Oklahoma Monthly Climate Summary

# FEBRUARY 2014

OKLAHOMA CLIMATOLOGICAL SURVEY

Merely looking at the temperature statistics for February would lead one to believe it was a frigid, wintry nightmare from beginning to end. After all, preliminary statistics from the Oklahoma Mesonet indicate that February finished nearly 6 degrees cooler than normal statewide with an average temperature of 36 degrees – the 15th coolest February for the state since records began in 1895. Most of that cold weather occurred during the month's first dozen days, however, setting a standard that occasional near- to above-normal temperatures throughout the rest of the month could not overcome. February combined with a frosty December and cool January to produce the 12th coldest winter on record in Oklahoma. Climatological winter runs from the first of December through the end of February. The winter's statewide average temperature of 35.5 degrees fell 3.3 degrees below normal. Oklahoma's coldest winter occurred in 1904-05 with a statewide average of 31.1 degrees. February's lowest temperature of minus 2 degrees was recorded on the fifth at both Beaver and Boise City. Boise City only reached a high of 6 degrees that day and at one point registered a wind chill of minus 25 degrees. Hollis managed to climb to 84 degrees on the 18th during a stretch of unseasonable warmth. The lowest winter temperature recorded by the Mesonet was minus 12 degrees at Nowata on January 6.

## February 2014 Statewide Extremes

| Description | Extreme | Station | Day |
|---|---|---|---|
| High Temperature | 84°F | Hollis | 18 |
| Low Temperature | -2°F | Beaver, Boise City | 5 |
| High Precipitation | 1.70 in. | Broken Bow | -- |
| Low Precipitation | 0.07 in. | Boise City | -- |

Unfortunately, there were no extended wet periods during February as dry weather dominated that side of the storyline, although there were a couple of winter storms to break up the monotony. The month's first day saw 4-6 inches of snow fall across southern Oklahoma and some unofficial totals of more than 8 inches reported in the southwest. Northwestern Oklahoma got into the act just a few days later with reports of 5-6 inches in some locations. Regardless of those brief storms, the state remained dry for the most part. The statewide average precipitation total from the Mesonet finished at 0.51 inches, the 16th driest February on record at 1.25 inches below normal. February's story of dry conditions with brief interruptions by periodic wintry weather was a continuation of the previous two months, and the statewide average precipitation total for the winter finished as the fifth driest on record at well over 3 inches below normal. For Northeast Oklahoma, it was their driest winter on record with a December-February average total of 1.56 inches, more than 4 inches below normal. East central and central Oklahoma did not fare much better with their second and fourth driest winters on record, respectively.

## February 2014 Statewide Statistics

Temperature

| | Average | Depart. | Rank (1895-2014) |
|---|---|---|---|
| Month (February) | 36.0°F | -5.7°F | 15th Coolest |
| Season-to-Date (Dec-Feb) | 35.5°F | -3.3°F | 12th Coolest |
| Year-to-Date (Jan-Feb) | 35.9°F | -2.8°F | 22nd Coolest |

Precipitation

| | Total | Depart. | Rank (1895-2014) |
|---|---|---|---|
| Month (February) | 0.51 in. | -1.25 in. | 16th Driest |
| Season-to-Date (Dec-Feb) | 1.92 in. | -3.31 in. | 5th Driest |
| Year-to-Date (Jan-Feb) | 0.81 in. | -2.40 in. | 4th Driest |

Depart. = departure from 30-year normal

The dry weather allowed for uncharacteristic cool-season drought intensification. Normally a time for moisture recharge, this winter had enough dry, windy and occasionally warm days to allow for drought to spread throughout the period. The U.S. Drought Monitor map from December 3, 2013, had 30.9 percent of the map experiencing at least moderate drought, and only 47.3 percent seeing at least abnormally dry conditions. February's final map showed 62.4 percent of the state in at least moderate drought, and 100% of the state in at least abnormally dry conditions. The Drought Monitor's intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification. Abnormally dry, while not a drought intensity itself, can signify areas that are going into or coming out of drought. In this case, it indicates the former.

## FEBRUARY 2014 DAILY SUMMARIES

**FEBRUARY 1-4:** Despite some maximum temperatures in the south peaking to 64 on the 1st, this four day period was gloomy, wet, and cool. The highest temperatures in the state fluctuated in the upper 30s and 40s from the 2nd through the 4th. Minimum temperatures generally ranged from the single digits to the 20s and low 30s. On the 1st, light rain and fog left traces of precipitation in the north and between one and two-tenths of an inch in the southeast. Precipitation intensity and amounts picked up from the 2nd through the 4th, hitting almost every portion of the state with freezing rain, sleet, or snow. The highest amounts of snow were measured at 2-4 inches in south-central and southeast OK on the 3rd and 6-8 inches in the northwest on the 4th. The highest amounts of liquid precipitation measured by the Mesonet each day were .22 inches in Broken Bow on the 1st, .8 inches in Broken Bow on the 2nd, .37 inches in Broken Bow on the 3rd, and .52 inches in Broken Bow on the 4th. The highest daily average wind speeds varied between 15 and 19mph during this time with a gust of 49mph observed in Medicine Park on the 2nd.

**FEBRUARY 5-7:** The warmest temperatures in the state wavered in the 30s and 40s and were located in the southeast on the 5th and 6th, and the panhandle on the 7th. Conversely, areas such as Boise City on the 5th and Beaver on the 6th, were only able to warm into the single digits. Low temperatures ranged from -2 in Beaver on the 5th to 25 in Idabel and Broken Bow on the 7th. A wind chill advisory was in effect for much of the region on the 5th as wind chill values measured between -10 and -15 degrees. Widespread snow fell over much of the state and left behind trace amounts to two inches of snow in most areas. Portions of southwest and central Oklahoma, however, accumulated nearly three inches on the 6th and Tushka in Atoka County received roughly four inches on the 7th. Winds were extremely breezy on the 5th, averaging between 10-26mph and measuring a gust of 49mph in Medicine Park. Average wind speeds were less than 13mph on the 6th and less than 11mph on the 7th.

**FEBRUARY 8-10:** Maximum temperatures started out pleasant at 63 degrees in Boise City and Kenton on the 8th. However, these warm highs didn't last long as a cooling trend ensued. The highest temperatures recorded fell to 43 in Kenton on the 9th and 39 in Sallisaw on the 10th. The lowest maximum temperatures in the state decreased as well, falling from the 20s on the 8th and 9th to the upper teens on the 10th. The highest minimum temperature trend was reversed, warming from 29 to 33 degrees by the end of this three-day period. The coolest temperatures measured were in the low teens. Thick fog hindered visibilities down to a quarter mile in western and southwest OK. Light snow, drizzle, and freezing drizzle fell in eastern OK on the 9th. Northwest and north-central Oklahoma received another passing band of snow and sleet on the 10th, which eventually made its way back into Eastern OK. Some of the highest snowfall amounts measured by COOP observers were 2.7 inches at Lehigh on the 8th, 2.5 inches at Daisy on the 8th, and 1.5 inches in Braman on the 10th. Average wind speeds were less than 10mph on Saturday, and less than 15mph on Sunday and Monday.

**FEBRUARY 11-15:** Despite a weak cold front dropping the highest maximum temperatures by 2 degrees on the 14th, this period experienced a rapid warming trend. The highest maximums climbed from 51 degrees on the 11th to 80 degrees (Goodwell) on the 15th, and the lowest maximum temperatures in the state drastically climbed from 18 degrees to 58 degrees. Although the warmest minimum temperatures bounced around a bit, the lowest minimum temperatures increased from 0 degrees (Buffalo) to the upper teens and low 20s. Lingering snow from the previous system dropped trace amounts to two inches of snow in southern Oklahoma, and nearly 3 inches in Pawnee and northeast Oklahoma on the 11th. Although precipitation ended, freezing fog made travel difficult on the 13th in the central one-third portion of the state. Wind speeds were mild, generally averaging less than 10mph from the 11th through the 13th and less than 15mph on the 14th and 15th. Peak gusts of 47mph occurred in Medicine Park, Minco, and Walters on the 14th, as well as in Watonga on the 15th.

**FEBRUARY 16-17:** Two weak cold fronts from the northwest passed through the area, shifting winds from the north to the south. Skies were warm, breezy, and rain-free. Maximum temperatures had a range of 59 degrees in Miami and May Ranch to 75 degrees in Kenton on the 16th, and a range of 60 degrees in Westville and Slapout to 73 degrees in Broken Bow on the 17th. Minimum temperatures ranged from 22 degrees in Kenton to 48 degrees in Spencer. The highest daily average wind speed was 16.2mph on both days.

**FEBRUARY 18-21:** On the 18th, the highest maximum temperature was well above normal at 84 degrees in Hollis. Although a cooling trend followed, the highest temperatures were still comfortably in the 70s. The lowest maximum temperatures gradually declined from 69 degrees on the 18th to the mid-50s by the 21st. This period was mainly dry, except for a few scattered showers confined to north-central and northeast Oklahoma on the 19th and 20th. Rainfall amounts were less than one-tenth of an inch. Although the highest wind speed average was 17mph on the 18th and 19th, 23mph on the 20th, and 13mph on the 21st, the number of high wind gusts were notable. One-third of the state had maximum wind gusts between 40 and 60mph on the 18th and one-third of the state had maximum wind gusts between 50 and 64mph on the 20th.

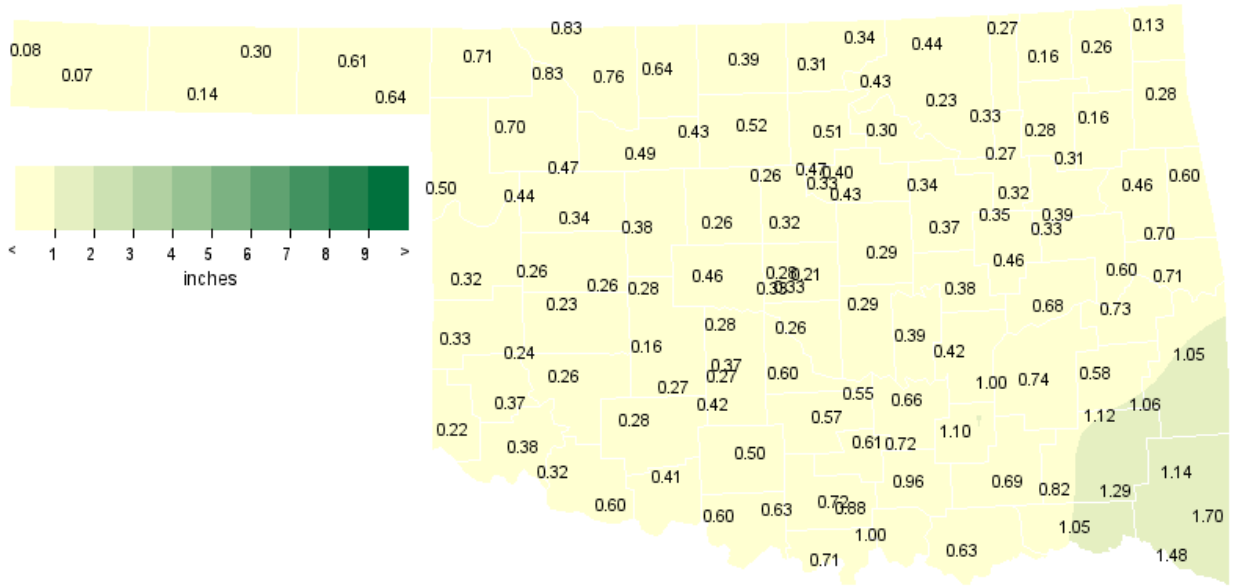
**FEBRUARY 22-23:** A stationary front was situated over the state on the 22nd, dividing northwesterly and southerly wind flow. By the afternoon, however, a cold front moved in from the northwest. Maximum temperatures fell from a range of 60-75 degrees on the 22nd to a range of 42-68 degrees on the 23rd. The warmest areas were southern and southeastern Oklahoma. The two days had similar minimum temperatures with an overall range of 18 degrees in Kenton to 49 degrees in McAlester. Rainfall was non-

existent and average wind speeds were between 4 and 14mph on the 22nd and 5 and 19mph on the 23rd.

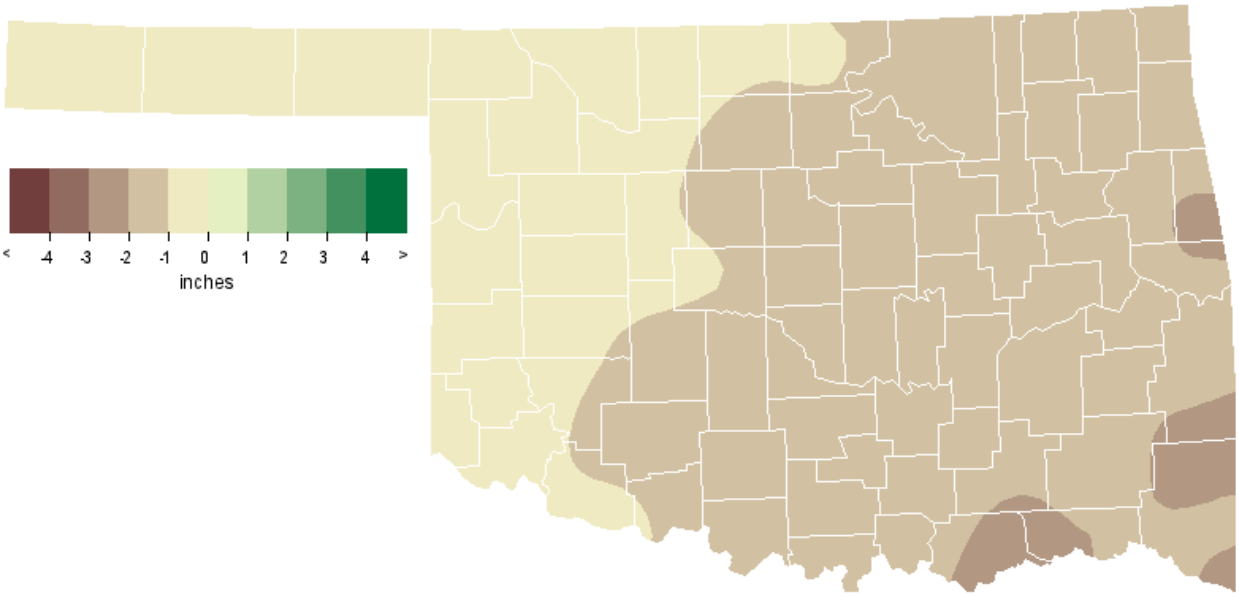
**FEBRUARY 24-26:** With the help of some cold air advection, temperatures cooled from the 24th to the 26th. The highest temperatures waned from 70 degrees in Kenton on Monday to 49 degrees in Kenton on Tuesday. Likewise, the lowest maximum temperatures fell from 45 degrees at Newport to 31 degrees at Jay. The highest minimum temperatures fluctuated in the 30s and 40s on the 24th and 25th, but eventually dropped to 26 degrees by the 26th. The coolest temperatures in the state fell from the teens to the single digits. Although precipitation was negligible, flurries were reported north of I-40 on the 26th. Average wind speeds were less than 11mph on the 24th, less than 18mph on the 25th, and less than 14mph on the 26th. Gusts of 46mph were reported in Medicine Park on Tuesday and Wednesday.

**FEBRUARY 27-28:** Due to southerly winds, the last two days in the month ended on a warming trend. Maximum temperatures ranged from 48 (Miami) to 70 degrees (Boise City) on the 27th and 43 (Cookson) to78 degrees (Hollis and Burneyville) on the 28th. The highest minimum temperatures increased from 27 degrees in Cheyenne to 41 degrees in Burneyville, and the lowest minimum temperatures increased from 10 degrees in Chickasha to 24 degrees in Wister. Light rain fell in north-central and northeast Oklahoma on the 28th, but amounts were less than two-tenths of an inch. Wind speeds averaged between 2-15mph on the 27th and between 5-14mph on the 28th.

## FEBRUARY 2014 OBSERVED PRECIPITATION




## FEBRUARY 2014 DEPARTURE FROM NORMAL PRECIPITATION



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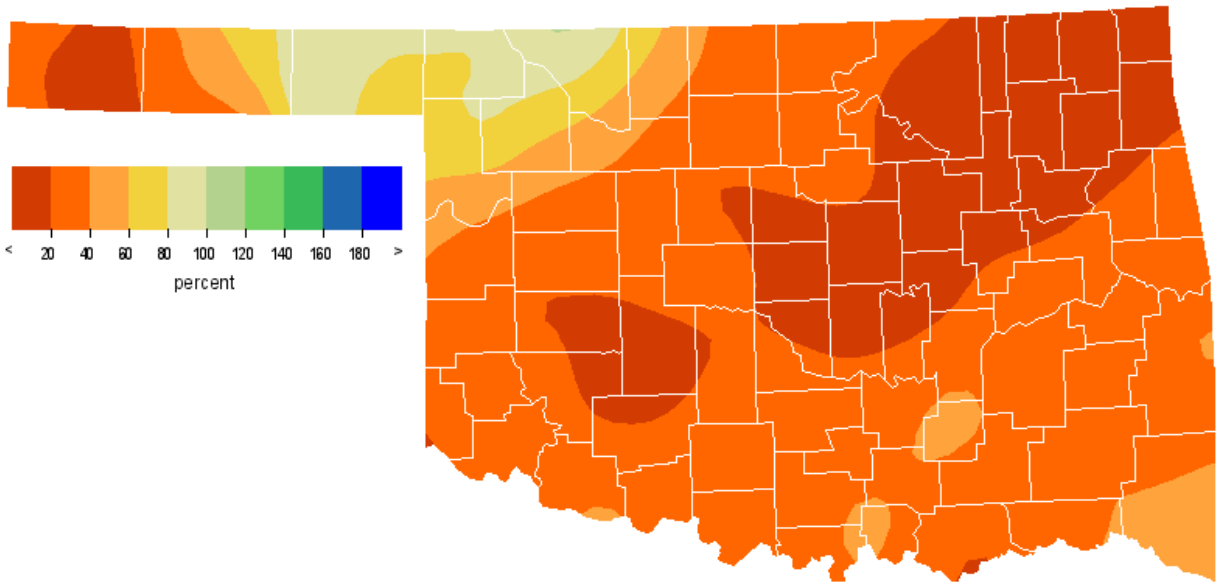
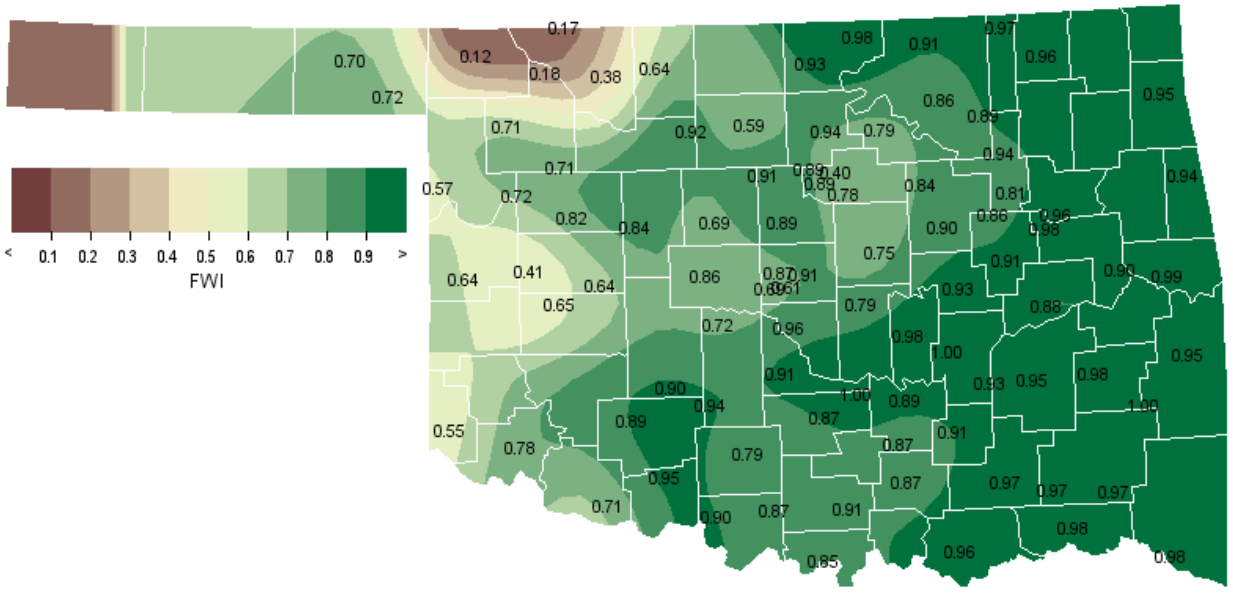
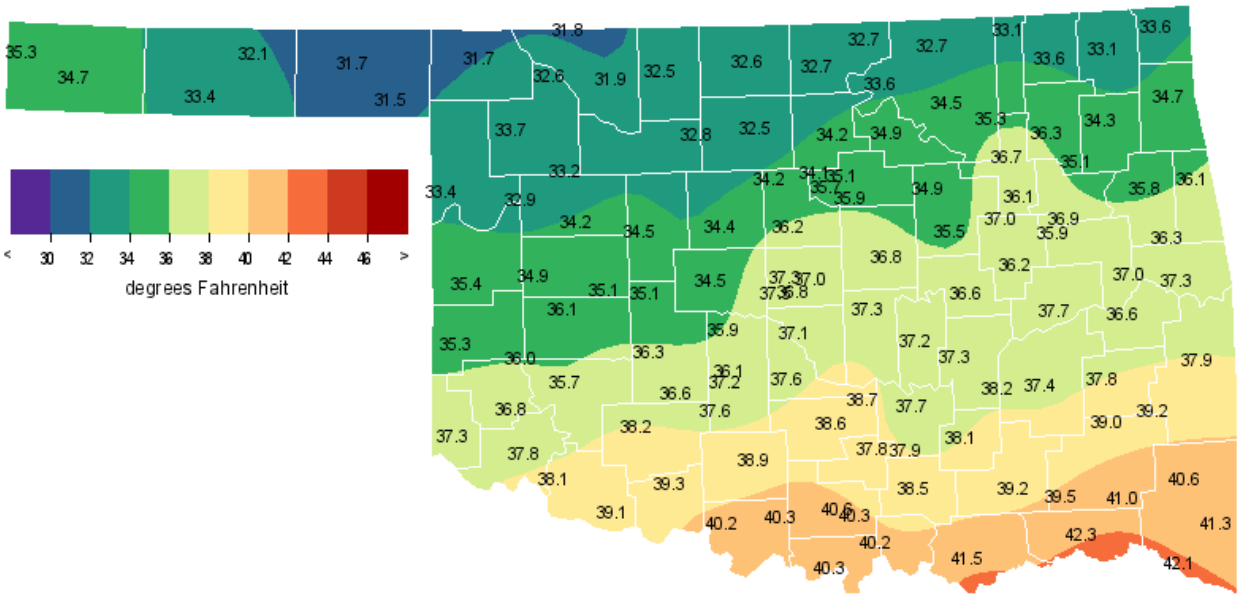


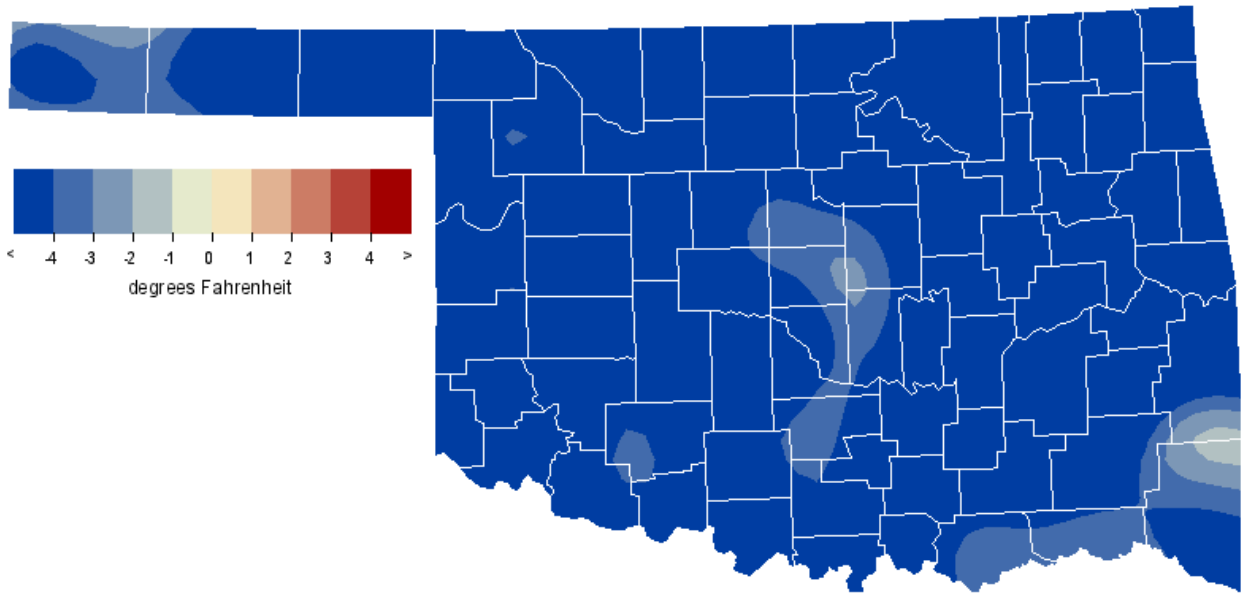

## FEBRUARY 2014 AVERAGE SOIL MOISTURE AT 25CM



## FEBRUARY 2014 AVERAGE TEMPERATURE



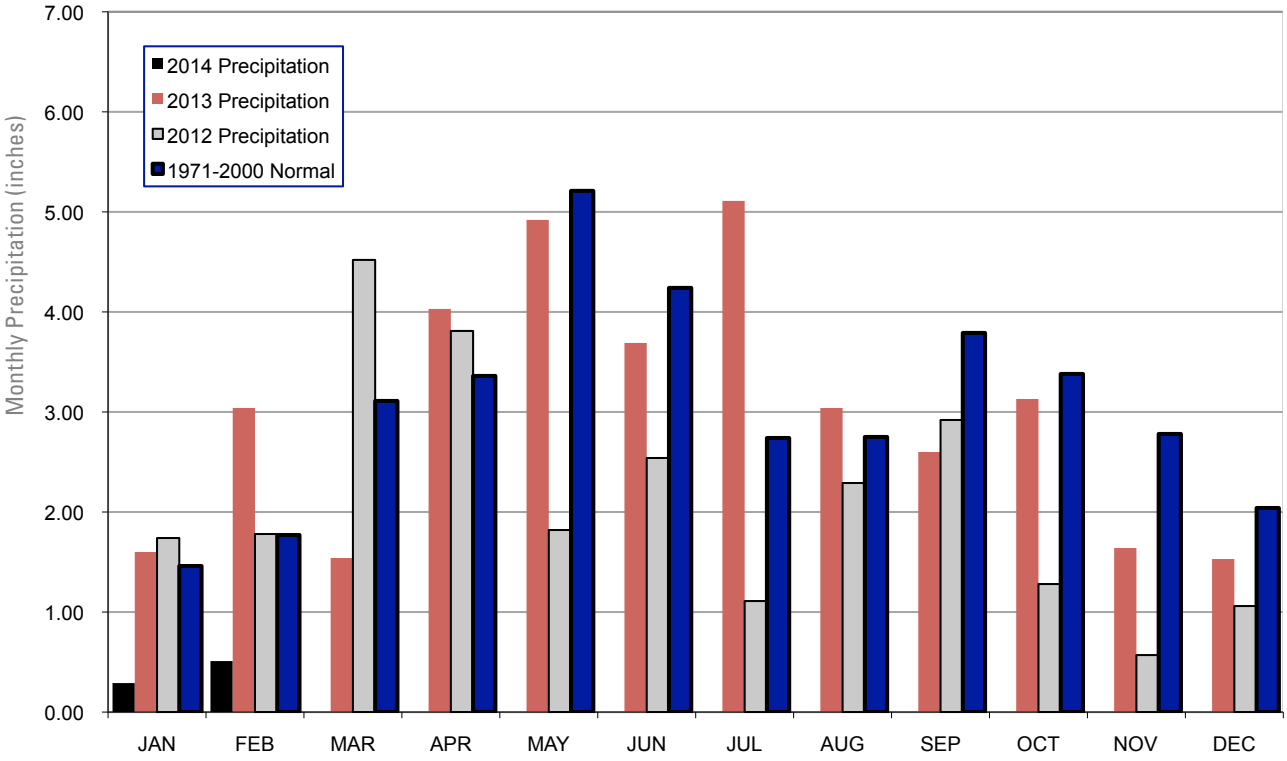

## FEBRUARY 2014 DEPARTURE FROM NORMAL TEMPERATURE



# MESONET MONTHLY SUMMARY FOR FEBRUARY 2014

| NAME | MEAN TEMP | HIGH TEMP | HIGH DAY | LOW TEMP | LOW DAY | HDD | CDD | TOT PPT | HIGH 24-HR | HIGH DAY |
|---|---|---|---|---|---|---|---|---|---|---|
| **PANHANDLE** | | | | | | | | | | |
| Arnett | 33.4 | 79 | 18 | 0 | 6 | 884 | 0 | .50 | .19 | 8 |
| Beaver | 31.7 | 78 | 18 | -2 | 5 | 933 | 0 | .61 | .26 | 13 |
| Boise City | 34.8 | 77 | 15 | -2 | 5 | 847 | 0 | .07 | .06 | 7 |
| Buffalo | 31.6 | 79 | 18 | 0 | 11 | 934 | 0 | .71 | .22 | 8 |
| Goodwell | 33.3 | 80 | 15 | 0 | 5 | 886 | 0 | .14 | .06 | 8 |
| Hooker | 32.1 | 79 | 15 | 0 | 5 | 921 | 0 | .30 | .28 | 8 |
| Kenton | 35.2 | 75 | 16 | -1 | 5 | 833 | 0 | .08 | .06 | 7 |
| Slapout | 31.5 | 78 | 18 | -1 | 5 | 937 | 0 | .64 | .21 | 13 |
| **NORTH CENTRAL** | | | | | | | | | | |
| Alva | 31.9 | 78 | 18 | 3 | 11 | 928 | 0 | .76 | .36 | 13 |
| Blackwell | 32.7 | 75 | 18 | 5 | 5 | 904 | 0 | .31 | .13 | 4 |
| Breckinridge | 32.6 | 75 | 18 | 5 | 5 | 909 | 0 | .52 | .23 | 12 |
| Cherokee | 32.4 | 77 | 18 | 3 | 11 | 911 | 0 | .64 | .28 | 12 |
| Fairview | ***** | *** | *** | *** | *** | **** | **** | .49 | .22 | 12 |
| Freedom | 32.5 | 78 | 18 | 2 | 5 | 909 | 0 | .83 | .39 | 13 |
| Lahoma | 32.8 | 76 | 18 | 5 | 5 | 901 | 0 | .43 | .20 | 12 |
| May Ranch | 31.8 | 74 | 18 | 2 | 5 | 931 | 0 | .83 | .42 | 13 |
| Medford | 32.6 | 75 | 18 | 4 | 5 | 909 | 0 | .39 | .18 | 12 |
| Newkirk | 32.7 | 73 | 18 | 4 | 5 | 905 | 0 | .34 | .22 | 28 |
| Red Rock | 34.2 | 75 | 18 | 7 | 5 | 862 | 0 | .51 | .22 | 28 |
| Seiling | 33.1 | 80 | 18 | 1 | 6 | 893 | 0 | .47 | .22 | 12 |
| Woodward | 33.7 | 79 | 18 | 2 | 5 | 877 | 0 | .70 | .24 | 8 |
| **NORTHEAST** | | | | | | | | | | |
| Bixby | 36.1 | 74 | 18 | 4 | 3 | 809 | 0 | .32 | .10 | 3 |
| Burbank | 33.6 | 74 | 18 | 6 | 6 | 878 | 0 | .43 | .21 | 28 |
| Claremore | 36.3 | 73 | 18 | 8 | 3 | 805 | 0 | .28 | .06 | 3 |
| Copan | 33.2 | 73 | 18 | 6 | 6 | 892 | 0 | .27 | .10 | 28 |
| Foraker | 32.7 | 73 | 18 | 5 | 5 | 905 | 0 | .44 | .19 | 28 |
| Inola | 35.1 | 74 | 18 | 7 | 3 | 838 | 0 | .31 | .11 | 28 |
| Jay | 34.7 | 70 | 18 | 5 | 3 | 848 | 0 | .28 | .11 | 3 |
| Miami | 33.6 | 69 | 20 | 7 | 6 | 881 | 0 | .13 | .04 | 20 |
| Nowata | 33.6 | 73 | 18 | 7 | 6 | 879 | 0 | .16 | .05 | 12 |
| Pawnee | 35.0 | 74 | 18 | 7 | 6 | 841 | 0 | .30 | .08 | 4 |
| Porter | 36.9 | 73 | 18 | 9 | 3 | 788 | 0 | .39 | .21 | 3 |
| Pryor | 34.3 | 73 | 18 | 6 | 3 | 858 | 0 | .16 | .06 | 28 |
| Skiatook | 35.3 | 73 | 18 | 7 | 6 | 833 | 0 | .33 | .11 | 20 |
| Tulsa | 36.7 | 74 | 18 | 9 | 6 | 792 | 0 | .27 | .11 | 20 |
| Vinita | 33.1 | 71 | 18 | 7 | 6 | 894 | 0 | .26 | .13 | 20 |
| Wynona | 34.5 | 74 | 18 | 7 | 6 | 855 | 0 | .23 | .09 | 28 |
| **WEST CENTRAL** | | | | | | | | | | |
| Bessie | 36.0 | 78 | 18 | 5 | 6 | 811 | 0 | .23 | .19 | 4 |
| Butler | 34.9 | 82 | 18 | 4 | 6 | 843 | 0 | .26 | .18 | 4 |
| Camargo | 32.9 | 81 | 18 | 0 | 6 | 899 | 0 | .44 | .15 | 12 |
| Cheyenne | 35.4 | 81 | 18 | 2 | 6 | 829 | 0 | .32 | .11 | 8 |
| Erick | 35.3 | 82 | 18 | 4 | 6 | 831 | 0 | .33 | .22 | 4 |
| Putnam | 34.1 | 79 | 18 | 2 | 6 | 864 | 0 | .34 | .15 | 12 |
| Retrop | 36.1 | 79 | 18 | 5 | 6 | 809 | 0 | .24 | .15 | 4 |
| Watonga | 34.4 | 75 | 18 | 4 | 6 | 856 | 0 | .38 | .20 | 12 |
| Weatherford | 35.0 | 74 | 18 | 5 | 6 | 840 | 0 | .26 | .22 | 4 |
| **CENTRAL** | | | | | | | | | | |
| Acme | 37.6 | 75 | 18 | 8 | 6 | 768 | 0 | .42 | .18 | 4 |
| Bowlegs | 37.2 | 75 | 18 | 6 | 3 | 779 | 0 | .39 | .25 | 3 |
| Bristow | 35.5 | 76 | 18 | 3 | 3 | 825 | 0 | .37 | .13 | 3 |
| Lake Carl Blac | 34.1 | 75 | 18 | 7 | 3 | 864 | 0 | .47 | .16 | 28 |
| Chandler | 36.8 | 75 | 18 | 8 | 3 | 789 | 0 | .29 | .12 | 3 |
| Chickasha | 36.0 | 77 | 18 | 9 | 6 | 812 | 0 | .37 | .22 | 4 |
| El Reno | 34.4 | 74 | 18 | 6 | 6 | 856 | 0 | .46 | .16 | 4 |
| Guthrie | 36.2 | 75 | 18 | 7 | 6 | 807 | 0 | .32 | .10 | 4 |
| Kingfisher | 34.3 | 75 | 18 | 7 | 6 | 859 | 0 | .26 | .11 | 12 |
| Marena | 35.7 | 75 | 18 | 7 | 6 | 821 | 0 | .33 | .10 | 12 |
| Minco | 35.9 | 74 | 18 | 7 | 6 | 814 | 0 | .28 | .16 | 4 |
| Marshall | 34.2 | 75 | 18 | 7 | 5 | 863 | 0 | .26 | .11 | 12 |
| Ninnekah | 37.2 | 76 | 18 | 9 | 6 | 777 | 0 | .27 | .13 | 4 |
| Norman | 37.2 | 75 | 18 | 8 | 6 | 779 | 0 | .26 | .16 | 4 |
| Oilton | 34.9 | 75 | 18 | 3 | 3 | 843 | 0 | .34 | .13 | 28 |
| OKC East | 36.8 | 73 | 18 | 7 | 6 | 788 | 0 | .33 | .19 | 4 |
| OKC North | 37.3 | 73 | 18 | 7 | 6 | 777 | 0 | .28 | .07 | 3 |
| OKC West | 37.5 | 73 | 18 | 7 | 6 | 771 | 0 | .33 | .17 | 4 |
| Okemah | 36.6 | 74 | 18 | 7 | 3 | 795 | 0 | .38 | .24 | 3 |
| Perkins | 35.9 | 75 | 18 | 8 | 6 | 814 | 0 | .43 | .17 | 28 |
| Shawnee | 37.2 | 75 | 18 | 8 | 6 | 777 | 0 | .29 | .14 | 3 |
| Spencer | 37.0 | 73 | 18 | 7 | 6 | 784 | 0 | .21 | .06 | 3 |
| Stillwater | 35.0 | 75 | 18 | 8 | 6 | 839 | 0 | .40 | .18 | 28 |
| Washington | 37.7 | 76 | 18 | 8 | 6 | 766 | 0 | .60 | .25 | 4 |
| **EAST CENTRAL** | | | | | | | | | | |
| Cookson | 36.3 | 72 | 18 | 3 | 3 | 804 | 0 | .70 | .34 | 3 |
| Eufaula | 37.7 | 73 | 18 | 10 | 3 | 764 | 0 | .68 | .32 | 3 |
| Haskell | 35.9 | 73 | 18 | 8 | 3 | 815 | 0 | .33 | .14 | 3 |
| Hectorville | 37.0 | 74 | 18 | 7 | 3 | 785 | 0 | .35 | .16 | 3 |
| Holdenville | 37.4 | 75 | 18 | 7 | 3 | 774 | 0 | .42 | .21 | 3 |
| McAlester | 37.5 | 74 | 18 | 8 | 3 | 771 | 0 | .74 | .27 | 3 |
| Okmulgee | 36.2 | 74 | 18 | 2 | 3 | 806 | 0 | .46 | .24 | 3 |
| Sallisaw | 37.2 | 74 | 18 | 5 | 3 | 778 | 0 | .71 | .27 | 3 |
| Stigler | 36.5 | 73 | 18 | 1 | 3 | 797 | 0 | .73 | .28 | 3 |
| Stuart | 38.3 | 73 | 18 | 10 | 6 | 749 | 0 | 1.00 | .36 | 3 |
| Tahlequah | 35.8 | 71 | 18 | 6 | 3 | 817 | 0 | .46 | .25 | 3 |
| Webbers Falls | 37.0 | 74 | 18 | 2 | 3 | 785 | 0 | .60 | .25 | 3 |
| Westville | 36.1 | 70 | 20 | 8 | 6 | 809 | 0 | .60 | .25 | 3 |
| **SOUTHWEST** | | | | | | | | | | |
| Altus | 37.8 | 83 | 18 | 8 | 6 | 761 | 0 | .38 | .24 | 4 |
| Apache | 36.6 | 75 | 18 | 7 | 6 | 794 | 0 | .27 | .11 | 4 |
| Fort Cobb | 36.3 | 76 | 18 | 7 | 6 | 805 | 0 | .16 | .08 | 4 |
| Grandfield | 39.0 | 79 | 18 | 10 | 6 | 727 | 0 | .60 | .29 | 4 |
| Hinton | 35.1 | 75 | 18 | 6 | 6 | 838 | 0 | .28 | .20 | 4 |
| Hobart | 35.7 | 79 | 18 | 6 | 6 | 821 | 0 | .26 | .15 | 4 |
| Hollis | 37.4 | 84 | 18 | 7 | 6 | 774 | 0 | .22 | .14 | 4 |
| Mangum | 36.7 | 83 | 18 | 7 | 6 | 793 | 0 | .37 | .25 | 4 |
| Medicine Park | 38.2 | 75 | 18 | 7 | 6 | 750 | 0 | .28 | .17 | 4 |
| Tipton | 38.1 | 79 | 18 | 9 | 6 | 752 | 0 | .32 | .17 | 4 |
| Walters | 39.3 | 79 | 18 | 10 | 6 | 719 | 0 | .41 | .26 | 4 |
| **SOUTH CENTRAL** | | | | | | | | | | |
| Ada | 37.6 | 76 | 18 | 9 | 3 | 766 | 0 | .66 | .34 | 3 |
| Ardmore | 40.4 | 78 | 18 | 12 | 6 | 689 | 0 | .88 | .37 | 4 |
| Burneyville | 40.4 | 79 | 18 | 13 | 6 | 689 | 0 | .71 | .46 | 4 |
| Byars | 38.6 | 76 | 18 | 9 | 6 | 738 | 0 | .55 | .21 | 3 |
| Centrahoma | 38.1 | 74 | 18 | 12 | 6 | 753 | 0 | 1.10 | .32 | 3 |
| Durant | 41.5 | 77 | 18 | 14 | 6 | 657 | 0 | .63 | .30 | 3 |
| Fittstown | 37.9 | 75 | 18 | 10 | 6 | 760 | 0 | .72 | .30 | 3 |
| Ketchum Ranch | 38.8 | 78 | 18 | 10 | 6 | 733 | 0 | .50 | .27 | 4 |
| Lane | 39.2 | 77 | 18 | 13 | 6 | 722 | 0 | .69 | .27 | 3 |
| Madill | 40.1 | 78 | 18 | 13 | 6 | 696 | 0 | 1.00 | .46 | 4 |
| Newport | 40.6 | 79 | 18 | 12 | 6 | 683 | 0 | .72 | .31 | 4 |
| Pauls Valley | 38.6 | 78 | 18 | 10 | 6 | 739 | 0 | .57 | .23 | 4 |
| Ringling | 40.3 | 79 | 18 | 12 | 6 | 692 | 0 | .63 | .35 | 4 |
| Sulphur | 37.8 | 77 | 18 | 10 | 27 | 762 | 0 | .61 | .24 | 3 |
| Tishomingo | 38.6 | 77 | 18 | 12 | 6 | 740 | 0 | .96 | .30 | 3 |
| Waurika | 40.2 | 80 | 18 | 12 | 6 | 694 | 0 | .60 | .32 | 4 |
| **SOUTHEAST** | | | | | | | | | | |
| Antlers | 39.5 | 77 | 18 | 10 | 27 | 715 | 0 | .82 | .26 | 4 |
| Broken Bow | 41.3 | 76 | 20 | 13 | 27 | 664 | 0 | 1.70 | .80 | 2 |
| Clayton | 39.0 | 74 | 18 | 12 | 27 | 728 | 0 | 1.12 | .39 | 4 |
| Cloudy | 41.0 | 75 | 18 | 14 | 27 | 671 | 0 | 1.29 | .52 | 4 |
| Hugo | 42.2 | 78 | 18 | 15 | 6 | 637 | 0 | 1.05 | .38 | 4 |
| Idabel | 42.1 | 76 | 18 | 15 | 27 | 640 | 0 | 1.48 | .72 | 2 |
| Mt Herman | 40.6 | 74 | 20 | 14 | 27 | 684 | 0 | 1.14 | .46 | 4 |
| Talihina | 39.2 | 74 | 18 | 10 | 27 | 723 | 0 | 1.06 | .41 | 4 |
| Wilburton | 37.8 | 73 | 18 | 11 | 3 | 763 | 0 | .58 | .28 | 3 |
| Wister | 38.0 | 75 | 20 | 12 | 27 | 756 | 0 | 1.05 | .40 | 4 |

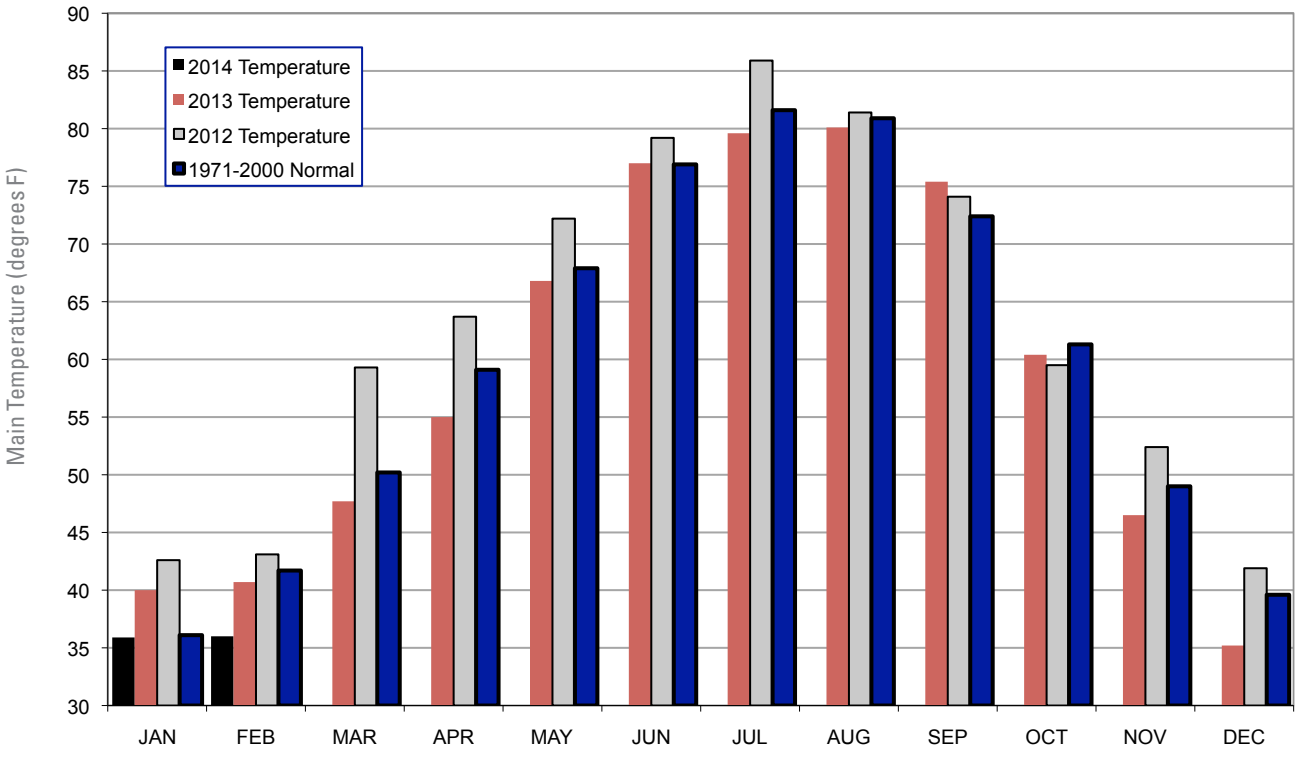
## 2012, 2013 AND 2014 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL




### February 2014 Mesonet Precipitation Comparison

| Climate Division | Precipitation (inches) | Departure from Normal (inches) | Rank since 1895 | Wettest on Record (Year) | Driest on Record (Year) | Feb-13 |
|---|---|---|---|---|---|---|
| Panhandle | 0.38 | -0.26 | 46th Driest | 2.94 (1911) | 0.00 (1896) | 1.59 |
| North Central | 0.56 | -0.66 | 37th Driest | 4.10 (1911) | 0.00 (1904) | 3.37 |
| Northeast | 0.29 | -1.69 | 3rd Driest | 5.80 (1985) | 0.10 (1963) | 3.61 |
| West Central | 0.31 | -0.83 | 28th Driest | 3.64 (1997) | 0.00 (1904) | 2.97 |
| Central | 0.35 | -1.51 | 14th Driest | 5.08 (1938) | 0.00 (1904) | 3.12 |
| East Central | 0.60 | -1.83 | 14th Driest | 9.15 (1938) | 0.00 (1895) | 3.85 |
| Southwest | 0.32 | -1.01 | 28th Driest | 3.89 (1997) | 0.00 (1902) | 2.67 |
| South Central | 0.72 | -1.49 | 29th Driest | 7.66 (1938) | 0.02 (1902) | 2.90 |
| Southeast | 1.13 | -2.01 | 17th Driest | 10.12 (1945) | 0.36 (1895) | 3.47 |
| Statewide | 0.51 | -1.25 | 16th Driest | 4.66 (1938) | 0.18 (1996) | 3.06 |

## 2012, 2013 AND 2014 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL




### February 2014 Mesonet Temperature Comparison

| Climate Division | Average Temp (F) | Departure from Normal (F) | Rank since 1895 | Hottest on Record (Year) | Coldest on Record (Year) | Feb-13 (F) |
|---|---|---|---|---|---|---|
| Panhandle | 33.0 | -5.3 | 20th Coolest | 47.5 (1954) | 23.1 (1899) | 35.4 |
| North Central | 32.8 | -6.5 | 18th Coolest | 49.6 (1954) | 22.4 (1899) | 37.8 |
| Northeast | 34.7 | -5.7 | 22nd Coolest | 49.8 (1976) | 25.6 (1899) | 39.2 |
| West Central | 34.9 | -5.7 | 17th Coolest | 51.0 (1954) | 23.8 (1905) | 40.0 |
| Central | 36.2 | -5.7 | 18th Coolest | 51.6 (1976) | 26.2 (1899) | 41.5 |
| East Central | 36.8 | -6.0 | 17th Coolest | 52.1 (1976) | 28.7 (1899) | 43.0 |
| Southwest | 37.3 | -5.8 | 15th Coolest | 52.5 (1954) | 26.8 (1905) | 42.3 |
| South Central | 39.3 | -5.5 | 15th Coolest | 53.6 (1976) | 30.0 (1905) | 45.9 |
| Southeast | 40.1 | -4.6 | 20th Coolest | 52.6 (1976) | 31.4 (1899) | 43.6 |
| Statewide | 36.0 | -5.7 | 15th Coolest | 50.7 (1954) | 26.6 (1899) | 40.9 |

# MESONET EXTREMES FOR FEBRUARY 2014

| Climate Division | High Temp (F) | Day | Station | Low Temp (F) | Day | Station | High Monthly Rainfall (inches) | Station | High Daily Rainfall (inches) | Day | Station |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Panhandle | 80 | 15th | Goodwell | -2 | 5th | Beaver | 0.71 | Buffalo | 0.28 | 8th | Hooker |
| North Central | 80 | 18th | Seiling | 1 | 6th | Seiling | 0.83 | Freedom | 0.42 | 13th | May Ranch |
| Northeast | 74 | 18th | Wynona | 4 | 3rd | Bixby | 0.44 | Foraker | 0.21 | 3rd | Porter |
| West Central | 82 | 18th | Butler | 0 | 6th | Camargo | 0.44 | Camargo | 0.22 | 4th | Erick |
| Central | 77 | 18th | Chickasha | 3 | 3rd | Bristow | 0.60 | Washington | 0.25 | 3rd | Bowlegs |
| East Central | 75 | 18th | Holdenville | 1 | 3rd | Stigler | 1.00 | Stuart | 0.36 | 3rd | Stuart |
| Southwest | 84 | 18th | Hollis | 6 | 6th | Hinton | 0.60 | Grandfield | 0.29 | 4th | Grandfield |
| South Central | 80 | 18th | Waurika | 9 | 3rd | Ada | 1.10 | Centrahoma | 0.46 | 4th | Burneyville |
| Southeast | 78 | 18th | Hugo | 10 | 27th | Antlers | 1.70 | Broken Bow | 0.80 | 2nd | Broken Bow |
| Statewide | 84 | 18th | Hollis | -2 | 5th | Beaver | 1.70 | Broken Bow | 0.80 | 2nd | Broken Bow |

# MARCH OUTLOOK

The retreat of winter and the onset of spring progress across Oklahoma during March, but the change of season is not smooth. Despite the generally moderating climate, winter intrudes from time-to-time, especially in the first half of the month, bringing with it some frigid weather and, occasionally, some frighteningly heavy snowstorms. By the end of the month, spring is typically in full sway, including occasional full participation in the severe thunderstorm season.

As befits a transitional month, March is Oklahoma's fifth coolest month. The statewide-average normal monthly temperature of 51.0 degrees is compiled from a collection of station-specific normals that range from 45.1 degrees in the panhandle at Goodwell to 55.7 degrees at Ardmore in south central Oklahoma. Monthly averages of statewide temperatures have included a maximum of 59.6 degrees in 2012 and a minimum of 37.6 degrees in 1915. Normal daily maximum temperatures are bounded by southerly Waurika's 68.8 degrees and northerly Arnett's 59.3. Extremes of normal daily minimum temperatures are found in the panhandle at Boise City, 29.8 degrees, and in the south at Ardmore, 43.8 degrees.

## Temperature

| | |
|---|---|
| **Mean** | 51.0 degrees |
| **Warmest Location** | 55.7 degrees, Ardmore |
| **Coolest Location** | 45.1 degrees, Goodwell |
| **Warmest March** | 2002, 59.6 degrees |
| **Coolest March** | 1915, 37.6 degrees |
| **Hottest Recorded** | 104 degrees, Fredrick, March 7, 1920 |
| **Coldest Recorded** | -18 degrees, Hooker, March 7, 1920 Kenton, March 1, 1922 & March 6, 1948 |

Normal statewide-averaged precipitation in March is 3.06 inches, ranking March as the state's 6th wettest month. The extreme monthly statewide averages of March precipitation are 7.46 inches in 1973 and 0.38 inches in 1971. Southeastern Oklahoma's Smithville carries the title of wettest station in March with a normal precipitation total of 5.52 inches. The least normal March precipitation in the state, 1.05 inches, belongs to Regnier in the northwestern panhandle. The northeastern Oklahoma town of Kansas holds the apparent record for the wettest March in the state with a reported 13.37 inches of rain in 1973.

Snow does not come every March, but when it does it comes in bunches. Boise City averages 6.6 inches of snow during the month, the greatest average snowfall among the state's reporting locations. Stations in the state's southern half generally average less than half-an-inch of snow during March. Snowstorms have dropped as much as 20 inches of snow on northern parts of Oklahoma several times. In 1988, Cherokee (29.5 inches), Laverne (27.5 inches), and Waynoka (25 inches) all reported monthly totals of over 2 feet of snow. Gate recorded 27 inches in March 1969 and Vinita noted 24 inches in March 1970. Both the 1988 and 1970 totals are additionally notable as most of the snow was reported on St. Patrick's Day. Beaver reported substantial snow in March 1912 to complete the state's seasonal snowfall record (winter of 1911/12) of 87.3 inches. A late-season snowstorm struck the panhandle in 1926, as Boise City reported 16 inches of snow on the 30th. Another late-season blizzard struck the northwest in 2009 with 26 inches being reported at both Woodward and Freedom.

## Precipitation

| | |
|---|---|
| **Mean** | 3.06 inches |
| **Wettest March** | 1973, 7.46 inches |
| **Driest March** | 1971, 0.38 inches |
| **Wettest location** | Smithville, 5.52 inches |
| **Driest location** | Regnier, 1.05 inches |
| **Most recorded** | 13.37 inches, Kansas, 1973 |

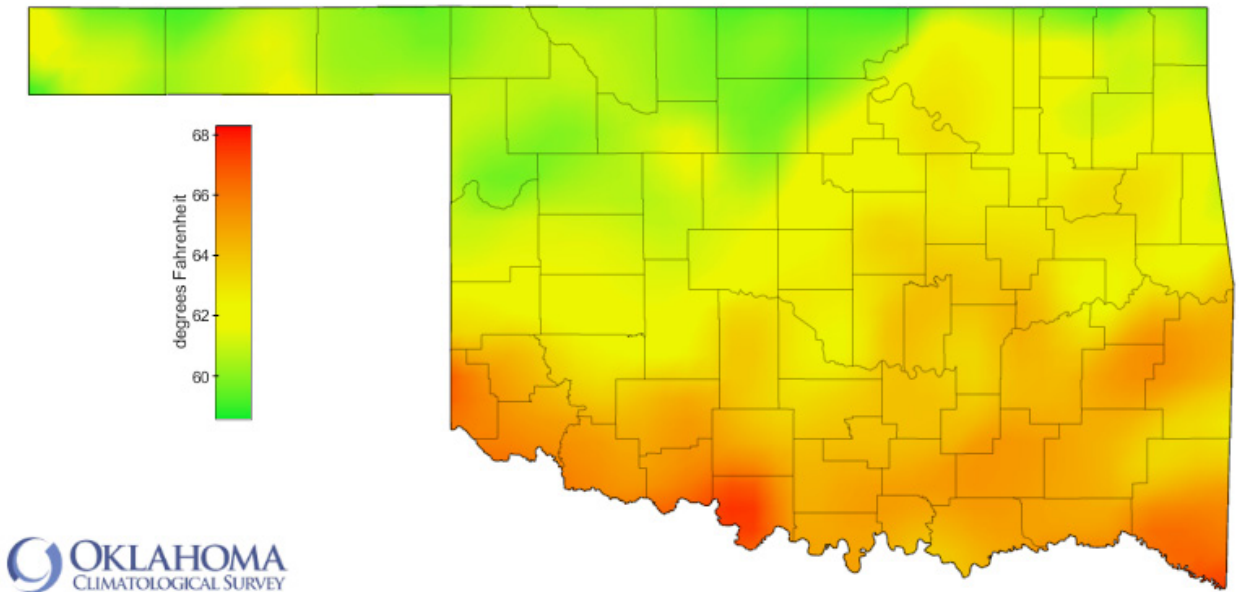
## Tornadoes

| | |
|---|---|
| **Average March Tornadoes (1950-2013)** | 4.0 |
| **Most** | 17 (1991) |

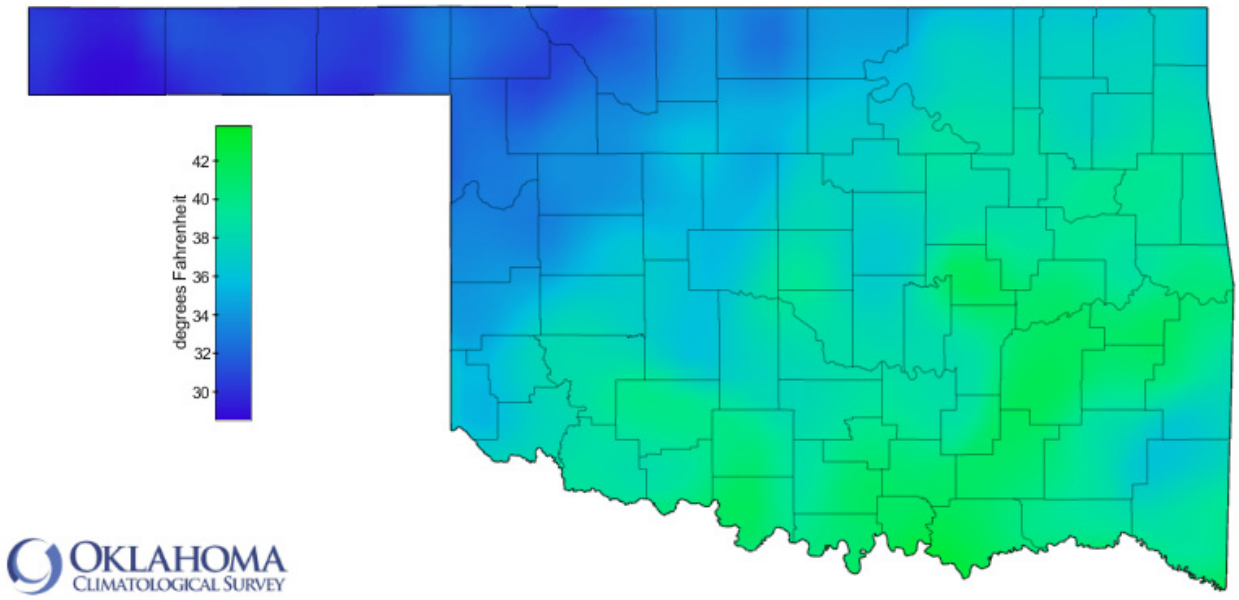
The state has averaged 3.7 tornadoes each March since 1950. The actual number has ranged from none (16 times in 55 years, including 2002) to 17 in 1991. Two deadly March tornadoes, each killing 10, were at Gowen on March 13, 1922 and Lenna on March 25, 1948. Two other notable tornadoes struck the Oklahoma City area, including Will Rogers Airport

and Tinker Air Force Base, on March 20th and 25th in 1948. The first tornado caused over $10 million in property damage, much of it to military aircraft. Damage from the second was $6 million. On the 25th, Air Force meteorologists recognizing the similarity of conditions to those of the 20th, issued what is now accepted to be the first successful and scientific forecast of a tornado.

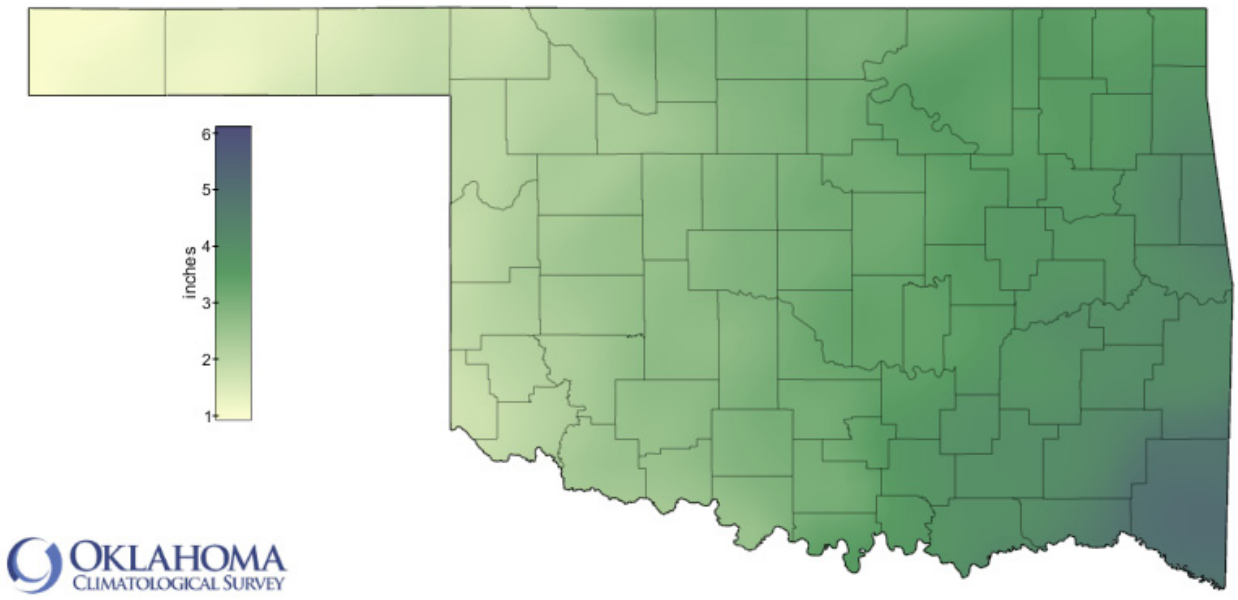
## MARCH NORMAL DAILY MAXIMUM TEMPERATURE (1981-2010)



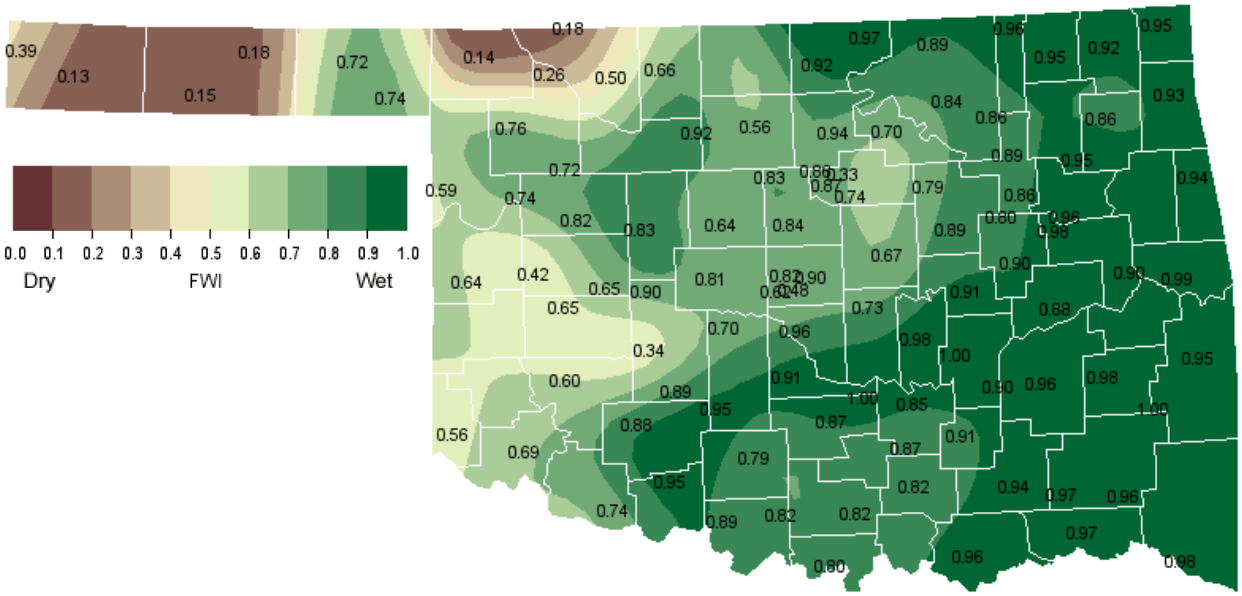

## MARCH NORMAL DAILY MINIMUM TEMPERATURE (1981-2010)



## MARCH NORMAL PRECIPITATION (1981-2010)

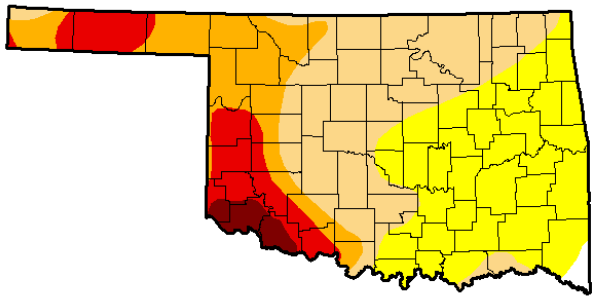



## MARCH 1, 2014 SOIL MOISTURE CONDITIONS AT 25CM



# MARCH 2014 DROUGHT INDICES

## U.S. Drought Monitor
## Oklahoma



**March 4, 2014**
*(Released Thursday, Mar. 6, 2014)*
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|---|---|---|---|---|---|
| **Current** | 0.78 | 99.22 | 62.55 | 28.86 | 13.07 | 2.40 |
| **Last Week** 2/25/2014 | 0.09 | 99.91 | 62.41 | 28.86 | 13.07 | 2.40 |
| **3 Months Ago** 12/3/2013 | 52.66 | 47.34 | 30.90 | 15.93 | 4.92 | 2.40 |
| **Start of Calendar Year** 12/31/2013 | 50.84 | 49.16 | 38.17 | 18.99 | 4.84 | 2.40 |
| **Start of Water Year** 10/1/2013 | 21.74 | 78.26 | 43.00 | 17.62 | 4.42 | 1.45 |
| **One Year Ago** 3/5/2013 | 0.00 | 100.00 | 100.00 | 100.00 | 61.65 | 9.54 |

*Intensity:*

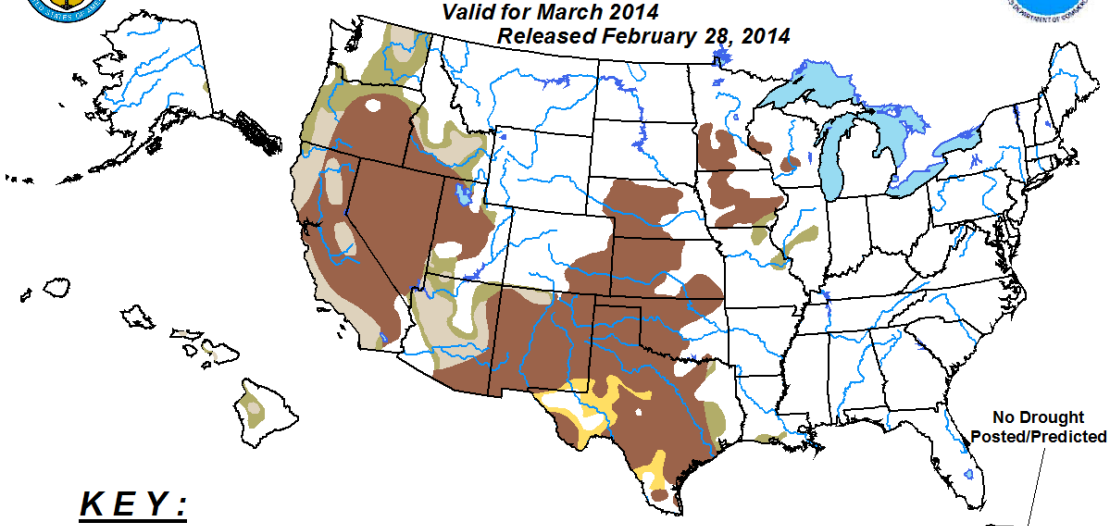
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

**Author:**
*Brad Rippey*
*U.S. Department of Agriculture*

**http://droughtmonitor.unl.edu/**

## U.S. Monthly Drought Outlook
### Drought Tendency During the Valid Period
***Valid for March 2014***
***Released February 28, 2014***



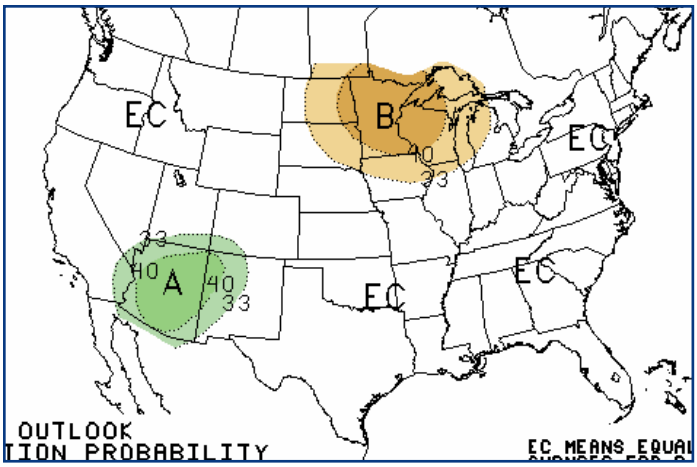

***KEY:***

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

**Author: Adam Allgood, Climate Prediction Center, NOAA**
**http://www.cpc.ncep.noaa.gov/products/expert_assessment/mdo_summary.html**

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 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)

## MARCH 2014 U.S. PRECIPITATION FORECAST




Percent Likelihood of Above or Below Average Precipitation*

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

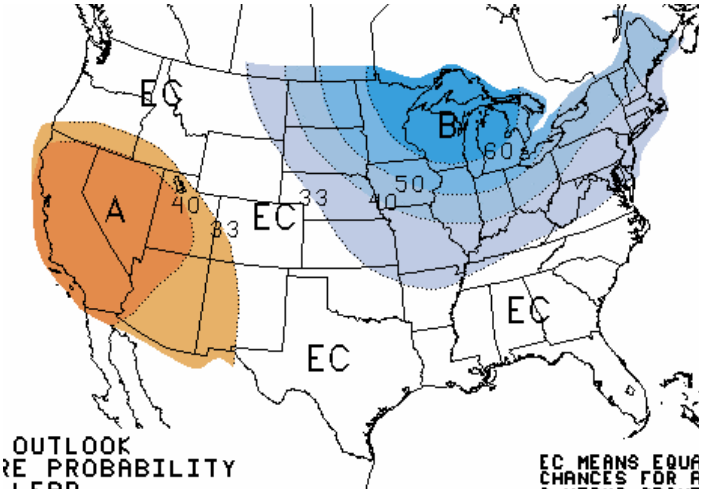
A = Above

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

B = Below

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

## MARCH 2014 U.S. TEMPERATURE FORECAST




Percent Likelihood of Above or Below Average Temperatures*

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

A = Above

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

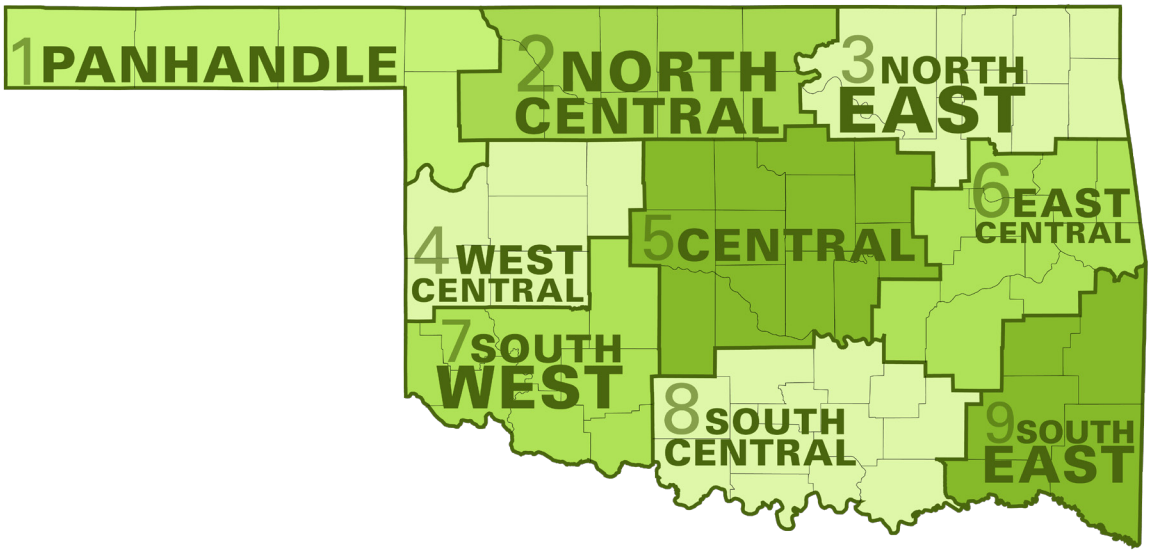
B = Below

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

## MARCH CLIMATE NORMALS

| Climate Division | Max. Temperature (°F) | Min. Temperature (°F) | Avg. Temperature (°F) | Precipitation (inches) |
|---|---|---|---|---|
| 1 | 61.5 | 31.6 | 46.5 | 1.58 |
| 2 | 60.4 | 33.7 | 47.1 | 2.67 |
| 3 | 62.5 | 37.9 | 50.2 | 3.61 |
| 4 | 61.7 | 34.7 | 48.2 | 2.29 |
| 5 | 62.6 | 37.6 | 50.2 | 3.15 |
| 6 | 63.3 | 39.6 | 51.5 | 3.99 |
| 7 | 64.5 | 37.0 | 50.8 | 2.29 |
| 8 | 64.9 | 40.0 | 52.5 | 3.50 |
| 9 | 65.5 | 39.9 | 52.7 | 4.45 |
| Statewide | 62.9 | 37.0 | 50.0 | 3.16 |

### 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 June 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 June 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

Oklahoma Climatological Survey is the State Climate Office for Oklahoma

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