

OKLAHOMA MONTHLY CLIMATE SUMMARY

JANUARY 2004



Oklahoma Climatological Survey

Overview

Oklahoma's weather fortunes were looking up during the year's first month, recording the 24th wettest and 31st warmest January since 1892. The moisture was a pleasant change of pace following the dry conditions of 2003, which saw nine out of 12 months suffer precipitation deficits. The warmth could also be considered a fortuitous development, considering the bitterly cold winter experienced thus far by the Northern Plains and the Northeast. Wintry precipitation was fairly non-existent for the month, although a fast-moving storm on the 26th dropped 1-3 inches of snow across the northern half of the state.

More good fortune shined on the state during January as a record of sorts was broken. January 20 marked the 249th consecutive day, beginning on May 17, 2003, in which no tornadoes were reported within the state's borders. That eclipsed the previous record of 248 days, from July 16, 1990, through March 20, 1991, in which the state went without a confirmed tornado. At month's end, the record had increased to 260 days.

Precipitation

January's precipitation surplus, a little over one-half of an inch, is a far cry from 2003's disastrous start to the year, which saw the state receive a meager 0.07 inches on average. All areas of the state received above normal precipitation during January 2004, save the south central and Panhandle regions, which both fell less than one-quarter of an inch below normal. The statewide-averaged precipitation total of 2.23 inches was boosted by abundant totals in a swath from southwestern up through west central and north central Oklahoma. These areas were well over an inch above normal for the month, and the 7th, 5th, and 6th wettest Januaries on record, respectively, since regional averages began in 1895. For the season thus far, statewide-averaged precipitation remained just a tad below normal, although areas in the north and west experienced a surplus.

Temperature

All areas of the state were above normal temperature-wise during January, save the far western Panhandle. The statewide-averaged temperature of 39.1 degrees was 3 degrees above normal for the month, bolstered by the southwest and south central regions, which

were almost 4 degrees above normal – the 24th warmest January on record for those areas. The figures were similar for the winter season, with the statewide-averaged temperature over 3 degrees above normal for December-January, and the 17th warmest such period on record since 1892.

January 2004 Statewide Extremes			
Description	Extreme	Station	Date
High Temperature	80°F	Burneyville	January 2nd
Low Temperature	-4°F	Beaver	January 6th
High Precipitation	4.51 in.	Cloudy	
Low Precipitation	0.01 in.	Hooker	

January Daily Highlights

January 1-3: The first few days of the New Year saw temperatures across the state soar up to 25 degrees above normal. Record high temperatures were set at Tulsa and McAlester on the 2nd, and once again at Tulsa on the 3rd. Tulsa and McAlester reached 76 and 74 degrees on the 2nd, respectively, with Tulsa reaching 75 degrees on the 3rd. The month's highest temperature of 80 degrees occurred at both Burneyville and Tipton on the 2nd, with 70s being widespread throughout Oklahoma during this period.

January 4-10: The widespread warmth of the month's first three days came to an abrupt halt on the 4th with the arrival of arctic air, which had been lurking just to the north. Southeastern Oklahoma still reached 70 degrees, but temperatures in northwestern and north central Oklahoma struggled to reach the freezing mark. The Oklahoma Mesonet site at May Ranch barely rose above 20 degrees on the 4th and 5th, halting at a bone chilling 29 and 22 degrees, respectively. Jay upped the ante once more on the 6th with a frigid high temperature of 20 degrees, the lowest maximum temperature for the month. The low temperatures from this period were even more icy, with a good part of the Oklahoma Panhandle dropping below zero on the 5th and 6th. Beaver experienced the lowest temperature of the month, -4 degrees, on the 6th. The weather was fairly mild for the remainder of this period through the 10th. Light winds, sunny skies, and temperatures in the 50s and 60s were the norm, along with chilly mornings.

January 11-17: With little significant precipitation during the month so far, a switch to the state's weather pattern to include more moisture was a welcome sight. An upper-level low pressure system in the Panhandles of Texas and Oklahoma swung winds around from the south, carrying ample moisture from the Gulf of Mexico northward. The first rainfall of this period occurred on the 12th as a trough moved across northern Oklahoma. The rain was generally less than a third of an inch, but it set the stage for heavier rainfall later. The temperatures throughout this period were once again above normal, capped by a high mark of 72 degrees at Tipton on the 14th. Significant, widespread rainfall moved into the area on the 16th and 17th, thanks to another upper-level storm approaching from the west. Much of west central and southwestern Oklahoma garnered more than an inch of precipitation on the 16th, with Altus leading the pack at 2.43 inches. Dense fog shut down the runways at Will Rogers International Airport for a time on the 16th, causing cancelled flights and stranding hundreds of passengers. The Alva Mesonet site won the day on the 17th with 2.32 inches.

January 18-23: Unfortunately, the same weather system that brought the much-needed precipitation also ushered in a strong cold front, accompanied by chilly temperatures in the 30s and strong northerly winds, gusting up to 40 mph. Colder air settled over the state on the 19th. Lows dropped into the teens, and wind-chills remained in the single-digits. Another storm system approaching from the west kicked up southerly winds once again on the 20th, this time around providing very little in the way of precipitation. The influence of the southerly winds helped to increase the temperatures later in this period, with highs finally back into the 60s on the 23rd.

January 24-25: Another cold front entered the state from the north, although temperatures behind the front merely dropped back down to more seasonable levels for a day. Dense fog formed after the frontal passage in the north, reducing visibilities to less than one-quarter of a mile. A few light showers formed along the front overnight, but yielded little in the way of precipitation. The front stalled in the northwest, creating widely varying high temperatures on the 25th, and providing more rain over the state. Precipitation amounts in northwestern Oklahoma were generally around one-tenth of an inch, but over one-half of an inch in the southeast. Temperatures were in the 40s in northern areas behind the front, but above 70 degrees in southern sections.

January 26-31: The month's final 6 days resembled a roller coaster temperature-wise. Arctic air moved in on the 26th and 27th, and with it wind chills down below zero in the north, along with a nice blanketing of snow. Snowfall amounts were generally between 1-3 inches, although some localized amounts exceeded 4 inches in Woods County. Three fatalities were associated with the wintry weather due to traffic accidents. Temperatures warmed into the 50s and 60s on the 28th, although they remained in the 30s in the north, where the arctic air still hovered. The cold air oozed southward, reaching central Oklahoma on the 29th. Snow flurries and temperatures in the 20s greeted those behind the front. Finally, on the 30th, the front had passed through the state. A few snow flurries and wind chill values below zero ushered the month out on a frigid note.

January 2004 Statewide Statistics			
Temperature			
	Average	Depart.	Rank (1892-2004)
Month (January)	39.1°F	3.0°F	31st Warmest
Year-to-Date (Dec-Jan)	40.6°F	3.1°F	17th Warmest
Precipitation			
	Total	Depart.	Rank (1892-2004)
Month (January)	2.12 in.	0.67 in.	24th Wettest
Year-to-Date (Dec-Jan)	3.24 in.	-0.23 in.	53rd Wettest
Depart. = Departure from 30-year normal			

January 2004 Severe Weather

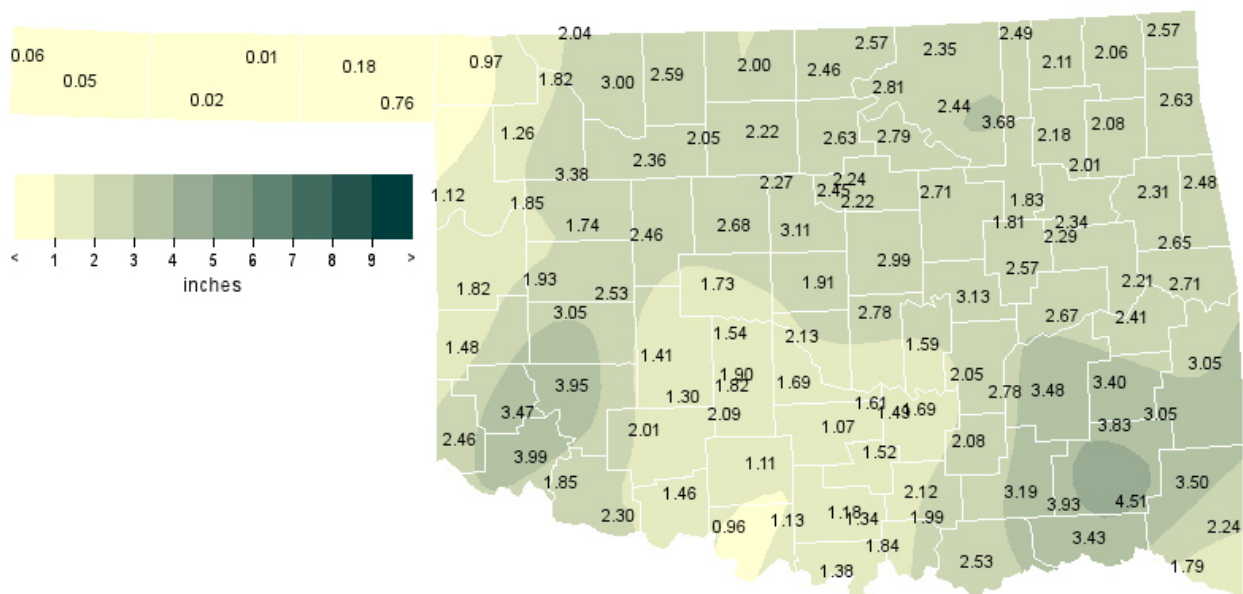
No significant severe weather reported in the state.

Record Event Reports

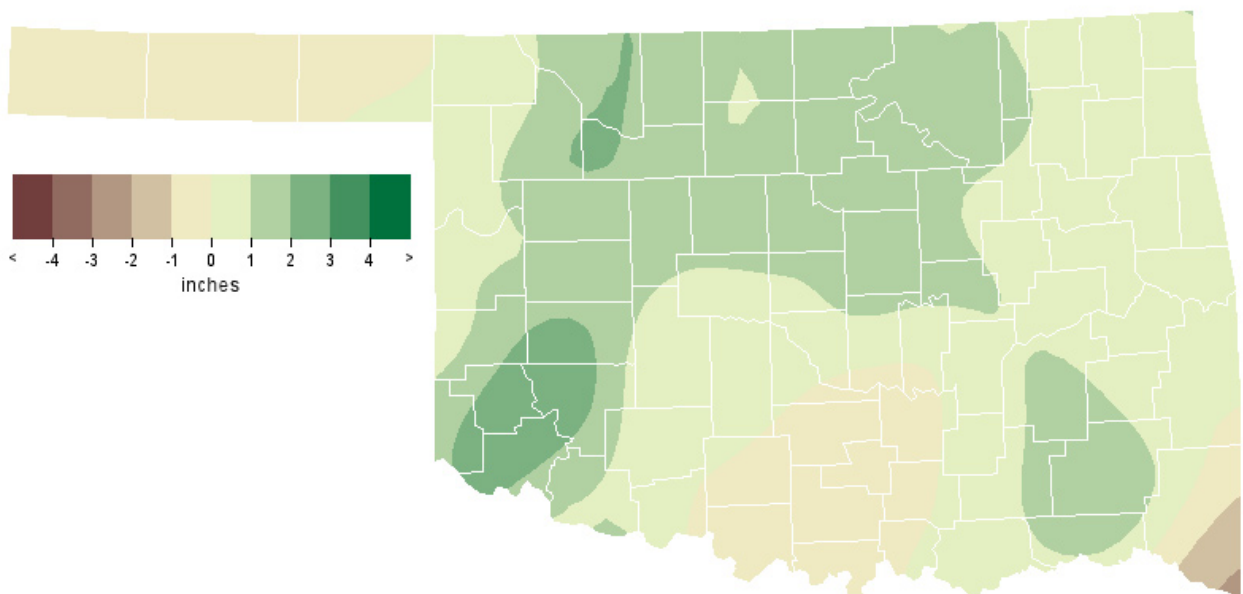
Description	Day	Location	Record	Previous Record	Year
High Temperature	2	McAlester	74 degrees	71 degrees	1997
High Temperature	3	Tulsa	75 degrees (T)*	75 degrees	1997

* (T) indicates a record that was tied

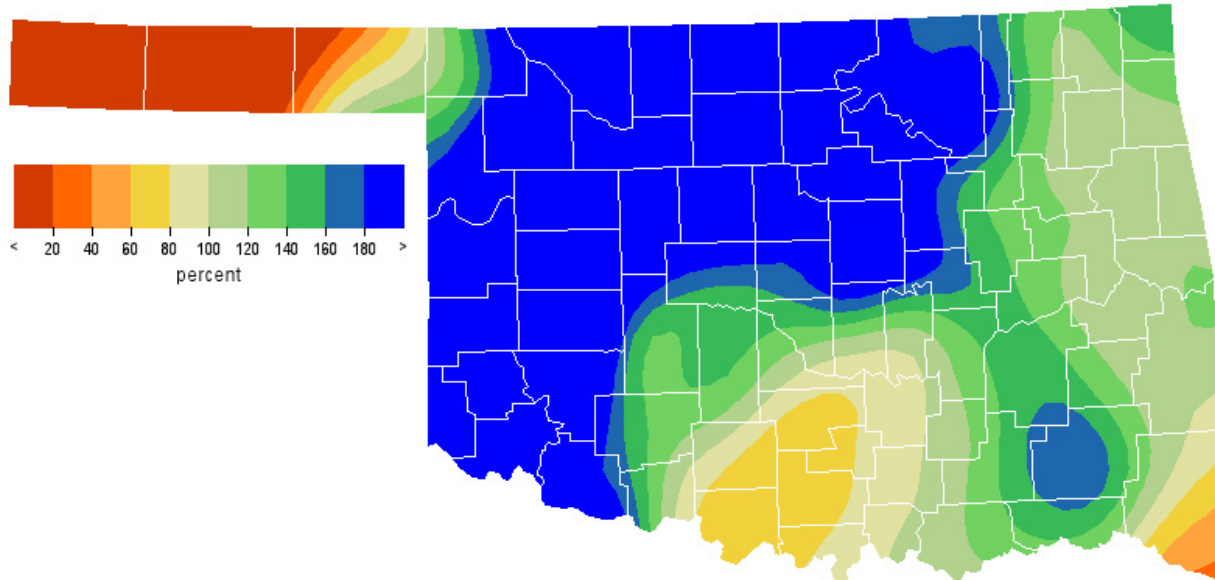
January 2004 Observed Precipitation



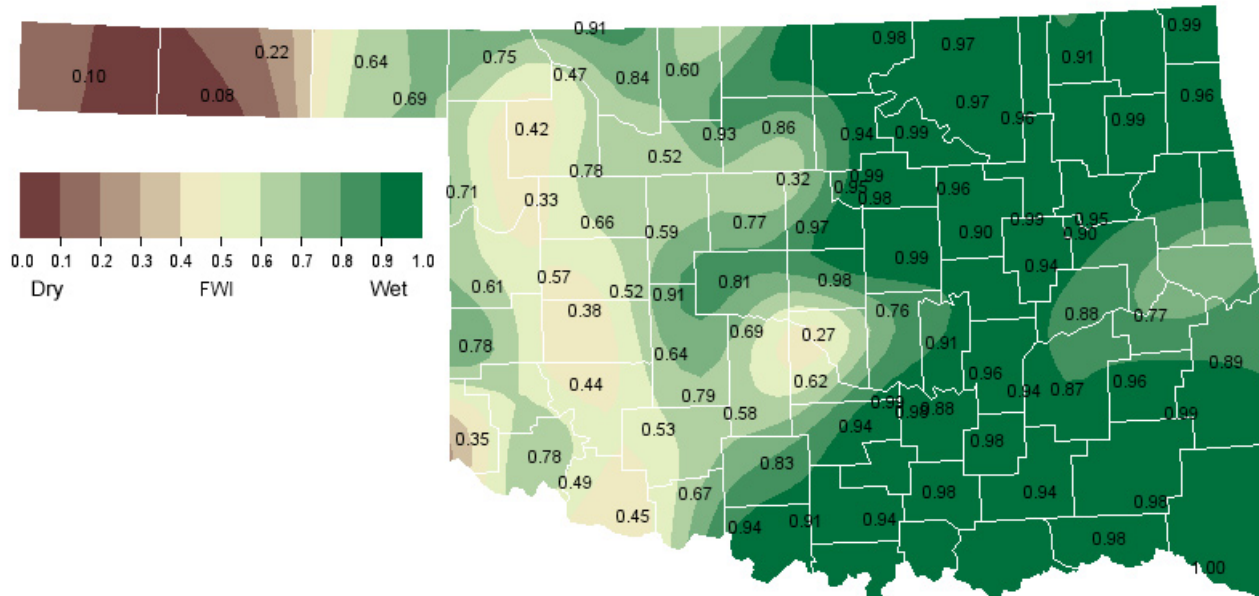
January 2004 Departure from Normal Precipitation



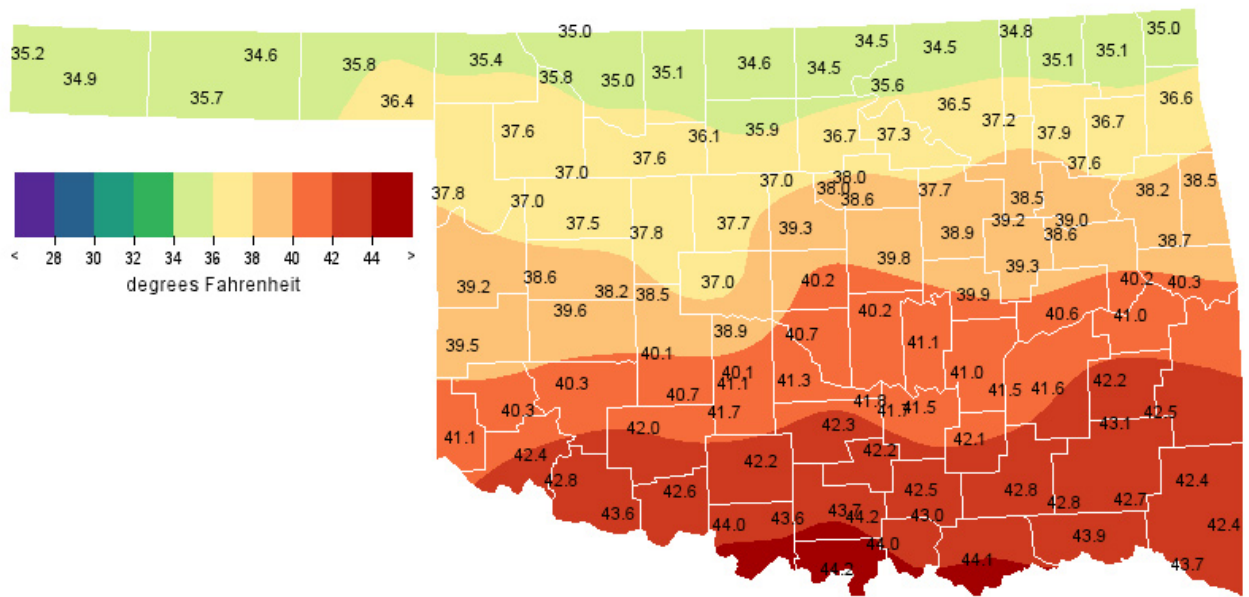
January 2004 Percent of Normal Precipitation



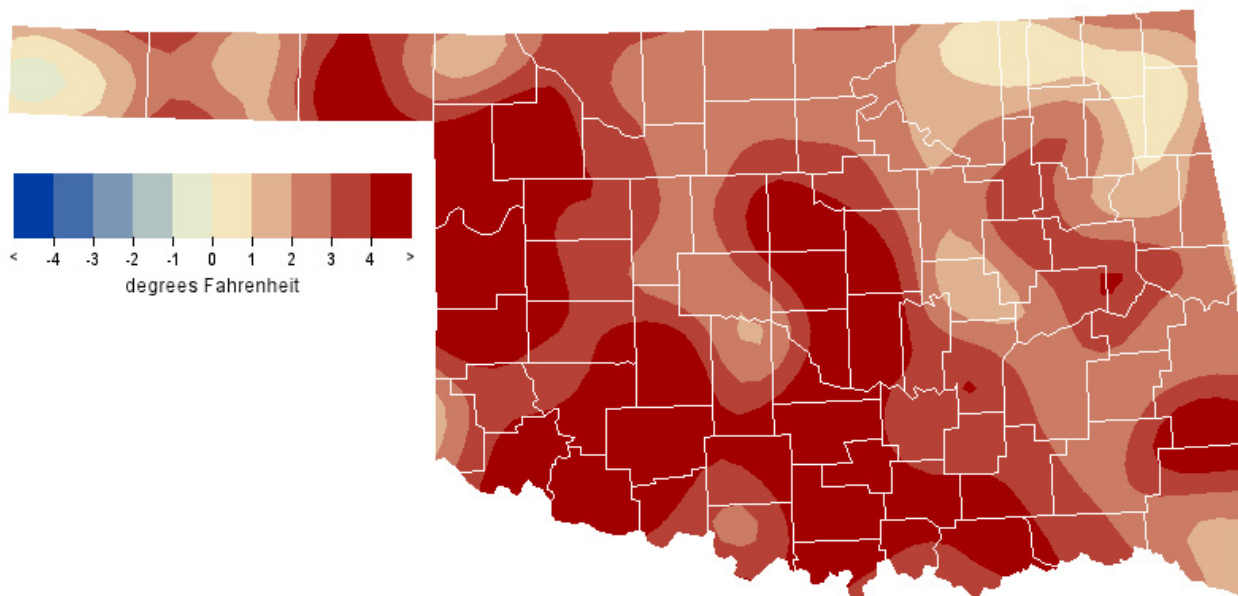
January 2004 Average Soil Moisture at 25cm



January 2004 Average Temperature



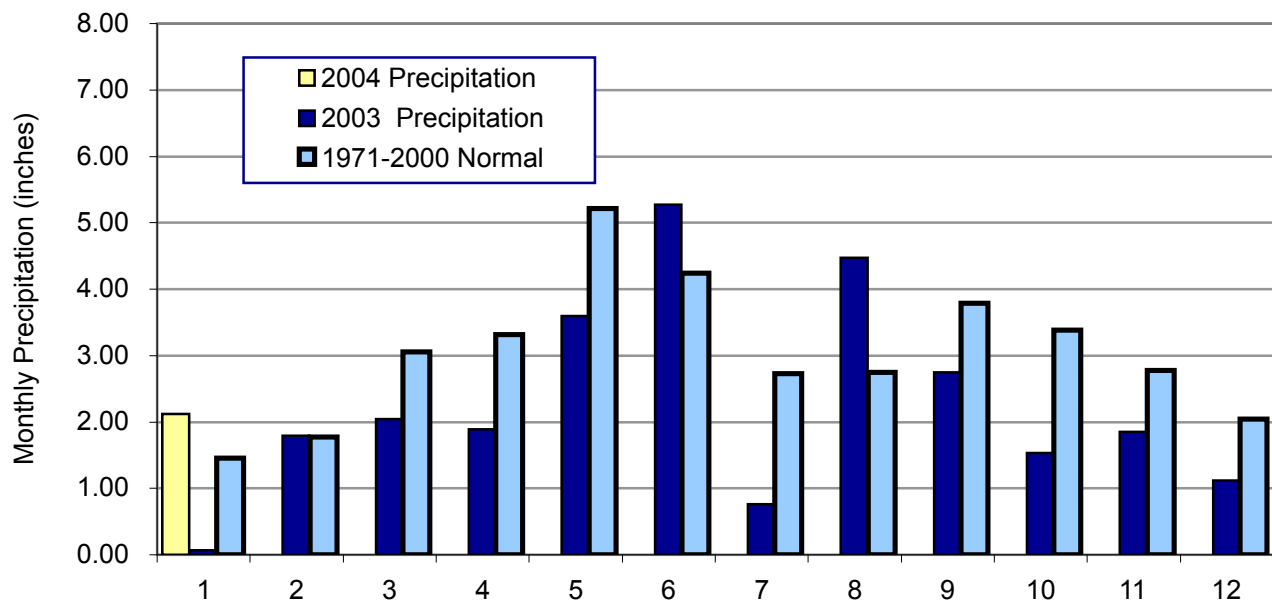
January 2004 Departure from Normal Temperature



January 2004 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jan-03
Panhandle	0.40	-0.12	55th Driest	1.64 (1939)	0.01 (1904)	0.02
North Central	2.34	1.41	6th Wettest	4.43 (1949)	0.00 (1912)	0.07
Northeast	2.42	0.85	25th Wettest	6.01 (1949)	0.01 (1986)	0.09
West Central	2.11	1.23	5th Wettest	4.08 (1949)	0.00 (1912)	0.04
Central	2.26	0.89	22nd Wettest	6.18 (1949)	0.00 (1912)	0.03
East Central	2.49	0.36	38th Wettest	7.99 (1932)	0.04 (1986)	0.17
Southwest	2.42	1.36	7th Wettest	4.89 (1949)	0.00 (1902)	0.08
South Central	1.66	-0.24	54th Wettest	6.85 (1932)	0.00 (1909)	0.01
Southeast	3.27	0.46	42nd Wettest	11.08 (1932)	0.18 (1943)	0.24
Statewide	2.12	0.67	24th Wettest	5.23 (1949)	0.04 (1986)	0.08

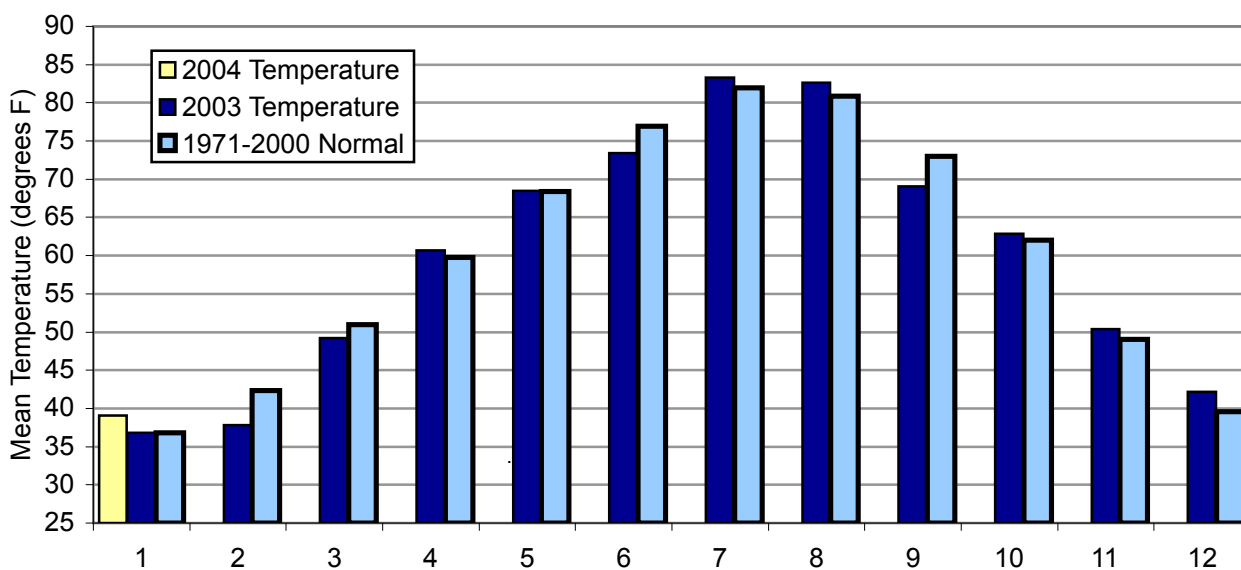
2003 and 2004 Statewide Precipitation Monthly Totals vs. Normal



January 2004 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jan-03 (F)
Panhandle	35.70	2.70	36th Warmest	42.6 (1953)	19.5 (1930)	37.00
North Central	35.80	2.30	42nd Warmest	43.8 (1923)	19.4 (1930)	34.40
Northeast	36.50	1.90	47th Warmest	44.4 (1933)	21.3 (1940)	34.90
West Central	38.40	3.40	33rd Warmest	45.8 (1923)	20.8 (1930)	36.50
Central	39.40	3.20	29th Warmest	46.0 (1933)	22.5 (1930)	36.90
East Central	39.90	2.60	40th Warmest	47.7 (1933)	24.8 (1940)	37.00
Southwest	41.30	3.80	24th Warmest	47.8 (1923)	24.2 (1930)	38.20
South Central	42.90	3.80	24th Warmest	49.5 (1923)	27.0 (1930)	38.30
Southeast	42.90	3.30	29th Warmest	49.4 (1952)	28.3 (1979)	37.30
Statewide	39.10	3.00	31st Warmest	46.0 (1923)	23.5 (1930)	36.70

2003 and 2004 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for January 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	73	2nd	Arnett	-4	6th	Beaver	1.12	Arnett	1.08	17th	Arnett
North Central	77	2nd	Fairview	-1	6th	Freedom	3.38	Seiling	2.32	17th	Alva
Northeast	76	3rd	Porter	2	6th	Foraker	3.68	Skiatook	2.02	17th	Skiatook
West Central	78	2nd	Butler	0	6th	Butler	3.05	Bessie	1.80	17th	Watonga
Central	77	2nd	Guthrie	1	6th	El Reno	3.13	Okemah	1.77	17th	Guthrie
East Central	76	2nd	Hectorville	6	6th	Westville	3.48	McAlester	1.00	16th	McAlester
Southwest	80	2nd	Tipton	2	6th	Mangum	3.99	Altus	2.43	16th	Altus
South Central	80	2nd	Burneyville	7	6th	Ketchum Ranch	3.19	Lane	1.81	16th	Lane
Southeast	75	3rd	Idabel	11	6th	Wilburton	4.51	Cloudy	1.91	16th	Antlers
Statewide	80	2nd	Burneyville	-4	6th	Beaver	4.51	Cloudy	2.43	16th	Altus

February Climatological Outlook

February is the warmest of the Oklahoma's three winter months, a product of the combination of gradually lengthening days - often heralding an illusory approach of spring - and the very real existence of the continuing winter. Recorded temperatures in Oklahoma during the second month of the year traverse a range of 126 degrees Fahrenheit, from 99 degrees at Arapaho on February 24, 1918 to -27 degrees at Vinita on February 13, 1905. The latter thermometer reading is tied as the state's all-time lowest temperature. Oklahoma's normal monthly temperature, based on data obtained from 1971 through 2000, is 42.3 degrees. Monthly values of normal daily maximum temperatures across the state range between 60.3 degrees along the Red River at Waurika and 49.5 degrees at Newkirk near the state's northern border. Normal daily minimum temperatures vary between 34.4 degrees at Waurika and 22.0 degrees in the Panhandle at Beaver. The monthly mean temperatures for February, compiled as a statewide average since 1892, have varied between a high of 51.8 degrees in 1954 and a low of 27.9 degrees in 1899.

Temperature

Mean: 42.3 degrees
Warmest February: 1954, 51.8 degrees
Coolest February: 1899, 27.9 degrees
Hottest recorded: 99 degrees, Arapaho, February 24, 1918
Coldest recorded: -27 degrees, Vinita, February 13, 1905

Of all the other months, only January has a normal precipitation lower, when averaged statewide, than February's 1.77 inches. Southeastern Oklahoma's Idabel possesses the state's greatest precipitation normal during February at 3.60 inches. Kenton, in the shadow of Black Mesa, gains distinction as the state's driest reporting station during February with a normal total of 0.33 inch. The February statewide-averaged precipitation varies substantially, being bounded by a low of 0.20 inch attained both in 1947 and 1996 and a high of, 4.66 inches in 1938. In contrast to the many stations that have suffered through February precipitation voids, Tuskahoma was treated to an excessive 13.21 inches during February 1945. Snow is an important part of the precipitation picture in northwestern Oklahoma. Helena and Woodward both average about 4.7 inches of snow during February, compared to less than one-half inch at stations in southeastern Oklahoma.

Oklahoma's extreme snowstorm of record was the blizzard of February 21-23, 1971. This blizzard buried northwestern Oklahoma under as much as three feet of snow, not accounting for drifts. Buffalo was the hardest hit, reporting 23 inches of snow on the 21st and a state-record snow depth of 36 inches by

the morning of the 24th. The snow was driven by winds 30 to 50 miles per hour, producing drifts as high as 20 feet. Military cargo planes were used to airdrop hay to cattle stranded in the far-flung pastures of the region. Losses to agriculture were estimated at \$2.1 million (1971 dollars). Lost livestock included approximately 11,000 cattle, 3,500 hogs, and 1,000 sheep. Buffalo reported a total of 39.5 inches of snow during the month (a state record for all months).

Precipitation

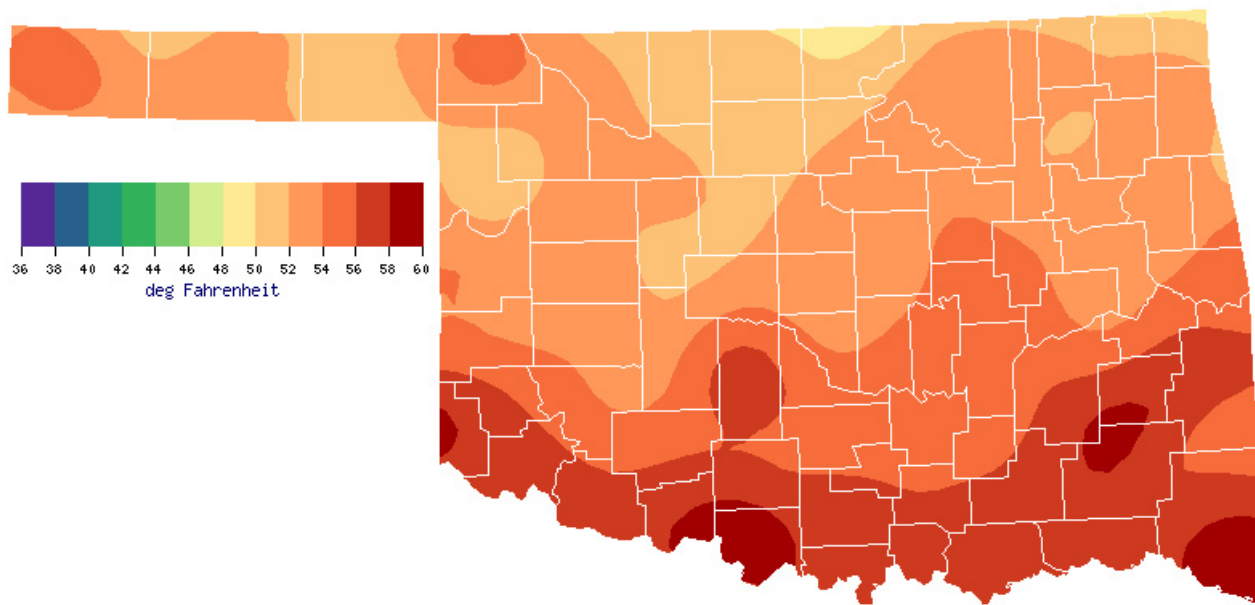
Mean: 1.77 inches
Wettest February: 1938, 6.44 inches
Driest February: 1947 and 1996, 0.20 inches
Wettest location: Idabel, 3.60 inches
Driest location: Kenton, 0.33 inches
Most recorded: 13.21 inches, Tuskahoma, 1945

Tornadoes are not generally considered a February phenomenon, but a total of 44 February tornadoes have been recorded across the state since 1950, including six in 1975. Three people were killed on February 22, 1975, bringing the confirmed total of February tornado deaths in the state to nine, according to storm-by-storm death tolls compiled by Thomas P. Grazulis and published in the book "Significant Tornadoes: 1880-1989."

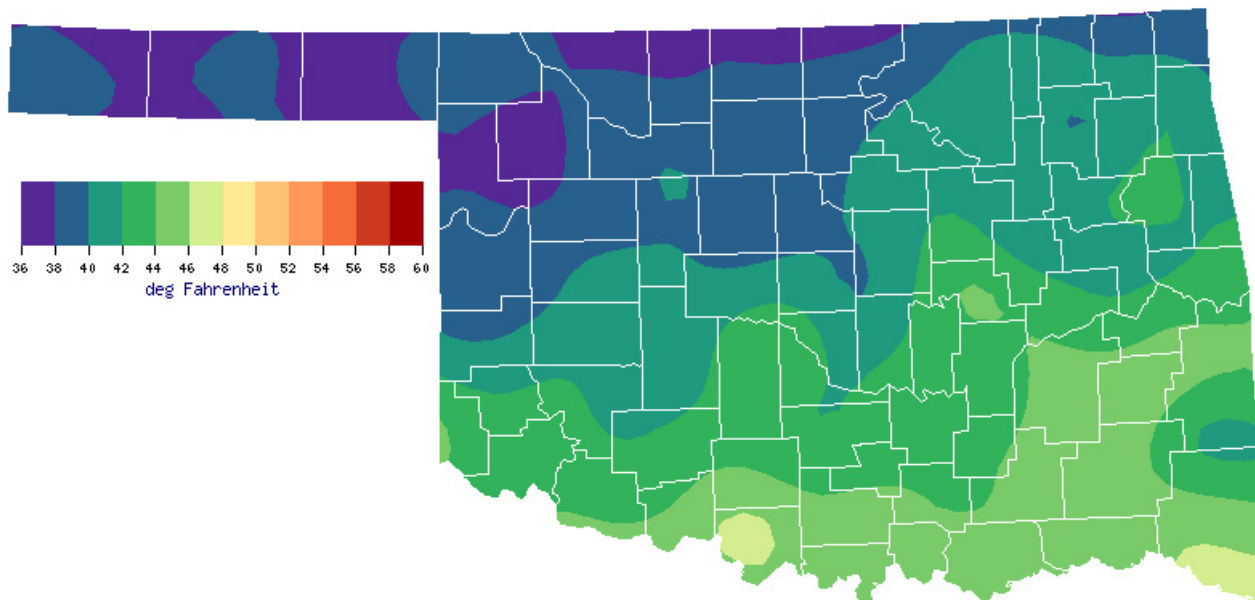
Tornadoes

Average February Tornadoes: 0.8
Most: 6 (1975)

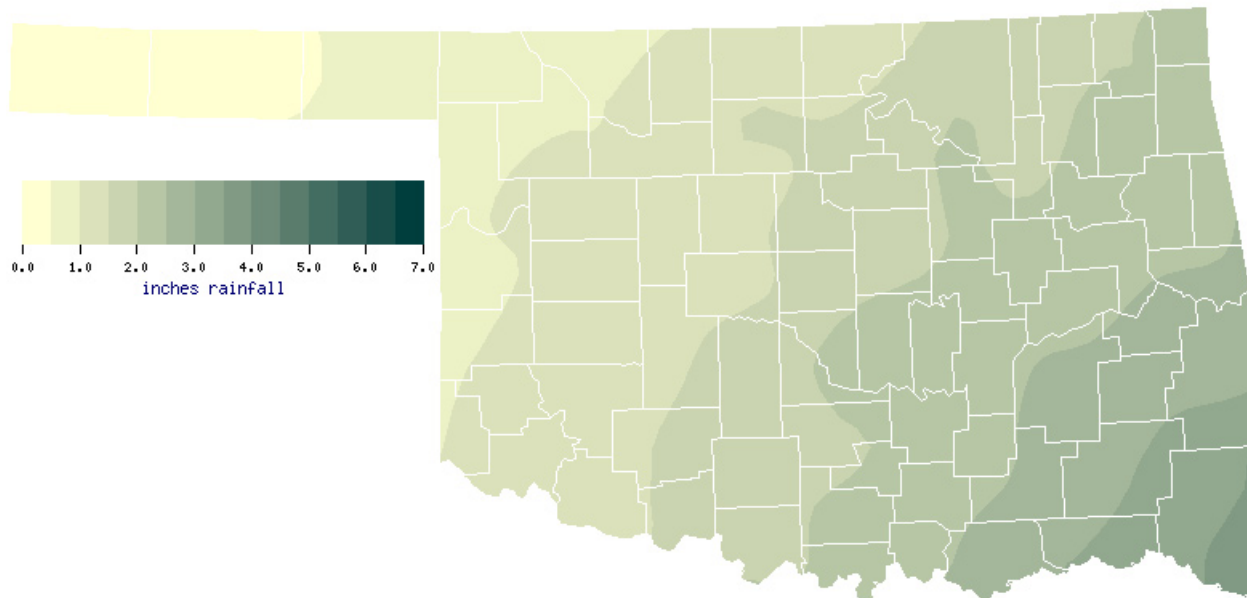
February Normal Monthly Maximum Temperature (1971-2000)



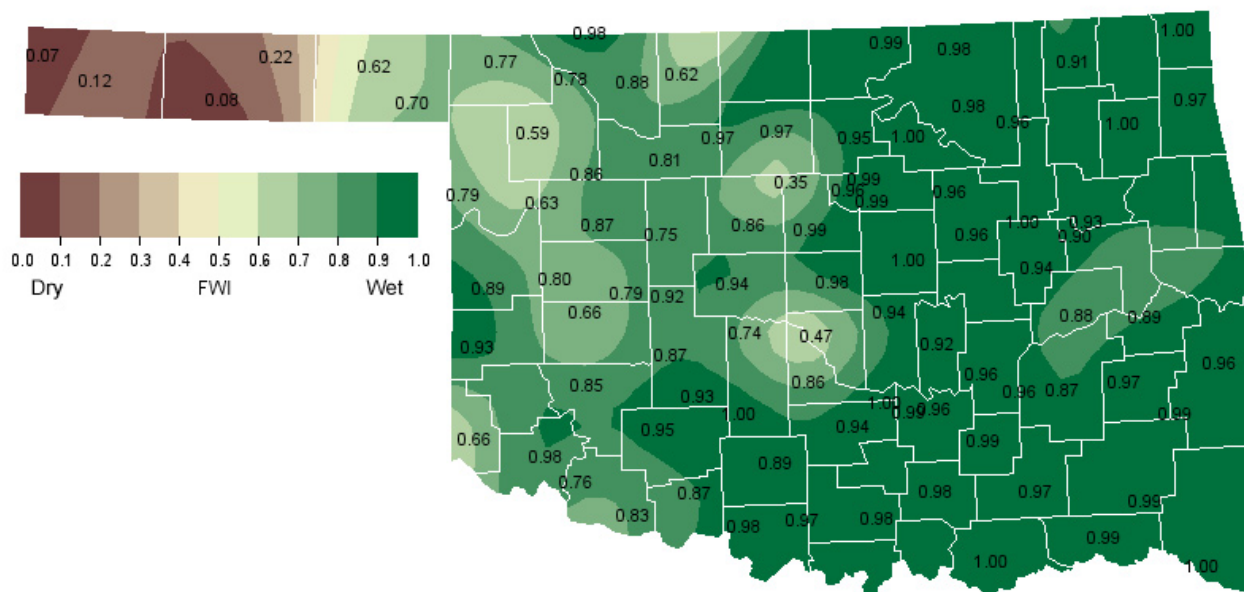
February Normal Monthly Minimum Temperature (1971-2000)



February Normal Precipitation (1971-2000)

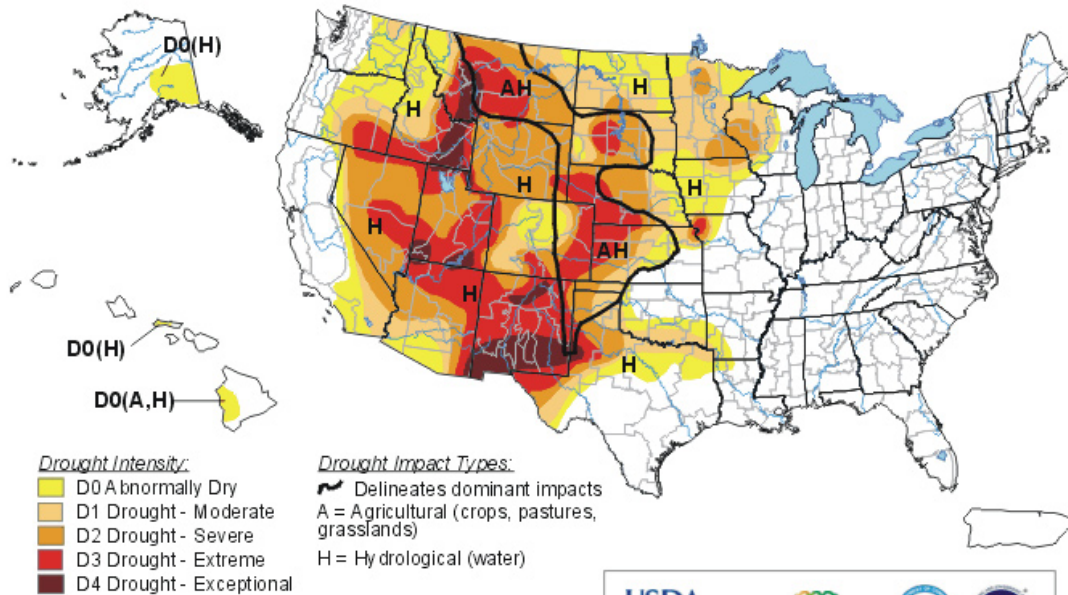


February 1, 2004 Soil Moisture Conditions at 25cm



U.S. Drought Monitor

February 3, 2004
Valid 7 a.m. EST



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

Drought Impact Types:
 Delineates dominant impacts
 A = Agricultural (crops, pastures, grasslands)
 H = Hydrological (water)

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

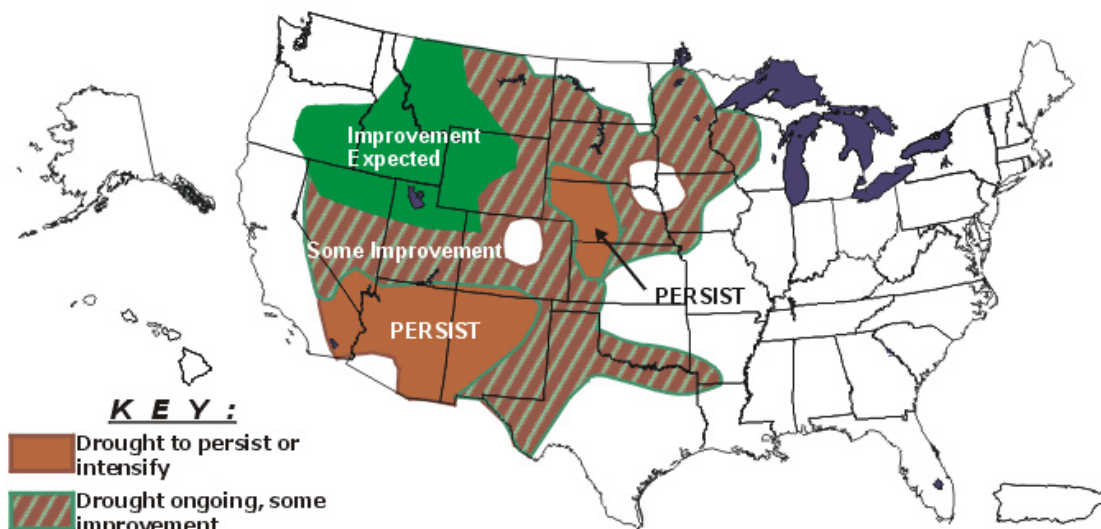


Released Thursday, February 5, 2004
Author: Mark Svoboda, NDMC

<http://drought.unl.edu/dm>



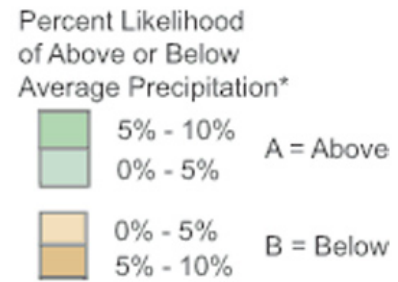
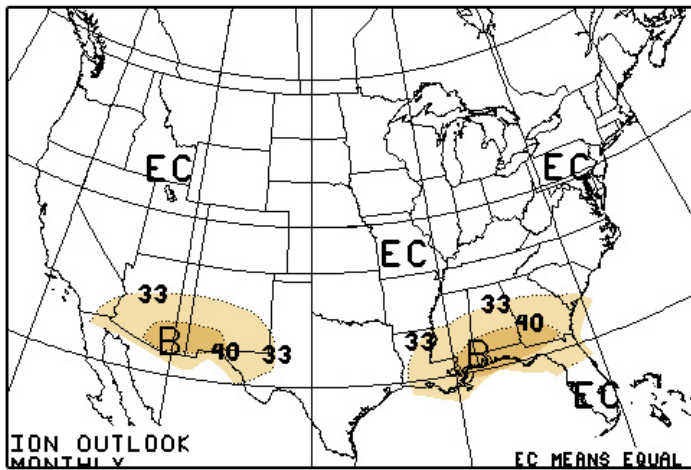
U. S. Seasonal Drought Outlook Through April 2004 Released January 15, 2004



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

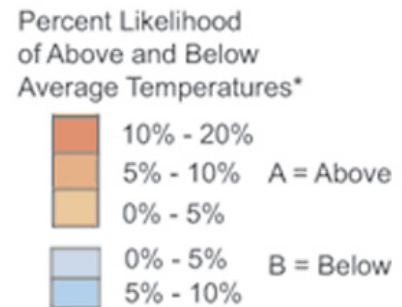
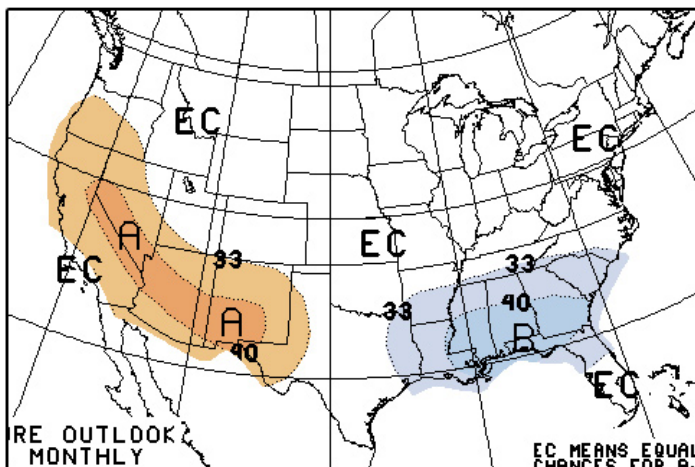
Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short and long-range statistical and dynamical forecasts. Short-term events-- such as individual storms -- cannot be accurately forecast more than a few days in advance, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are schematically approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text.

February 2004 U.S. Precipitation Forecast



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

February 2004 U.S. Temperature Forecast

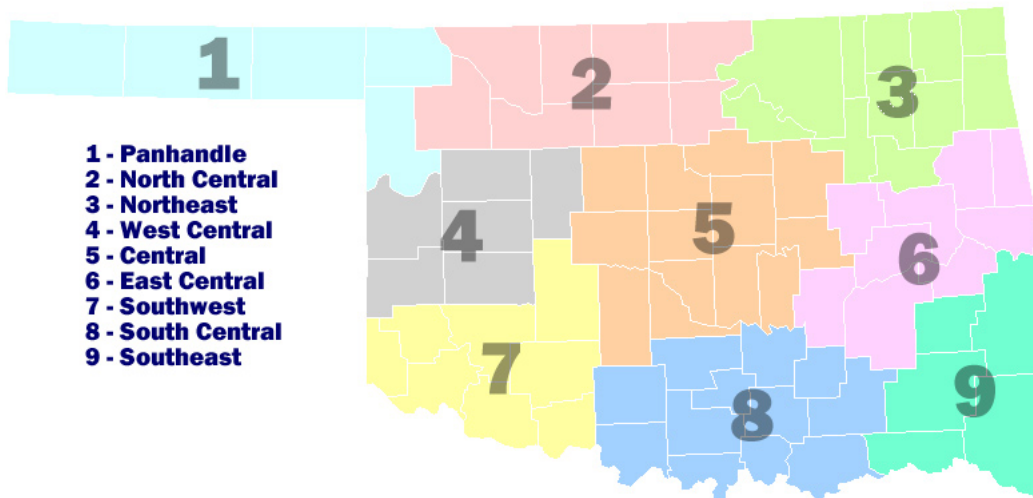


*EC indicates no forecasted anomalies due to lack of model skill.

February Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	53.3	23.8	38.6	0.64
2	51.4	25.1	38.3	1.23
3	52.9	28.8	40.9	1.96
4	53.2	26.9	40.1	1.09
5	53.9	29.2	41.6	1.77
6	54.4	31.2	42.8	2.35
7	55.9	29.0	42.5	1.36
8	56.8	31.9	44.4	2.21
9	57.3	31.9	44.6	3.13
Statewide	54.2	28.7	41.5	1.82

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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