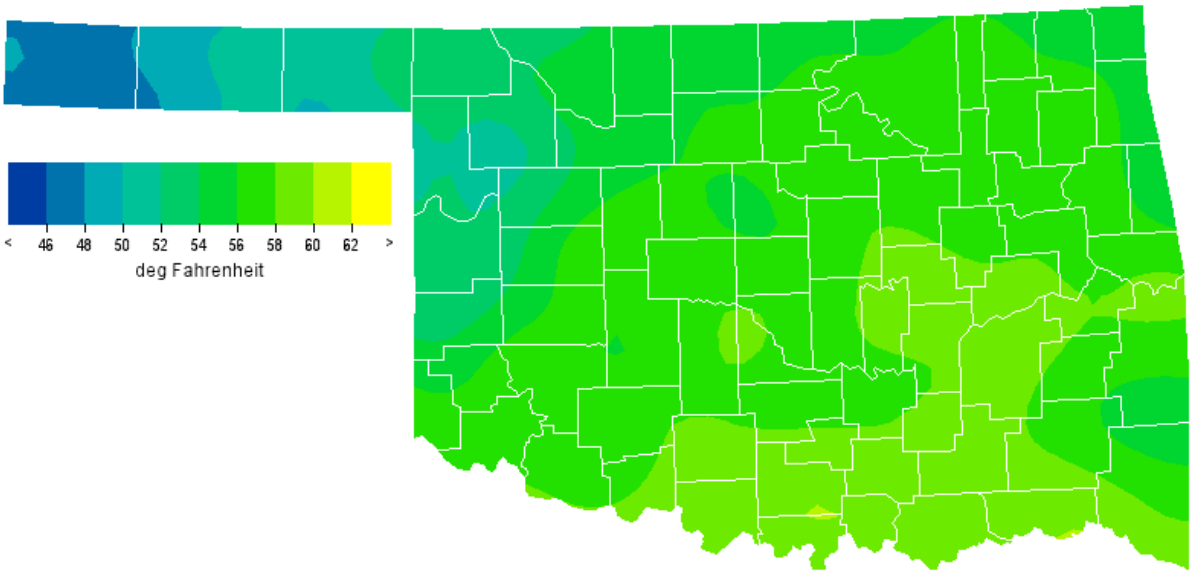
| | |
|---|---|
| **Average May Tornadoes** | 21.3 |
| **Most** | 90 (1999, 2010) |

Springtime in Oklahoma is noted for severe thunderstorms and tornadoes. Over the last 52 years (the period of reasonably comprehensive statistics on the subject) Oklahoma has been struck by more tornadoes in May than in any other two months combined (April and June rank second and third, respectively, among the months). May 1999 holds the state record for most tornadoes in a single month with a nearly unbelievable confirmed total of 91. Most of those tornadoes (59) occurred in central and western Oklahoma on the afternoon and evening of May 3. That outbreak caused extensive damage and killed 40 people along a wide path extending generally from Amber to Stroud. Some of the fiercest storms struck in the southern portion of the Oklahoma City metropolitan area. A mobile Doppler radar operated by a University of Oklahoma research team measured winds as great as 318 miles per hour in one of the funnels, the greatest wind speed yet measured on the planet.

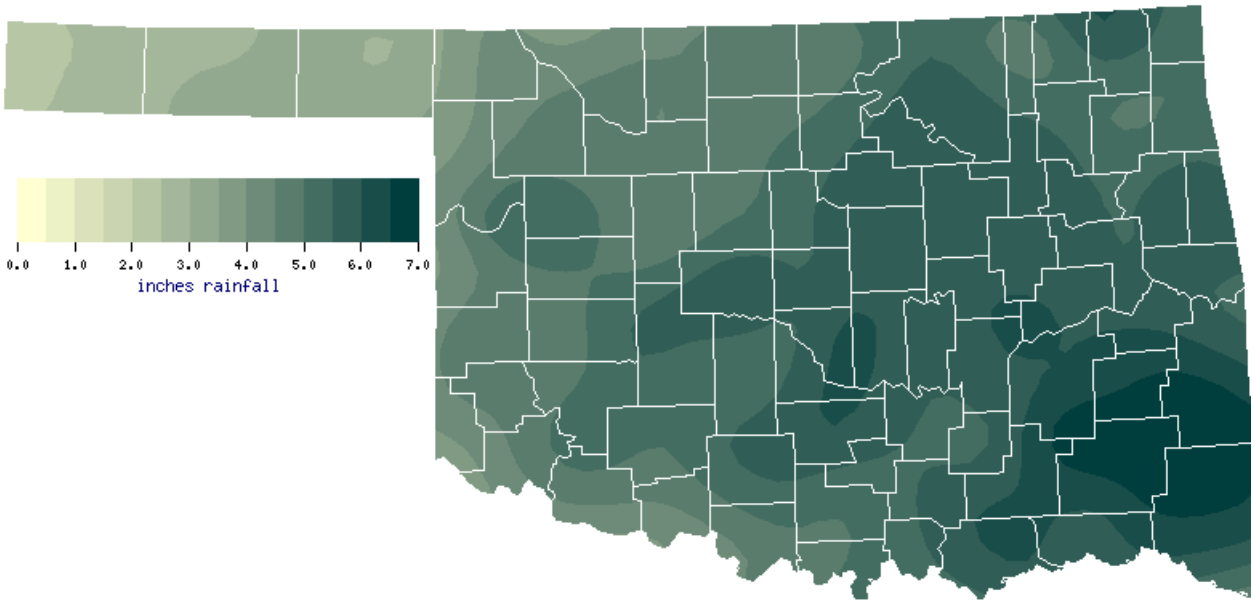
## MAY NORMAL DAILY MAXIMUM TEMPERATURE (1971-2000)



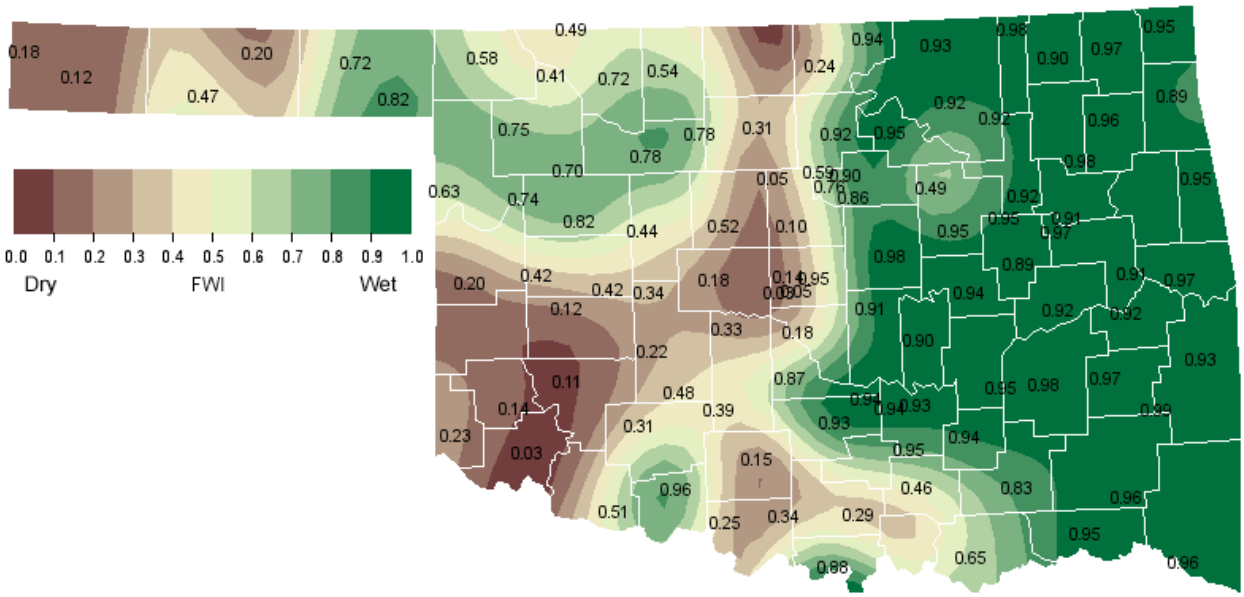

## MAY NORMAL DAILY MINIMUM TEMPERATURE (1971-2000)



## MAY NORMAL PRECIPITATION (1971-2000)




## MAY 1, 2011 SOIL MOISTURE CONDITIONS AT 25CM



## MAY 2011 DROUGHT INDICES

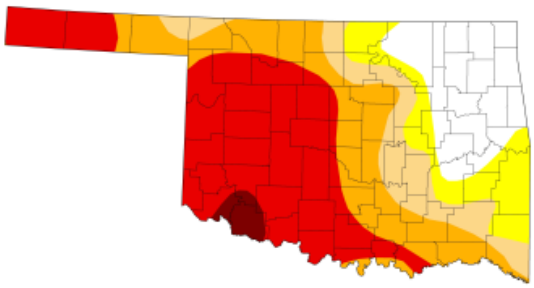
# U.S. Drought Monitor

**April 26, 2011**
Valid 7 a.m. EST

**Oklahoma**

*Drought Conditions (Percent Area)*

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|---|---|---|---|---|---|
| Current | 16.89 | 83.11 | 72.45 | 60.83 | 38.88 | 1.95 |
| Last Week (04/19/2011 map) | 3.83 | 96.17 | 86.21 | 72.88 | 37.93 | 0.00 |
| 3 Months Ago (01/25/2011 map) | 0.36 | 99.64 | 54.35 | 5.51 | 0.00 | 0.00 |
| Start of Calendar Year (12/28/2010 map) | 13.82 | 86.18 | 47.90 | 1.50 | 0.00 | 0.00 |
| Start of Water Year (09/28/2010 map) | 66.28 | 33.72 | 4.21 | 0.00 | 0.00 | 0.00 |
| One Year Ago (04/20/2010 map) | 92.03 | 7.97 | 0.00 | 0.00 | 0.00 | 0.00 |



*Intensity:*

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

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

**http://drought.unl.edu/dm**

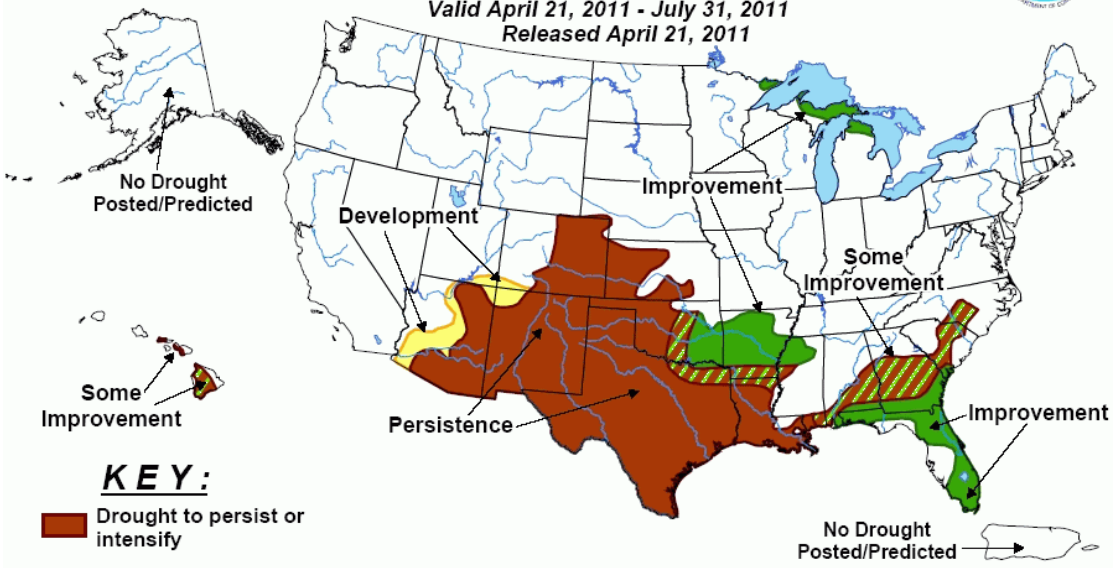
USDA · National Drought Mitigation Center

*Released Thursday, April 28, 2011*
*Michael Brewer, National Climatic Data Center NOAA*

# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

*Valid April 21, 2011 - July 31, 2011*
*Released April 21, 2011*

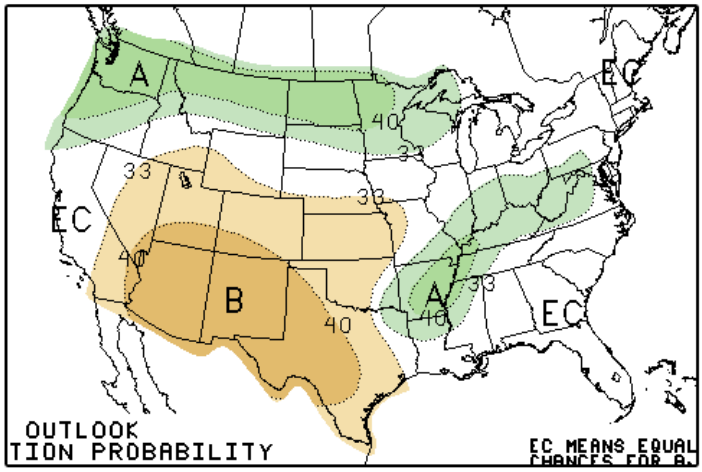



***KEY:***

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

## MAY 2011 U.S. PRECIPITATION FORECAST




Percent Likelihood of Above or Below Average Precipitation*

- 5% - 10%
- 0% - 5%

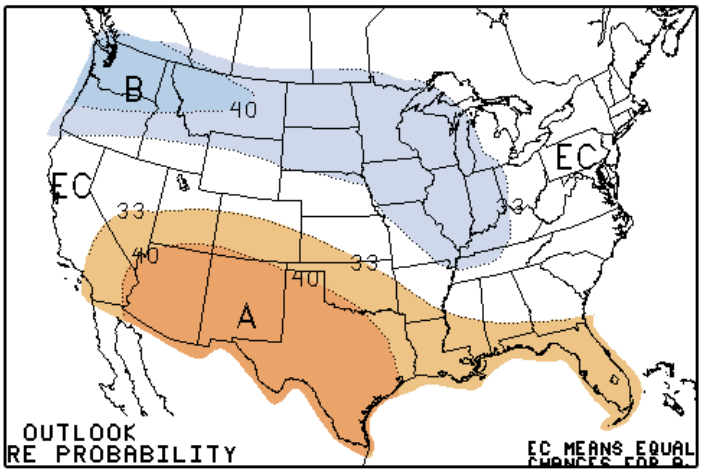
A = Above

- 0% - 5%
- 5% - 10%

B = Below

*EC indicates no forecasted anomalies due to lack of model skill.

## MAY 2011 U.S. TEMPERATURE FORECAST




Percent Likelihood of Above or Below Average Temperatures*

- 10% - 20%
- 5% - 10%
- 0% - 5%

A = Above

- 0% - 5%
- 5% - 10%

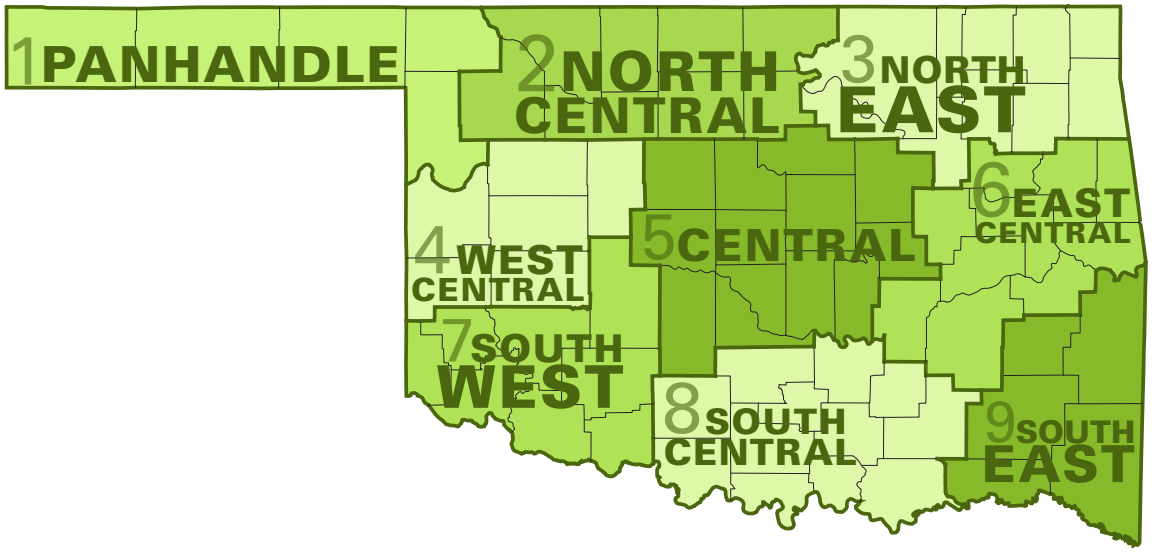
B = Below

*EC indicates no forecasted anomalies due to lack of model skill.

## MAY CLIMATE NORMALS

| Climate Division | Max. Temperature (°F) | Min. Temperature (°F) | Avg. Temperature (°F) | Precipitation (inches) |
|---|---|---|---|---|
| 1 | 78.8 | 50.8 | 64.8 | 3.30 |
| 2 | 79.1 | 54.9 | 67.0 | 4.68 |
| 3 | 78.9 | 56.6 | 67.8 | 5.40 |
| 4 | 79.5 | 55.0 | 67.3 | 4.64 |
| 5 | 79.6 | 57.5 | 68.6 | 5.45 |
| 6 | 79.2 | 57.8 | 68.5 | 5.77 |
| 7 | 81.8 | 56.8 | 69.3 | 4.80 |
| 8 | 80.8 | 58.8 | 69.8 | 5.52 |
| 9 | 80.5 | 57.5 | 69.0 | 6.31 |
| Statewide | 79.8 | 56.3 | 68.1 | 5.21 |

### Oklahoma Climate Divisions



## INTERPRETATION INFORMATION

**MEAN DAILY TEMPERATURE:** Calculated from an average of the daily maximum and minimum temperatures. Daily averages are summed for each day, and then divided by the number of valid data points – typically the number of days in the month. Although this may differ from the "true" daily average, it is consistent with historical methods of observation and comparable to the normals and extremes for stations and regions of the state.

**DEGREE DAYS:** Degree Days are calculated each day of the month for which there is a temperature report and the mean temperature for the day is less than (Heating Degree Days) or greater than (Cooling Degree Days) 65 degrees. Daily values are summed to arrive at a monthly total. HDD/CDD are qualitative measures of how much heating/cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value.

**SEVERE WEATHER REPORTS:** Only the most significant events are listed. Tornadoes of F2 or greater strength (on the 0-5 Fujita scale), hail of two inches diameter or greater, and wind speeds of 70 miles per hour or above are listed. National Weather Service defines storms as severe when they produce a tornado, hail of three-quarters inch or greater, or wind speeds above 57 miles per hour (50 knots). For additional reports, contact the Oklahoma Climatological Survey, Storm Prediction Center, or your local National Weather Service forecast office.

**SOIL MOISTURE:** The soil moisture variable displayed is the Fractional Water Index (FWI), measured at a depth of 25 cm. This unitless value ranges from very dry soil having a value of 0, to saturated soils having a value of 1.

## ADDITIONAL RESOURCES

**SUNRISE / SUNSET TABLES**
U.S. Naval Observatory: http://aa.usno.navy.mil/data

**SEVERE STORM REPORTS**
Storm Prediction Center: http://spc.noaa.gov/climo/

National Climatic Data Center (more than about 4-5 months old):
http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

**SEASONAL OUTLOOKS**
Climate Prediction Center:
http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.html

**CLIMATE CALENDARS AND OTHER LOCAL WEATHER AND CLIMATE INFORMATION**
Oklahoma Climatological Survey:
http://climate.mesonet.org or http://climate.ok.gov/

OKLAHOMA CLIMATOLOGICAL SURVEY

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