

# OKLAHOMA MONTHLY CLIMATE SUMMARY

## MARCH 2004



Oklahoma Climatological Survey

Spring arrived earlier than scheduled during March. Trees blossomed, flowers bloomed, and the state's residents migrated outdoors early in the month, all seeking to enjoy the 11<sup>th</sup> warmest March on record. A sizable portion of the state experienced a surplus of precipitation to accompany the warmth, resulting in the 22<sup>nd</sup> wettest March in the last 113 years. Unfortunately, most of that precipitation fell in just a few distinct periods as the state saw its most abundant severe weather activity since June of the previous year. Those violent few days ran the gamut of severe weather: large hail, flooding rainfall, and tornadoes.

The state's longest recorded period between tornadoes – since accurate statistics began in 1950 – ended on March 4<sup>th</sup> with the touchdown of an F0 tornado near Muldrow. The new record, which stands at 292 days, began its streak on May 17, 2003. Another seven tornadoes struck on the 27<sup>th</sup> of March. All eight reported tornadoes during March were weak, and the damage they inflicted was light.

### Precipitation

The month's precipitation pattern was dominated by two features: a swath of greater-than 6-inch totals running from west central up through north central sections, and an area of deficits in the southeastern one-third. Those 6-inch or greater totals, associated almost entirely with precipitation events on the 4<sup>th</sup> and 27<sup>th</sup>, helped boost the statewide-averaged precipitation to over one-half of an inch above normal. West central and northeastern Oklahoma were both more than 2 inches above the established normals, ranking as the 4<sup>th</sup> and 7<sup>th</sup> wettest March for those areas, respectively, since 1895. Southwestern and north central areas fared as well, enjoying the 6<sup>th</sup> and 7<sup>th</sup> wettest March on record, respectively. Even the Panhandle received a bounty, and owing to its normally dry nature, a less than one-half of an inch surplus carried it to the 16<sup>th</sup> wettest March on record for that area. Coming up short for the month was the southeast with a deficit of over 2 inches, the 22<sup>nd</sup> driest March on record. Suffering a similar fate were the south central and east central sections of the state, both of which fell more than one-half of an inch below normal for the month. For the year thus far, the statewide-averaged precipitation continues with a rather healthy surplus of well over an inch. West central, north central, and southwestern Oklahoma are much improved over the same period last year, with each averaging over 3 inches above normal, the 3<sup>rd</sup>, 5<sup>th</sup>, and 5<sup>th</sup> wettest January-March periods on record, respectively.

### March 2004 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	88°F	Hollis	March 19th
Low Temperature	19°F	Boise City	March 2nd
High Precipitation	7.65 in.	Brekenridge	
Low Precipitation	0.74 in.	Kenton	

### Temperature

To say the state's statewide-averaged temperature was above normal would be a bit of an understatement. Widespread 70s and 80s throughout the month helped to propel the month to finish more than 4 degrees above normal. In fact, every region of Oklahoma was at least 3 degrees above normal, each falling into the top 20 warmest on record. For the year-to-date, the statewide-averaged temperature remained significantly above normal, more than 1.5 degrees, and ranked as the 23<sup>rd</sup> warmest such period.

### Kingfisher Flooding

More than 5 inches of rain fell on March 4<sup>th</sup> in Kingfisher and the surrounding areas. In the early morning hours of March 5<sup>th</sup>, the swollen Kingfisher and Uncle John's creeks overflowed their banks, submerging northern sections of town in up to 5 feet of water. The damage from the flood was quite extensive: 99 dwellings, 37 businesses, three churches, and four apartments. Five injuries were reported in Kingfisher as a result of the flooding. A train traveling through the area derailed two miles north of Kingfisher just before daybreak on the 5<sup>th</sup>. Approximately 800 feet of track was replaced due to damage from the flood and derailment. The derailment caused automobiles being carried by the train to catch fire, which then burned out of control due to the firefighting personnel's inability to reach the site. This was reportedly the flood-prone area's third major incident in the past 12 years. Longtime residents indicated that a flood of this magnitude occurs in the affected area approximately every 5 years.

## **March Daily Highlights**

**March 1-4:** The month started with seasonable weather, as temperatures on the 1<sup>st</sup> climbed into the 50s and 60s. Much like its reputation describes, the wind was fairly fierce that first day as well, gusting from the west over 30 mph. A warm front on the 2<sup>nd</sup> and 3<sup>rd</sup> pushed northwards through the state, generating showers and thunderstorms which dumped close to 4 inches of rain in northeastern Oklahoma. That was merely a prelude to a more severe scenario that played out on the 4<sup>th</sup>, culminating with an end to the state's longest recorded tornado drought in history. A large complex of storms moved from southwestern up through central and finally north central Oklahoma in the early morning hours, accompanied by flooding rainfall and high winds. Another bout of severe weather moved into southwestern and southern sections of the state later that afternoon. An 86 mph wind gust was recorded by the Medicine Park Mesonet site, and 80 mph winds were reported at Waurika, removing the roof of a barn and inflicting extensive tree damage. Wind gusts over 70 mph were widespread with this severe event. Flooding was common in west central Oklahoma. A deluge of 5.31 inches was recorded by the Kingfisher Mesonet site, while 5.21 inches fell at Hinton. Rainfall amounts of greater than 4 inches were common across the area. Flash flooding was reported in Logan, Garfield, Kay, Noble, and Kingfisher counties. At 5:27 p.m., Oklahoma's longest recorded tornado drought ended at 292 days when a small F0 twister touched down 2 miles north of Muldrow, lifting a minute later. Damage from the small tornado's mile-long path included a destroyed barn and carport.

**March 5-12:** The intervening eight days were a study in tranquil weather. Highs were often found lazily drifting into the 70s as high pressure dominated. The pleasant weather was interrupted every so often by cool fronts and a brief cool-down, but temperatures seemed to recover quite nicely after each intrusion of cold air. Very little precipitation fell in this time frame after the deluge of the previous week.

**March 13-16:** The state saw a bit more in the way of precipitation the next four days, although amounts were generally less than an inch. An upper level storm system over the Texas panhandle on the 13<sup>th</sup> furnished the southern sections with a few showers. Idabel saw nearly one-half of an inch. The rain continued into the next day, with Idabel receiving nearly three-quarters of an inch on that day as well. High temperatures throughout this period ranged from the 50s under cloudy skies, to the 70s in more sunny environs.

**March 17-22:** The month's second major bout with severe weather struck on the 17<sup>th</sup>, this time confined to the northeast. A weak cold front triggered storms to fire in the late afternoon. The main threats from this event were hail and strong winds once again. Widespread reports of damage and hail up to golfball size occurred with these storms. The Mesonet site at Cookson led the way with over 2 inches of rainfall, but most rainfall amounts were less than one-half of an inch. Temperatures that

day warmed into the 80s before the intrusion of cool air. The temperatures rebounded quite nicely on the 18<sup>th</sup>, however, once again rising into the 70s and 80s. The month's high temperature of 88 degrees was recorded at the Hollis Mesonet site on the 19<sup>th</sup>. The first day of spring was very mild and humid. Southerly winds ferried moisture northward to clash with a cold front which had rapidly traversed the state from the north. The result was a few strong thunderstorms, particularly in Bryan County. Rainfall amounts were light with the storms, however. Highs on the season's beginning managed to rise into the 80s along the Red River, before the front passed through. High pressure built in the following couple of days, with cool nights and pleasant afternoons.

**March 23-28:** Low pressure in the lee of the Rockies the next several days set the conditions needed for another outbreak of severe weather. Highs during this period rose once again into the 70s and 80s, and the winds howled from the south at 20-30 mph, with higher gusts. With abundant moisture in place, and an approaching cold front, storms finally popped up on the 26<sup>th</sup> in both northern and southern sections of the state. Amounts were generally less than an inch, but the state's most violent weather since May 2003 appeared on the 27<sup>th</sup>. The storms developed early on the 27<sup>th</sup> and pushed northeast. Rainfall was heaviest near the cold front, with another 1-3 inches falling in north central Oklahoma, adding to their totals from the month's first week. Over 3 inches fell in Garfield County, with 1-2 inches being common from Oklahoma City northward. Hail greater than 2 inches in size was reported in Beckham and Custer County. The big story of the day, however, was an outbreak of weak tornadoes, which occurred in northwestern sections. Seven tornadoes touched down that day, with the largest, an F1, occurring near Sharon in Woodward County. Fortunately, the 250 yard wide tornado lasted only a few minutes, striking mostly rural areas. The other tornadoes that day were even weaker, touching down for a few moments only, in general. Mostly cloudy skies greeted the state on the 28<sup>th</sup>. Other than some light rain that fell in southeastern sections along the front, the weather was quiet and seasonable.

**March 29-31:** The month did not live up to its billing, exiting as more lamb than lion. Mostly clear skies and highs in the 70s greeted Oklahoma in the month's final 3 days. Winds died down as well as high pressure furnished a tranquil curtain-call for the month.

## March 2004 Statewide Statistics

### Temperature

	Average	Depart.	Rank (1892-2004)
Month (March)	54.5°F	4.3°F	11th Warmest
Year-to-Date (Jan-Mar)	44.3°F	1.7°F	23rd Warmest

### Precipitation

	Total	Depart.	Rank (1892-2004)
Month (March)	3.66 in.	0.55 in.	22nd Wettest
Year-to-Date (Jan-Mar)	7.63 in.	1.31 in.	16th Wettest

Depart. = Departure from 30-year normal

## March 2004 Severe Weather

### Significant Tornadoes (F2 or greater)

No significant tornadoes were reported in the state.

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

Size (in.)	Location	County	Date
2.00	1 NW Oneta	Wagoner	03/17/04
2.50	2 SW Sayre	Beckham	03/27/04
2.50	5 E Butler	Custer	03/27/04
2.75	2 S Clinton	Custer	03/27/04

### Wind Gusts (70 mph or greater)

Speed (m.p.h.)	Location	County	Date
86	3 W Medicine Park	Comanche	03/04/04
80	Waurika	Jefferson	03/04/04
77	Lawton	Comanche	03/04/04
70	Ringling Mesonet site	Jefferson	03/04/04
70	5 WSW Davis	Murray	03/04/04
70	Allen	Pontotoc	03/04/04
70	Atwood	Hughes	03/04/04
70	2 N Arkoma	Le Flore	03/17/04

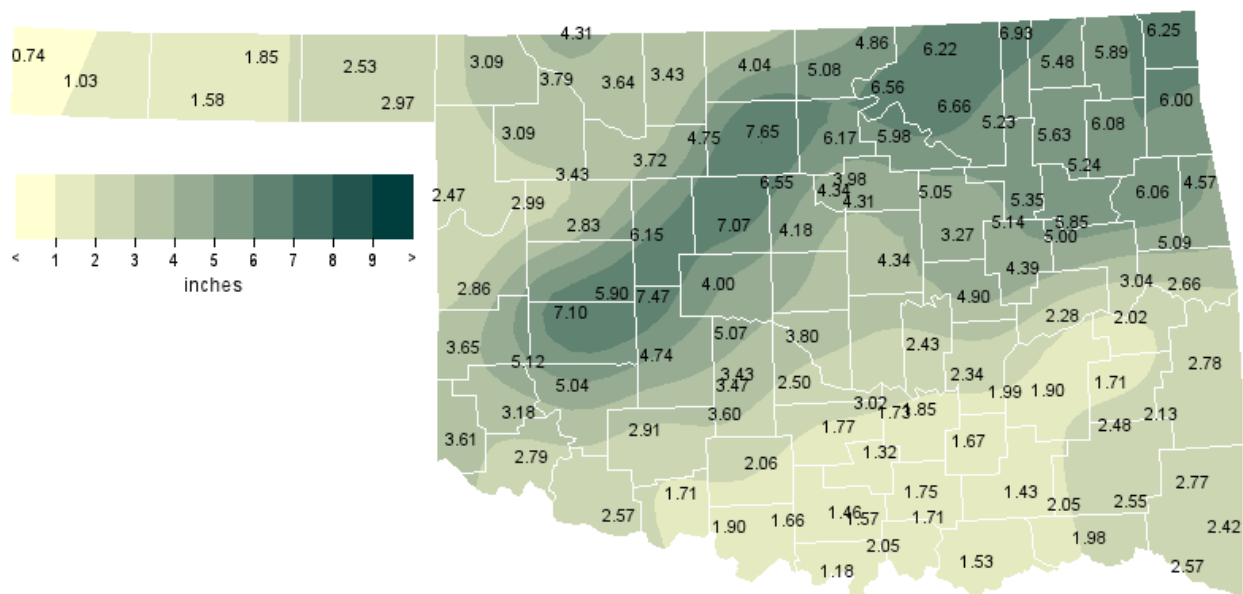
### Flooding

Location	County	Date
5 S Watonga	Blaine	03/04/04
Nardin	Kay	03/04/04
Fairmont	Garfield	03/04/04
4 E Salt Fork	Grant	03/04/04
9 N Perry	Noble	03/04/04
3 W Kingfisher	Kingfisher	03/04/04
1 E Lovell	Logan	03/04/04
2 NE Lovell	Logan	03/04/04
4 SE Enid	Garfield	03/04/04
7 SSW Ponca City	Kay	03/04/04
4 S Blackwell	Kay	03/04/04
Lucien	Noble	03/04/04
Perry	Noble	03/04/04
Bartlesville	Washington	03/04/04
5 N Wann	Washington	03/04/04
4 E Wann	Nowata	03/04/04
4 N Hominy	Osage	03/04/04
Claremore	Rogers	03/04/04
4 S Oologah	Rogers	03/04/04
Pawnee	Pawnee	03/04/04
Pawhuska	Osage	03/04/04
Nowata	Nowata	03/04/04

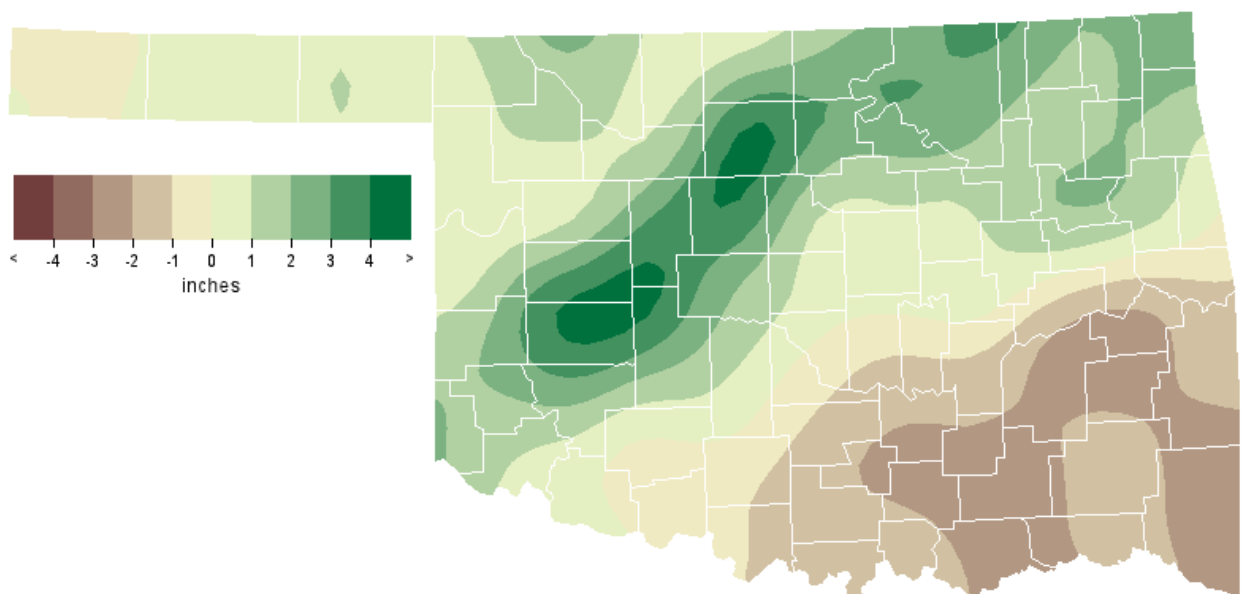
## Record Events Reports

Description	Day	Location	Record	Previous Record	Year
Maximum Daily Rainfall	4	Oklahoma City	1.60 inches	0.67 inches	1933
Maximum Daily Rainfall	4	Tulsa	2.30 inches	1.45 inches	1953
Maximum Daily Rainfall	29	Tulsa	3.05 inches	2.55 inches	1912

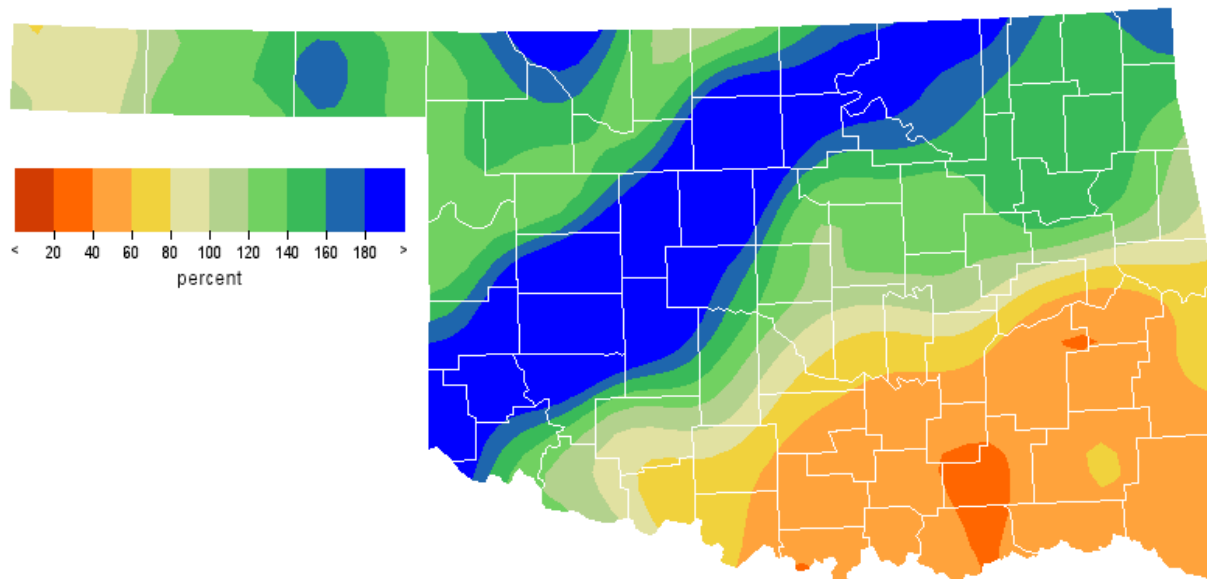
## March 2004 Observed Precipitation



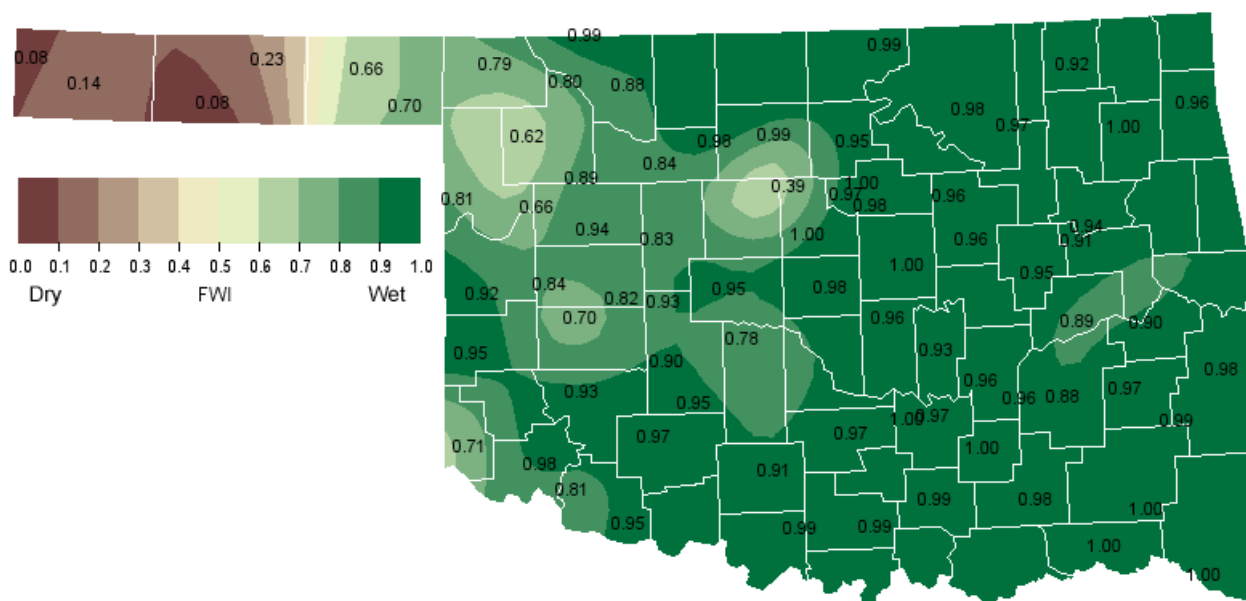
## March 2004 Departure from Normal Precipitation



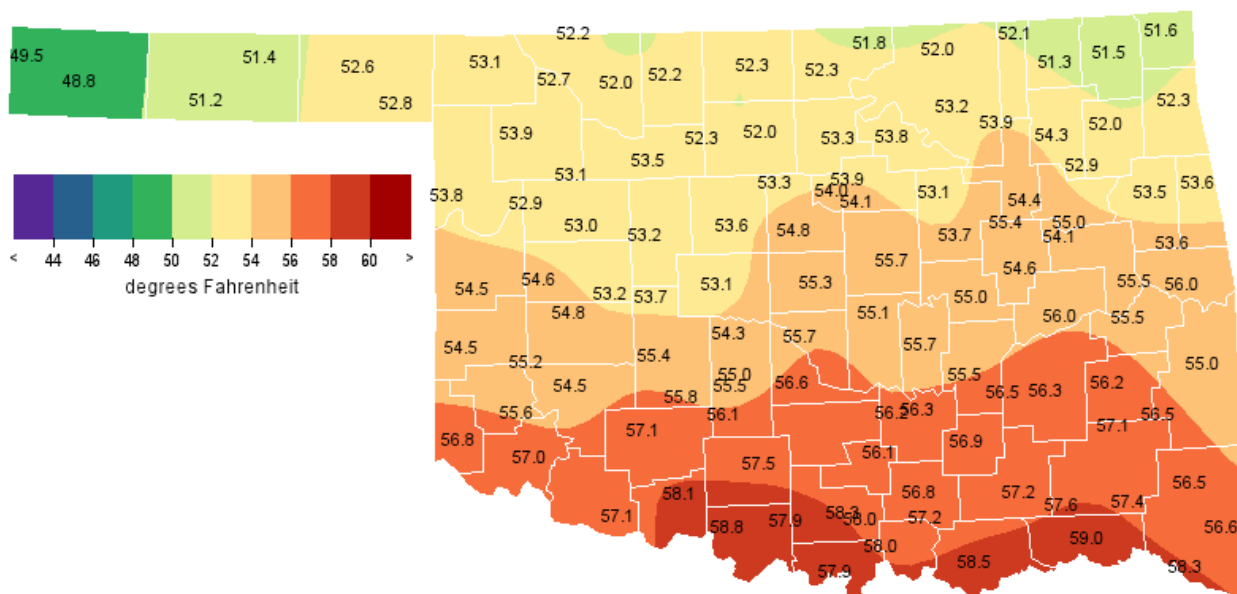
### March 2004 Percent of Normal Precipitation



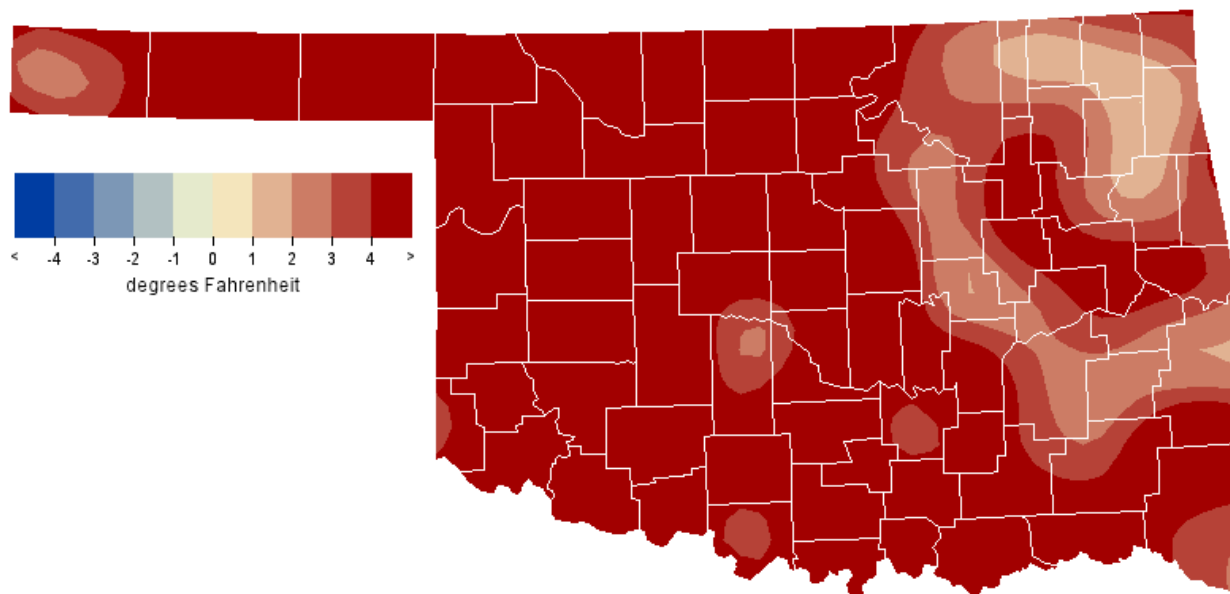
### March 2004 Average Soil Moisture at 25cm



## March 2004 Average Temperature



## March 2004 Departure from Normal Temperature



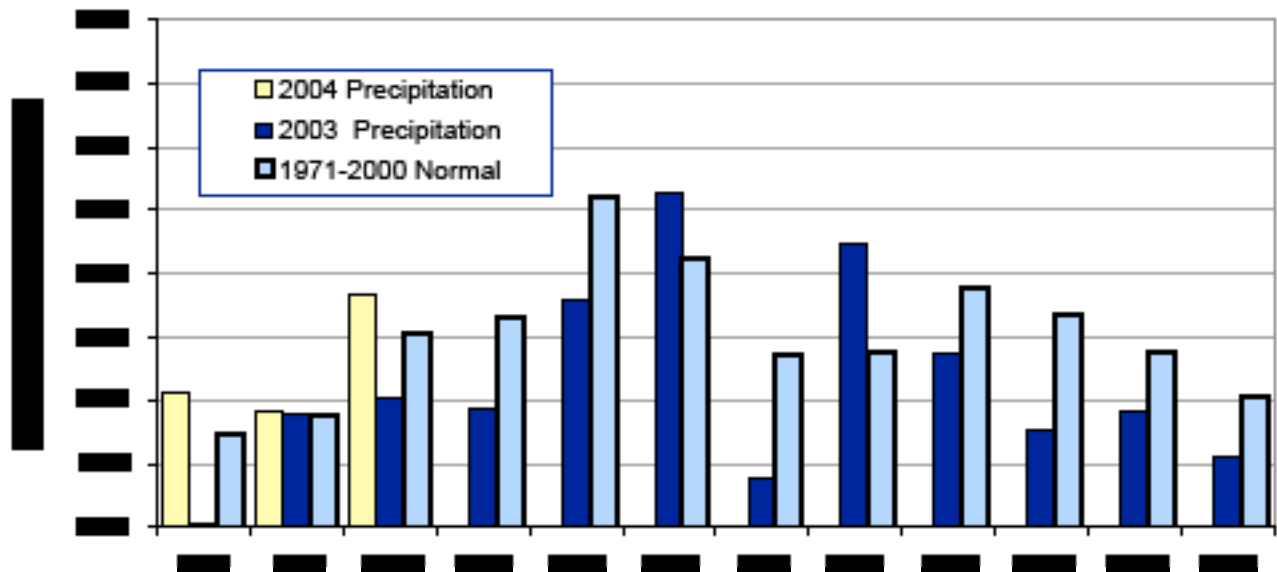
# Mesonet Monthly Summary for March 2004

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	53.8	86	19	26	2	367	20	2.47	1.88	4	Goodwell	51.2	87	19	26	2	430	2	1.58	.91	4
Beaver	53.1	86	19	28	16	****	****	2.20	1.48	4	Hooker	51.4	86	19	27	2	427	4	1.85	1.13	4
Boise City	48.8	85	19	19	2	501	0	1.03	.75	4	Kenton	49.5	84	19	19	1	482	1	.74	.35	4
Buffalo	53.1	88	19	27	2	392	22	3.09	2.08	4	Slapout	52.7	86	19	27	2	395	15	2.97	1.86	4
<b>NORTH CENTRAL</b>																					
Blackwell	52.2	82	19	28	16	403	8	5.08	3.48	4	Medford	52.2	80	19	28	2	404	9	4.04	2.40	4
Breckenridge	52.0	81	19	29	16	412	10	7.65	4.51	4	Newkirk	51.8	79	17	27	16	413	5	4.86	2.76	4
Cherokee	52.2	80	19	27	2	407	10	3.43	2.39	4	Red Rock	53.2	82	17	29	2	374	10	6.17	4.40	4
Fairview	53.5	82	19	28	2	366	9	3.72	2.38	4	Seiling	53.2	81	19	28	2	376	10	3.43	2.18	4
Freedom	52.7	82	19	26	2	392	12	3.79	2.91	4	Woodward	53.9	86	19	27	2	364	20	3.09	2.27	4
Lahoma	52.3	81	19	30	2	402	8	4.75	2.72	4	Alva	52.1	80	19	26	2	412	12	3.64	2.52	4
May Ranch	52.2	81	25	27	2	408	10	4.31	3.36	4											
<b>NORTHEAST</b>																					
Bixby	54.4	80	17	31	12	345	16	5.35	2.85	3	Pryor	52.0	79	26	27	12	415	11	6.04	2.26	3
Burbank	****	***	***	***	***	****	****	6.56	3.65	4	Skiatook	53.8	79	17	28	16	354	8	5.23	1.84	28
Copan	52.0	76	17	29	12	407	5	6.93	3.84	4	Vinita	51.5	76	19	27	22	427	8	5.89	2.36	28
Foraker	52.0	80	17	26	16	411	6	6.22	3.23	4	Wynona	53.2	81	17	29	16	373	8	6.66	4.38	4
Jay	52.3	75	17	28	12	402	9	6.00	2.50	28	Porter	55.0	80	20	32	12	324	14	5.85	3.93	3
Miami	51.6	75	26	28	12	424	8	6.25	1.91	4	Inola	53.0	79	17	28	12	383	10	5.24	2.33	3
Nowata	51.3	75	26	26	12	432	7	5.48	2.04	28	Claremore	54.3	80	17	31	16	343	11	5.63	2.46	28
Pawnee	53.8	82	17	29	16	358	10	5.98	3.74	4											
<b>WEST CENTRAL</b>																					
Bessie	54.8	82	19	29	2	333	18	7.10	4.39	4	Putnam	53.0	81	19	29	2	384	11	2.83	1.84	4
Butler	54.6	84	19	28	2	341	19	****	****	***	Retrop	55.2	84	19	32	2	325	20	5.12	3.98	4
Camargo	52.9	83	25	29	6	389	13	2.99	2.30	4	Watonga	53.1	80	19	30	2	378	9	6.15	4.17	4
Cheyenne	54.5	84	19	29	2	343	18	2.86	2.03	4	Weatherford	53.2	79	19	30	2	375	10	5.90	4.06	4
Erick	54.5	85	19	31	6	345	19	3.65	2.71	4											
<b>CENTRAL</b>																					
Bowlegs	56.0	81	18	30	10	****	****	2.43	1.51	3	Okemah	55.0	80	17	32	8	323	12	4.90	3.45	3
Bristow	53.8	80	17	29	10	361	13	3.27	1.82	3	Perkins	54.1	81	17	31	16	349	11	4.31	2.37	4
Chandler	55.6	83	17	32	16	306	16	4.34	1.73	3	Shawnee	55.1	81	17	31	2	318	11	****	****	***
Chickasha	55.1	82	18	30	8	324	16	3.43	1.80	4	Spencer	55.4	82	19	32	2	310	12	****	****	***
El Reno	53.1	82	19	29	2	383	14	4.00	2.37	4	Stillwater	53.9	83	17	31	16	360	15	3.98	2.60	4
Guthrie	54.8	83	19	31	2	334	16	4.18	2.25	4	Washington	56.6	84	17	35	10	280	20	2.50	1.46	3
Kingfisher	53.6	82	19	29	2	367	14	7.07	5.31	4	Ninnekah	55.5	84	17	32	8	313	19	3.47	1.83	4
Marena	54.1	83	17	30	16	352	13	4.34	2.67	4	Acme	56.1	85	17	34	2	299	22	3.60	1.66	4
Minco	54.3	80	17	32	2	344	12	5.07	2.31	4	Norman	55.7	83	17	35	2	305	16	3.80	1.99	3
Oilton	53.0	82	17	28	22	384	12	5.05	1.78	4	Marshall	53.3	82	19	29	2	376	14	6.55	4.81	4
<b>EAST CENTRAL</b>																					
Calvin	55.5	81	17	29	10	309	15	2.34	.88	3	Stigler	55.4	80	20	30	12	314	17	2.02	.69	28
Cookson	53.6	79	18	29	12	365	12	5.09	2.12	17	Stuart	56.5	81	20	34	10	281	18	1.99	.59	28
Eufaula	56.2	80	17	35	16	****	****	2.28	.61	4	Tahlequah	53.5	79	18	29	12	365	8	6.06	3.66	3
Haskell	54.1	79	17	31	16	351	14	5.00	3.28	3	Webbers Falls	55.4	80	17	30	12	317	19	3.04	.91	28
McAlester	56.3	80	17	32	8	291	22	1.90	.86	28	Westville	53.6	78	18	31	31	363	8	4.57	2.12	3
Okmulgee	54.5	81	17	28	10	341	16	4.39	2.56	3	Hectorville	55.3	79	17	33	16	313	13	5.14	2.87	3
Sallisaw	56.0	80	17	30	8	302	24	2.66	.69	28											
<b>SOUTHWEST</b>																					
Altus	56.9	86	19	35	1	285	35	2.79	1.66	4	Medicine Park	57.1	84	17	35	6	271	25	2.91	1.56	4
Fort Cobb	55.4	83	19	35	1	320	21	4.74	3.53	4	Tipton	****	***	***	***	***	****	****	****	****	***
Hinton	53.7	82	19	31	2	361	11	7.47	5.21	4	Walters	58.1	87	17	34	8	251	36	1.71	.76	4
Hobart	54.5	81	19	32	2	341	16	5.04	2.97	4	Apache	55.8	82	17	33	2	303	17	****	****	***
Hollis	56.8	88	19	34	1	291	36	3.61	2.84	4	Grandfield	57.1	83	17	37	8	274	29	2.57	1.40	4
Mangum	55.3	86	19	30	6	****	****	3.18	2.40	4											
<b>SOUTH CENTRAL</b>																					
Ada	56.3	81	17	34	16	288	17	1.85	.84	3	Ringling	57.9	85	17	35	8	246	27	1.66	.73	3
Burneyville	57.8	85	20	30	10	251	29	1.18	.69	4	Sulphur	56.1	81	20	31	8	293	18	1.32	.43	4
Byars	57.1	82	17	36	31	****	****	3.02	1.43	3	Tishomingo	56.8	83	20	31	10	****	****	1.75	1.04	4
Centrahoma	56.9	82	20	29	10	275	23	1.67	.59	4	Waurika	58.8	87	17	35	8	228	37	1.90	1.06	3
Durant	58.5	83	20	36	8	228	26	1.53	.88	4	Vanoss	56.2	83	20	34	10	295	21	1.73	.79	3
Ketchum Ranch	57.5	86	17	36	8	259	27	2.06	1.26	3	Bee	57.2	83	20	31	10	264	24	1.71	.99	4
Lane	57.2	82	20	32	10	267	24	1.43	.67	4	Newport	58.3	85	20	37	8	233	27	1.46	.84	4
Madill	58.0	84	20	32	8	243	27	2.05	1.13	4	Ardmore	58.0	85	20	36	31	244	26	1.57	.66	4
Pauls Valley	57.6	84	17	35	8	****	****	1.77	.83	3											
<b>SOUTHEAST</b>																					
Antlers	57.6	84	20	29	10	260	31	2.05	.90	4	Mt Herman	56.5	79	20	31	8	277	14	2.77	1.14	4
Clayton	57.0	81	17	30	10	267	20	2.48	1.10	4	Talihina	56.5	79	17	28	10	281	16	2.13	1.07	4
Cloudy	57.5	81	20	32	8	253	21	2.55	1.29	4	Wilburton	56.2	80	17	30	8	296	22	1.71	.97	4
Hugo	59.0	83	20	37	17	215	28	1.98	1.18	4	Wister	55.1	79	18	26	10	325	17	2.78	1.24	4
Idabel	58.3	82	20	33	8	230	22	2.57	.76	4	Broken Bow	56.6	82	20	28	8	273	12	2.42	.72	14

## March 2004 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Mar-03
Panhandle	2.03	0.40	16th Wettest	5.84 (1973)	0.00 (1895)	1.08
North Central	4.46	1.78	7th Wettest	8.18 (1973)	0.00 (1936)	2.31
Northeast	5.96	2.29	7th Wettest	9.79 (1973)	0.00 (1900)	3.39
West Central	4.58	2.18	4th Wettest	7.24 (1973)	0.00 (1895)	0.86
Central	4.24	1.00	11th Wettest	7.88 (1990)	0.00 (1900)	2.25
East Central	3.58	-0.51	45th Wettest	10.63 (1945)	0.46 (1911)	2.84
Southwest	3.78	1.52	6th Wettest	5.52 (1973)	0.00 (1940)	0.74
South Central	1.74	-1.81	31st Driest	8.46 (1945)	0.20 (1950)	1.44
Southeast	2.34	-2.14	22nd Driest	12.38 (1945)	1.01 (1954)	2.42
Statewide	3.66	0.55	22nd Wettest	7.46 (1973)	0.38 (1971)	1.97

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

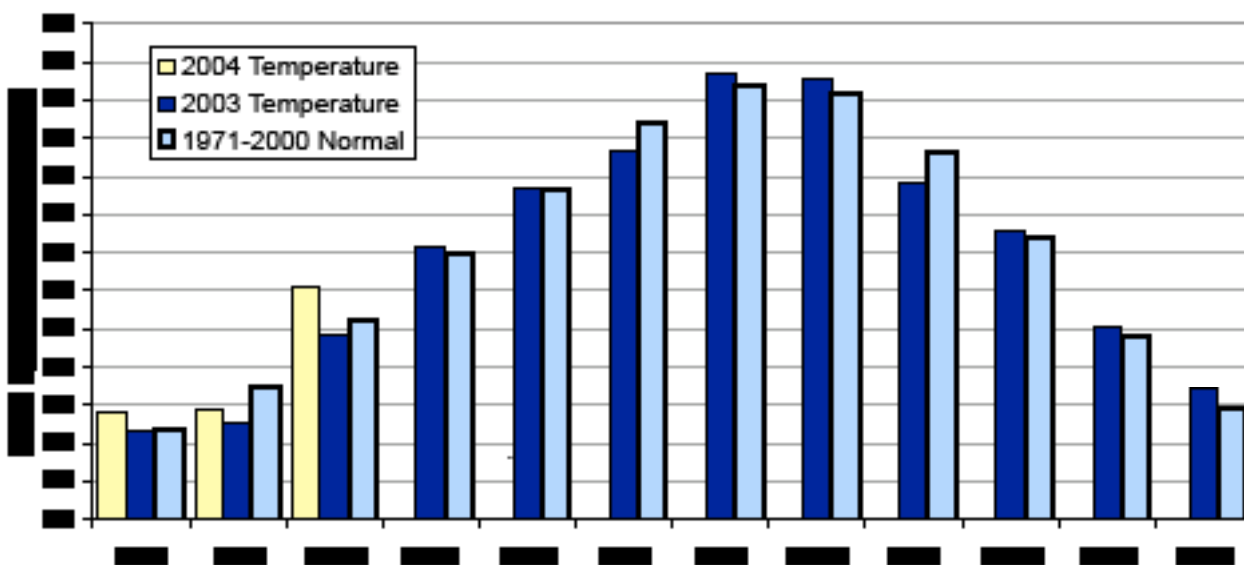




## March 2004 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Mar-03 (F)
Panhandle	51.6	5.4	5th Warmest	54.3 (1910)	32.9 (1915)	46.8
North Central	52.6	4.4	12th Warmest	57.6 (1910)	35.3 (1915)	48.8
Northeast	52.9	3.3	18th Warmest	57.7 (1910)	37.3 (1960)	49.0
West Central	54.0	5.1	7th Warmest	56.8 (1910)	35.8 (1915)	49.5
Central	54.7	4.2	11th Warmest	58.4 (1910)	37.7 (1915)	50.2
East Central	55.1	3.6	16th Warmest	59.5 (1907)	39.2 (1915)	52.0
Southwest	56.1	4.6	7th Warmest	58.7 (1907)	38.2 (1915)	51.9
South Central	57.4	4.4	10th Warmest	61.1 (1907)	40.4 (1915)	53.1
Southeast	57.0	4.2	13th Warmest	61.5 (1907)	42.0 (1915)	54.1
Statewide	54.5	4.3	11th Warmest	57.9 (1907)	37.6 (1915)	50.5

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



## Mesonet Extremes for March 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	88	19th	Buffalo	19	2nd	Boise City	3.09	Buffalo	2.08	4th
North Central	86	19th	Woodward	26	2nd	Alva	7.65	Breckenridge	4.51	4th	Breckenridge
Northeast	82	17th	Pawnee	26	16th	Foraker	6.93	Copan	4.38	4th	Wynona
West Central	85	19th	Erick	28	2nd	Butler	7.10	Bessie	4.39	4th	Bessie
Central	85	17th	Acme	28	22nd	Oilton	7.07	Kingfisher	5.31	4th	Kingfisher
East Central	81	17th	Calvin	28	10th	Okmulgee	6.06	Tahlequah	3.66	3rd	Tahlequah
Southwest	88	19th	Hollis	30	6th	Mangum	7.47	Hinton	5.21	4th	Hinton
South Central	87	17th	Waurika	29	10th	Centrahoma	3.02	Byars	1.43	3rd	Byars
Southeast	84	20th	Antlers	26	10th	Wister	2.78	Wister	1.29	4th	Cloudy
Statewide	88	19th	Hollis	19	2nd	Boise City	7.65	Breckenridge	5.31	4th	Kingfisher

# April Climatological Outlook

April is the first full month of spring- the season of newly green trees and grass, redbud trees in bloom, and wildflowers aplenty. Baseball, romance, and pollen permeate the air, creating the dizzying mixture of joy and misery that marks the season. Most of April features exceedingly pleasant weather, much like that on April 22, 1889. According to the weather report submitted by the observer at Fort Reno, the day of the first great land run featured a high temperature of 80 degrees Fahrenheit, sandwiched between overnight lows of 46 and 54 degrees. Winds were northeasterly and light. Clouds were few.

April is the state's 5<sup>th</sup> wettest and 7<sup>th</sup> warmest month, establishing it clearly as part of the spring transition season. The statewide-averaged normal precipitation, based on the 30-year record compiled from 1971 through 2000, is 3.32 inches. The average monthly temperature, compiled from observations over the same period, is 59.8 degrees.

## Precipitation

Mean: 3.32 inches  
Wettest April: 1942, 8.50 inches  
Driest April: 1989, 0.58 inches  
Wettest location: Daisy, 5.19 inches  
Driest location: Regnier, 1.36 inches  
Most recorded: 17.78 inches, Okemah, 1945

Precipitation generally increases from southeast to northwest. Monthly normal precipitation for individual stations ranges from 1.36 inches at Oklahoma's driest observing station, Regnier (in the northwestern panhandle), to 5.19 inches at Daisy, on the western edge of southeastern Oklahoma's Ouachita Mountains. A statewide-averaged precipitation of 8.50 inches rates 1942 as the wettest April in the state's annals. The driest April, statewide, was in 1989 when the state's reporting stations received an average of just 0.58 inch for the month. The greatest April precipitation at any reporting station was 17.78 inches recorded at Okemah in 1945. Snowfall is rare in April, except in the panhandle. Boise City averages 2.5 inches of snow during April. Goodwell reported 17 inches of snow during April 1988, and Fargo received 14 inches during that month in 1973.

Normal monthly temperatures decrease from south to north. Waurika is the state's warmest location during April with a normal temperature of 63.9 degrees. Boise City ranks as the coolest site with a monthly average temperature of 54 degrees. Normal daily maximum temperatures range from 77 degrees at Waurika to 67.8 degrees at Newkirk. Normal daily minimum

temperatures range from Waurika's 50.7 degrees to Boise City's 37.3. Temperatures drop below the freezing mark an average of nearly 8 times during April at Kenton, but freezes are uncommon across most of the main body of the state. Except in the panhandle, any sub-freezing temperatures after mid-April would constitute a late freeze and would be harmful to plants, especially fruit or pecan trees. Southwestern Oklahoma experiences temperatures in the 90s an average of three times each April. Hot and cold do manage to creep in, however. On April 12, 1972, Mangum recorded a high temperature of 106 degrees, the highest of the 15 temperature reports of 102 degrees or more across the state that day. Conversely, Hooker's daily minimum temperature on April 4, 1979 was 7 degrees, thereby establishing the other extreme temperature for the month.

## Temperature

Mean: 59.8 degrees  
Warmest Location: 63.9 degrees, Waurika  
Coolest Location: 54.0 degrees, Boise City  
Warmest April: 1954, 65.4 degrees  
Coolest April: 1983, 54.0 degrees  
Hottest recorded: 106 degrees, Mangum, April 12, 1972  
Coldest recorded: 7 degrees, Hooker, April 4, 1979

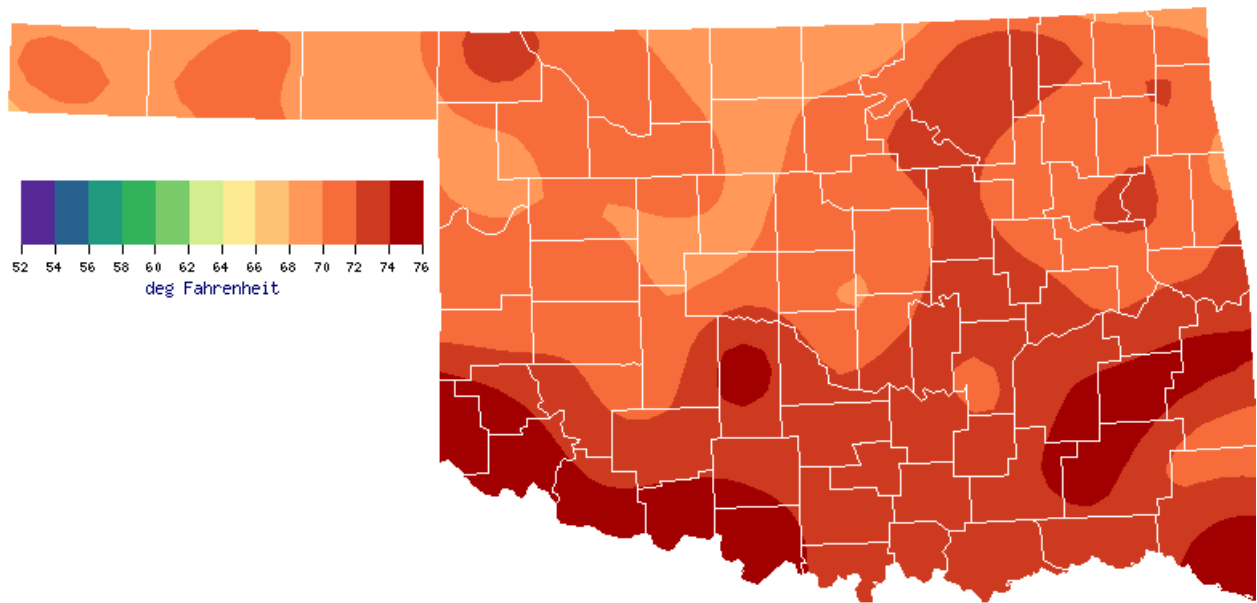
Spring brings with it Oklahoma's noted severe weather season. April is Oklahoma's windiest month and ranks second among the 12 months in the number of tornadoes observed across the state. The state has averaged 10.7 tornadoes each April since 1950, a monthly average exceeded only by May. Eight years of wind observations from the statewide Oklahoma Mesonet have revealed an average April wind speed, statewide, of 10.6 miles per hour, which barely edges March for windiest month honors. South winds prevail in most areas, although passing cold fronts are still capable of turning winds to northerly for a day or so at a time.

Comprehensive records of tornado occurrence are available from 1950 to the present. A total of 579 tornadoes are listed as having struck within Oklahoma during April from 1950 through 2003. Forty of those tornadoes were reported in 1957, easily the most of any April during the period.

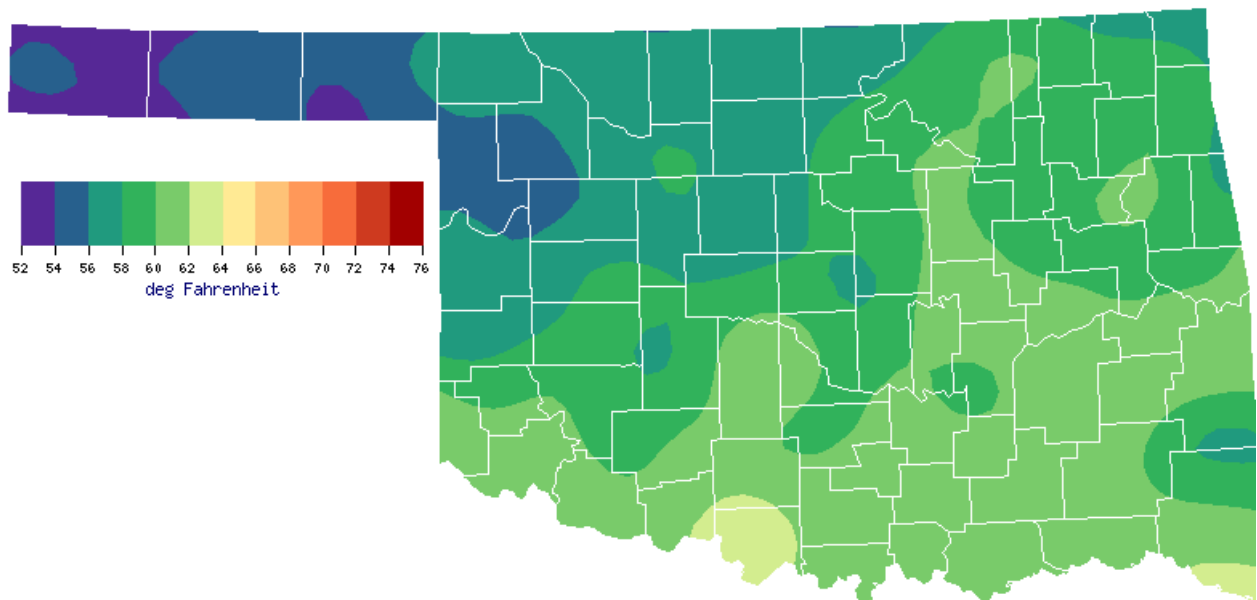
## Tornadoes

Average April Tornadoes: 10.7  
Most: 40 (1957)

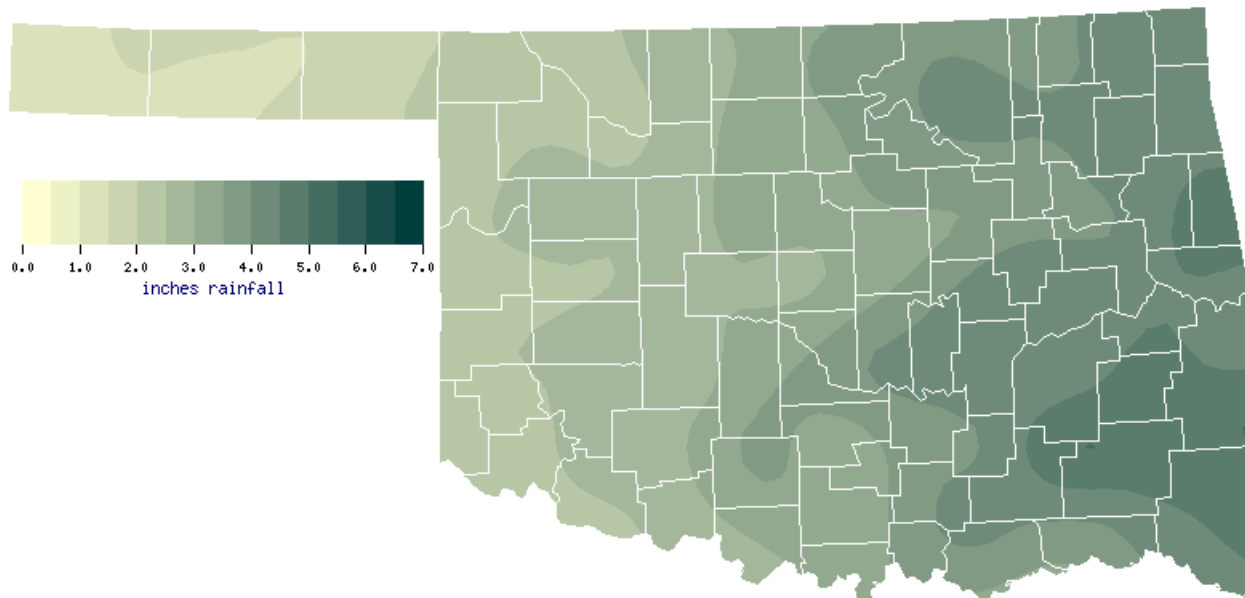
## **April Normal Monthly Maximum Temperature (1971-2000)**



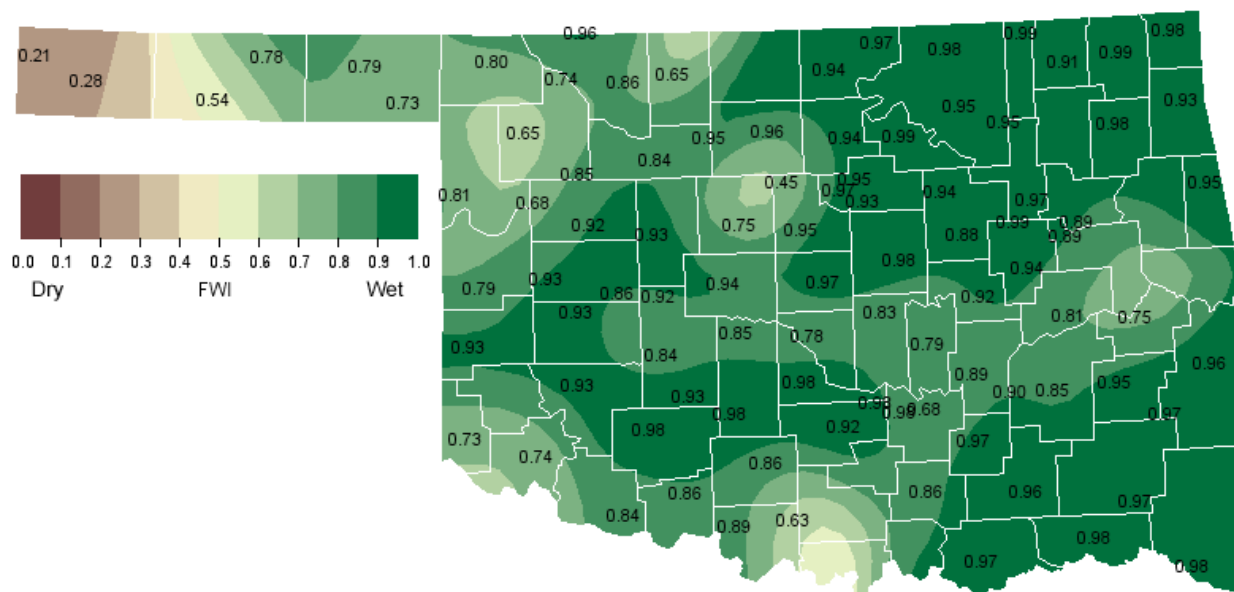
## **April Normal Monthly Minimum Temperature (1971-2000)**



## April Normal Precipitation (1971-2000)

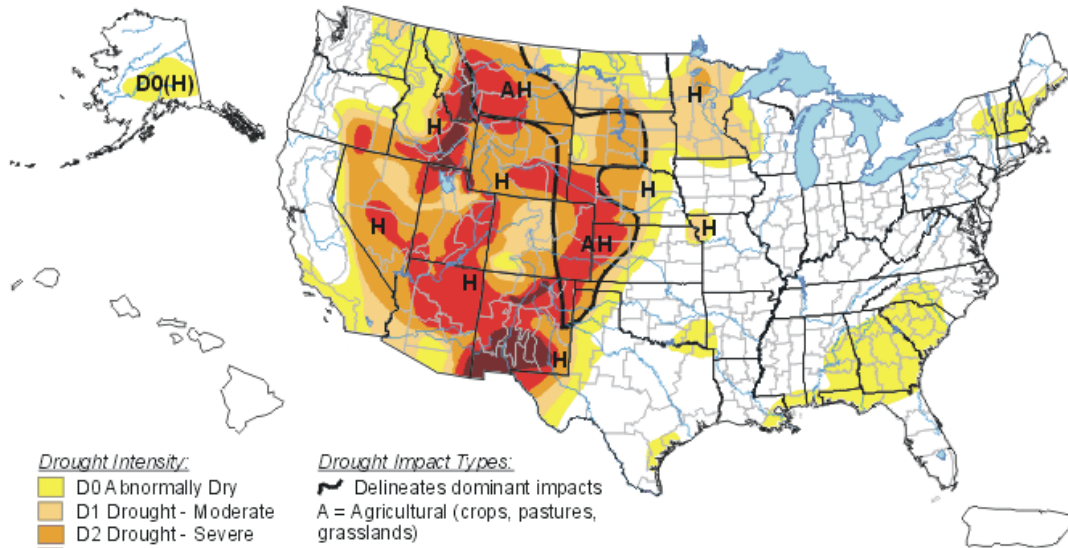


## April 1, 2004 Soil Moisture Conditions at 25cm



# U.S. Drought Monitor

March 30, 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)
- (No type = Both impacts)

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



Released Thursday, April 1, 2004

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

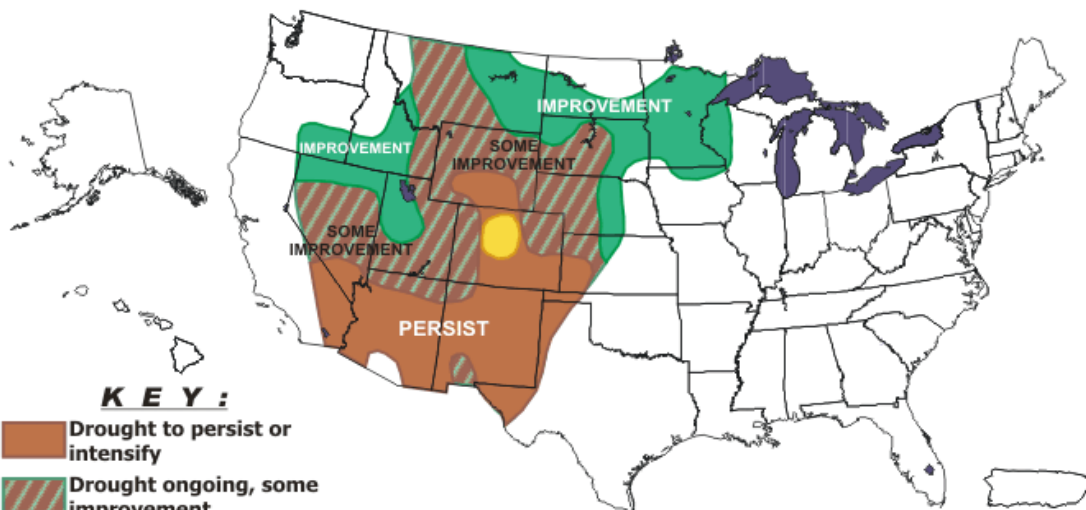
<http://drought.unl.edu/dm>



## U. S. Seasonal Drought Outlook

Through June 2004

Released March 18, 2004

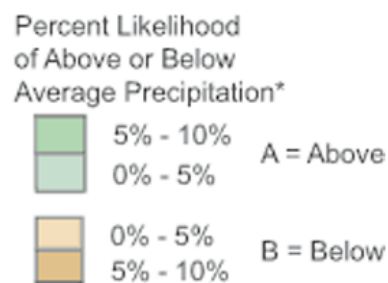
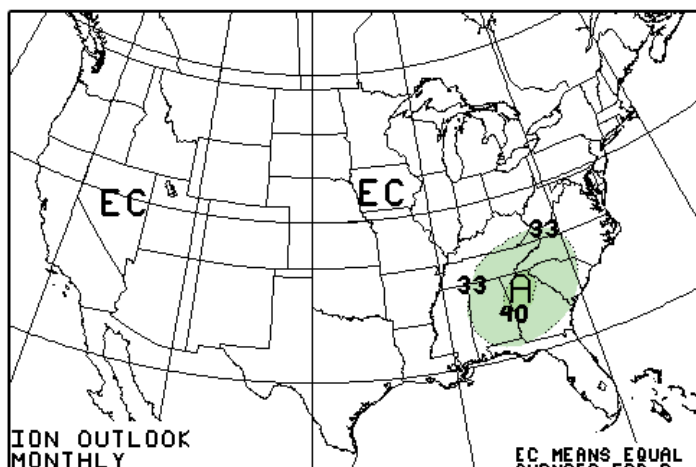


**KEY:**

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

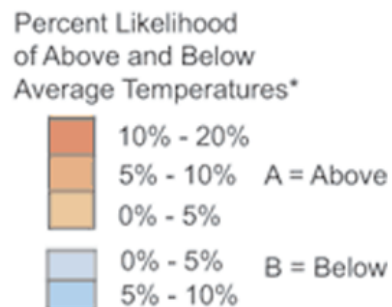
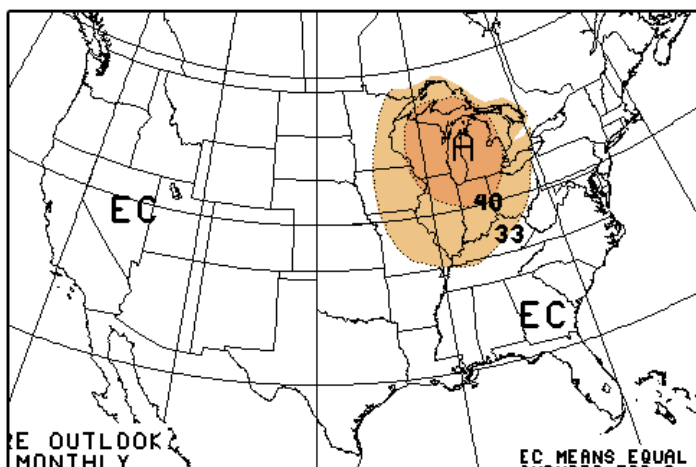
Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance, so use caution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

## April 2004 U.S. Precipitation Forecast



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

## April 2004 U.S. Temperature Forecast

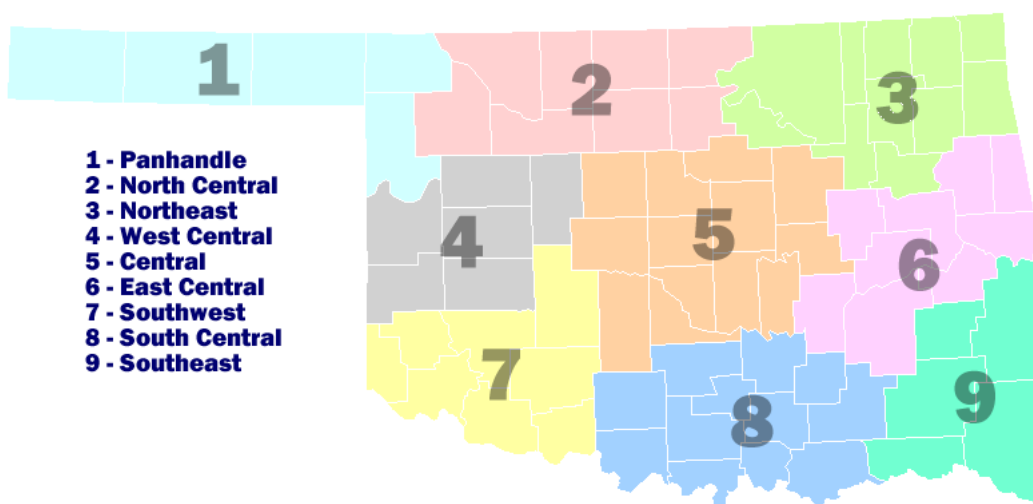


\*EC indicates no forecasted anomalies due to lack of model skill.

## April Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	70.7	40.5	55.6	1.81
2	70.2	43.6	56.9	2.95
3	72.1	47.1	59.6	3.92
4	71.0	44.3	57.7	2.48
5	71.9	47.2	59.6	3.47
6	72.3	48.3	60.3	4.24
7	73.6	46.4	60.0	2.66
8	73.5	48.9	61.2	3.74
9	73.7	47.8	60.8	4.46
Statewide	72.1	46.2	59.2	3.41

## 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)



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