# OKLAHOMA MONTHLY CLIMATE SUMMARY
# AUGUST 2004

Oklahoma Climatological Survey

As Augusts and summers go, the 2004 versions were a delight. Despite a cessation of the above normal precipitation experienced during the previous two months, the cool weather continued unabated into August, allowing both the month and season to finish as the 5th coolest such periods on record. The statewide-averaged precipitation did not fare as well statistically as the temperature, however, largely due to dry conditions in the eastern half of the state. Nonetheless, moist conditions in central and western sections propelled rainfall totals to near normal for the month, which contributed to Oklahoma's 13th wettest summer on record.

## Precipitation

The states precipitation pattern resembled the climatological version of the "haves" and "have-nots." While the southeast was experiencing its 17th driest August on record, west central Oklahoma was enjoying its 14th wettest. That was the basic pattern during the month, with a large part of central and western Oklahoma benefiting from a precipitation surplus – at times significant – and eastern sections suffering a deficit. The wettest areas of the state were focused in Roger Mills, Beckham, and Oklahoma counties, each with rainfall totals three to four inches above normal. A large swath of eastern Oklahoma finished one to two inches below normal. Fortunately, all areas of the state were decidedly moist for the summer as a whole. The largest surplus occurred in south central Oklahoma at nearly seven inches above normal, the 6th wettest summer in that region since 1892. All but southeastern Oklahoma finished within the top twenty wettest summers on record. The results were much the same for the year-to-date period of January-August. The statewide-averaged precipitation total of over 2.5 inches earned the ranking of 26th wettest. The southeast brought up the rear as the only area with a deficit, at just over two inches below normal, and the 39th driest such period for that region of the state.

## Temperature

The series of cool fronts which visited the state during June and July continued into August, and allowed the month to finish with a statewide-averaged temperature nearly five degrees below normal. All areas of the state ranked in the top six coolest Augusts on record. The summer readings were similar. South central Oklahoma once again led the way with the 4th coolest such period on record. A very warm spring countered the cool summer, and the statewide-averaged January-August temperature finished exactly normal.

**August 2004 Statewide Extremes**

| Description | Extreme | Station | Date |
|---|---|---|---|
| High Temperature | 105ºF | Cherokee | August 3rd |
| Low Temperature | 48ºF | Miami | August 13th |
| High Precipitation | 7.84 in. | Erick | |
| Low Precipitation | 0.76 in. | Wister | |

## August Daily Highlights

**August 1-3:** High pressure at the surface began the month with false portents of another hot August. Mostly sunny skies and southerly winds raised temperatures into triple-digits for this three-day stretch over much of the state. Heat indices jumped up close to 110 degrees, with low temperatures in the more-seasonable mid-70s.

**August 4-8:** The month's first cold air intrusion entered the state on the 4th, generating showers and thunderstorms. Northern areas received nearly an inch of rain, with lighter amounts elsewhere. Temperatures remained high in advance of the front; 100-degree temperatures were common over southern portions of the state. Areas behind the front experienced a pleasant cooling trend, as temperatures fell into the low-60s overnight. Partly cloudy skies and temperatures up to 10 degrees cooler than the previous day greeted the state on the 5th. Boise City's high temperature was a fall-like 78 degrees on that day. The unseasonably cool weather continued for the next several days, as did the occasional bouts with showers and storms. The northern third of the state struggled to reach

80 degrees throughout this period, and lows were commonly in the 50s in this area. The heaviest rainfall was recorded in the western third of the state.

**August 9-11:** This period was characterized by the most turbulent weather of the month. Showers and storms associated with a stalled front occurred each day, bringing strong winds, large hail, and flooding rainfall. Winds between 60-80 mph accompanied storms in northern Oklahoma on the 9th, and again across central Oklahoma on the 10th. The cold front made a final push through the state on the 11th, and the main severe weather threat shifted to flooding rainfall. Portions of central Oklahoma saw general amounts of three to five inches of rainfall, and flash flood warnings were issued for Midwest City, Oklahoma City, and Shawnee. The Oklahoma Mesonet site at Shawnee recorded nearly five inches of rainfall on the 11th for the state's heaviest rainfall event of the month.

**August 12-18:** The weather following the cold front passage could best be described as downright cold for August. Low temperatures dipped into the upper-40s in northern Oklahoma on the 12th and 13th, with highs struggling to reach 70 degrees. McAlester tied its record low temperature of 58 degrees on the 12th, as did Oklahoma City on the 14th, falling to 60 degrees. High temperatures in the 70s and 80s were common across the rest of the state throughout the entire seven-day period. The tranquil weather was interrupted on the 15th as showers and thunderstorms brought torrential rainfall to western sections of the state. Clinton received nearly four inches of rainfall, with other areas measuring from two to three inches. Oklahoma City broke its record for coolest high temperature on the 15th with 72 degrees, shattering the old mark of 77 degrees set in 1942. Temperatures warmed a bit for the next three days, but remained close to five degrees below the seasonal norms. The north remained on the cool side, however, with lows in the 50s and highs in the 70s and 80s.

**August 19-22:** The 19th and 20th were wet and cool as another cold front moved through the state. Nearly three inches fell at Durant on 19th, with one to three inches common in northern Oklahoma. Temperatures once again dipped into the 70s and 80s behind the front. Highs in the Panhandle on the 19th failed to reach 70 degrees. Skies were partly to mostly cloudy throughout this period and temperatures remained unseasonably cool.

**August 23-27:** Warm moist flow from the south returned, and temperatures once again flirted with summer-like conditions. Buffalo reached 99 degrees in northwestern Oklahoma on the 23rd, while winds were from the south at 10-20 mph, with gusts of over 30 mph. The clear skies during this period allowed temperatures to once again soar above 100 degrees. Heat indices in turn exceeded the 110-degree mark. Another approaching cold front on the 27th generated showers and storms across northwestern Oklahoma. Hail to the size of quarters with localized wind gusts of 60 mph were reported with the storms.

**August 28-31:** August's final days reflected the weather of the majority of the month: unseasonably cool and wet. Overcast skies on the 28th kept highs in the 70s and 80s. Storms generated by the cold front's passage dumped nearly two and a half inches of rainfall in Stephens County, while much of central Oklahoma had from a quarter to a half of an inch of rain. The 29th was nearly a perfect day. Fair skies, light winds, and highs in the lower 80s, nearly 10 degrees below normal, were common across the entire state. An upper-level disturbance on the 30th once again triggered showers and storms in the west. Close to four inches fell near Buffalo and Erick, and flash flood warnings were issued for those areas. The month ended under fair skies, light winds, and temperatures in the 80s and 90s.

### *August 2004 Statewide Statistics*

#### *Temperature*

| | Average | Depart. | Rank (1892-2003) |
|---|---|---|---|
| Month (August) | 75.8ºF | -4.6ºF | 5th Coolest |
| Season-to-Date (Jun-Aug) | 76.4ºF | -3.2ºF | 5th Coolest |
| Year-to-Date (Jan-Aug) | 61.8ºF | 0.0ºF | 45th Warmest |

#### *Precipitation*

| | Total | Depart. | Rank (1892-2003) |
|---|---|---|---|
| Month (August) | 2.74 in. | 0.03 in. | 54th Wettest |
| Season-to-Date (Jun-Aug) | 14.07 in. | 4.30 in. | 13th Wettest |
| Year-to-Date (Jan-Aug) | 27.24 in. | 2.58 in. | 26th Wettest |

Depart. = Departure from 30-year normal

## August 2004 Severe Weather

### Significant Tornadoes (F2 or greater)

No significant tornadoes were reported in the state.

### Hail (2 inches in diameter or greater)

| Size (in.) | Location | County | Date |
|---|---|---|---|
| 2.00 | Hunter | Garfield | 08/10/04 |

### Wind Gusts (70 mph or greater)

| Speed (m.p.h) | Location | County | Date |
|---|---|---|---|
| 88 | 4 miles SE of Guthrie | Logan | 08/10/04 |
| 80 | 7 miles NE of Amorita | Alfalfa | 08/09/04 |
| 80 | Edmond | Oklahoma | 08/11/04 |
| 77 | 4 miles SE of Guthrie | Logan | 08/10/04 |
| 72 | 17 miles NE of Boise City | Cimarron | 08/11/04 |
| 70 | 5 miles N of Garber | Garfield | 08/10/04 |
| 70 | Guthrie | Logan | 08/10/04 |
| 70 | 1 mile SE of Mulhall | Logan | 08/10/04 |
| 70 | Edmond | Oklahoma | 08/11/04 |
| 70 | 4 miles S of McLoud | Pottawatomie | 08/11/04 |

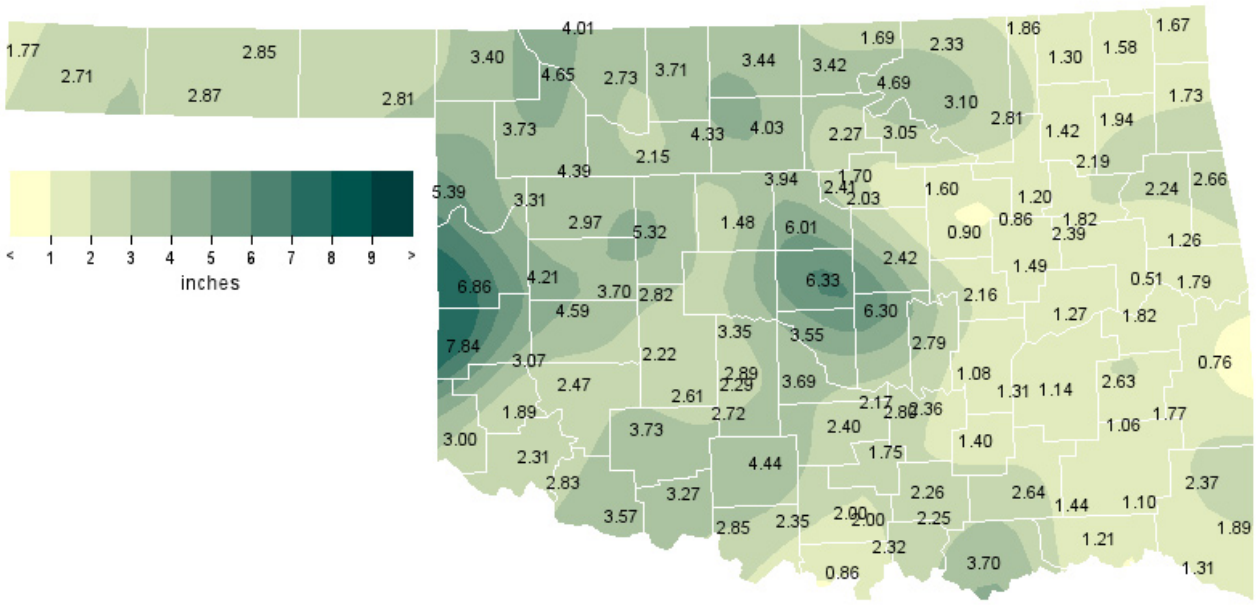
### Flooding

| Location | County | Date |
|---|---|---|
| Oklahoma City | Oklahoma | 08/11/04 |
| Shawnee | Pottawatomie | 08/11/04 |
| Midwest City | Oklahoma | 08/11/04 |
| 8 miles E of Camargo | Dewey | 08/30/04 |

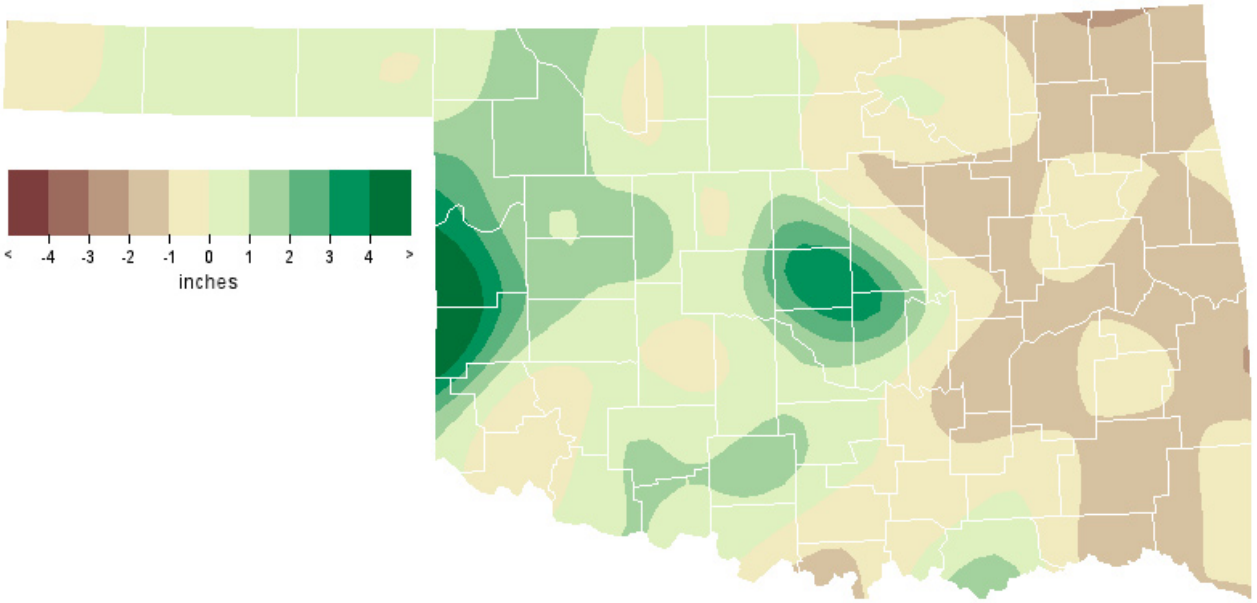
### Record Event Reports

| Description | Day | Location | Record | Previous Record | Year |
|---|---|---|---|---|---|
| Coolest Minimum Temperature (tied) | 12 | McAlester | 58 | 58 | 1989 |
| Coolest Minimum Temperature (tied) | 14 | Oklahoma City | 60 | 60 | 1967 |
| Coolest Maximum Temperature | 15 | Oklahoma City | 72 | 77 | 1942 |

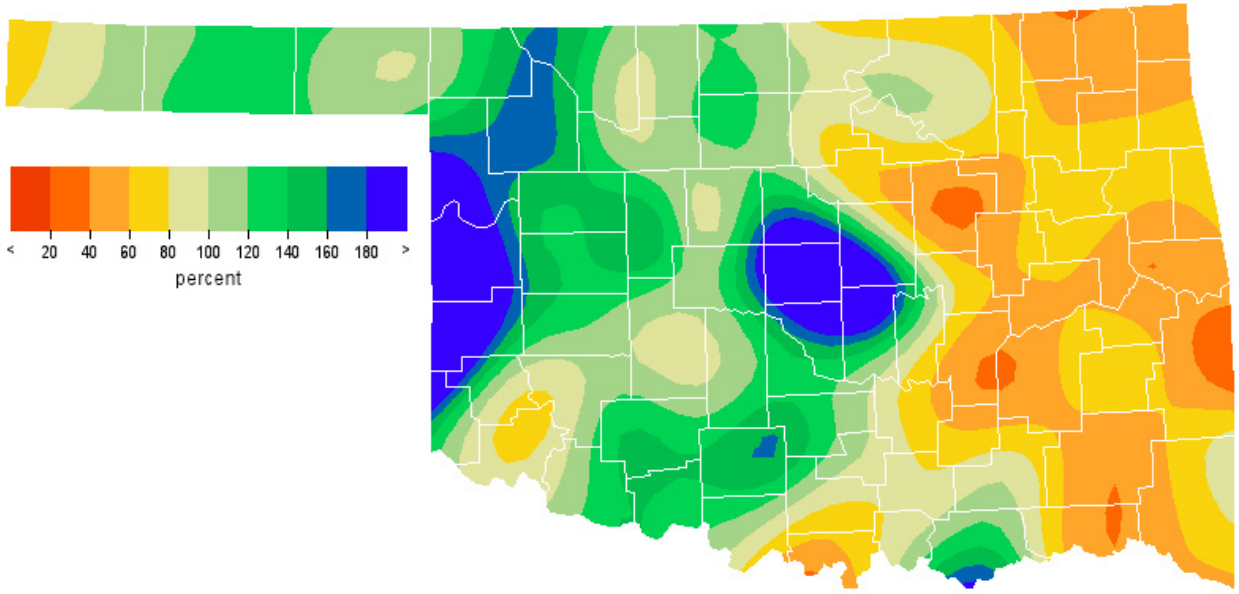
## *August 2004 Observed Precipitation*



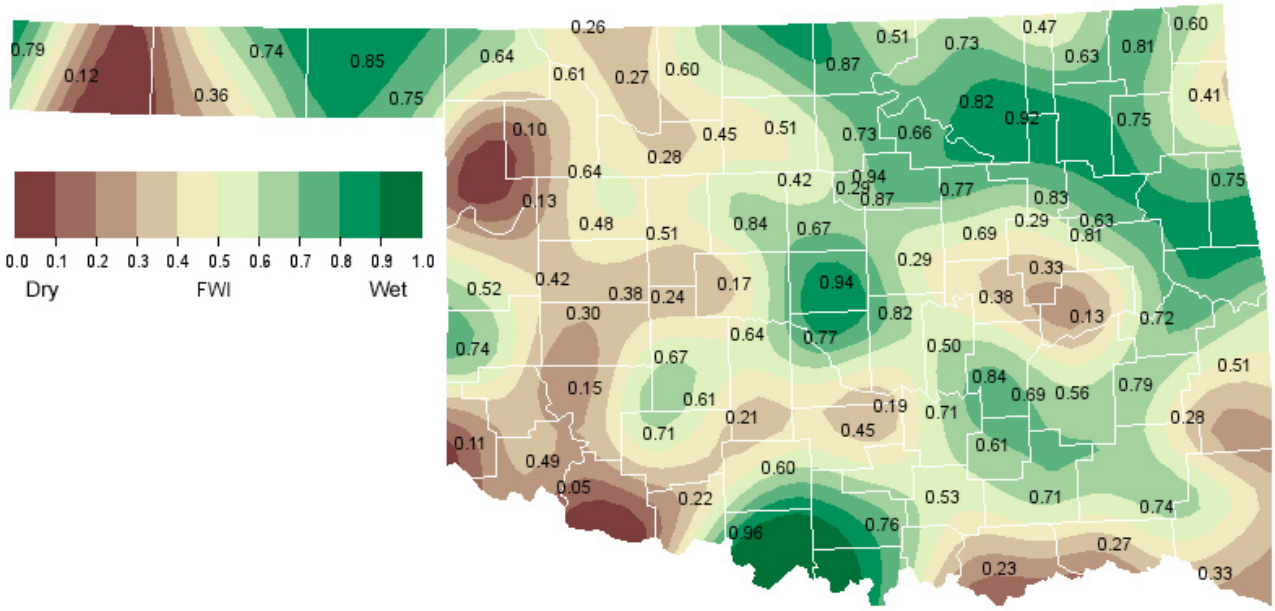

## *August 2004 Departure from Normal Precipitation*



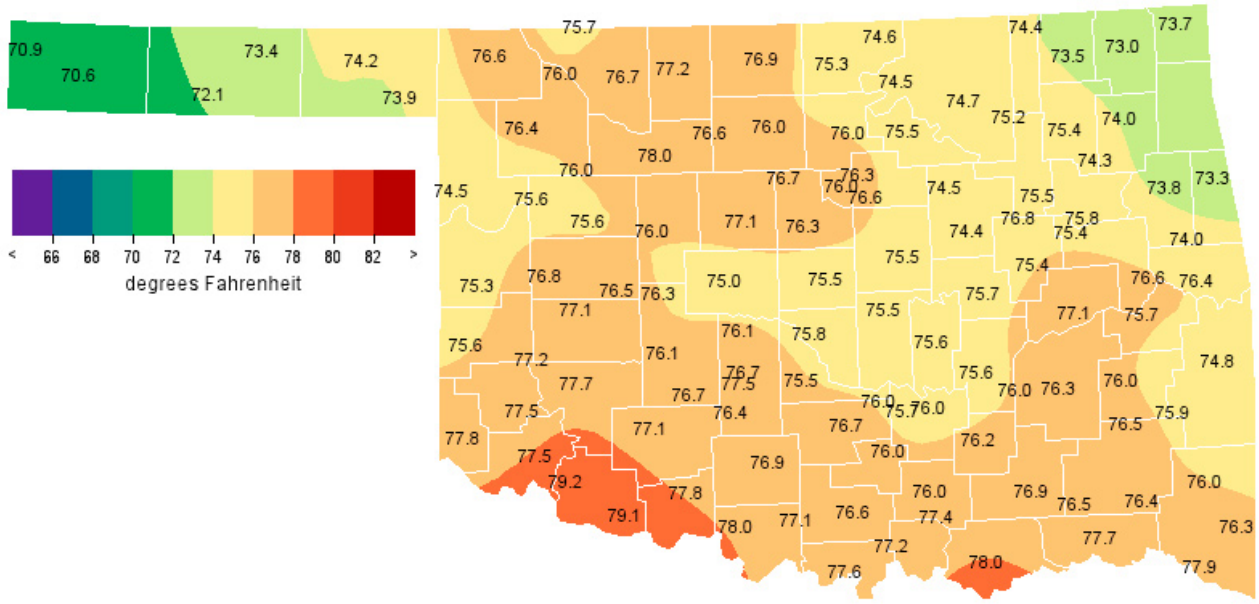
## *August 2004 Percent of Normal Precipitation*



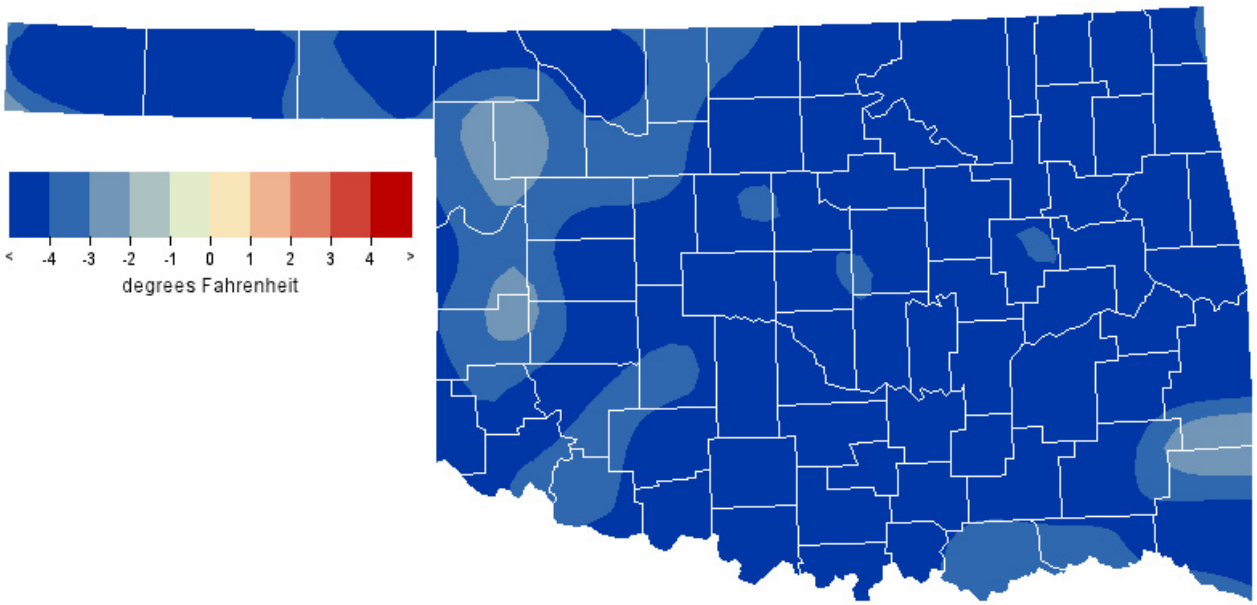

## *August 2004 Average Soil Moisture at 25cm*



## *August 2004 Average Temperature*




## *August 2004 Departure from Normal Temperature*



# *Mesonet Monthly Summary for August 2004*

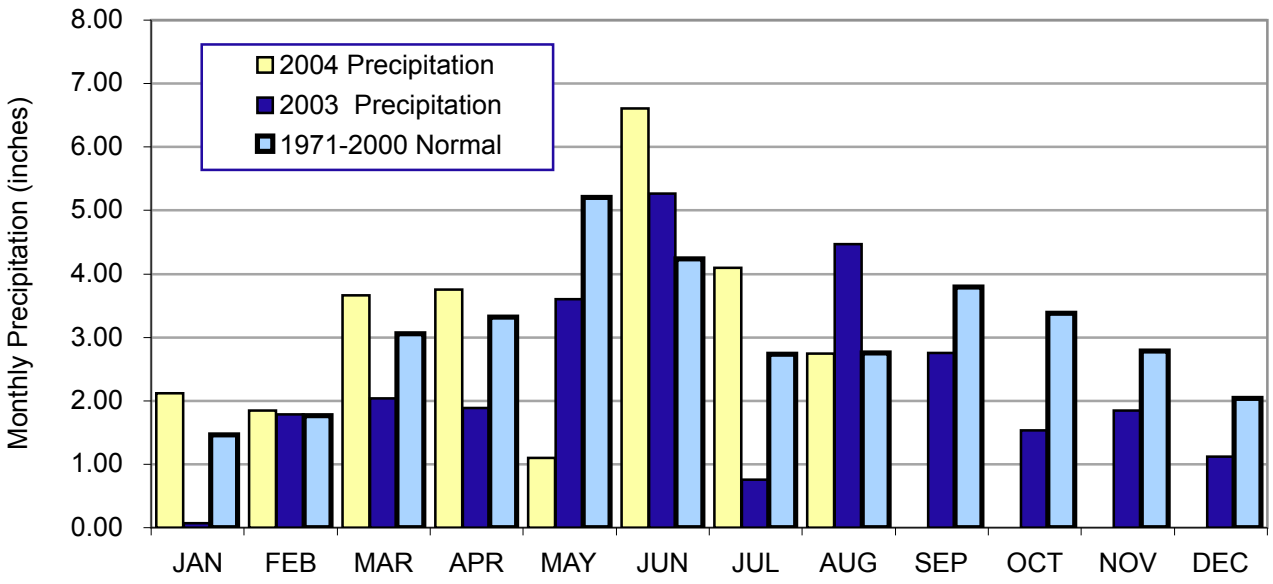
| NAME | MEAN TEMP | HIGH TEMP | HIGH DAY | LOW TEMP | LOW DAY | HDD | CDD | TOT PPT | HIGH 24-HR | HIGH DAY |
|---|---|---|---|---|---|---|---|---|---|---|
| **PANHANDLE** | | | | | | | | | | |
| Arnett | 74.6 | 99 | 3 | 54 | 21 | 0 | 297 | 5.39 | 2.64 | 15 |
| Beaver | 74.1 | 100 | 3 | 53 | 13 | 2 | 285 | ***** | ***** | *** |
| Boise City | 70.7 | 96 | 3 | 50 | 28 | 12 | 187 | 2.71 | 1.26 | 18 |
| Buffalo | 76.6 | 104 | 3 | 51 | 29 | 0 | 358 | 3.40 | 1.73 | 30 |
| **NORTH CENTRAL** | | | | | | | | | | |
| Blackwell | 75.4 | 99 | 3 | 54 | 13 | 0 | 321 | 3.42 | 1.68 | 11 |
| Breckenridge | 76.1 | 99 | 3 | 55 | 21 | 0 | 344 | 4.03 | 2.00 | 11 |
| Cherokee | 77.3 | 105 | 3 | 54 | 29 | 0 | 380 | 3.71 | 2.77 | 11 |
| Fairview | 78.0 | 103 | 26 | 53 | 29 | 0 | 403 | 2.15 | 1.07 | 11 |
| Freedom | 76.0 | 104 | 3 | 53 | 29 | 0 | 340 | 4.65 | 1.26 | 11 |
| Lahoma | 76.6 | 104 | 3 | 55 | 21 | 0 | 360 | 4.33 | 1.64 | 11 |
| May Ranch | 75.7 | 104 | 3 | 54 | 20 | 0 | 332 | 4.01 | 1.71 | 11 |
| **NORTHEAST** | | | | | | | | | | |
| Bixby | 75.5 | 97 | 3 | 53 | 13 | 0 | 325 | 1.20 | .70 | 11 |
| Burbank | 74.5 | 96 | 3 | 53 | 13 | 0 | 295 | 4.69 | 1.42 | 11 |
| Copan | 74.4 | 96 | 26 | 51 | 13 | 3 | 294 | 1.86 | .92 | 19 |
| Foraker | ***** | *** | *** | *** | *** | **** | **** | 2.33 | 1.06 | 11 |
| Jay | 72.3 | 92 | 26 | 49 | 12 | **** | **** | 1.73 | .82 | 11 |
| Miami | 73.7 | 94 | 3 | 48 | 13 | 7 | 278 | 1.67 | 1.50 | 19 |
| Nowata | 73.3 | 94 | 26 | 49 | 13 | **** | **** | 1.30 | .72 | 11 |
| Pawnee | 75.4 | 96 | 3 | 53 | 21 | 0 | 322 | 3.05 | 1.25 | 11 |
| **WEST CENTRAL** | | | | | | | | | | |
| Bessie | 77.1 | 102 | 4 | 56 | 21 | 0 | 375 | 4.59 | 1.98 | 27 |
| Butler | 76.8 | 102 | 3 | 52 | 21 | 0 | 367 | 4.21 | 2.21 | 15 |
| Camargo | 75.6 | 103 | 3 | 53 | 29 | 0 | 327 | 3.31 | 1.19 | 30 |
| Cheyenne | 75.2 | 100 | 4 | 58 | 21 | 0 | 318 | 6.86 | 3.86 | 15 |
| Erick | 75.7 | 102 | 4 | 55 | 21 | 0 | 330 | 7.84 | 3.84 | 30 |
| **CENTRAL** | | | | | | | | | | |
| Bowlegs | 75.4 | 95 | 3 | 55 | 13 | **** | **** | 2.79 | 1.58 | 11 |
| Bristow | 74.7 | 96 | 26 | 51 | 13 | **** | **** | .90 | .56 | 11 |
| Chandler | 75.8 | 96 | 3 | 55 | 21 | **** | **** | 1.83 | 1.09 | 11 |
| Chickasha | 76.8 | 98 | 26 | 53 | 21 | 0 | 364 | 2.89 | 1.26 | 11 |
| El Reno | 75.2 | 98 | 25 | 51 | 21 | **** | **** | ***** | ***** | *** |
| Guthrie | 76.3 | 97 | 3 | 56 | 21 | 0 | 350 | 6.01 | 2.29 | 11 |
| Kingfisher | 77.3 | 100 | 25 | 56 | 29 | **** | **** | ***** | ***** | *** |
| Marena | 76.0 | 97 | 3 | 54 | 21 | 0 | 341 | 2.41 | .74 | 11 |
| Minco | 76.0 | 99 | 4 | 56 | 21 | 0 | 341 | 3.35 | 1.27 | 27 |
| Oilton | 74.5 | 95 | 3 | 52 | 21 | 0 | 294 | 1.60 | .92 | 11 |
| **EAST CENTRAL** | | | | | | | | | | |
| Calvin | 75.6 | 95 | 26 | 53 | 12 | **** | **** | 1.08 | .44 | 11 |
| Cookson | 73.9 | 93 | 3 | 49 | 13 | 5 | 281 | 1.26 | .75 | 11 |
| Eufaula | 77.1 | 97 | 26 | 55 | 13 | 0 | 375 | 1.27 | 1.00 | 11 |
| Haskell | 75.4 | 98 | 3 | 53 | 13 | 0 | 322 | 2.39 | 1.76 | 11 |
| McAlester | 76.3 | 97 | 26 | 54 | 12 | 0 | 350 | 1.14 | .39 | 11 |
| Okmulgee | 75.4 | 97 | 26 | 52 | 13 | 0 | 321 | 1.49 | 1.05 | 11 |
| Sallisaw | 76.4 | 96 | 3 | 53 | 13 | 0 | 353 | 1.79 | .83 | 28 |
| **SOUTHWEST** | | | | | | | | | | |
| Altus | 77.5 | 98 | 4 | 59 | 21 | 0 | 388 | 2.31 | 1.27 | 28 |
| Fort Cobb | 76.1 | 100 | 4 | 55 | 21 | 0 | 344 | 2.22 | 1.10 | 11 |
| Hinton | 76.3 | 101 | 3 | 56 | 21 | 0 | 349 | 2.82 | 1.07 | 11 |
| Hobart | 77.6 | 102 | 3 | 57 | 21 | 0 | 392 | 2.47 | 1.36 | 12 |
| Hollis | 77.8 | 102 | 3 | 58 | 21 | 0 | 397 | 3.00 | 1.28 | 8 |
| Mangum | 77.5 | 102 | 26 | 53 | 21 | 0 | 388 | 1.89 | .88 | 27 |
| **SOUTH CENTRAL** | | | | | | | | | | |
| Ada | 76.0 | 94 | 3 | 56 | 12 | 0 | 340 | 2.36 | 1.12 | 11 |
| Burneyville | 77.6 | 98 | 3 | 54 | 12 | 0 | 390 | .86 | .34 | 19 |
| Byars | 76.0 | 94 | 3 | 57 | 12 | 0 | 342 | 2.17 | .86 | 11 |
| Centrahoma | 76.0 | 97 | 26 | 53 | 12 | **** | **** | 1.40 | .56 | 11 |
| Durant | 78.0 | 96 | 3 | 57 | 12 | 0 | 404 | 3.70 | 2.66 | 19 |
| Ketchum Ranch | 76.9 | 97 | 3 | 57 | 21 | 0 | 368 | 4.44 | 2.35 | 28 |
| Lane | 76.7 | 96 | 3 | 55 | 12 | **** | **** | 2.64 | 1.30 | 19 |
| Madill | 77.2 | 95 | 3 | 56 | 12 | 0 | 378 | 2.32 | .98 | 19 |
| Pauls Valley | 76.7 | 96 | 4 | 57 | 30 | 0 | 364 | 2.40 | .84 | 11 |
| **SOUTHEAST** | | | | | | | | | | |
| Antlers | 76.4 | 97 | 3 | 53 | 12 | 0 | 355 | 1.44 | 1.03 | 11 |
| Clayton | 76.5 | 95 | 3 | 54 | 12 | 0 | 356 | 1.06 | .51 | 19 |
| Cloudy | 76.4 | 94 | 3 | 55 | 12 | 0 | 353 | 1.10 | .70 | 11 |
| Hugo | 77.7 | 95 | 3 | 56 | 12 | 0 | 395 | 1.21 | .52 | 11 |
| Idabel | 77.9 | 98 | 3 | 55 | 12 | 0 | 399 | 1.31 | .69 | 28 |

| NAME | MEAN TEMP | HIGH TEMP | HIGH DAY | LOW TEMP | LOW DAY | HDD | CDD | TOT PPT | HIGH 24-HR | HIGH DAY |
|---|---|---|---|---|---|---|---|---|---|---|
| Goodwell | 72.0 | 96 | 23 | 53 | 20 | 9 | 224 | 2.87 | 1.08 | 10 |
| Hooker | 73.3 | 98 | 23 | 51 | 29 | **** | **** | 2.85 | 1.10 | 11 |
| Kenton | 71.0 | 93 | 3 | 52 | 26 | 7 | 192 | 1.77 | .86 | 9 |
| Slapout | 73.9 | 100 | 3 | 54 | 20 | 4 | 279 | 2.81 | 1.02 | 11 |
| Medford | 76.9 | 102 | 3 | 56 | 29 | 0 | 367 | 3.44 | 1.49 | 19 |
| Newkirk | 74.6 | 97 | 26 | 54 | 12 | 0 | 299 | 1.69 | 1.03 | 11 |
| Red Rock | 75.9 | 98 | 3 | 54 | 21 | 0 | 339 | 2.27 | .94 | 10 |
| Seiling | 76.0 | 101 | 3 | 52 | 29 | **** | **** | 4.39 | 2.48 | 11 |
| Woodward | 76.3 | 102 | 3 | 54 | 29 | 0 | 352 | 3.73 | 1.45 | 11 |
| Alva | 76.7 | 103 | 3 | 51 | 29 | 0 | 364 | 2.73 | 1.23 | 11 |
| Pryor | 74.0 | 94 | 3 | 51 | 13 | 3 | 281 | 1.94 | 1.53 | 11 |
| Skiatook | 75.2 | 95 | 3 | 55 | 12 | 0 | 316 | 2.81 | 1.73 | 11 |
| Vinita | 73.0 | 92 | 3 | 49 | 12 | 7 | 254 | 1.58 | .96 | 19 |
| Wynona | 74.7 | 95 | 3 | 53 | 13 | 0 | 302 | 3.10 | 1.96 | 11 |
| Porter | 75.8 | 97 | 3 | 54 | 13 | 0 | 334 | 1.82 | .96 | 11 |
| Inola | 74.4 | 94 | 26 | 52 | 13 | 1 | 291 | 2.19 | 1.12 | 19 |
| Claremore | 75.4 | 95 | 27 | 53 | 13 | 0 | 322 | 1.42 | 1.01 | 11 |
| Putnam | 75.6 | 99 | 2 | 55 | 21 | 0 | 327 | 2.97 | .83 | 15 |
| Retrop | 77.1 | 104 | 4 | 56 | 21 | 0 | 376 | 3.07 | 1.46 | 15 |
| Watonga | 76.0 | 100 | 3 | 57 | 20 | 0 | 341 | 5.32 | 1.51 | 11 |
| Weatherford | 76.5 | 101 | 3 | 58 | 20 | 0 | 357 | 3.70 | 1.23 | 15 |
| Okemah | 75.8 | 97 | 26 | 55 | 14 | 0 | 333 | 2.16 | 1.54 | 11 |
| Perkins | 76.7 | 99 | 3 | 54 | 21 | **** | **** | 2.03 | .64 | 11 |
| Shawnee | 75.7 | 97 | 3 | 57 | 13 | **** | **** | 6.29 | 4.59 | 11 |
| Spencer | 75.5 | 95 | 3 | 54 | 21 | 0 | 324 | 6.33 | 2.90 | 11 |
| Stillwater | 76.3 | 97 | 3 | 53 | 21 | 0 | 350 | 1.70 | .96 | 11 |
| Washington | 75.4 | 95 | 4 | 55 | 21 | **** | **** | 3.69 | 1.50 | 11 |
| Ninnekah | 77.4 | 101 | 3 | 54 | 21 | 0 | 384 | 2.29 | 1.21 | 11 |
| Acme | 76.3 | 98 | 26 | 52 | 21 | 0 | 351 | 2.72 | 1.26 | 11 |
| Norman | 75.8 | 96 | 4 | 54 | 21 | 0 | 334 | 3.55 | 1.70 | 11 |
| Marshall | 76.6 | 100 | 3 | 56 | 21 | 0 | 359 | 3.94 | 1.98 | 11 |
| Stigler | 75.8 | 95 | 26 | 53 | 13 | 0 | 334 | 1.82 | .88 | 28 |
| Stuart | 76.1 | 95 | 26 | 55 | 14 | **** | **** | 1.31 | .32 | 16 |
| Tahlequah | 73.8 | 92 | 2 | 49 | 13 | 5 | 279 | 2.24 | 1.61 | 19 |
| Webbers Falls | 76.7 | 98 | 26 | 52 | 13 | 0 | 362 | .51 | .22 | 28 |
| Westville | 73.3 | 91 | 3 | 49 | 12 | 7 | 264 | 2.66 | 1.54 | 19 |
| Hectorville | 76.8 | 99 | 26 | 56 | 13 | 0 | 366 | .86 | .48 | 11 |
| Medicine Park | 77.0 | 99 | 4 | 57 | 21 | 0 | 371 | 3.73 | 1.21 | 28 |
| Tipton | 79.2 | 103 | 3 | 61 | 31 | 0 | 440 | 2.83 | 1.12 | 20 |
| Walters | 77.7 | 99 | 26 | 58 | 12 | 0 | 395 | 3.27 | 1.02 | 28 |
| Apache | 76.6 | 100 | 3 | 56 | 21 | 0 | 361 | 2.61 | 1.40 | 11 |
| Grandfield | 79.1 | 102 | 26 | 61 | 12 | 0 | 436 | 3.57 | 1.98 | 28 |
| Ringling | 77.0 | 96 | 26 | 59 | 12 | 0 | 373 | 2.35 | .78 | 11 |
| Sulphur | 75.9 | 95 | 3 | 55 | 12 | 0 | 337 | 1.75 | .87 | 11 |
| Tishomingo | 76.0 | 95 | 3 | 55 | 12 | 0 | 340 | 2.26 | .97 | 11 |
| Waurika | 78.2 | 98 | 26 | 58 | 12 | **** | **** | 2.85 | .81 | 28 |
| Vanoss | 75.7 | 95 | 3 | 54 | 12 | 0 | 333 | 2.80 | 1.09 | 11 |
| Bee | 77.4 | 96 | 3 | 55 | 12 | 0 | 385 | 2.25 | .87 | 28 |
| Newport | 76.6 | 95 | 26 | 56 | 12 | 0 | 359 | 2.00 | .63 | 8 |
| Ardmore | ***** | *** | *** | *** | *** | **** | **** | 2.00 | .76 | 11 |
| Mt Herman | 76.0 | 96 | 3 | 52 | 12 | 0 | 342 | 2.37 | .77 | 19 |
| Talihina | 75.9 | 96 | 27 | 50 | 13 | 0 | 338 | 1.77 | .84 | 19 |
| Wilburton | 76.0 | 96 | 3 | 53 | 12 | 0 | 341 | 2.63 | 1.10 | 28 |
| Wister | 74.9 | 97 | 27 | 49 | 13 | 0 | 307 | .76 | .30 | 11 |
| Broken Bow | 76.2 | 97 | 3 | 52 | 14 | 0 | 347 | 1.89 | .53 | 19 |

## *August 2004 Mesonet Precipitation Comparison*

| Climate Division | Precipitation (inches) | Departure from Normal (inches) | Rank since 1895 | Wettest on Record (Year) | Driest on Record (Year) | Aug-03 |
|---|---|---|---|---|---|---|
| Panhandle | 3.11 | 0.60 | 30th Wettest | 5.68 (1977) | 0.47 (1913) | 4.29 |
| North Central | 3.43 | 0.38 | 40th Wettest | 7.69 (1974) | 0.09 (1913) | 4.46 |
| Northeast | 2.18 | -1.00 | 35th Driest | 8.03 (1964) | 0.02 (2000) | 7.01 |
| West Central | 4.65 | 1.93 | 14th Wettest | 7.01 (1995) | 0.05 (1913) | 3.79 |
| Central | 3.08 | 0.45 | 41st Wettest | 7.21 (1906) | 0.03 (2000) | 3.98 |
| East Central | 1.52 | -1.35 | 20th Driest | 6.89 (1915) | 0.00 (2000) | 4.16 |
| Southwest | 2.79 | 0.10 | 35th Wettest | 8.01 (1996) | 0.00 (1913) | 3.77 |
| South Central | 2.39 | -0.15 | 52nd Wettest | 8.46 (1915) | 0.01 (2000) | 3.03 |
| Southeast | 1.55 | -1.16 | 17th Driest | 8.73 (1915) | 0.19 (1943) | 3.07 |
| Statewide | 2.74 | -0.03 | 54th Wettest | 6.54 (1906) | 0.14 (2000) | 4.22 |

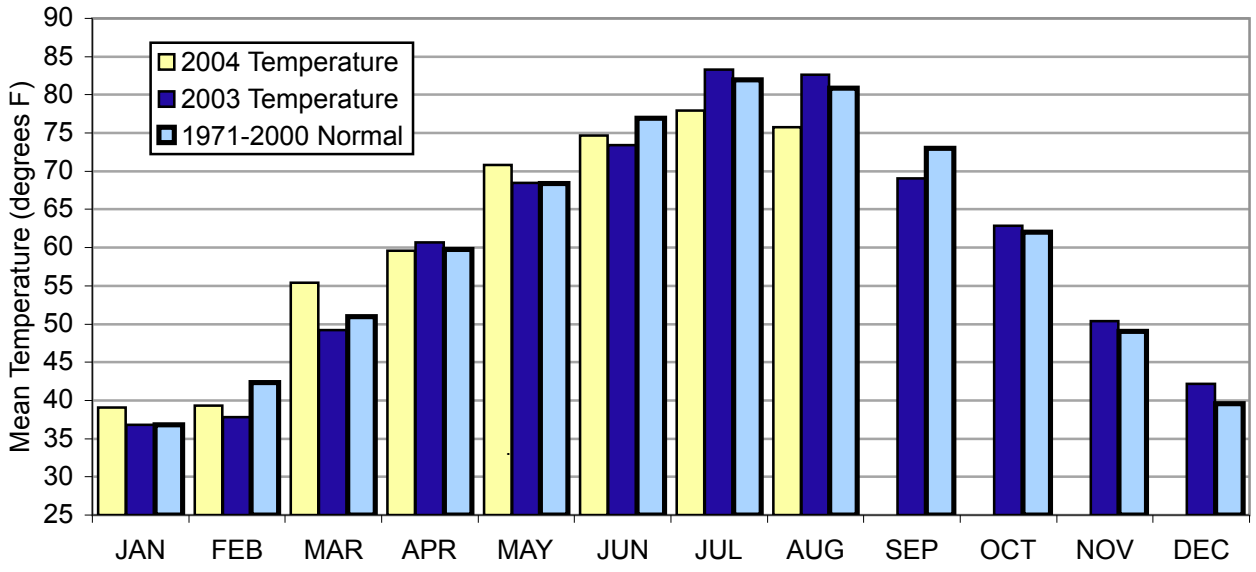
## *2003 and 2004 Statewide Precipitation Monthly Totals vs. Normal*



## *August 2004 Mesonet Temperature Comparison*

| Climate Division | Average Temp (F) | Departure from Normal (F) | Rank since 1895 | Hottest on Record (Year) | Coldest on Record (Year) | Aug-03 (F) |
|---|---|---|---|---|---|---|
| Panhandle | 73.3 | -4.5 | 5th Coolest | 83.1 (1983) | 71.3 (1915) | 80.9 |
| North Central | 76.3 | -4.4 | 6th Coolest | 88.9 (1936) | 72.3 (1915) | 83.3 |
| Northeast | 74.6 | -5.2 | 5th Coolest | 88.4 (1936) | 71.7 (1915) | 82.0 |
| West Central | 76.2 | -4.0 | 6th Coolest | 87.4 (1936) | 72.9 (1915) | 82.8 |
| Central | 75.9 | -5.1 | 4th Coolest | 88.3 (1936) | 73.1 (1915) | 83.2 |
| East Central | 75.6 | -4.8 | 4th Coolest | 88.0 (1936) | 73.0 (1915) | 82.9 |
| Southwest | 77.5 | -4.3 | 4th Coolest | 88.1 (1952) | 75.4 (1915) | 83.9 |
| South Central | 76.8 | -5.0 | 3rd Coolest | 87.6 (1934) | 75.5 (1915) | 83.5 |
| Southeast | 76.4 | -3.9 | 5th Coolest | 87.3 (1943) | 74.5 (1915) | 81.2 |
| Statewide | 75.8 | -4.6 | 5th Coolest | 87.2 (1936) | 73.2 (1915) | 82.7 |

## *2003 and 2004 Statewide Temperature Monthly Averages vs. Normal*



## *Mesonet Extremes for August 2004*

| Climate Division | High Temp (F) | Day | Station | Low Temp (F) | Day | Station | High Monthly Rainfall (inches) | Station | High Daily Rainfall (inches) | Day | Station |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Panhandle | 104 | 3rd | Buffalo | 50 | 28th | Boise City | 5.39 | Arnett | 2.64 | 15th | Arnett |
| North Central | 105 | 3rd | Cherokee | 51 | 29th | Alva | 4.65 | Freedom | 2.77 | 11th | Cherokee |
| Northeast | 97 | 3rd | Porter | 48 | 13th | Miami | 4.69 | Burbank | 1.96 | 11th | Wynona |
| West Central | 104 | 4th | Retrop | 52 | 21st | Butler | 7.84 | Erick | 3.86 | 15th | Cheyenne |
| Central | 101 | 3rd | Ninnekah | 51 | 21st | El Reno | 6.33 | Spencer | 4.59 | 11th | Shawnee |
| East Central | 99 | 26th | Hectorville | 49 | 13th | Cookson | 2.66 | Westville | 1.76 | 11th | Haskell |
| Southwest | 103 | 3rd | Tipton | 53 | 21st | Mangum | 3.73 | Medicine Park | 1.98 | 28th | Grandfield |
| South Central | 98 | 26th | Waurika | 53 | 12th | Centrahoma | 4.44 | Ketchum Ranch | 2.66 | 19th | Durant |
| Southeast | 98 | 3rd | Idabel | 49 | 13th | Wister | 2.63 | Wilburton | 1.10 | 28th | Wilburton |
| Statewide | 105 | 3rd | Cherokee | 48 | 13th | Miami | 7.84 | Erick | 4.59 | 11th | Shawnee |

# September Climatological Outlook

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.

***Temperature***
Mean: 73.0 degrees
Hottest September: 1931, 79.8 degrees
Coolest September: 1974, 64.7 degrees
Hottest location: Waurika, 76.8 degrees
Coolest location: Boise City, 68.0 degrees
Hottest recorded: 115 degrees, Alva, September 3, 1939 and 1947
Coldest recorded: 25 degrees, Boise City, 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. 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.

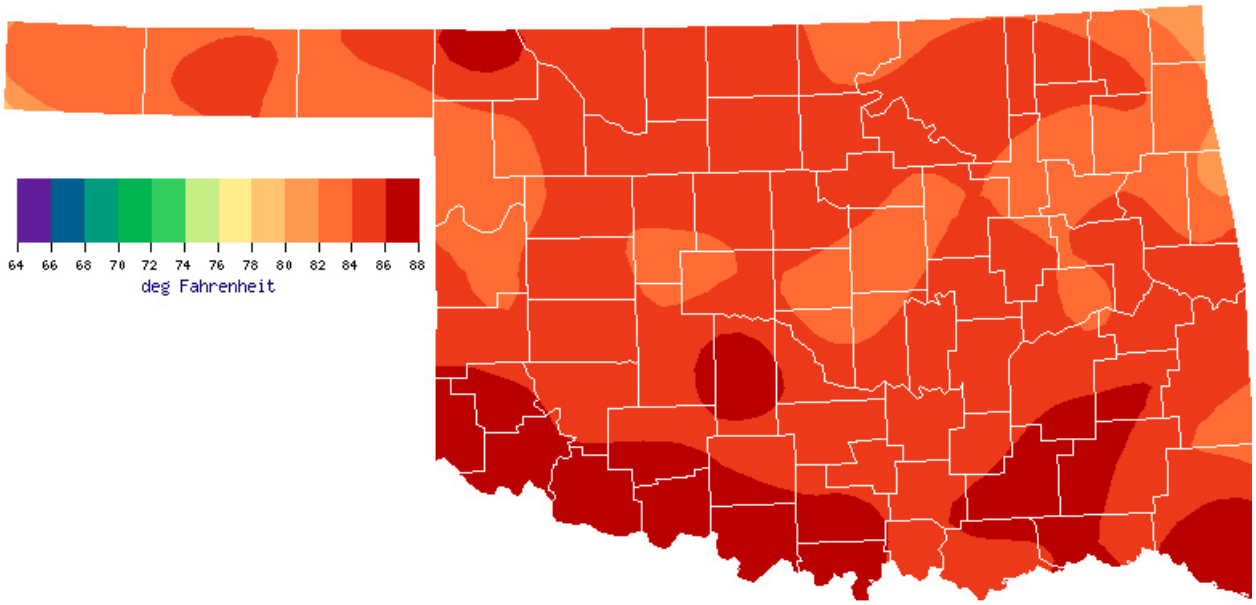
Tornadoes are slightly more frequent in September, averaging 2.1 each year, than they are during the previous two months. The most tornadoes reported in the state during September is 16 in 1992. No tornadoes were reported in the state during September in 18 of 52 years from 1950 through 2001 (the period 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.

***Precipitation***
Mean: 3.80 inches
Wettest September: 1945, 7.86 inches
Driest September: 1956, 0.27 inches
Wettest location: Kansas, 5.56 inches
Driest location: Regnier, 1.44 inches
Most recorded: 16.82 inches, Wyandotte, 1945

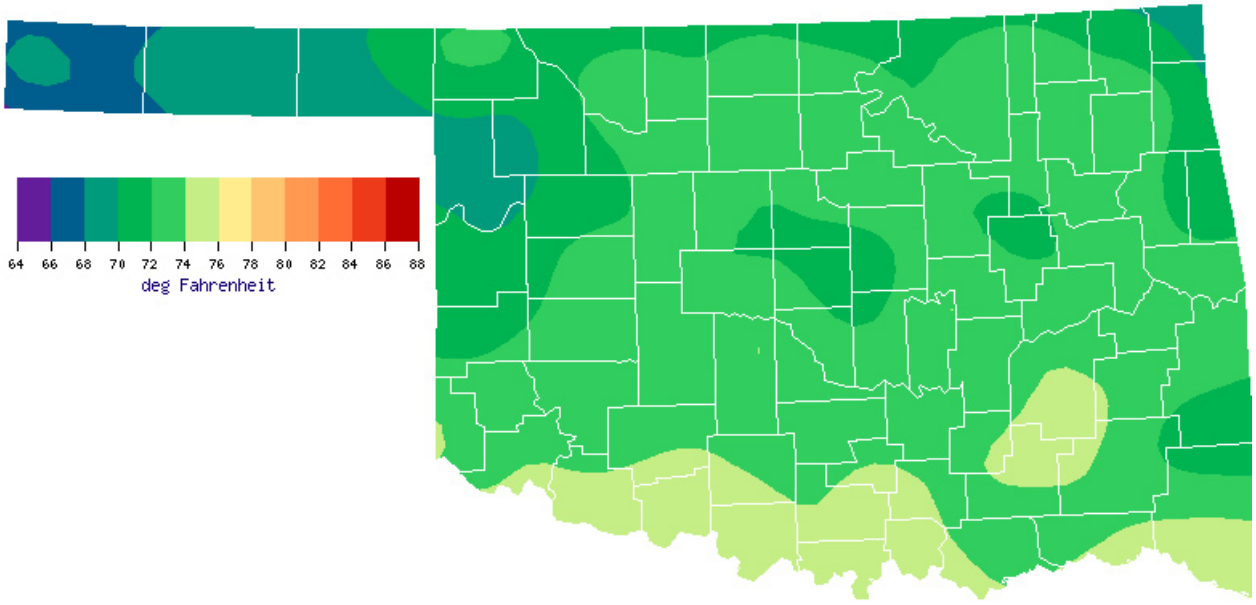
Floods present a more common weather hazard than tornadoes in September. Residual moisture from tropical disturbances, usually from the Gulf of Mexico but occasionally from the Pacific Ocean, interacts with slow moving frontal systems in the state from time-to-time during the autumn months. Widespread 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.

***Tornadoes***
Average September Tornadoes: 2.1
Most: 16 (1992)

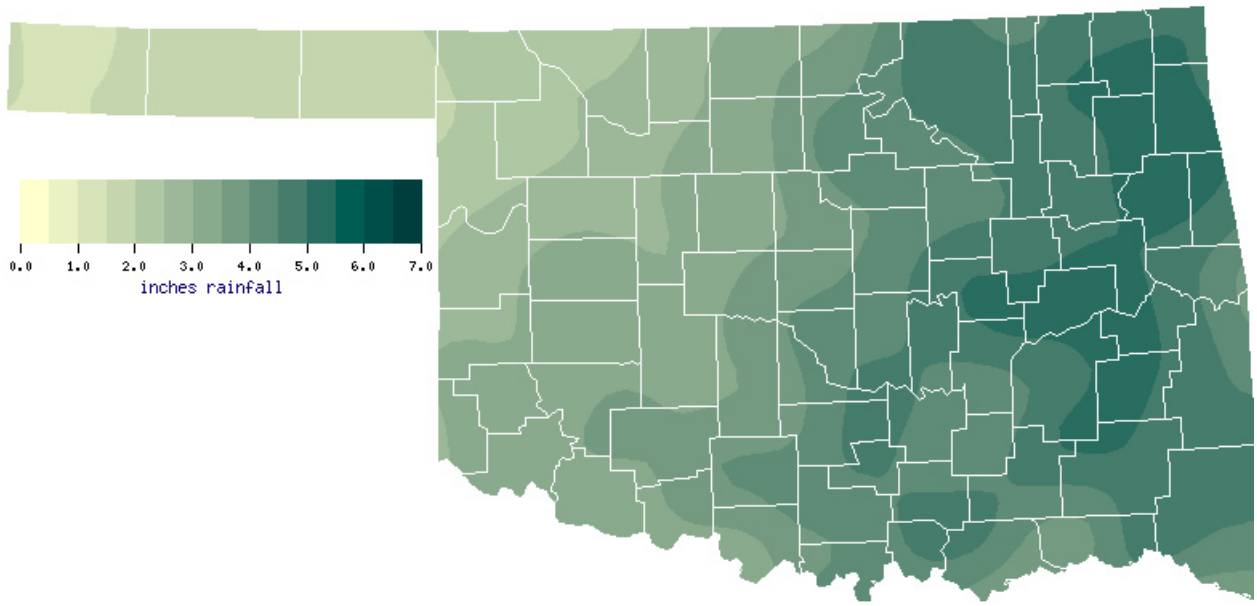
## *September Normal Monthly Maximum Temperature (1971-2000)*



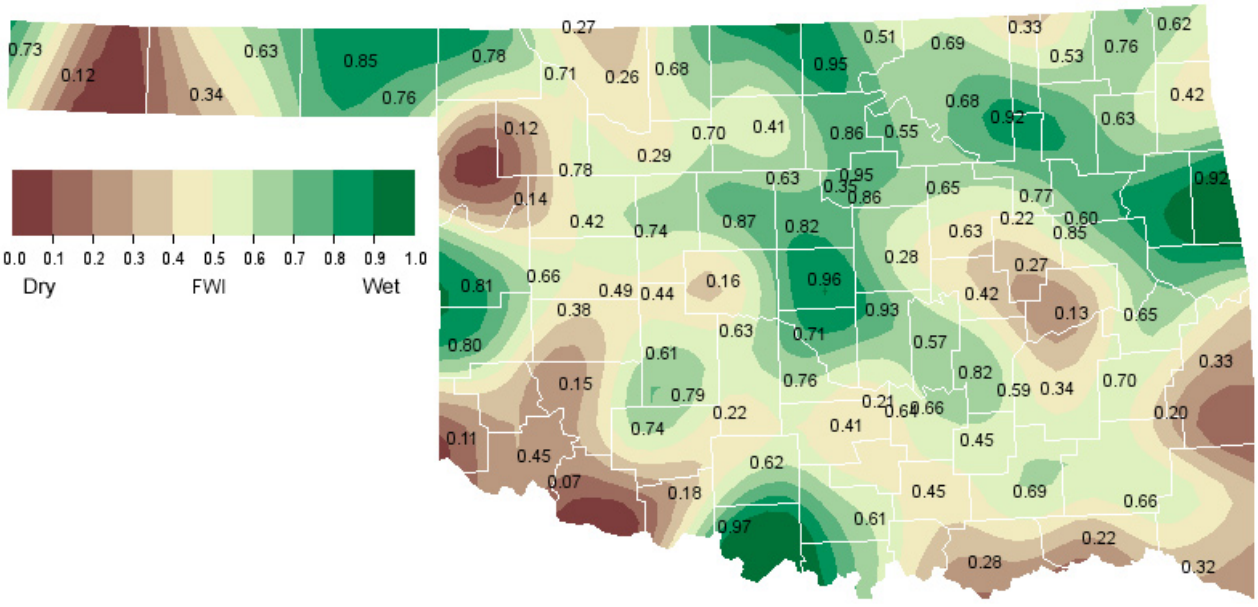

## *September Normal Monthly Minimum Temperature (1971-2000)*



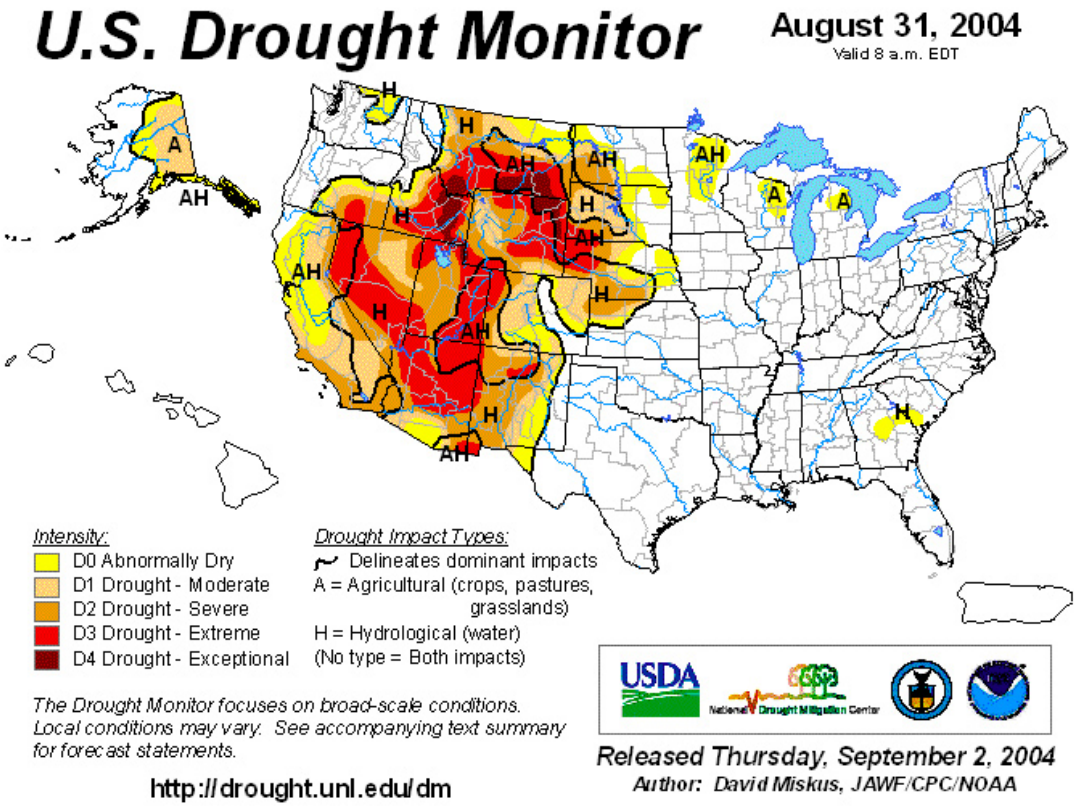
## *September Normal Precipitation (1971-2000)*

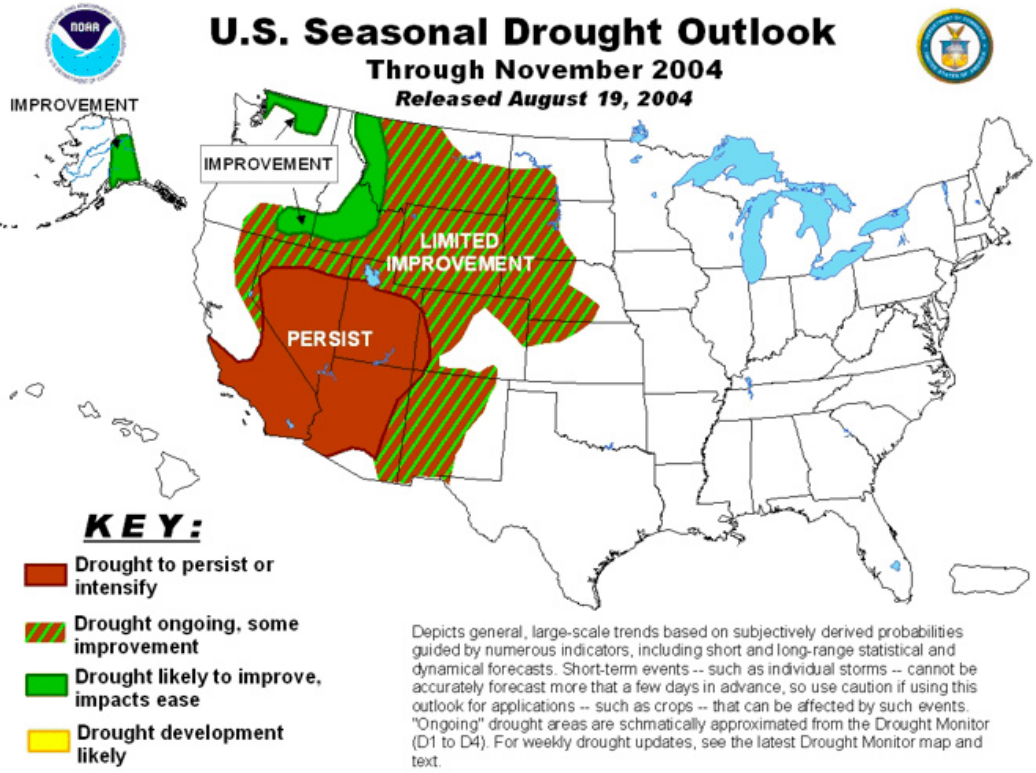



## *September 1, 2004 Soil Moisture Conditions at 25cm*

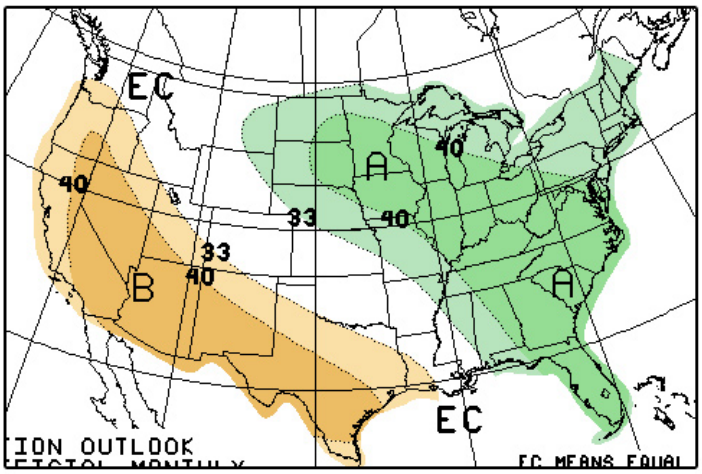


## *September 2004 Drought Indices*



## *September 2004 U.S. Precipitation Forecast*



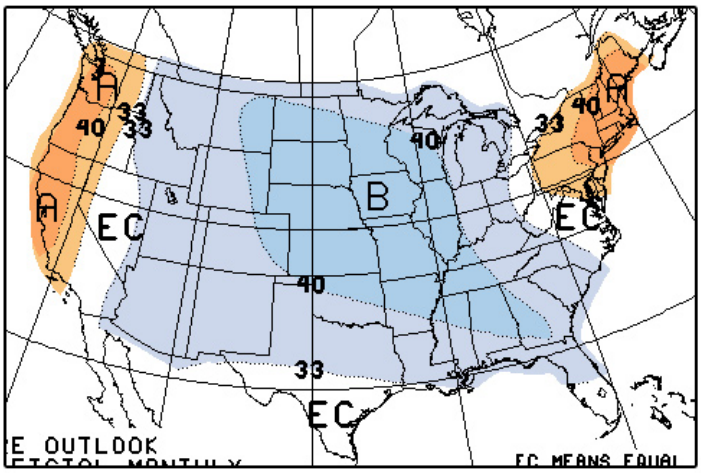

Percent Likelihood of Above or Below Average Precipitation*

5% - 10%
0% - 5%
A = Above

0% - 5%
5% - 10%
B = Below

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

## *September 2004 U.S. Temperature Forecast*




Percent Likelihood of Above and Below Average Temperatures*

10% - 20%
5% - 10%
0% - 5%
A = Above

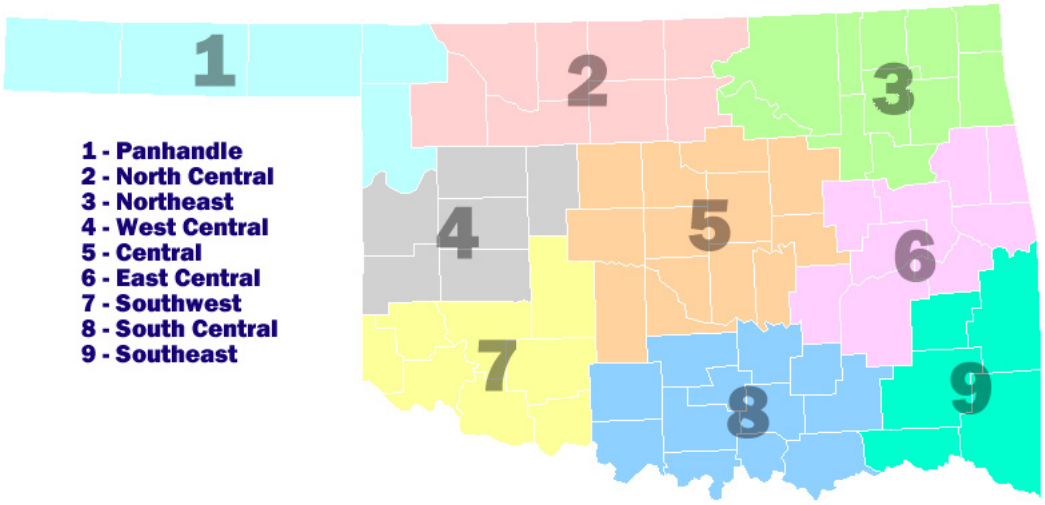
0% - 5%
5% - 10%
B = Below

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

## *September Climate Normals*

| Climate Division | Max. Temperature (°F) | Min. Temperature (°F) | Avg. Temperature (°F) | Precipitation (inches) |
|---|---|---|---|---|
| 1 | 84.5 | 55.6 | 70.1 | 1.86 |
| 2 | 84.8 | 59.2 | 72 | 3.13 |
| 3 | 84.1 | 60.5 | 72.3 | 4.83 |
| 4 | 84.7 | 59.5 | 72.1 | 2.95 |
| 5 | 84.8 | 61 | 72.9 | 4.03 |
| 6 | 84.5 | 61.3 | 72.9 | 4.88 |
| 7 | 86.4 | 61 | 73.7 | 3.34 |
| 8 | 86.2 | 62.3 | 74.3 | 4.27 |
| 9 | 85.9 | 60.9 | 73.4 | 4.52 |
| Statewide | 85.1 | 60.3 | 72.7 | 3.9 |

## *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.ocs.ou.edu or
http://www.ocs.ou.edu/
E-mail (ocs@ou.edu) or telephone (405/325-2541)

Oklahoma Climatological Survey

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