

# OKLAHOMA MONTHLY CLIMATE SUMMARY

## FEBRUARY 2004



Oklahoma Climatological Survey

### Overview

Oklahoma's statewide-averaged precipitation finished two consecutive months above normal for the first time since July-August of 2002. February's surplus combined with a wetter-than-normal January to help the 2003-2004 winter season's precipitation total finish close to normal. The 39<sup>th</sup> wettest February since 1892 was also the 37<sup>th</sup> coolest on record, which resulted in three significant snowstorms for the state. Despite the cool-down during winter's final month, the season still ended as the state's 28<sup>th</sup> warmest.

### Precipitation

All areas of the state received beneficial precipitation during February. The southern sections of the state, an area hit hard by drought conditions during 2003, had the more robust totals for the month. Southwest and south central Oklahoma were both nearly an inch above normal to rank as the 14<sup>th</sup> and 21<sup>st</sup> wettest such period on record, respectively. For the season, however, those areas were a bit more varied in their precipitation fortunes. Building off of a wet January, southwestern sections managed to total nearly 1.25 inches of surplus, the 23<sup>rd</sup> wettest winter for that area since 1895. The southeast did not share the same fortune, however, as it remained 1.75 inches below normal for December-February. The other area of the state with an impressive excess of winter precipitation was north central Oklahoma. At nearly 1.5 inches above normal, with most of that surplus coming in the form of melted snow, the region had its 19<sup>th</sup> wettest winter on record. Unfortunately, the Oklahoma Panhandle finished just below normal for the month with an average of 0.59 inches, continuing the dry conditions of an area already suffering from extreme drought. Ironically, that total left the area 0.59 inches below normal for the season, the 41<sup>st</sup> driest on record.

### February 2004 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	81°F	Altus, Magnum	February 19th
Low Temperature	0°F	Boise City, Medford	February 12th, 7th
High Precipitation	4.46 in.	Idabel	
Low Precipitation	0.04 in.	Boise City	

### Temperature

February's statewide-averaged temperature was nearly 2.5 degrees below normal, which spoiled winter's attempts to finish as one of the warmest on record. All parts of the state had an average February temperature of at least 1.7 degrees below normal. South central Oklahoma had the coolest average for the month at over 3 degrees below normal, the 30<sup>th</sup> coolest on record. Despite the cool conditions, however, the statewide-averaged winter temperature was well over one degree above normal, and one of the warmest one-third in the last 100 years.

### February Daily Highlights

**February 1-3:** The month started on a damp and frigid note due to a cold front pushing into the state from the west. Precipitation started in the northwest as freezing rain and snow behind the front, remaining liquid east of the boundary. Rainfall totals were generally less than one-half of an inch, with Chandler leading the pack at 0.78 inches. Snowfall amounts were from a trace at many locations to 4 inches at both Lahoma and Goltry. Skies cleared overnight on the 2<sup>nd</sup> as a surface high dropped in over the state behind the cold front. Wind chill readings were in the single digits in the morning, and the snow cover kept highs below freezing in north central sections. Those conditions remained in place on the 3<sup>rd</sup> in advance of another approaching storm system.

**February 4-7:** Rain, sleet, and snow made another appearance on the 4<sup>th</sup> in association with an upper-level low from the west. Snowfall amounts were generally between 2-4 inches. Medford and Enid had 6.5 inches of snowfall at the storm's end. The system moved out overnight on the 5<sup>th</sup>, leaving scattered light drizzle in its wake. Temperatures never rose above freezing in the areas with snow cover, but managed to climb into the 40s in southern sections. The weather remained chilly through the 7<sup>th</sup>. Lows fell to near zero each day, with highs in the 30s and 40s.

**February 8-10:** The weather finally warmed on the 8<sup>th</sup>. High temperatures rose 10-15 degrees higher than the previous day into the 60s. Mangum reached 62 degrees as strong southerly winds gusted to over 25 mph. A weak cold front on the 9<sup>th</sup> ushered out the spring-like weather of the 8<sup>th</sup>. Light rain and snow occurred briefly with the front before clearing out later in the day. High pressure settled in, which kept temperatures below normal for the next two days.

**February 11-15:** Another storm system moved in from the west on the 11<sup>th</sup>. Light rain and snow flurries fell in the northwest as a cold front entered the panhandle. Cold weather remained in place for another upper-level disturbance's entrance on the 14<sup>th</sup>. Snowfall amounts of 6 to 8 inches were common across the south near the Red River. Quanah received over 7 inches to lead the state, while Madill and Atoka had close to 6 inches.

**February 16-19:** Fair skies and light winds greeted the state the morning of the 16<sup>th</sup> as high pressure settled in behind the cold front. The weather proceeded to get warmer and windier through the 19<sup>th</sup>. Highs progressed from 50s and 60s on the 17<sup>th</sup> to 60s and 70s on the 18<sup>th</sup>, finally culminating with 70s and 80s on the 19<sup>th</sup>. Altus and Mangum recorded the state's highest temperature of the month with 81 degrees on the 19<sup>th</sup>. Unfortunately, as the temperatures rose, so did the winds. The state faced extreme fire danger on the 18<sup>th</sup> and 19<sup>th</sup>, as winds gusting to 50 mph accompanied the warm, dry conditions. Thunderstorms formed around sunset on the 19<sup>th</sup> in the northwest, producing severe wind gusts and nickel-sized hail.

**February 20-25:** The warmth of the past several days was replaced with cooler, more seasonable weather. High temperatures on the 20<sup>th</sup> ranged from the upper-40s to the mid-60s. The weather became a bit more pleasant on the 21<sup>st</sup> and 22<sup>nd</sup>, culminating with highs in the upper-60s and low-70s. Showers and storms formed that night in southeastern Oklahoma as a cold front entered the panhandle. Tipton received an inch of

rain, although most totals across the area were less than one-half of an inch. The cold front moved through the state on the 23<sup>rd</sup>, triggering more showers in central and south central sections. Rain continued overnight through the 24<sup>th</sup> and 25<sup>th</sup>. After the rain finally ended on the 25<sup>th</sup>, southern sections of the state had received a much-needed soaking, generally greater than an inch.

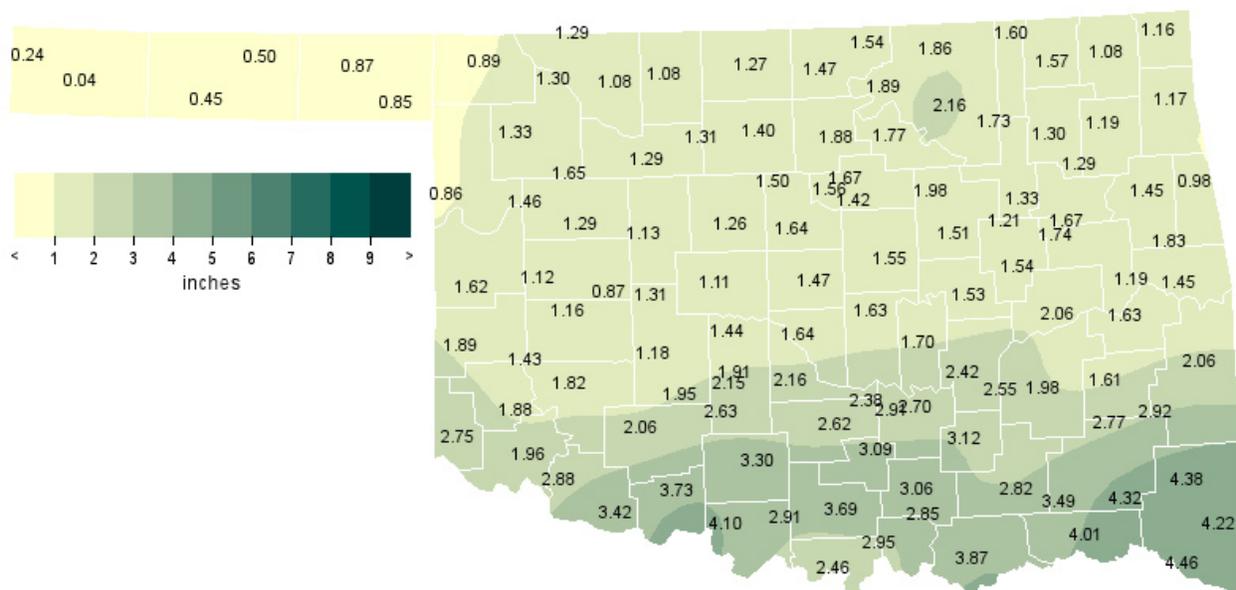
**February 26-29:** Unseasonably cold weather was left in the wake of the previous storm system. Lows ranged from the upper-teens to the lower-30s, with Gage reaching a bone-chilling 7 degrees. The state warmed up quite nicely, however, with highs in the mid-50s to low-60s. After a warmer morning on the 27<sup>th</sup>, temperatures jumped up to the 60s and 70s. Yet another upper-level disturbance approached the state on the 28<sup>th</sup>, increasing winds from the south to over 40 mph. The associated cloudiness kept temperatures cooler than the previous day, however, staying mostly in the 50s. The month's last day brought more rain, this time to western Oklahoma. Eastern portions of the state generally received a trace of precipitation, while western Oklahoma saw up to three-quarters of an inch.

<b>February 2004 Statewide Statistics</b>			
<b>Temperature</b>			
	<b>Average</b>	<b>Depart.</b>	<b>Rank (1892-2004)</b>
Month (February)	39.3°F	-2.4°F	37th Coolest
Season-to-date (Jan-Feb)	40.2°F	1.3°F	28th Warmest
Year-to-Date (Jan-Feb)	39.2°F	0.4°F	5th Warmest
<b>Precipitation</b>			
	<b>Total</b>	<b>Depart.</b>	<b>Rank (1892-2004)</b>
Month (February)	1.85 in.	0.09 in.	39th Wettest
Season-to-Date (Jan-Feb)	5.09 in.	-0.14 in.	47th Wettest
Year-to-Date (Jan-Feb)	3.98 in.	0.77 in.	27th Wettest
Depart. = Departure from 30-year normal			

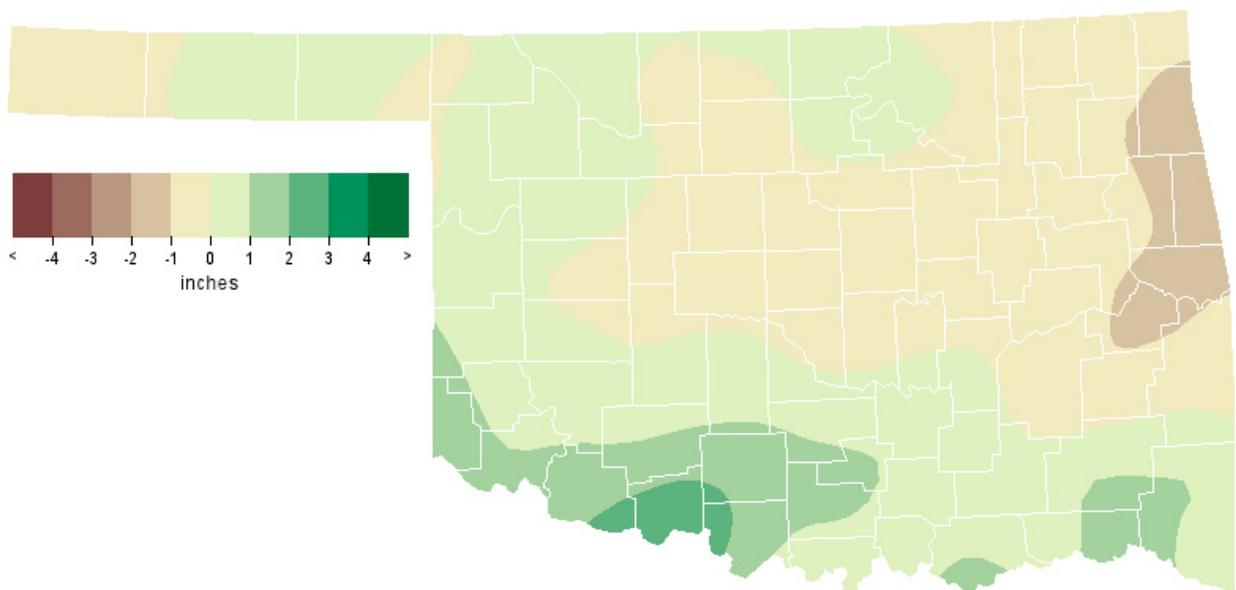
## **February 2004 Severe Weather**

No significant severe weather reported in the state.

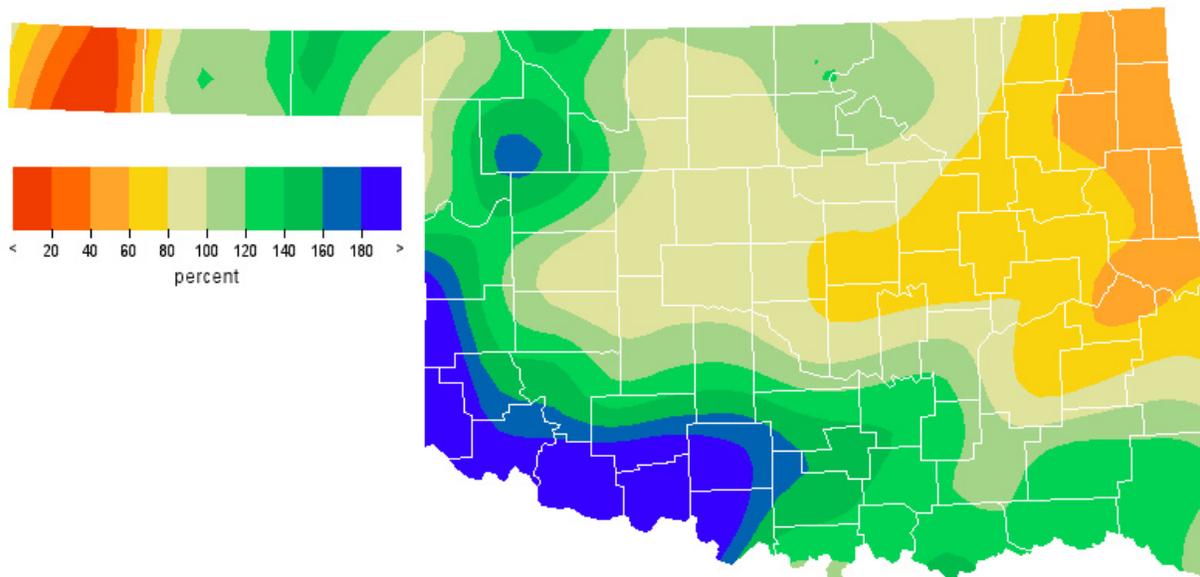
## February 2004 Observed Precipitation



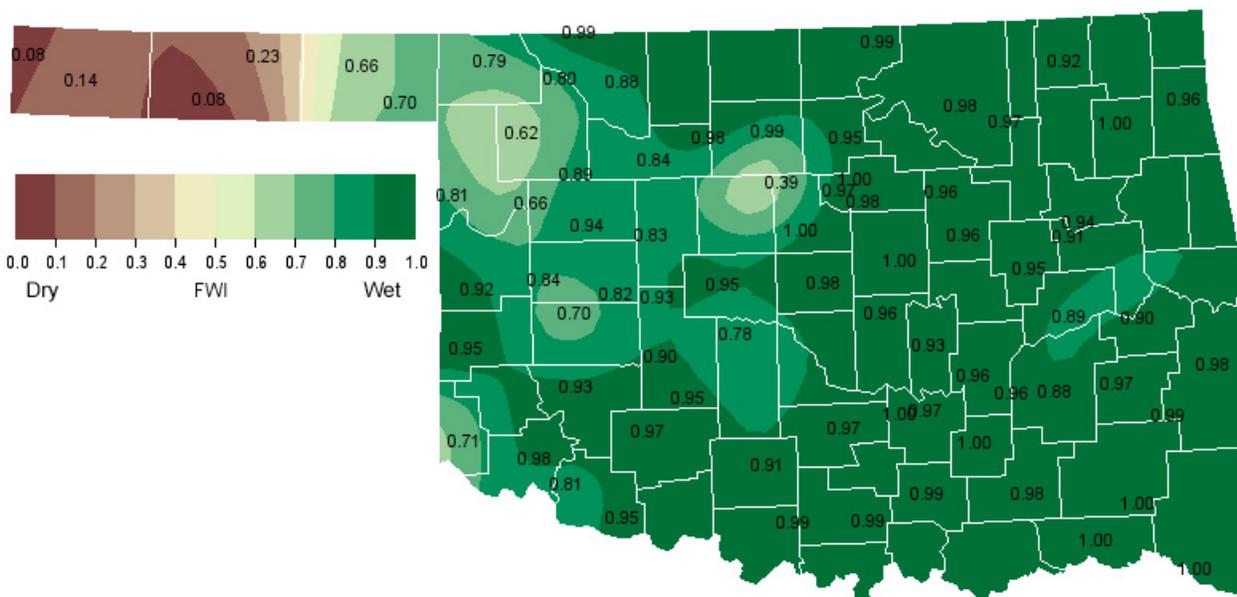
## February 2004 Departure from Normal Precipitation



## February 2004 Percent of Normal Precipitation



## February 2004 Average Soil Moisture at 25cm





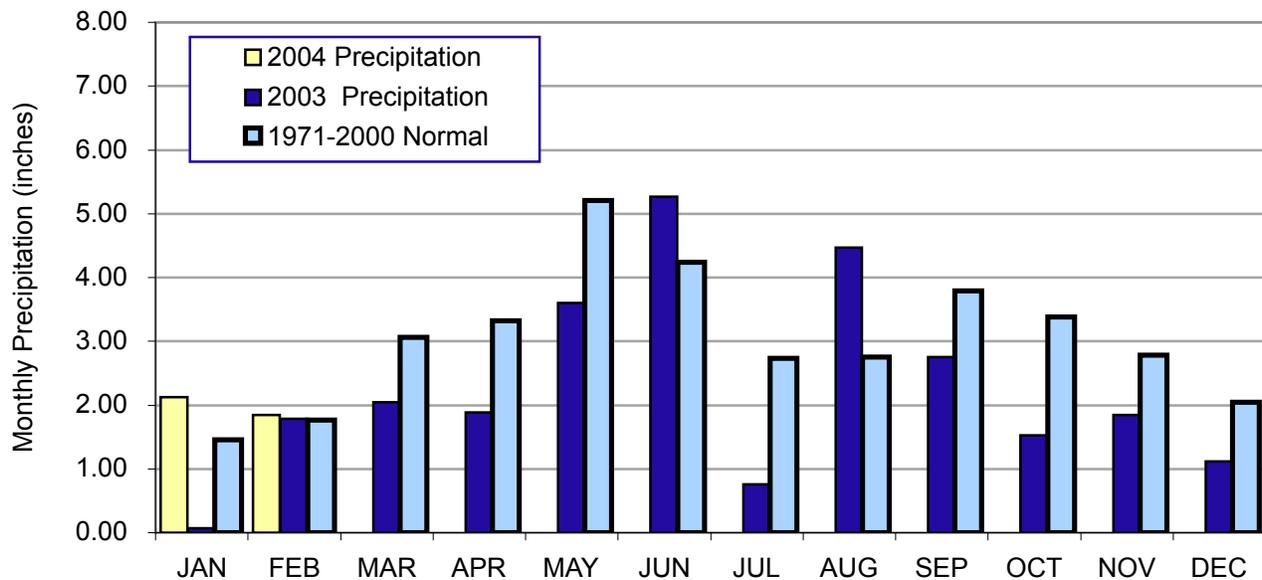
# Mesonet Monthly Summary for February 2004

NAME	MEAN		HIGH		LOW		TOT HIGH		NAME	MEAN		HIGH		LOW		TOT HIGH					
	TEMP	TEMP	DAY	TEMP	DAY	HDD	CDD	PPT		24-HR	DAY	TEMP	TEMP	DAY	TEMP	DAY	HDD	CDD	PPT	24-HR	DAY
<b>PANHANDLE</b>																					
Arnett	37.8	75	19	12	13	790	0	.86	.55	29	Goodwell	36.3	77	18	6	12	831	0	.45	.28	29
Beaver	36.8	77	27	8	13	817	0	.87	.61	29	Hooker	36.0	77	27	6	13	840	0	.50	.46	29
Boise City	34.8	77	18	0	12	875	0	.04	.03	23	Kenton	34.9	80	18	2	13	872	0	.24	.21	19
Buffalo	37.1	75	19	5	7	809	0	.89	.60	29	Slapout	37.0	77	18	11	7	812	0	.85	.58	29
<b>NORTH CENTRAL</b>																					
Blackwell	36.5	71	19	7	7	825	0	1.47	.44	1	Medford	35.5	70	19	0	7	856	0	1.27	.37	29
Breckenridge	36.4	70	19	5	7	830	0	1.40	.40	1	Newkirk	36.6	70	19	6	7	822	0	1.54	.46	1
Cherokee	36.4	71	19	7	7	829	0	1.08	.31	29	Red Rock	38.0	72	19	9	7	782	0	1.88	.54	29
Fairview	37.9	73	19	11	7	786	0	1.29	.31	29	Seiling	37.7	72	19	14	2	790	0	1.65	.90	29
Freedom	36.9	72	22	11	7	815	0	1.30	.72	29	Woodward	38.0	73	19	14	13	784	0	1.33	.80	29
Lahoma	36.6	70	19	8	7	825	0	1.31	.41	29	Alva	36.0	73	19	9	6	841	0	1.08	.40	29
May Ranch	36.1	70	19	9	8	839	0	1.29	.88	29											
<b>NORTHEAST</b>																					
Bixby	39.6	71	19	16	13	736	0	1.33	.42	1	Pryor	38.0	70	19	14	13	782	0	1.19	.39	5
Burbank	*****	***	***	***	***	****	****	1.89	.57	29	Skiatook	39.1	71	19	11	7	752	0	1.73	.46	1
Copan	37.7	70	19	12	13	792	0	1.60	.47	1	Vinita	37.8	71	19	11	8	790	0	1.08	.29	29
Foraker	37.3	71	19	10	7	804	0	1.86	.59	1	Wynona	38.6	71	19	13	7	766	0	2.16	.67	23
Jay	38.4	70	19	10	13	772	0	1.17	.42	5	Porter	40.1	70	19	16	13	721	0	1.67	.57	1
Miami	38.1	71	19	11	8	781	0	1.16	.32	5	Inola	38.8	71	19	14	13	758	0	1.29	.45	1
Nowata	37.4	69	19	12	8	801	0	1.57	.38	29	Claremore	39.8	71	19	13	13	732	0	1.30	.37	5
Pawnee	38.8	73	19	12	7	761	0	1.77	.54	29											
<b>WEST CENTRAL</b>																					
Bessie	39.9	75	19	16	13	728	0	1.16	.58	29	Putnam	37.7	72	19	14	13	791	0	1.29	.66	29
Butler	39.1	77	19	11	13	752	0	1.12	.75	29	Retrop	40.4	78	19	17	2	712	0	1.43	.59	29
Camargo	37.6	73	19	12	13	794	0	1.46	.83	29	Watonga	38.3	71	19	16	7	775	0	1.13	.36	29
Cheyenne	39.1	75	19	15	12	752	0	1.62	.91	29	Weatherford	38.4	72	19	16	2	772	0	.87	.42	29
Erick	39.5	79	19	15	2	740	0	1.89	.83	29											
<b>CENTRAL</b>																					
Bowlegs	40.1	70	19	14	13	721	0	1.70	.62	1	Okemah	39.6	70	19	15	13	735	0	1.53	.60	1
Bristow	39.0	70	19	14	13	753	0	1.51	.65	1	Perkins	39.2	70	19	14	7	749	0	1.42	.55	1
Chandler	39.7	71	19	14	13	733	0	1.55	.78	1	Shawnee	39.6	70	19	15	13	735	0	1.63	.62	1
Chickasha	39.6	74	19	13	13	738	0	1.91	.61	29	Spencer	39.5	70	19	13	13	738	0	1.47	.55	29
El Reno	37.6	71	19	11	13	794	0	1.11	.51	29	Stillwater	38.9	72	19	13	13	755	0	1.67	.51	1
Guthrie	39.3	71	19	14	13	744	0	1.64	.62	29	Washington	40.8	72	22	14	13	****	****	1.80	.70	1
Kingfisher	38.8	72	19	16	13	758	0	1.26	.31	1	Ninnekah	40.4	74	19	14	13	712	0	2.15	.65	29
Marena	38.7	72	19	12	13	762	0	1.56	.52	1	Acme	40.6	72	19	12	13	708	0	2.63	.85	23
Minco	39.0	71	19	15	13	754	0	1.44	.52	29	Norman	40.1	71	22	14	13	****	****	1.64	.65	1
Oilton	38.3	72	19	11	13	776	0	1.98	.70	1	Marshall	38.3	72	19	14	7	775	0	1.50	.44	29
<b>EAST CENTRAL</b>																					
Calvin	40.4	70	22	17	13	714	0	2.42	.90	23	Stigler	40.9	71	19	15	8	699	0	1.63	.63	4
Cookson	39.2	68	19	11	8	748	0	1.83	.60	29	Stuart	40.9	70	22	17	13	699	0	2.55	.93	4
Eufaula	40.8	70	19	18	13	702	0	2.06	.54	4	Tahlequah	38.9	67	19	13	13	758	0	1.45	.52	5
Haskell	39.4	70	19	16	13	741	0	1.74	.67	1	Webbers Falls	40.8	71	19	19	3	702	0	1.19	.46	4
McAlester	41.2	70	22	17	7	690	0	1.98	.54	4	Westville	39.4	67	19	13	8	741	0	.98	.29	4
Okmulgee	39.4	71	19	13	13	742	0	1.54	.56	1	Hectorville	40.1	70	19	15	13	723	0	1.21	.42	29
Sallisaw	41.0	71	19	16	8	695	0	1.45	.67	4											
<b>SOUTHWEST</b>																					
Altus	41.4	81	19	21	13	686	0	1.96	.66	29	Medicine Park	41.2	73	19	17	13	691	0	2.06	.57	29
Fort Cobb	40.1	74	19	16	13	723	0	1.18	.49	29	Tipton	41.3	81	19	19	13	687	0	2.88	.99	23
Hinton	38.8	72	19	17	13	761	0	1.31	.48	29	Walters	41.7	74	19	16	13	677	0	3.73	1.09	23
Hobart	40.1	77	19	17	13	721	0	1.82	.62	23	Apache	40.2	73	19	16	13	720	0	1.95	.63	1
Hollis	40.6	79	19	18	2	706	0	2.75	1.11	22	Grandfield	41.4	78	19	18	13	685	0	3.42	1.19	23
Mangum	40.1	81	19	13	13	723	0	1.88	.70	29											
<b>SOUTH CENTRAL</b>																					
Ada	40.8	70	22	15	13	702	0	2.70	1.15	23	Pauls Valley	*****	***	***	***	***	****	****	2.62	.92	23
Ardmore	*****	***	***	***	***	****	****	****	****	***	Ringling	41.8	72	19	18	7	672	0	2.91	1.24	23
Burneyville	42.0	71	19	16	3	667	0	2.46	.90	23	Sulphur	40.7	70	22	15	7	705	0	3.09	1.52	23
Byars	*****	***	***	***	***	****	****	2.38	.76	23	Tishomingo	41.4	69	22	16	7	686	0	3.06	1.04	4
Centrahoma	40.9	71	22	15	7	698	0	3.12	1.05	4	Waurika	42.1	74	19	17	13	663	0	4.10	1.66	23
Durant	42.8	71	22	21	13	643	0	3.87	1.11	4	Vanoss	40.5	71	22	14	13	710	0	2.91	1.30	23
Ketchum Ranch	41.4	72	19	16	13	685	0	3.30	1.22	23	Bee	41.9	69	22	19	7	671	0	2.85	.94	4
Lane	41.9	70	22	20	7	670	0	2.82	1.03	4	Newport	42.1	71	22	18	13	****	****	3.69	1.71	23
Madill	42.3	70	22	19	7	658	0	2.95	.96	4	Ardmore	*****	***	***	***	***	****	****	****	****	****
<b>SOUTHEAST</b>																					
Antlers	42.4	72	22	20	13	657	0	3.49	1.27	4	Mt Herman	41.7	69	19	18	3	675	0	4.38	1.64	4
Clayton	41.8	70	19	14	8	672	0	2.77	1.21	4	Talihina	41.6	69	19	14	8	679	0	2.92	1.67	4
Cloudy	42.3	70	19	18	8	659	0	4.32	1.79	4	Wilburton	41.4	70	19	17	3	683	0	1.61	.82	4
Hugo	42.9	70	19	21	7	642	0	4.01	1.56	4	Wister	40.3	70	19	12	8	717	0	2.06	1.43	4
Idabel	43.0	73	23	19	8	639	0	4.46	1.55	4	Broken Bow	41.6	71	19	16	8	678	0	4.22	1.61	4

## February 2004 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Feb-03
Panhandle	0.59	-0.05	50th Wettest	2.94 (1911)	0.00 (1896)	0.42
North Central	1.38	0.16	39th Wettest	4.10 (1911)	0.00 (1904)	1.46
Northeast	1.52	-0.46	52nd Driest	5.80 (1985)	0.10 (1963)	2.36
West Central	1.33	0.19	32nd Wettest	3.64 (1997)	0.00 (1904)	0.60
Central	1.67	-0.19	41st Wettest	5.08 (1938)	0.00 (1904)	1.50
East Central	1.69	-0.74	46th Driest	9.15 (1938)	0.00 (1895)	2.90
Southwest	2.27	0.94	14th Wettest	3.89 (1997)	0.00 (1902)	0.77
South Central	3.05	0.84	21st Wettest	7.66 (1938)	0.02 (1902)	2.14
Southeast	3.42	0.28	44th Wettest	10.12 (1945)	0.36 (1895)	3.80
Statewide	1.85	0.09	39th Wettest	4.66 (1938)	0.18 (1996)	1.76

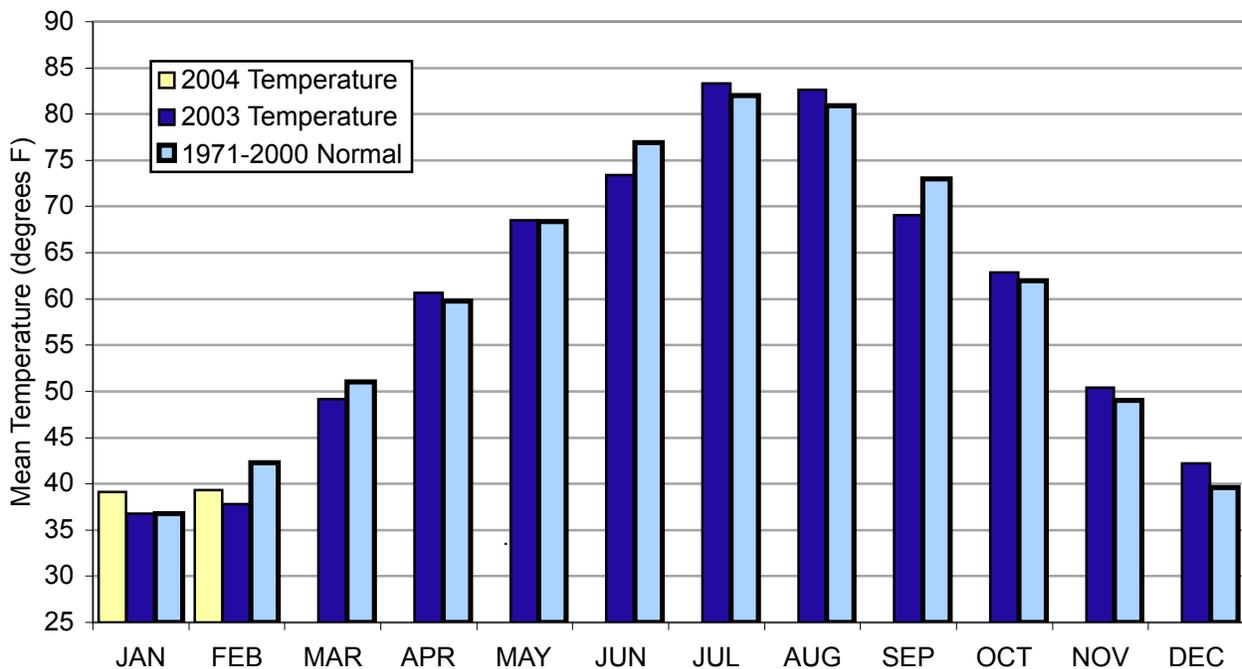
## 2003 and 2004 Statewide Precipitation Monthly Totals vs. Normal



## February 2004 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Feb-03 (F)
Panhandle	36.3	-2.0	42nd Coolest	47.5 (1954)	23.1 (1899)	35.2
North Central	36.8	-2.5	38th Coolest	49.6 (1954)	22.4 (1899)	37.5
Northeast	38.6	-1.8	45th Coolest	49.8 (1976)	25.6 (1899)	37.3
West Central	38.9	-1.7	42nd Coolest	51.0 (1954)	23.8 (1905)	37.7
Central	39.3	-2.6	39th Coolest	51.6 (1976)	26.2 (1899)	38.5
East Central	40.2	-2.6	36th Coolest	52.1 (1976)	28.7 (1899)	39.9
Southwest	40.6	-2.5	35th Coolest	52.5 (1954)	26.8 (1905)	40.5
South Central	41.6	-3.2	30th Coolest	53.6 (1976)	30.0 (1905)	42.0
Southeast	41.9	-2.8	31st Coolest	52.6 (1976)	31.4 (1899)	42.2
Statewide	39.3	-2.4	37th Coolest	50.7 (1954)	26.6 (1899)	38.9

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



## Mesonet Extremes for February 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	80	18th	Kenton	0	12th	Boise City	0.89	Buffalo	0.61	29th	Beaver
North Central	73	19th	Alva	0	7th	Medford	1.88	Red Rock	0.90	29th	Seiling
Northeast	73	19th	Pawnee	10	7th	Foraker	2.16	Wynona	0.67	23rd	Wynona
West Central	79	19th	Erick	11	13th	Butler	1.89	Erick	0.91	29th	Cheyenne
Central	74	19th	Chickasha	11	13th	El Reno	2.63	Acme	0.85	23rd	Acme
East Central	71	19th	Webbers Falls	11	8th	Cookson	2.55	Stuart	0.93	4th	Stuart
Southwest	81	19th	Altus	13	13th	Mangum	3.73	Walters	1.19	23rd	Grandfield
South Central	74	19th	Waurika	14	13th	Vanoss	4.10	Waurika	1.71	23rd	Newport
Southeast	73	23rd	Idabel	12	8th	Wister	4.46	Idabel	1.79	4th	Cloudy
Statewide	81	19th	Altus	0	7th	Medford	4.46	Idabel	1.79	4th	Cloudy

## March Climatological 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 5<sup>th</sup> 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 1907 and a minimum of 39.2 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: 1907, 59.6 degrees  
Coolest March: 1915, 39.2 degrees  
Hottest recorded: 104 degrees, Frederick, March 27, 1971  
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 6<sup>th</sup> 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 doesn't 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 30<sup>th</sup>.

### Precipitation

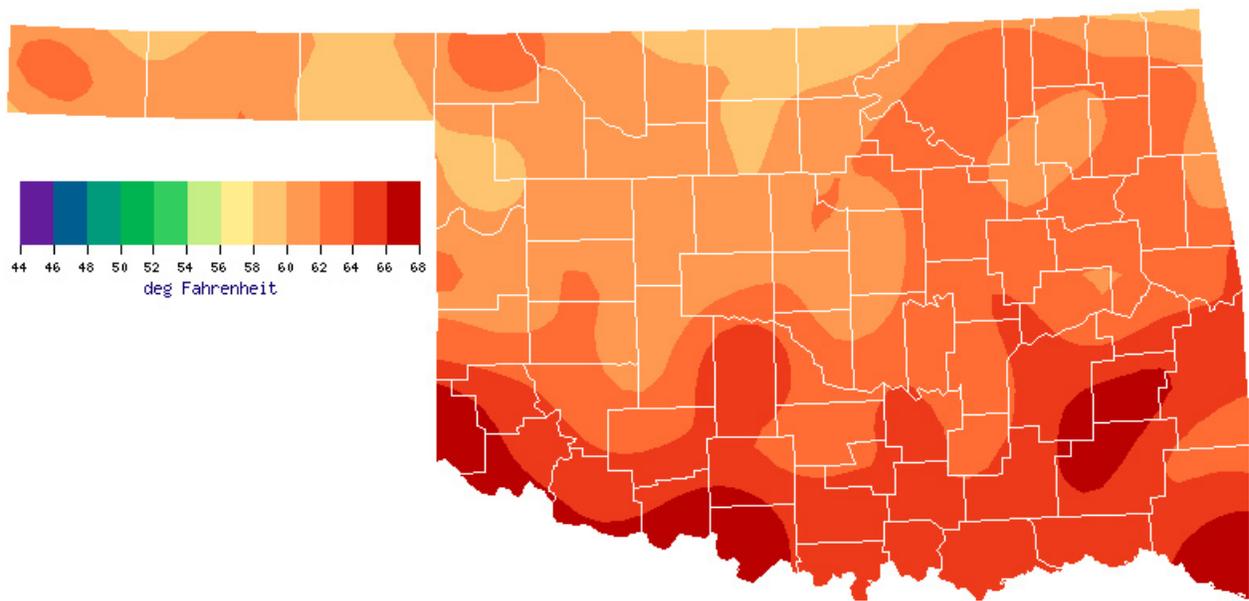
Mean: 3.06 inches  
Wettest March: 1973, 7.46 inches  
Driest March: 1971, 0.38 inches  
Wettest location: Smithville, 5.52 inches  
Driest location: Regnier, 1.05 inches  
Most recorded: 13.37 inches, Kansas, 1973

The state has averaged 3.7 tornadoes each March since 1950. The actual number has ranged from none (16 times in 53 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 20<sup>th</sup> and 25<sup>th</sup> 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 25<sup>th</sup>, Air Force meteorologists recognizing the similarity of conditions to those of the 20<sup>th</sup>, issued what is now accepted to be the first successful and scientific forecast of a tornado.

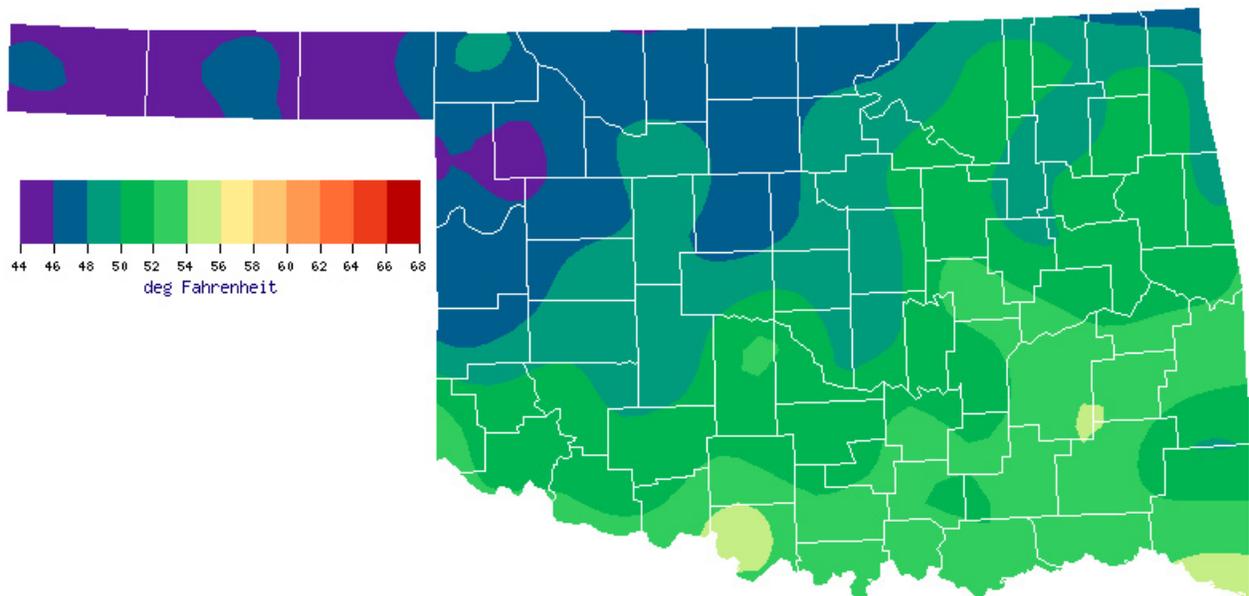
### Tornadoes

Average March Tornadoes: 4  
Most: 17 (1991)

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



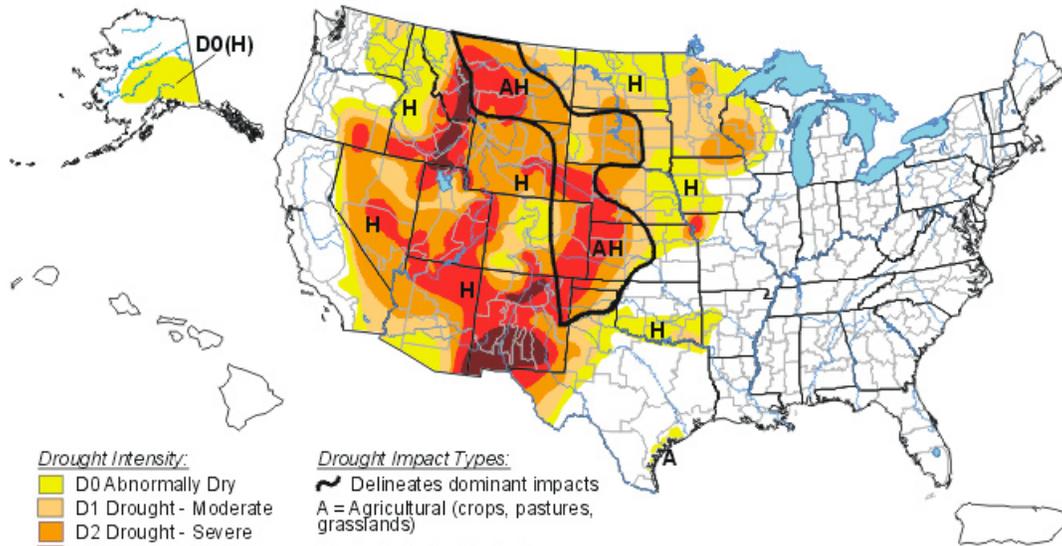
### **March Normal Monthly Minimum Temperature (1971-2000)**





# U.S. Drought Monitor

March 2, 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.

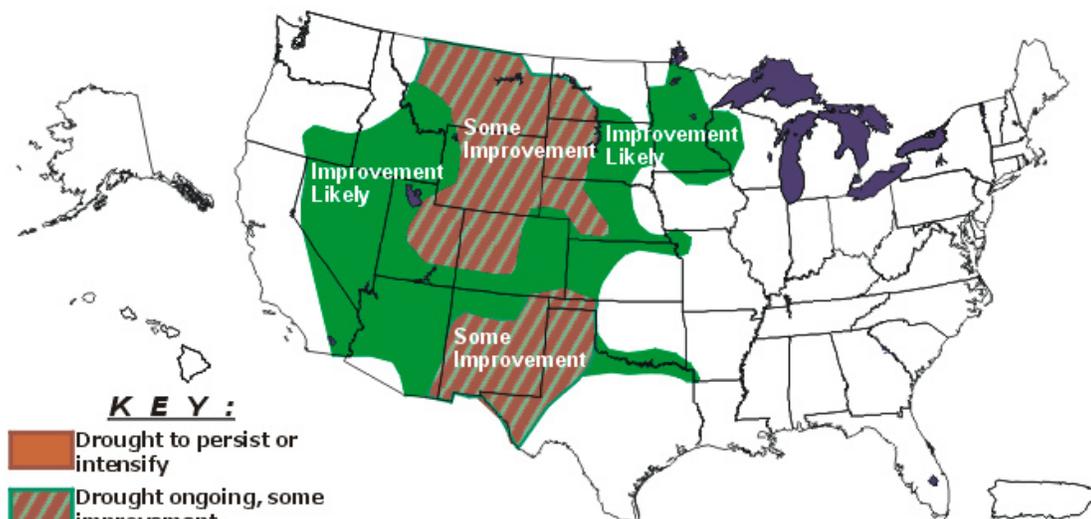


Released Thursday, March 4, 2004  
 Author: Richard Tinker, NOAA/NWS/NCEP/CPC

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



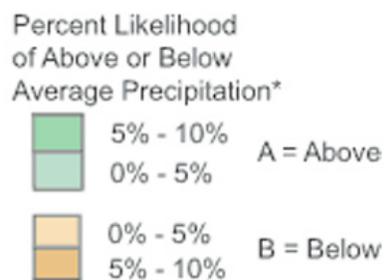
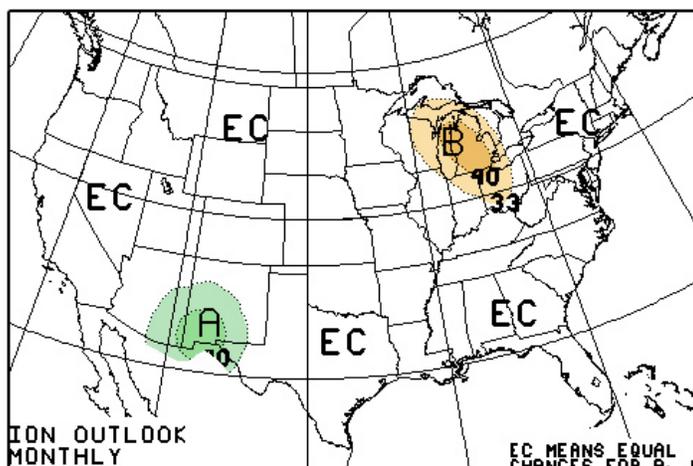
## U. S. Seasonal Drought Outlook Through May 2004 Released February 19, 2004



**KEY:**  
 Brown: Drought to persist or intensify  
 Red with diagonal lines: Drought ongoing, some improvement  
 Green: Drought likely to improve, impacts ease  
 Yellow: Drought development likely

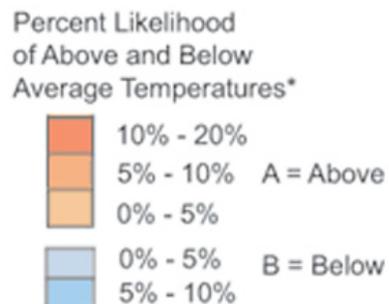
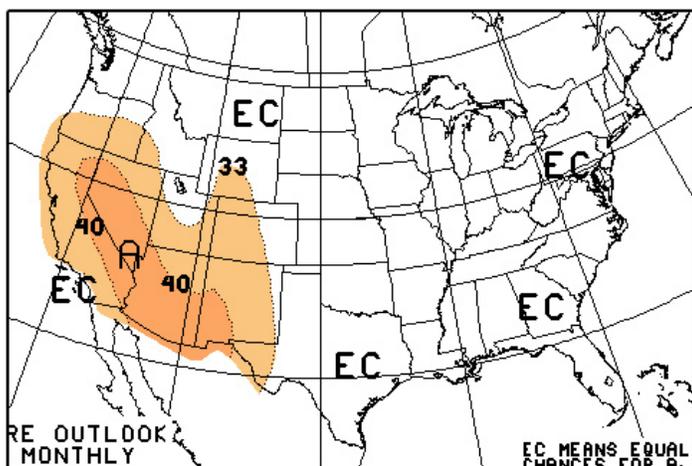
Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short and long-range statistical and dynamical forecasts. Short-term events-- such as individual storms-- cannot be accurately forecast more than a few days in advance, so use caution 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.

### March 2004 U.S. Precipitation Forecast



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

### March 2004 U.S. Temperature Forecast

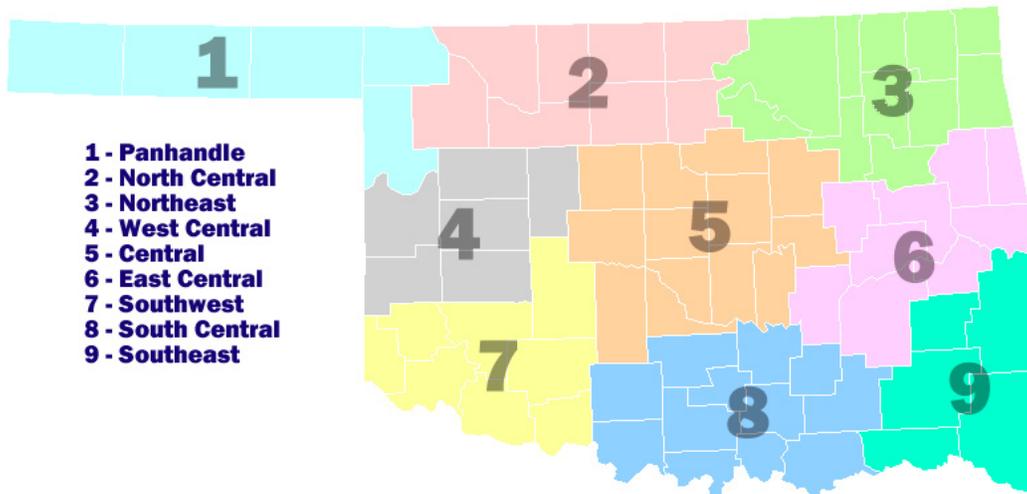


\*EC indicates no forecasted anomalies due to lack of model skill.

## 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 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](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](mailto:ocs@ou.edu)) or telephone (405/325-2541)



## **Oklahoma Climatological Survey**

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