Oklahoma Monthly Climate Summary

FEBRUARY 2011

OKLAHOMA CLIMATOLOGICAL SURVEY

In a state accustomed to extreme weather, February was a bit startling to even the most seasoned veteran of Mother Nature's whimsy. The roller coaster ride began on the month's first day with a crippling blizzard and ended on its last with tornado warnings. The month was peppered with records, including the state's all-time lowest minimum temperature and greatest 24-hour snowfall total. Those extremes occurred amidst the larger backdrop of an intensifying drought across the western two-thirds of the state. Statewide temperature and precipitation averages look relatively boring in comparison to the singular extreme events. The statewide average precipitation total finished a tad below normal at 1.36 inches, the 55th driest February since 1895. Temperatures moderated throughout the month and ranked as the 43rd coolest on record, around 2 degrees below normal. February also marks the end of the climatological winter, which goes in the books as the 32nd coolest and 11th driest on record. The ongoing drought was the other big story during February. The prodigious snowfalls in the northeast helped that area somewhat, but the western half of the state continued with very dry conditions. Much of western Oklahoma received less than a half-inch of precipitation during the month. That continued the ongoing drought intensification in that part of the state, a reflection of the dry winter. The Panhandle, north central, west central and southwestern regions of the state all experienced winters that were within their top-five driest on record, dating back to 1895.

February 2011 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	90°F	Grandfield, Walters	27
Low Temperature	-31°F	Nowata	10
High Precipitation	4.05 in.	Mt. Herman	--
Low Precipitation	0.03 in.	Hooker	--

PRECIPITATION

The month's first 10 days brought three separate snowstorms and a prolonged visit with arctic air. The first storm combined heavy sleet and snow with winds of over 60 mph to produce blizzard conditions over much of the state. Tulsa set a record for its snowiest day ever with 13.2 inches on the first. Oklahoma City reported 12.1 inches to set the record for its snowiest day ever in February. Totals of 10-15 inches were common across the northeast with 1-6 inches reported in southern Oklahoma. Another 2-6 inches fell across the eastern half of the state on the fourth before a more powerful storm system moved in on the ninth. That storm dumped over 20 inches of snow in the northeast, including 27 inches in less than 24 hours at Spavinaw, breaking the state's all-time 24-hour snowfall record. The final epitaph of those three storms was remarkable. Preliminary reports indicate approximately 40 inches of snow fell in some areas in the northeast. The 22.5 inches of snow ranks February as the snowiest of any month in Tulsa's history and helps its seasonal total of 26.1 inches to rank as the most on record as well. Oklahoma City's final total of 18.9 inches shatters its previous February record of 12.9 inches from 1913.

TEMPERATURE

The snow cover on the 10th combined with calm winds and clear skies to drop temperatures into territory never before seen in Oklahoma. The Oklahoma Mesonet site at Nowata reached 31 degrees below zero, shattering the record for lowest temperature ever recorded in the state. The previous record of 27 degrees below zero was set three times previously at different locations in Oklahoma's first half-century of statehood, most recently at Guthrie in January 1947. Lows from 15-25 degrees below zero were reported across the northern half of the state that morning. That set the stage for yet another extreme as the temperature at Nowata rose

February 2011 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2011)
Month (February)	39.6°F	-2.1°F	43rd Coolest
Season-to-Date (Dec-Feb)	37.8°F	-1.1°F	32nd Coolest
Year-to-Date (Jan-Feb)	37.1°F	-1.7°F	33rd Coolest

Precipitation

	Average	Depart.	Rank (1895-2011)
Month (February)	1.36 in.	-0.40 in.	55th Driest
Season-to-Date (Dec-Feb)	2.53 in.	-2.70 in.	11th Driest
Year-to-Date (Jan-Feb)	1.60 in.	-1.61 in.	19th Wettest

Depart. = departure from 30-year normal

to 79 degrees seven days later on the 17th. That 110-degree temperature swing within a week was the greatest such change within seven days in Oklahoma history. Fifteen other Mesonet sites achieved a 100-degree swing within that same period, a feat accomplished only twice previously in Oklahoma since 1890. Warm weather was the rule for the second half of the month. Widespread record-high temperatures were record on the 17th with temperatures in the 70s and 80s statewide. Strong southerly winds brought more warmth on the 27th with the Oklahoma Mesonet stations at Grandfield and Walters both recording a high temperature of 90 degrees, the month's highest reading.

FEBRUARY DAILY HIGHLIGHTS

FEBRUARY 1-3: A massive winter storm continued overnight into the month's first day. Precipitation that had begun as sleet and freezing rain quickly turned to snow overnight and continued through the day. Up to 21 inches of snow was reported in localized areas in the northeast, according to preliminary reports. Tulsa recorded 13.2 inches of snow on the first while Oklahoma City had 11.8 inches. Reports of 6-12 inches were widespread across the state. Up to 2 inches of sleet fell in southern Oklahoma before the changeover to snow. Thunder was reported with the heaviest precipitation. Winds gusted over 50 mph over much of the state, combining with the snow to create true blizzard conditions. The strong winds also caused drifting snow, paralyzing travel and burying some locations in the north under 5-10 feet of snow. Frigid temperatures added to the storms impacts. By the afternoon of the first, temperatures had fallen into the single digits and low teens statewide. Wind chill temperatures plummeted in kind to less than -20 degrees. Kenton's wind chill amounted to -36 degrees when taking the wind and temperature into account. The next two days were frigid with very little melting of the snowpack. Kenton fell to a lows of -19 degrees and -18 degrees on the second and third, respectively. Nowata dropped to -18 degrees on the third as well. Temperatures began to moderate on the fourth.

FEBRUARY 4-7: Snow returned to the state on the fourth. Snow began falling overnight in southern Oklahoma before spreading farther north during the morning hours. East central Oklahoma got an additional 4-5 inches while central Oklahoma saw an inch or two. At the same time, clear skies and westerly winds brought warmer conditions to the west. Highs reached into the upper 40s there where the snow had already dwindled. More warm weather spread eastward on the fifth, allowing for the first real melting of the snowpack in northeastern Oklahoma. The Oklahoma Mesonet site at Erick reached a balmy 66 degrees while Vinita was still chilly with a high of 34 degrees. The seventh saw seasonable temperatures once again with lows in the 20s and 30s and highs mainly in the 40s.

FEBRUARY 8-10: Another powerful winter storm entered the state on the eighth, bringing with it another paralyzing bout with snow. A strong cold front began moving through the northwest during the late morning. Temperatures behind the front quickly dropped into the single digits along the northern edge of the state. Light snow started falling in the north during the afternoon before spreading south across much of the state by evening. The snow totals continued to mount overnight before tapering off in the morning. Totals were largest in the northeast where a very heavy band of snow developed during the late evening. A swath of 8-12 inches of snow surrounded an even heavier band where over 20 inches was reported. Spavinaw in far eastern Oklahoma set a new all-time state record for 24-hour snowfall with 27 inches. Amounts of 20-25 inches were widespread in the eastern portion of that band. Areas farther to the south received less snow. Oklahoma City reported 6 inches with 2-4 inches more common down along the Red River border with Texas. Wind gusts of up to 40 mph again created snowdrifts and paralyzed traffic. The storm and its associated cloudiness moved off to the east during the afternoon and evening of the ninth. A deep dome of high pressure settled over northeastern Oklahoma early on the tenth. Light winds and clear skies allowed temperatures to drop into territory never before seen in Oklahoma's climate record. The Oklahoma Mesonet site at Nowata fell to -31 degrees, besting the old all-time state record by 4 degrees. The NWS observing site at Bartlesville dropped to -28 degrees. Low temperatures across the state ranged from -31 degrees at Nowata to around 10 degrees in far southeast Oklahoma. Most of northern Oklahoma fell to between -20 degrees to -27 degrees. Sunny skies in the afternoon gave way to above-freezing readings in the south. Temperatures only rose into the teens in the northeast due to the continued snowpack.

FEBRUARY 11-17: A wild temperature swing occurred over the next seven days. By the 17th, temperatures had risen some 100 degrees and more for several stations following the frigid weather on the 10th. Nowata's high on the 17th was 79 degrees, a 110-degree swing from its low on the 10th of -31 degrees. In all, 16 Mesonet sites had at least a 100-degree swing over that same period. High temperatures on the 16th and 17th soared into the 70s and 80s over most of the state. Oklahoma City, Tulsa, Bartlesville and McAlester all set high temperature records on the 17th.

FEBRUARY 18-20: The warmth continued for the next three days with more records being set each day. Highs continued into the 70s and 80s and lows were still very warm in the 50s for the most part. Oklahoma City set high minimum temperature records with 58 degrees on the 18th and 57 degrees on the 19th. Tulsa tied its high temperature record with 77 degrees on the 19th. A frontal boundary entered the northwest on the 20th to cool things down. High temperatures still rose into the 70s and 80s ahead of the front.

FEBRUARY 21-24: The cold front pushed through overnight on the 21st. Lows dropped into the teens in the northwest but managed to remain in the 40s before the front passed through in the southeast. Another warm-up occurred over the next couple of days with warm humid air returning on the 23rd. A

cold front sagged into the northwest that evening and triggered showers and storms that lasted through the 24th. Totals of 1-2 inches were common in the northeast with lesser amounts to the south. Northwestern Oklahoma was largely left high and dry. Oklahoma City set a record rainfall total that day with 1.31 inches.

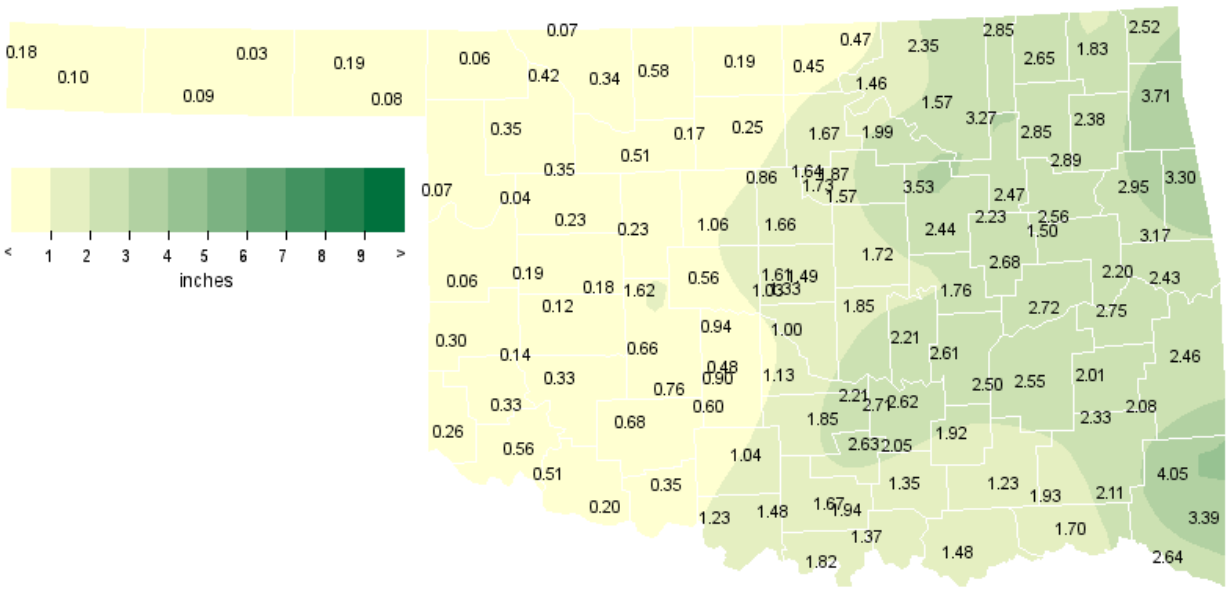
FEBRUARY 25-28: A cold front had moved through the state overnight bringing with it strong northerly winds and much colder weather. Lows fell into the 20s and 30s and did not rise much higher than that in the afternoon, thanks to more clouds. A warm-up over the next two days was brought about by an approaching storm system. A cold front and a dryline combined on the 27th to produce tornado watches and warnings as storms broke out in northern Oklahoma. Woodward had a non-thunderstorm wind gust of 73 mph. Hail from 1-2 inches pounded portions of the state to go along with severe winds. Not much rain occurred with the storms, although totals did exceed a half of an inch in east central Oklahoma.

FEBRUARY 2011 SEVERE WEATHER

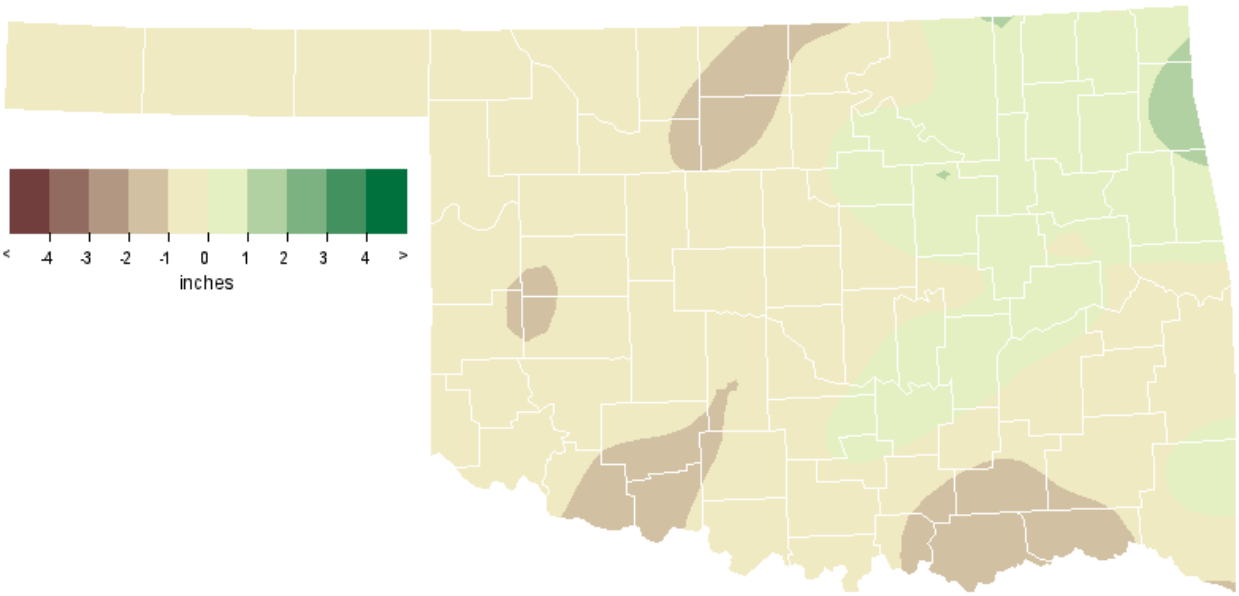
Wind Gusts (70 mph or greater)

Speed (m.p.h)	Location	County	Day
73	Freedom	Woods	27
70	Pocola	LeFlore	27

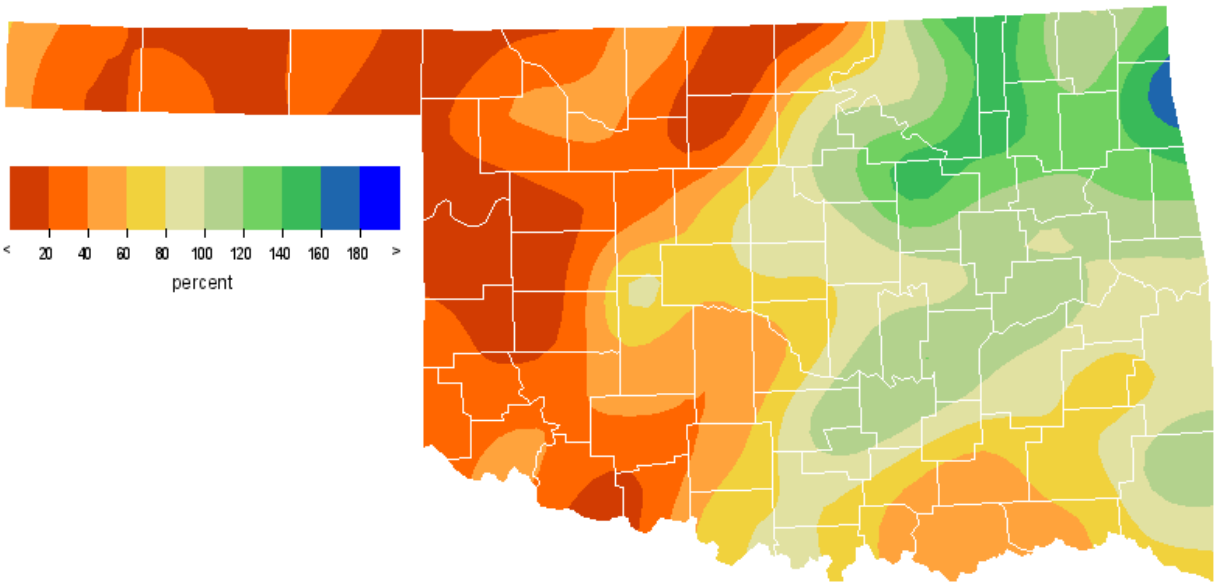
FEBRUARY 2011 OBSERVED PRECIPITATION



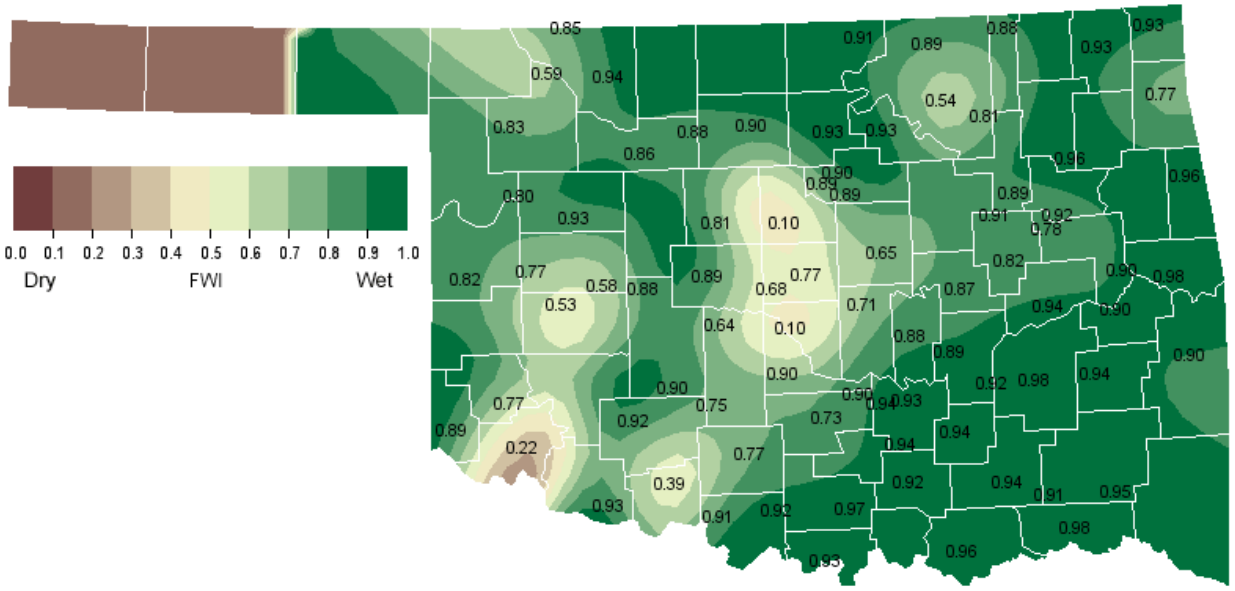
FEBRUARY 2011 DEPARTURE FROM NORMAL PRECIPITATION



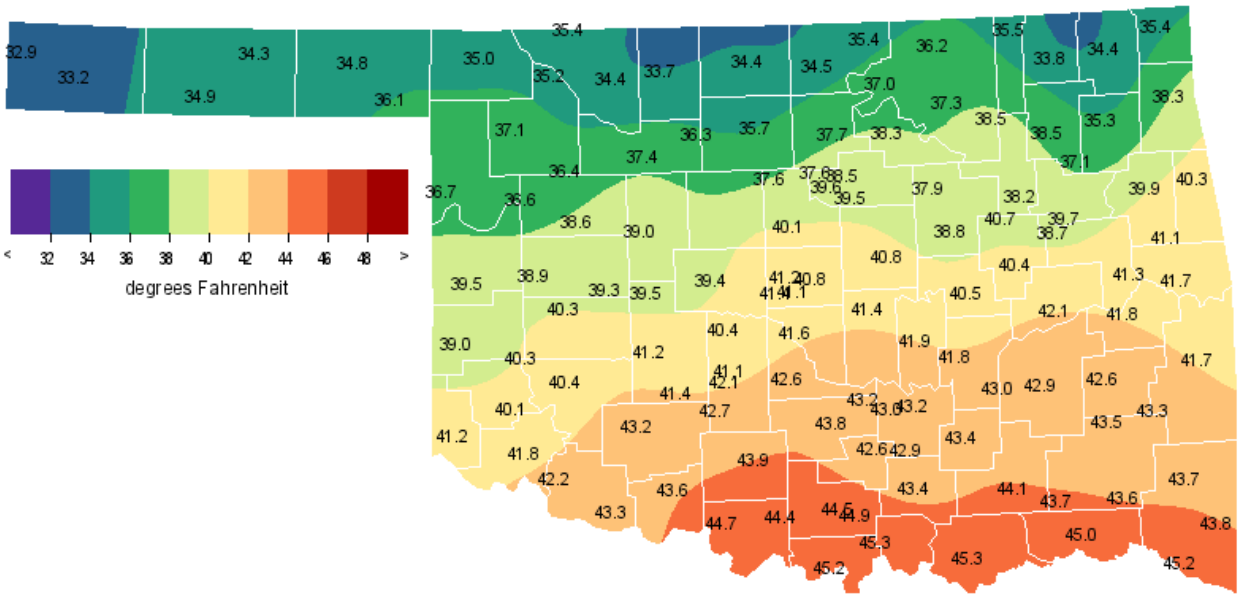
FEBRUARY 2011 PERCENT OF NORMAL PRECIPITATION



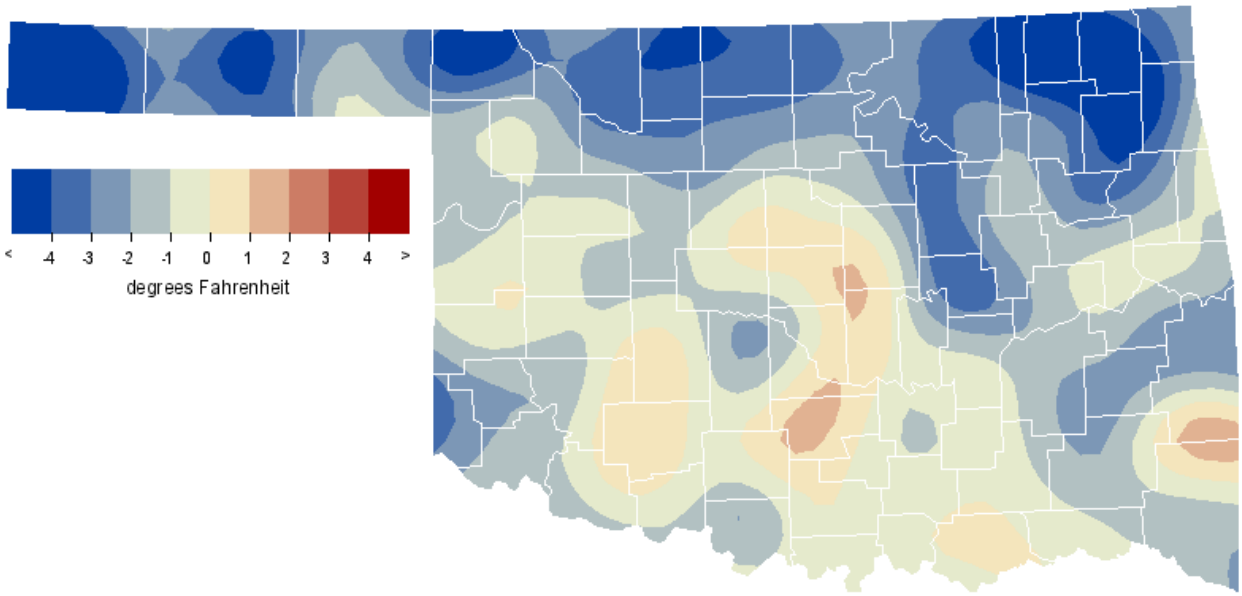
FEBRUARY 2011 AVERAGE SOIL MOISTURE AT 25CM



FEBRUARY 2011 AVERAGE TEMPERATURE



FEBRUARY 2011 DEPARTURE FROM NORMAL TEMPERATURE

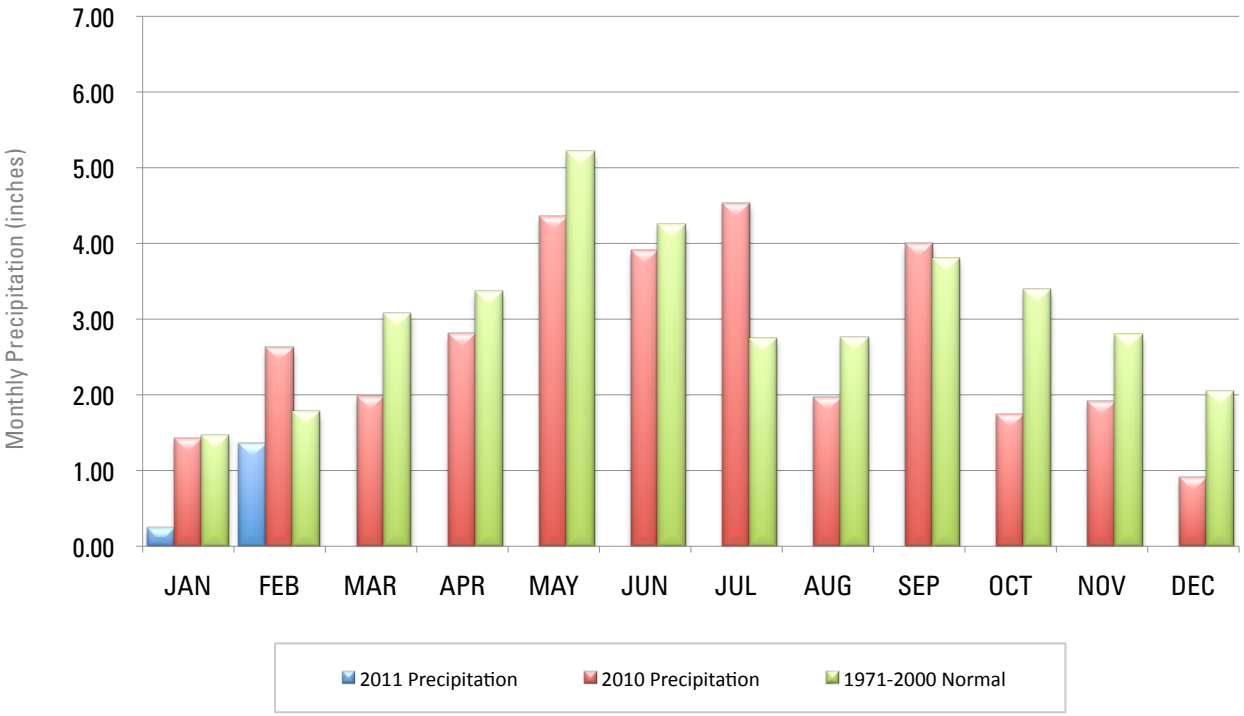


MESONET MONTHLY SUMMARY FOR FEBRUARY 2011

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	36.6	83	16	-13	10	795	0	.07	.07	10
Beaver	34.9	84	16	-13	10	844	0	.19	.10	10
Boise City	33.1	78	16	-16	3	892	0	.10	.07	6
Buffalo	34.9	85	16	-14	10	841	0	.06	.02	10
NORTH CENTRAL										
Alva	34.4	82	17	-15	10	856	0	.34	.16	11
Blackwell	34.5	81	17	-27	10	856	3	.45	.35	24
Breckinridge	35.7	80	17	-23	10	821	2	.25	.10	11
Cherokee	33.6	81	17	-24	10	878	0	.58	.21	12
Fairview	37.4	84	17	-15	10	776	3	.51	.22	11
Freedom	35.3	80	16	-14	10	833	1	.42	.18	11
Lahoma	36.3	81	17	-13	10	807	2	.17	.08	10
NORTHEAST										
Bixby	38.1	78	17	-22	10	758	5	2.47	.99	24
Burbank	37.0	80	17	-21	10	793	8	1.46	.91	24
Claremore	38.6	78	17	-10	10	745	6	2.85	.76	24
Copan	35.5	81	17	-15	10	830	3	2.85	1.34	24
Foraker	36.1	81	17	-13	10	811	3	2.35	1.47	24
Inola	37.0	76	17	-23	10	784	1	2.89	1.06	24
Jay	38.4	75	19	-16	10	749	3	3.71	1.56	24
Miami	35.4	75	19	-20	10	830	2	2.52	1.24	24
WEST CENTRAL										
Bessie	40.2	83	27	-3	10	701	5	.12	.11	24
Butler	38.8	84	17	-11	10	736	3	.19	.14	10
Camargo	36.6	84	17	-16	10	795	0	.04	.03	10
Cheyenne	39.4	82	17	-1	3	718	1	.06	.05	10
Erick	39.0	83	17	-8	10	729	0	.30	.20	10
CENTRAL										
Acme	42.7	87	27	-4	10	643	17	.60	.18	5
Bowlegs	41.8	78	17	-8	10	657	8	2.21	.81	6
Bristow	38.8	79	17	-20	10	739	5	2.44	1.32	24
Lake Carl Blac	37.6	81	17	-23	10	772	6	1.64	1.14	24
Chandler	40.7	80	17	-16	10	686	6	1.72	.76	24
Chickasha	41.1	85	27	-3	10	680	9	.48	.15	24
El Reno	39.5	80	27	-10	10	718	4	.56	.45	24
Guthrie	40.1	81	17	-12	10	705	7	1.66	1.30	24
Kingfisher	*****	***	***	***	***	****	****	1.06	.76	24
Marena	39.6	82	17	-13	10	720	8	1.73	1.24	24
Minco	40.4	82	27	-2	10	693	5	.94	.87	24
Marshall	37.5	81	17	-25	10	776	8	.86	.56	24
EAST CENTRAL										
Cookson	41.1	72	19	-9	10	671	1	3.17	.86	24
Eufaula	42.1	75	17	-3	10	644	4	2.72	.88	24
Haskell	38.6	76	17	-15	10	742	3	1.50	.45	24
Hectorville	40.7	78	17	-7	10	686	6	2.23	.89	24
Holdenville	41.8	77	17	-3	10	654	6	2.61	1.10	6
McAlester	42.9	74	17	-4	10	627	8	2.55	.60	27
Okmulgee	40.4	77	17	-13	10	696	6	2.68	.58	24
SOUTHWEST										
Altus	41.8	86	27	-3	10	656	7	.56	.46	24
Apache	41.4	85	27	0	10	672	11	.76	.48	24
Fort Cobb	41.2	83	27	-2	10	673	6	.66	.61	24
Grandfield	43.2	90	27	1	10	625	16	.20	.07	24
Hinton	39.5	79	27	-3	10	717	4	1.62	1.55	24
Hobart	40.5	85	27	-2	10	692	5	.33	.28	24
SOUTH CENTRAL										
Ada	43.2	79	17	-2	10	617	7	2.62	.87	6
Ardmore	44.9	79	27	5	10	577	13	1.94	.64	5
Burneyville	45.2	80	17	3	10	573	19	1.82	.63	5
Byars	43.2	79	17	-1	10	620	10	2.21	1.05	6
Centrahoma	43.4	76	27	0	10	613	10	1.92	.71	6
Durant	45.3	77	24	6	10	564	11	1.48	.41	5
Fittstown	42.9	78	17	0	10	622	5	2.05	.67	6
Ketchum Ranch	43.9	87	27	2	10	613	21	1.04	.51	6
Lane	44.1	75	20	2	10	595	10	1.23	.32	5
SOUTHEAST										
Antlers	43.8	75	19	1	10	600	6	1.93	.40	6
Broken Bow	43.7	76	21	8	5	596	0	3.39	1.26	1
Clayton	43.4	73	17	-1	10	612	6	2.33	.58	6
Cloudy	43.5	72	18	10	5	601	0	2.11	.48	1
Hugo	45.0	75	24	7	10	567	6	1.70	.41	1

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	34.8	81	16	-8	3	845	0	.09	.05	6
Hooker	34.3	82	16	-11	9	860	0	.03	.03	10
Kenton	32.9	77	16	-19	2	900	0	.18	.10	5
Slapout	36.1	84	16	-4	9	810	0	.08	.05	10
May Ranch	35.3	79	16	-3	10	830	0	.07	.04	10
Medford	34.4	82	17	-27	10	859	3	.19	.12	27
Newkirk	35.4	80	17	-12	10	830	2	.47	.38	24
Red Rock	37.7	81	17	-23	10	774	8	1.67	.70	24
Seiling	36.5	82	17	-18	10	801	2	.35	.17	11
Woodward	37.1	82	16	-3	3	782	0	.35	.21	11
Nowata	33.8	79	17	-31	10	878	3	2.65	2.12	24
Pawnee	38.4	82	17	-20	10	753	7	1.99	1.49	24
Porter	39.7	76	19	-13	10	713	4	2.56	.73	24
Pryor	35.3	76	19	-28	10	835	3	2.38	1.32	24
Skiatook	38.5	79	17	-9	10	748	5	3.27	1.98	24
Vinita	34.4	77	17	-24	10	860	3	1.83	1.52	24
Wynona	37.2	81	17	-16	10	781	4	1.57	1.26	24
Putnam	38.6	84	17	-4	10	744	3	.23	.11	24
Retrop	40.3	84	27	-2	10	697	5	.14	.11	24
Watonga	38.9	80	17	-4	10	734	4	.23	.10	24
Weatherford	39.3	80	17	-4	10	723	4	.18	.16	24
Ninnekah	42.0	86	27	-6	10	660	17	.90	.37	24
Norman	41.5	80	27	-4	10	664	7	1.00	.33	5
Oilton	37.9	81	17	-21	10	766	8	3.53	2.11	24
OKC East	41.1	80	17	-6	10	678	8	1.33	.98	24
OKC North	41.2	80	17	-4	10	673	8	1.61	1.40	24
OKC West	41.3	80	17	-1	10	670	7	1.03	.78	24
Okemah	40.6	77	17	-14	10	690	6	1.76	.47	6
Perkins	39.5	81	17	-13	10	721	7	1.57	1.13	24
Shawnee	41.4	78	17	-6	10	669	8	1.85	.79	24
Spencer	40.8	79	17	-9	10	684	7	1.49	.94	24
Stillwater	38.5	81	17	-19	10	754	11	1.87	1.49	24
Washington	42.7	82	27	-2	10	640	14	1.13	.38	6
Sallisaw	41.7	77	18	-3	10	654	0	2.43	.55	27
Stigler	41.8	75	19	-5	10	652	3	2.75	.76	27
Stuart	43.0	75	17	-2	10	624	7	2.50	.73	6
Tahlequah	39.8	74	19	-17	10	706	2	2.95	.77	24
Webbers Falls	41.3	74	18	-7	10	665	0	2.20	.64	24
Westville	40.2	72	19	-7	10	695	0	3.30	.95	27
Hollis	41.3	86	27	-1	10	668	3	.26	.11	24
Mangum	40.1	87	27	-4	10	700	3	.33	.24	24
Medicine Park	43.2	85	27	3	2	621	10	.68	.56	24
Tipton	42.1	87	27	-1	10	648	8	.51	.43	24
Walters	43.6	90	27	-1	10	620	21	.35	.15	6
Madill	45.3	78	24	3	10	566	16	1.37	.49	5
Newport	44.5	79	17	3	10	586	12	1.67	.69	5
Pauls Valley	43.8	80	17	-1	10	608	14	1.85	.68	6
Ringling	44.4	83	27	1	10	593	16	1.48	.73	24
Sulphur	42.6	78	17	-6	10	636	7	2.63	.82	6
Tishomingo	43.4	77	27	2	10	614	8	1.35	.55	6
Vanoss	43.0	79	17	-6	10	626	11	2.71	1.01	6
Waurika	44.7	89	27	2	10	592	22	1.23	.61	5
Idabel	45.2	76	21	4	5	558	3	2.64	1.25	24
Mt Herman	43.7	72	18	7	10	597	1	4.05	1.61	1
Talihina	43.3	72	19	-3	10	614	6	2.08	.50	6
Wilburton	42.6	75	18	-3	10	633	6	2.01	.55	6
Wister	41.7	77	19	-6	10	657	4	2.46	.69	1

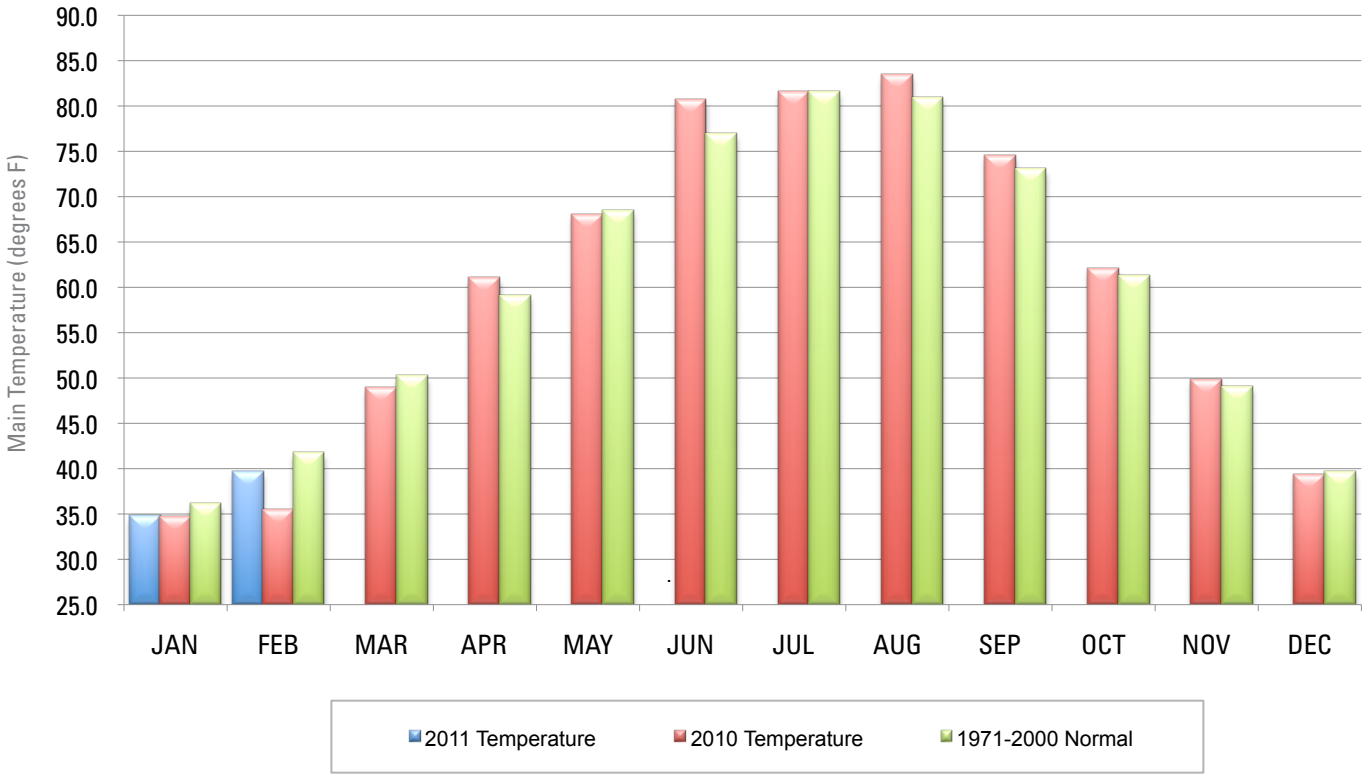
2010 AND 2011 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



February 2011 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Feb-10
Panhandle	0.1	-0.54	19th Driest	2.94 (1911)	0.00 (1896)	1.14
North Central	0.45	-0.77	29th Driest	4.10 (1911)	0.00 (1904)	1.01
Northeast	2.49	0.51	29th Wettest	5.80 (1985)	0.10 (1963)	1.47
West Central	0.17	-0.97	18th Driest	3.64 (1997)	0.00 (1904)	1.58
Central	1.46	-0.4	51st Wettest	5.08 (1938)	0.00 (1904)	2.01
East Central	2.58	0.15	39th Wettest	9.15 (1938)	0.00 (1895)	1.98
Southwest	0.57	-0.76	39th Driest	3.89 (1997)	0.00 (1902)	0.9
South Central	1.83	-0.38	58th Wettest	7.66 (1938)	0.02 (1902)	1.96
Southeast	2.47	-0.67	45th Driest	10.12 (1945)	0.36 (1895)	4.15
Statewide	1.36	-0.4	55th Driest	4.66 (1938)	0.18 (1996)	1.77

2010 AND 2011STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



February 2011 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Feb-10 (F)
Panhandle	34.7	-3.6	34th Coolest	47.5 (1954)	23.1 (1899)	30.8
North Central	35.7	-3.6	35th Coolest	49.6 (1954)	22.4 (1899)	34.1
Northeast	36.9	-3.5	31st Coolest	49.8 (1976)	25.6 (1899)	33.3
West Central	39.1	-1.5	47th Coolest	51.0 (1954)	23.8 (1905)	34.7
Central	40.4	-1.5	51st Coolest	51.6 (1976)	26.2 (1899)	36.0
East Central	41.2	-1.6	50th Coolest	52.1 (1976)	28.7 (1899)	37.0
Southwest	41.6	-1.5	47th Coolest	52.5 (1954)	26.8 (1905)	36.8
South Central	43.9	-0.9	58th Coolest	53.6 (1976)	30.0 (1905)	38.1
Southeast	43.6	-1.1	53rd Coolest	52.6 (1976)	31.4 (1899)	36.3
Statewide	39.6	-2.1	43rd Coolest	50.7 (1954)	26.6 (1899)	35.2

RECORD EVENT REPORTS

Description	Day	Location	Record	Previous Record	Year
Daily Rainfall	1	Tulsa	0.78 inches	0.78 inches	1923
Daily Snowfall	1	Tulsa	13.2 inches	5.0 inches	1996
Daily Snowfall	1	Oklahoma City	11.8 inches	5.5 inches	1913
February Daily Snowfall	1	Oklahoma City	11.8 inches	6.5 inches	1986
Low Maximum Temperature	2	Tulsa	16	16	1917
Low Temperature	3	Tulsa	-6	-5	1996
Daily Snowfall	9	Tulsa	5.7 inches	3.0 inches	2003
Low Maximum Temperature	9	Tulsa	19	20	1994
Daily Snowfall	9	Oklahoma City	5.9 inches	2.6 inches	2003
Low Temperature	10	Tulsa	-12	-3	1929
Low Temperature	10	Oklahoma City	-5	4	1899/1929
Statewide All-Time Record Low Temperature	10	Nowata	-31	-27	1947
Low Temperature	10	McAlester	-4	10	1981
All-Time Record Low	10	Bartlesville	-28	-25	1930
Record Low	10	Bartlesville	-28	-13	1929
High Temperature	17	Tulsa	79	79	1907
High Temperature	17	Oklahoma City	80	79	1991
High Temperature	17	McAlester	74	47	1986
High Temperature	17	Bartlesville	82	79	1907
High Minimum Temperature	18	Oklahoma City	58	50	1926
High Temperature	19	Tulsa	77	77	1981
High Minimum Temperature	19	Oklahoma City	57	54	1997
High Minimum Temperature	20	Oklahoma City	60	55	1894
Daily Rainfall	24	Oklahoma City	1.31 inches	0.97 inches	1952
Daily Rainfall	27	McAlester	0.6 inches	0.5 inches	1978
Statewide All-Time 24-hour Snow Total	9-10	Spavinaw	27 inches	26 inches	2009
Snowiest February		Tulsa	22.5 inches	10.5 inches	2003
Snowiest Month		Tulsa	22.5 inches	19.7 inches	Mar-24
Snowiest February		Oklahoma City	13 inches	12.9 inches	1913

MESONET EXTREMES FOR FEBRUARY 2011

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	85	16th	Buffalo	-19	2nd	Kenton	0.19	Beaver	0.1	10th	Beaver
North Central	84	17th	Fairview	-27	10th	Blackwell	1.67	Red Rock	0.7	24th	Red Rock
Northeast	82	17th	Pawnee	-31	10th	Nowata	3.71	Jay	2.12	24th	Nowata
West Central	84	27th	Retrop	-16	10th	Camargo	0.3	Erick	0.2	10th	Erick
Central	87	27th	Acme	-21	10th	Oilton	3.53	Oilton	2.11	24th	Oilton
East Central	78	17th	Hectorville	-17	10th	Tahlequah	3.3	Westville	1.1	6th	Holdenville
Southwest	90	27th	Walters	-4	10th	Mangum	1.62	Hinton	1.55	24th	Hinton
South Central	89	27th	Waurika	-6	10th	Vanoss	2.71	Vanoss	1.05	6th	Byars
Southeast	77	19th	Wister	-6	10th	Wister	4.05	Mt Herman	1.61	1st	Mt Herman
Statewide	90	27th	Walters	-31	10th	Nowata	4.05	Mt Herman	2.12	24th	Nowata

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 5th 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 57.9 degrees both 1907 and 1910 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	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 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 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 30th.

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.

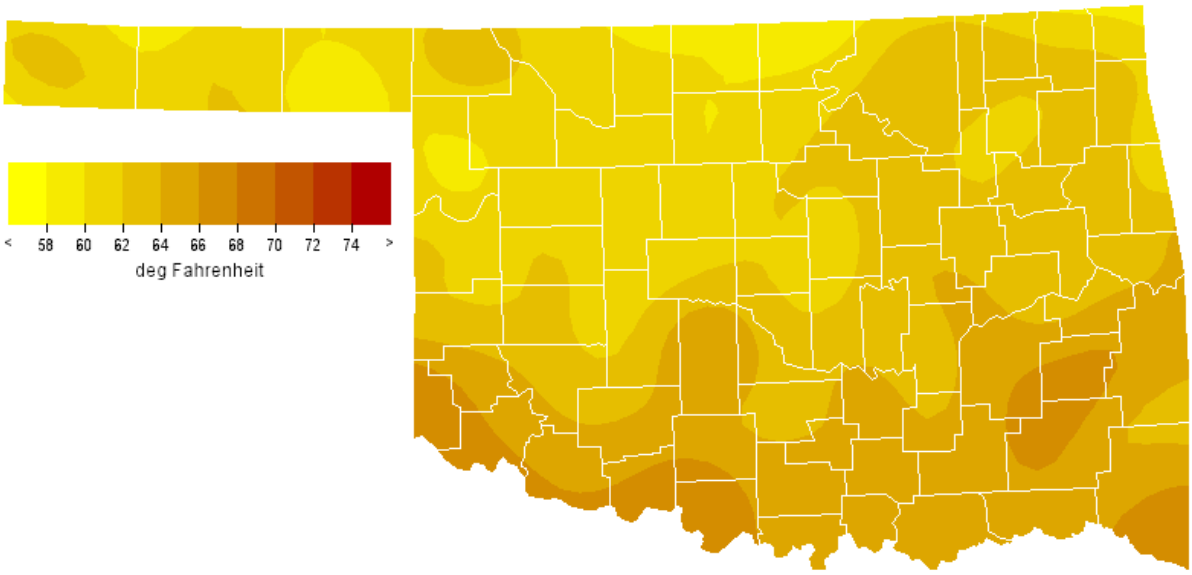
Precipitation

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

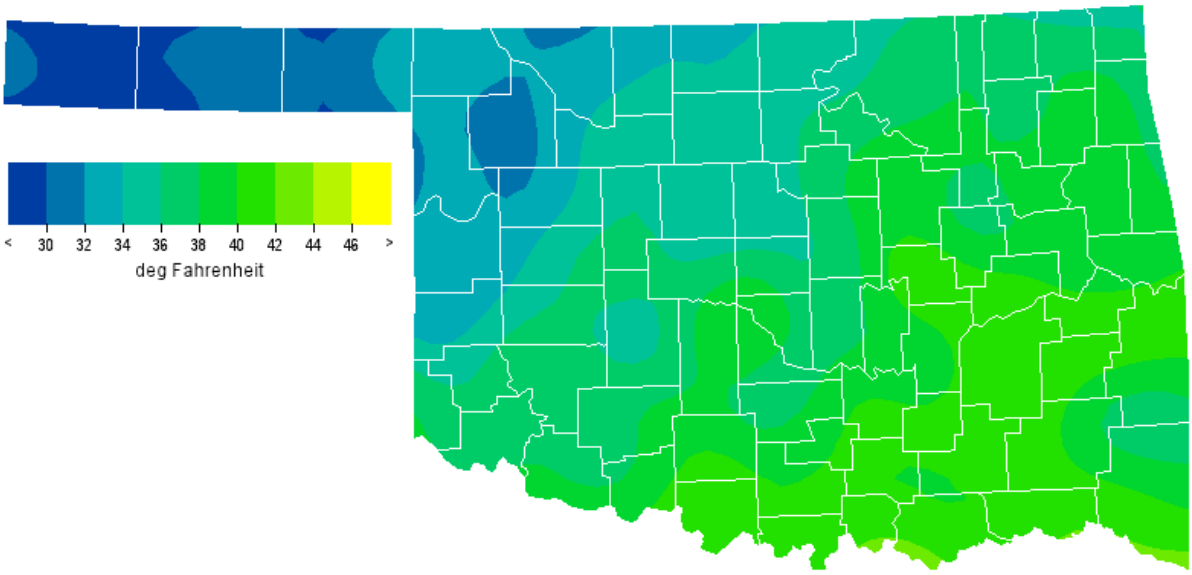
Tornadoes

Average March Tornadoes	4.1
Most	17 (1991)

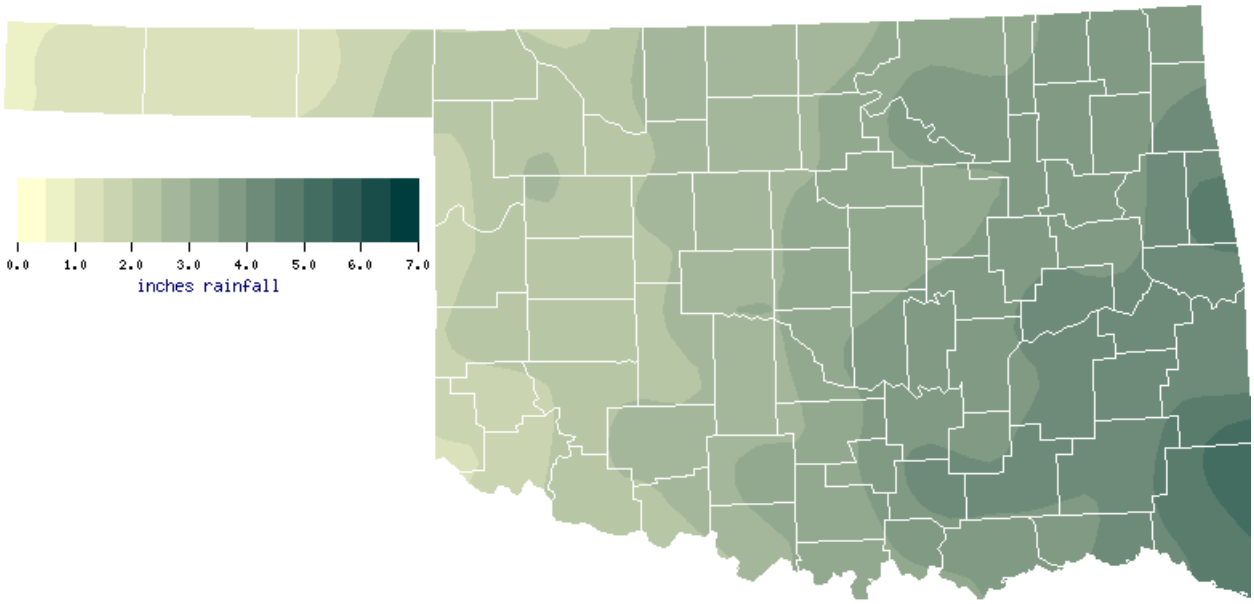
MARCH NORMAL DAILY MAXIMUM TEMPERATURE (1971-2000)



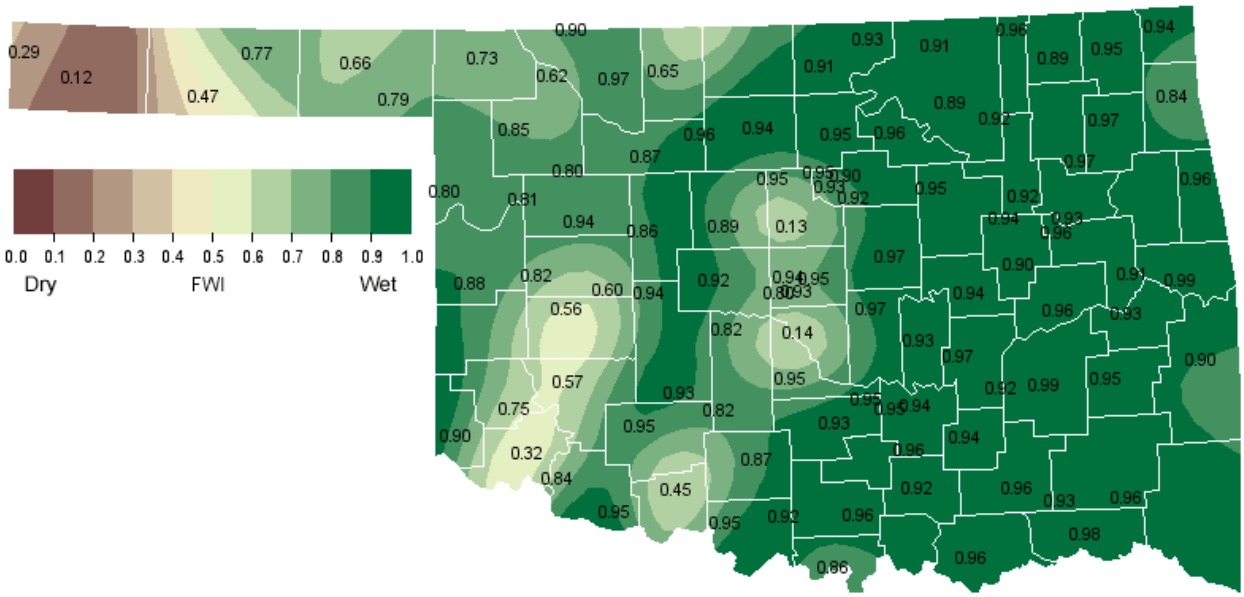
MARCH NORMAL DAILY MINIMUM TEMPERATURE (1971-2000)



MARCH NORMAL PRECIPITATION (1971-2000)



MARCH 1, 2011 SOIL MOISTURE CONDITIONS AT 25CM



MARCH 2011 DROUGHT INDICES

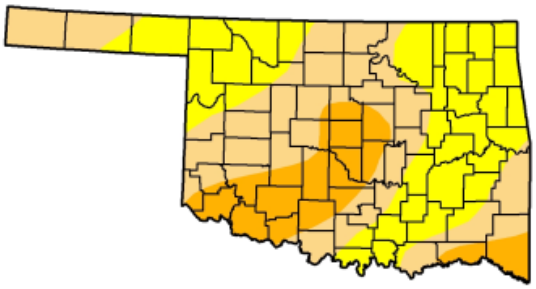
U.S. Drought Monitor

March 1, 2011
Valid 7 a.m. EST

Oklahoma

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.02	99.98	58.68	18.16	0.00	0.00
Last Week (02/22/2011 map)	0.02	99.98	63.04	18.15	0.00	0.00
3 Months Ago (11/30/2010 map)	46.34	53.66	3.13	0.00	0.00	0.00
Start of Calendar Year (12/28/2010 map)	13.82	86.18	47.90	1.50	0.00	0.00
Start of Water Year (09/28/2010 map)	66.28	33.72	4.21	0.00	0.00	0.00
One Year Ago (02/23/2010 map)	100.00	0.00	0.00	0.00	0.00	0.00



Intensity:

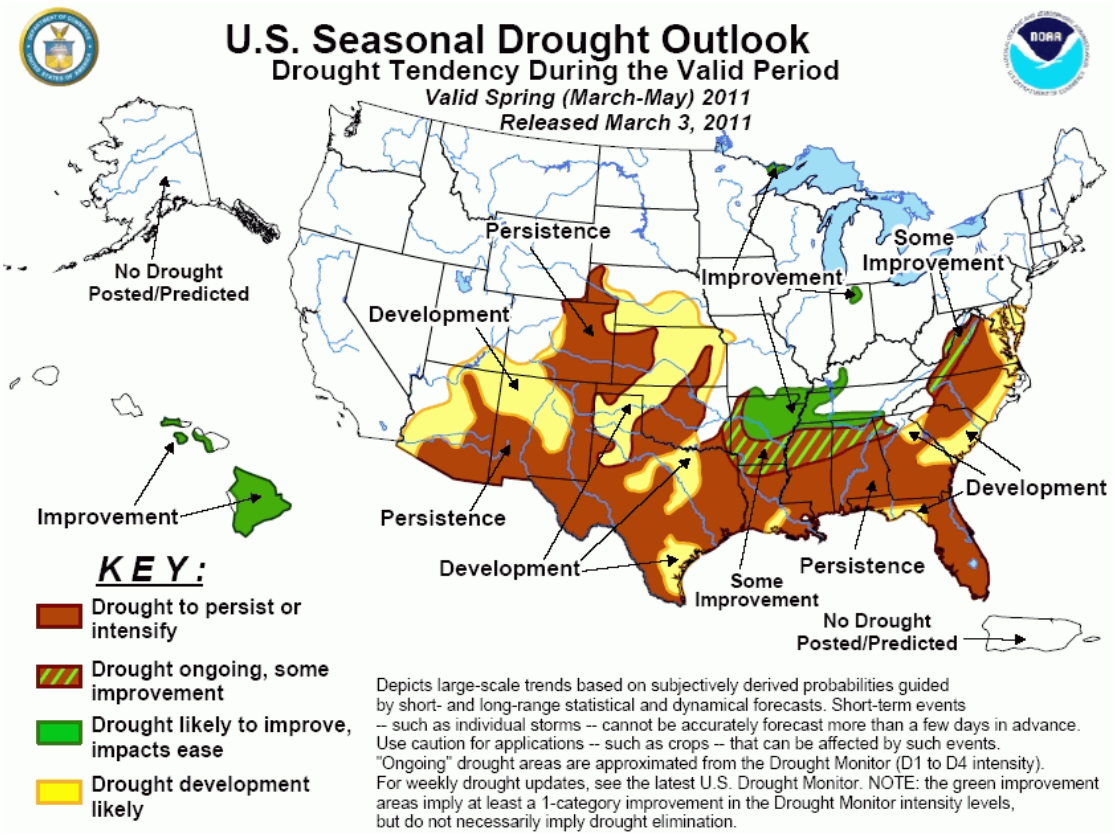
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

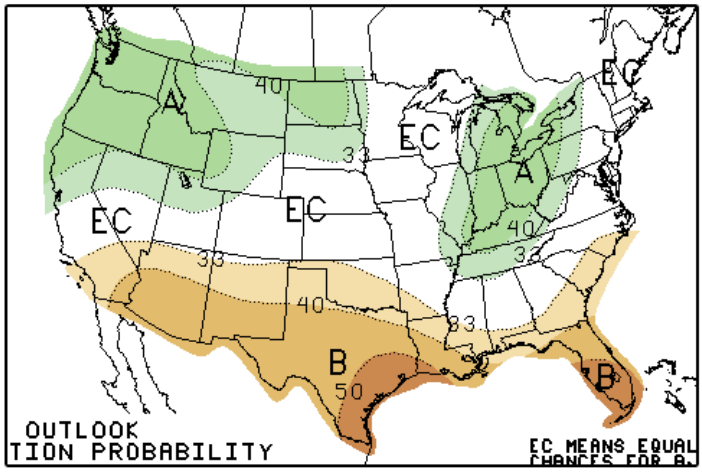
http://drought.unl.edu/dm

USDA · National Drought Mitigation Center

Released Thursday, March 3, 2011
L. Edwards, Western Regional Climate Center



MARCH 2011 U.S. PRECIPITATION FORECAST



Percent Likelihood of Above or Below Average Precipitation*

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

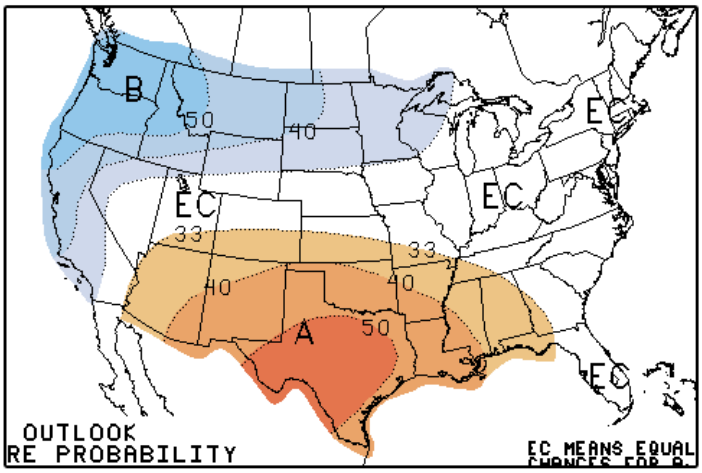
A = Above

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

B = Below

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

MARCH 2011 U.S. TEMPERATURE FORECAST



Percent Likelihood of Above or Below Average Temperatures*

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

A = Above

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

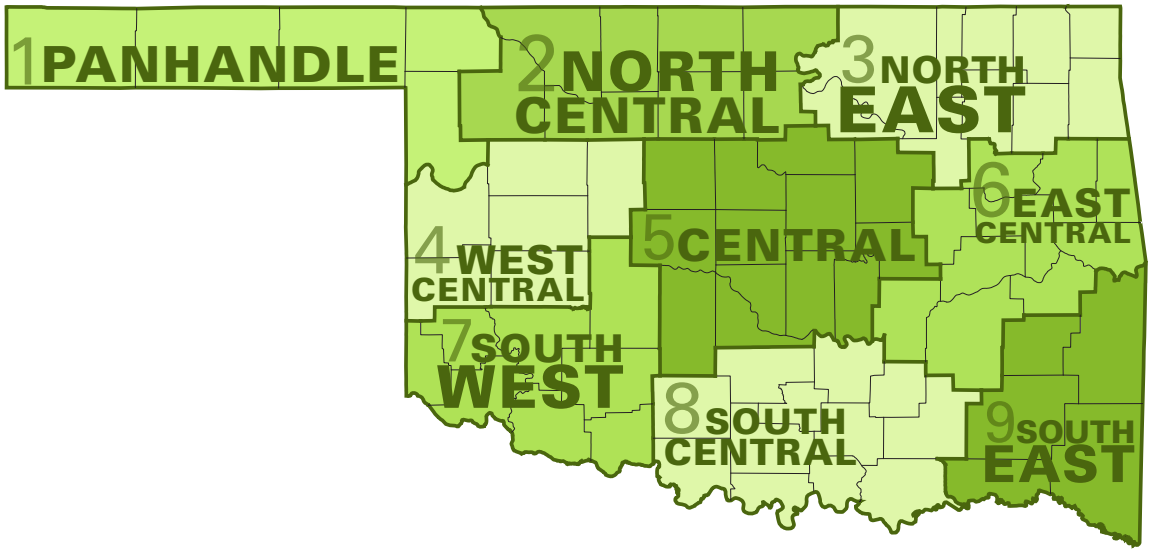
B = Below

*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	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.mesonet.org or http://climate.ok.gov/

OKLAHOMA CLIMATOLOGICAL SURVEY

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