OKLAHOMA MONTHLY CLIMATE SUMMARY
SEPTEMBER 2003

Oklahoma Climatological Survey

Overview

September is a transitional month climatologically, as the heat of summer begins to wane and the crisp, cool air of fall begins making more appearances in the state. It is also the wettest month of Oklahoma's "secondary" rainy season, another autumnal phenomenon. As with five of the previous eight months of 2003, however, the statewide-averaged precipitation fell below the established normal. At just over an inch below normal, the month falls roughly in the middle of the pack historically. The September temperature deficit was decidedly more significant, however, resulting in the 8th coolest September since record-keeping began in 1892. Continuing yet another trend, significant severe weather was practically non-existent for the 4th straight month, and no tornadoes were reported within the state's boundaries. Since 1950, when accurate and comprehensive tornado statistics began, no other June-September period has been without at least one tornado. Unlike the lack of precipitation, however, this deficiency is very much appreciated.

Precipitation

September's precipitation shortfall, while not disastrous following the wet month of August, worsened a persistent dry pattern which saw its genesis at the year's beginning. For the year thus far, the statewide-averaged precipitation total fell to over 5.5 inches below normal, which ranks as the 25th driest such period on record. The only areas of the state which haven't fallen significantly behind for 2003 are the northeast and the eastern panhandle; the latter a region somewhat unaccustomed to moisture surpluses, and the former the lone area with above normal precipitation for the year. For the month, however, the panhandle was the big winner with the 21st wettest September in the last 112 years. The southwest was particularly dry, recording less than an inch of rainfall on average – the 14th driest September historically for that region.

Temperature

Hindered by several strong cold fronts and extensive cloud cover from the remnants of Tropical Storm Grace and Hurricane Marty, the statewide-averaged temperature fell over 3 degrees below normal. The northern half of the state was particularly cool, with much of that area falling over 4 degrees below normal. The cool weather was enough to drop the year-to-date statewide-averaged temperature over a half of a degree below normal, although this still ranks the period as the 44th warmest since 1892.

September 2003 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	97ºF	Tipton	September 10th
Low Temperature	33ºF	Beaver	September 19th
High Precipitation	7.25 in.	Madill	
Low Precipitation	0.41 in.	Tipton	

September Daily Highlights

September 1-2: The month's beginning saw the first of several strong cold fronts sliding through the state, accompanied by strong northerly winds and abundant cloud cover. Temperatures dropped after the frontal passage from the 80s to the mid-60s on the 1st, and the temperatures remained below normal the following day as well. Rain began in the state along the cold front on the month's first day, with a big boost from the remnants of tropical storm Grace. The heaviest rainfall occurred in the southeast with the intrusion of the tropical system. Durant led the pack at 3.76 inches. Much of the state awoke to dense fog on the 2nd, and the southeastern corner once again experienced heavy rainfall as the weakening tropical system swung out to the northeast.

September 3-9: An extended period of tranquil weather settled upon the state from the 3rd to the 9th. Temperatures started below normal during this period, slowly rising to near-normal on the 8th and 9th. What little rain that did fall was generally light, but a few heavy thunderstorms in the panhandle on the 6th and 7th brought 1.75 inches of rain to Boise City.

September 10-13: Torrential rainfall in Beckham County on the 11th is the highlight of this rainy and cool period. The rains came courtesy of a large cluster of thunderstorms, a Mesoscale Convective System (MCS), which entered the state from the Texas panhandle overnight on the 10th. Radar estimates of 6-8 inches were indicated in Beckham County. The Oklahoma Mesonet station located in Erick recorded 5.7 inches of rain with this MCS, which resulted in significant flooding in Erick and the surrounding areas. An elderly man needed rescue when his car was stranded in high water, and two tractor-trailer rigs hydroplaned onto the median of Interstate 40 in the deluge. In Erick itself, water rose to a height of over 4 feet in low-lying areas, allowing it to enter business and homes. The municipality's baseball field was flooded, and the facility's fences were demolished by the force of moving flood waters. Temperatures cooled once again to below normal, with more heavy rainfall occurring across the state through the 13th. Amounts in north-central Oklahoma exceeded 2.5 inches on that day.

September 14-17: An upper-level low pressure system over north Texas brought a few light showers to southern Oklahoma. Yet another cold front traversed the state early on the 14th with the customary north winds and cool temperatures. The surface high pressure system that took up residence over the state behind the cold front provided very pleasant weather through the 17th. A trough of low pressure near the surface approached from the west, swinging winds back from the south, at times gusting to nearly 45 mph. With the wind came the warmth, and temperatures near the end of this period once again rose to near- and above-normal, from the mid-80s to the low-90s.

September 18-21: Much-needed precipitation returned on the 18th. A cold front had sagged into the panhandle, triggering showers and thunderstorms, before eventually passing through the entire state. Behind the front, winds were from the north at 20-25 mph, with higher gusts. Temperatures fell 15 degrees across the boundary. The surface high that settled over the state ushered in a chilly air mass. Lows reached into the mid-30s in the panhandle and the northwest on the 19th, while the maximum temperatures were in the 60s and 70s. The northwest received the bulk of the precipitation on the 20th. Showers and thunderstorms dumped well over an inch of rainfall in the eastern panhandle. An upper trough passed over the state on the 21st, triggering yet more thunderstorms, and bringing the eastern half of Oklahoma widespread rainfall totals of greater than an inch.

September 22-28: A weak boundary sagged into northern Oklahoma on the 22nd, while cloudiness from the remnants of Hurricane Marty, a Pacific storm, moved into southern Oklahoma, suppressing temperatures. A stronger push of cold air moved across the state on the 24th, along with some much drier air. This remained the dominant pattern through the 28th, as northwesterly flow in the upper levels brought a series of cold fronts through the state. The weather remained cool, accordingly, a pleasant precursor to the cooler weather of autumn.

September 29-30: A last bit of rainfall was in store for the state on the final two days of the month, accompanied by a bit of chilly weather. Much of northeastern Oklahoma fell into the 30s on the 29th, to go along with rainfall amounts of up to an inch. The month's epilogue was a typical fall day in Oklahoma, albeit with conditions normally seen in late October. Highs in the northwest struggled to reach 60 degrees, and strong northerly winds made the day feel much cooler.

September 2003 Statewide Statistics

Temperature

	Average	Depart.	Rank (1892-2003)
Month (September)	69.1ºF	-3.3ºF	8th Coolest
Year-to-Date (Jan-Sep)	62.4ºF	-0.6ºF	44th Warmest

Precipitation

	Total	Depart.	Rank (1892-2003)
Month (September)	2.75 in.	-1.06 in.	47th Driest
Year-to-Date (Jan-Sep)	22.92 in.	-5.55 in.	24th Driest

Depart. = Departure from 30-year normal

September 2003 Severe Weather

Significant Tornadoes (F2 or greater)

No significant tornadoes reported in the state

Hail (2 inches in diameter or greater)

No significant hail reported in the state

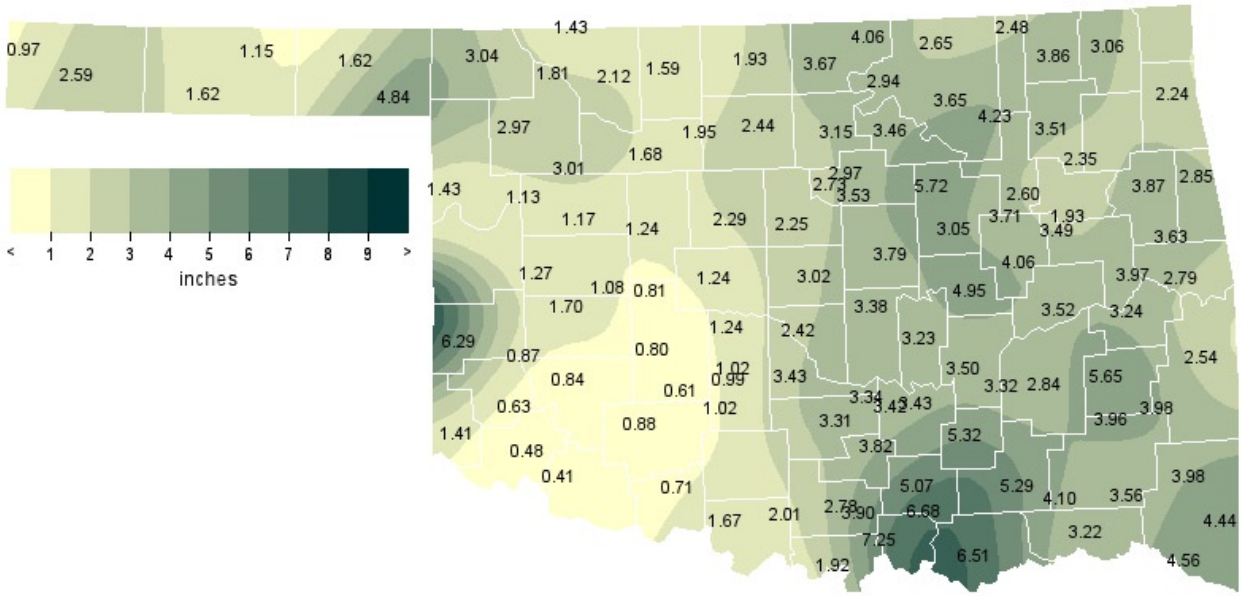
Wind Gusts (70 mph or greater)

No significant wind gusts reported in the state

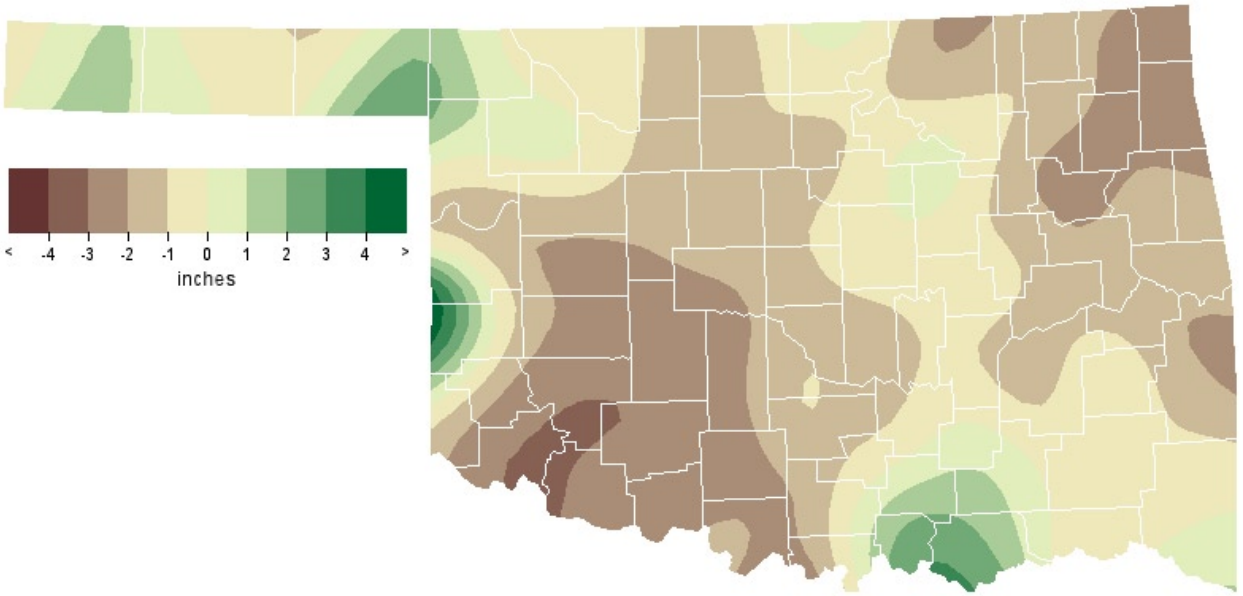
Flooding

Location	County	Date
Erick	Beckham	September 11
1 N Erick	Beckham	September 11
Sayre	Beckham	September 11

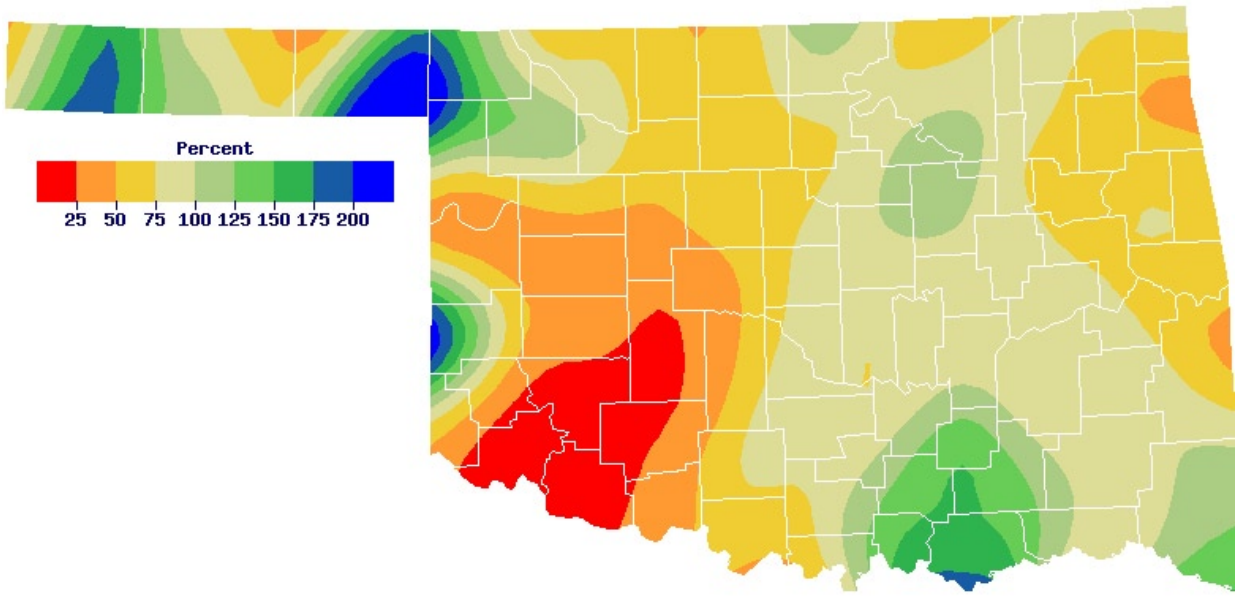
September 2003 Observed Precipitation



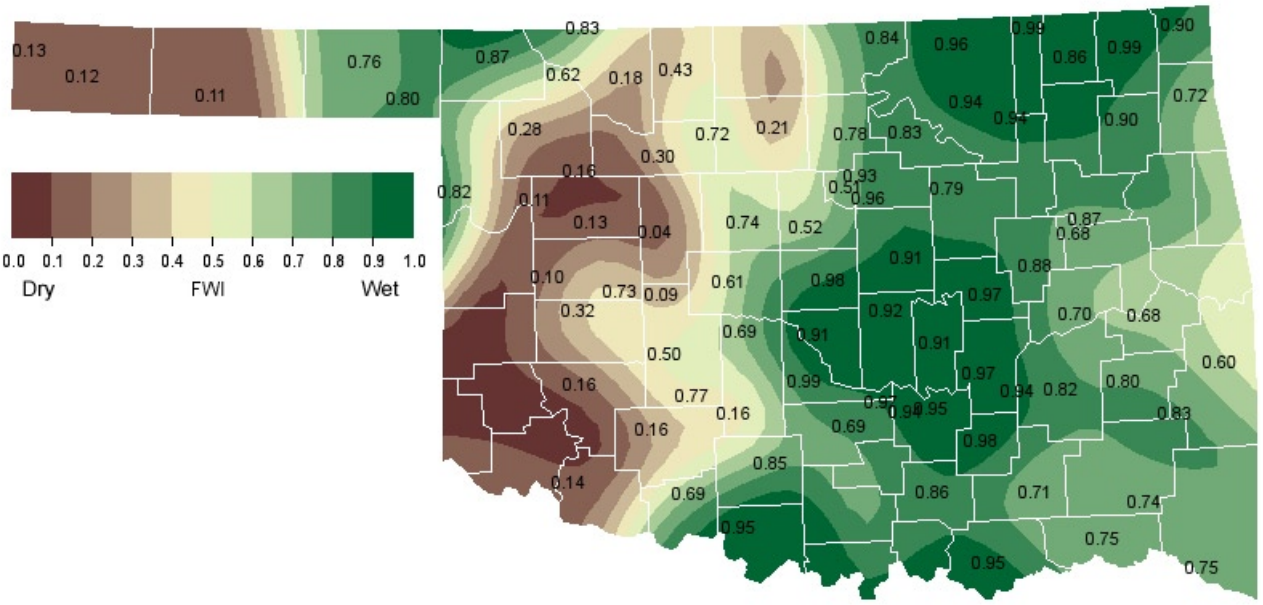
September 2003 Departure from Normal Precipitation



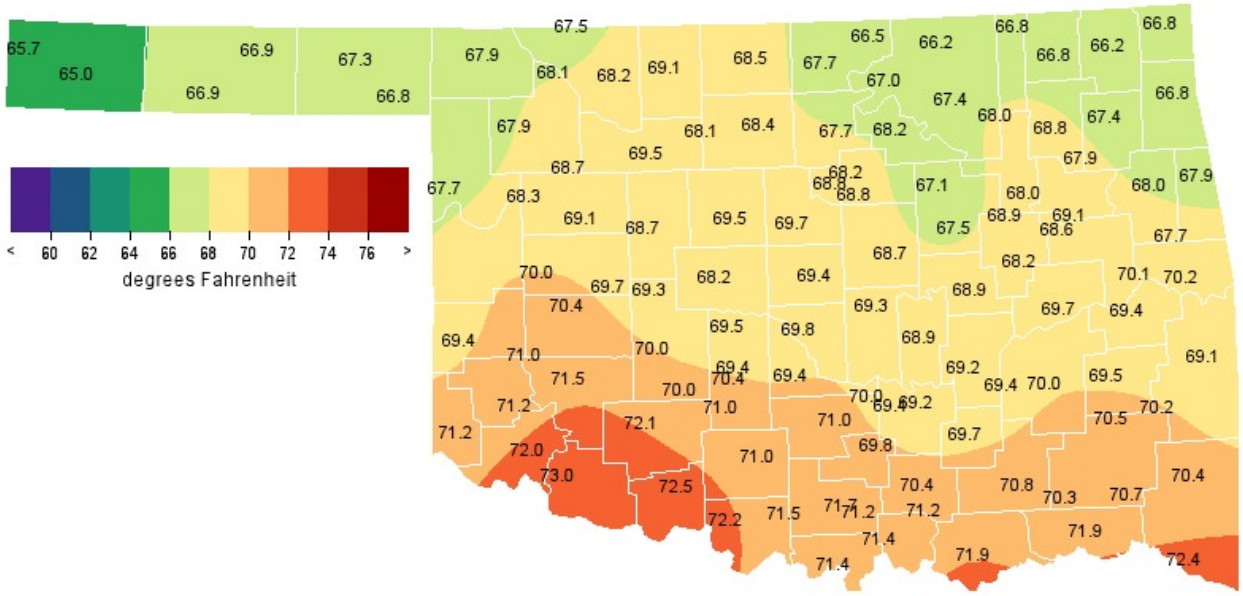
September 2003 Percent of Normal Precipitation



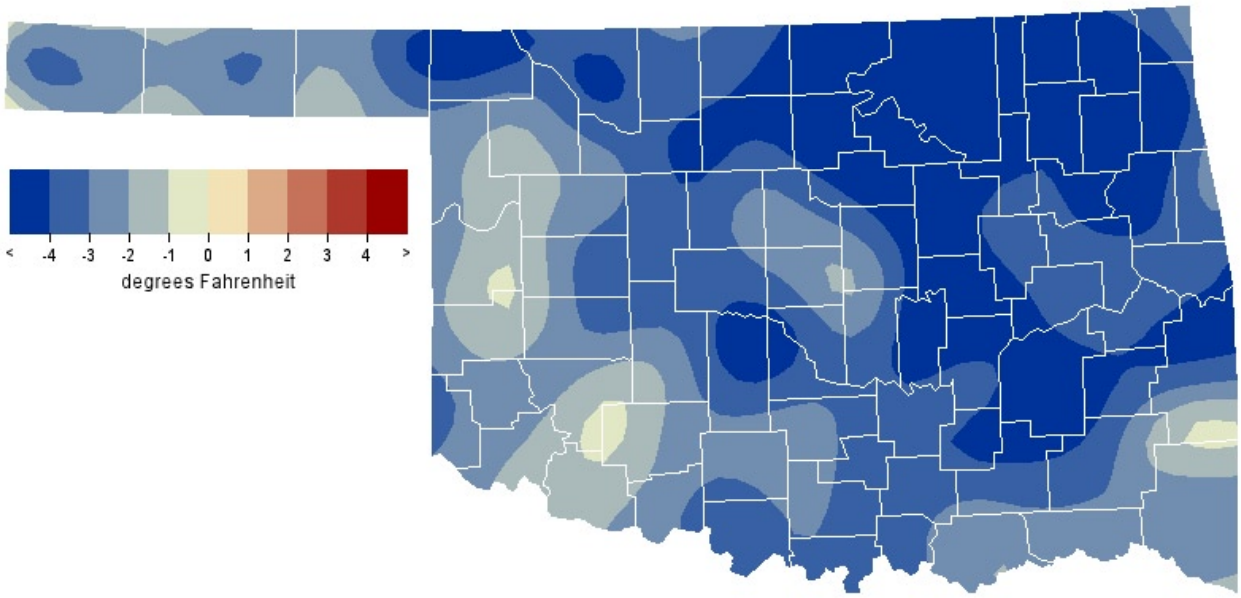
September 2003 Average Soil Moisture at 25cm



September 2003 Average Temperature



September 2003 Departure from Normal Temperature



Mesonet Monthly Summary for September 2003

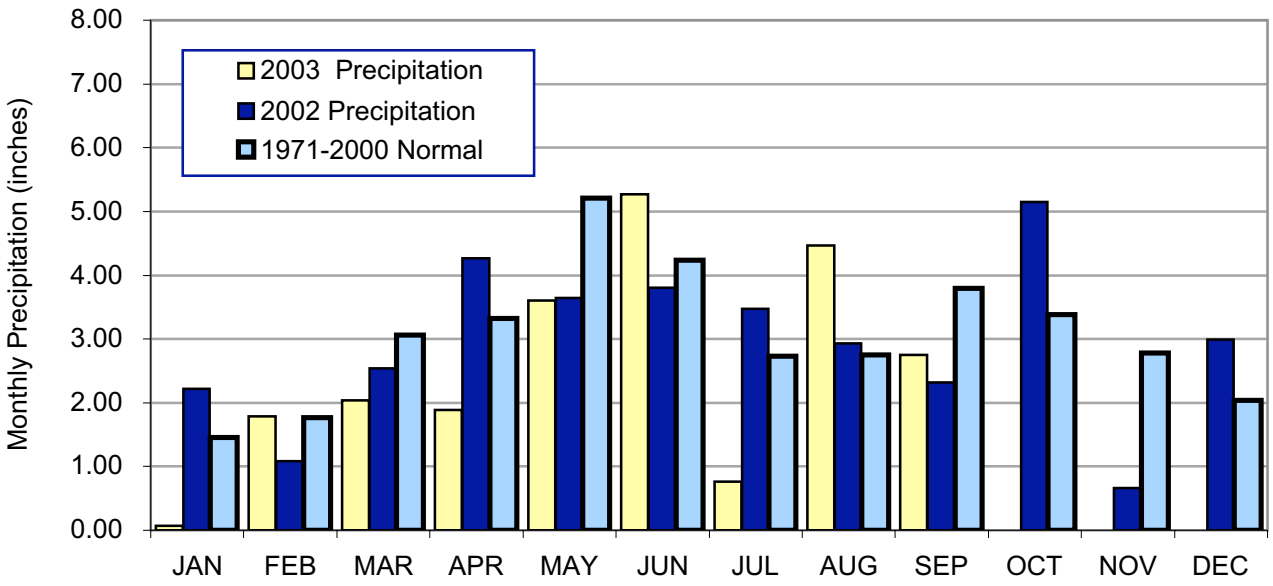
NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	67.7	91	10	40	19	43	125	1.43	.41	29
Beaver	67.3	95	16	33	19	61	130	1.62	.43	20
Boise City	65.1	93	16	36	19	85	87	2.59	1.30	7
Buffalo	67.9	93	10	38	19	50	137	3.04	.76	20
NORTH CENTRAL										
Blackwell	67.6	91	26	43	19	55	134	3.67	2.88	13
Breckenridge	68.4	92	26	42	20	51	153	2.44	1.05	29
Cherokee	69.1	95	26	40	19	46	170	1.59	.51	29
Fairview	69.5	94	26	41	19	41	176	1.68	.56	30
Freedom	68.0	95	10	37	19	55	145	1.81	.68	29
Lahoma	68.1	92	26	42	19	52	144	1.95	.62	29
May Ranch	67.5	93	10	40	19	56	131	1.43	.40	29
NORTHEAST										
Bixby	68.0	88	10	43	29	41	132	2.60	.61	12
Burbank	67.0	88	26	43	19	56	114	2.94	1.06	13
Copan	66.8	86	9	42	29	48	103	2.48	.91	21
Foraker	66.3	87	26	42	29	59	97	2.65	1.07	11
Jay	66.8	86	9	38	29	53	108	2.24	.73	1
Miami	66.7	86	10	39	29	55	107	*****	*****	***
Nowata	66.7	86	24	41	29	50	101	3.86	1.29	21
Pawnee	68.2	89	10	43	20	47	143	3.46	1.15	13
WEST CENTRAL										
Bessie	70.5	93	10	43	19	21	185	1.70	.64	30
Butler	70.0	95	10	41	19	25	173	1.27	.38	11
Camargo	68.4	94	10	38	19	41	142	1.13	.47	29
Cheyenne	68.6	91	10	43	19	****	****	1.63	.50	10
Erick	69.4	94	10	42	19	18	149	6.29	5.70	10
CENTRAL										
Bowlegs	68.9	87	9	45	20	26	143	3.23	2.16	11
Bristow	67.5	87	10	41	29	50	125	3.05	1.18	11
Chandler	68.7	87	10	44	20	35	146	3.79	1.88	11
Chickasha	69.3	90	10	43	20	25	155	1.02	.45	21
El Reno	68.2	90	10	43	28	43	138	1.24	.75	13
Guthrie	69.6	91	10	45	19	35	174	2.25	1.09	13
Kingfisher	69.5	92	26	43	20	38	172	2.29	.91	13
Marena	68.8	90	10	45	19	40	153	2.73	1.21	13
Marshall	*****	***	***	***	***	****	****	*****	*****	***
Minco	69.7	88	10	47	19	****	****	1.24	.70	13
Oilton	67.1	87	10	41	20	59	122	5.72	2.50	11
EAST CENTRAL										
Calvin	69.2	88	10	46	20	23	148	3.50	1.08	11
Cookson	67.6	86	9	39	29	47	126	3.63	1.70	1
Eufaula	69.7	88	9	45	29	26	166	3.52	1.23	21
Haskell	68.6	88	10	44	29	34	142	3.49	1.46	21
McAlester	70.0	89	10	45	29	17	166	2.84	1.45	1
Okmulgee	68.2	89	10	42	29	40	136	4.06	1.03	21
Sallisaw	70.2	89	10	42	29	21	177	2.79	1.09	1
SOUTHWEST										
Altus	72.0	94	10	47	19	4	214	.48	.37	11
Fort Cobb	70.0	91	10	46	20	16	165	.80	.26	11
Hinton	69.3	92	10	42	19	32	161	.81	.29	29
Hobart	71.4	94	10	47	19	7	199	.84	.47	11
Hollis	71.2	96	10	44	19	7	194	1.41	1.26	11
Mangum	71.2	96	10	44	19	7	192	.63	.32	11
SOUTH CENTRAL										
Ada	69.3	88	4	46	20	22	149	3.43	1.39	11
Ardmore	71.4	90	10	51	20	****	****	3.90	2.41	11
Burneyville	71.4	91	10	47	28	4	196	1.92	1.34	11
Byars	70.0	87	9	50	20	15	165	3.34	1.84	11
Centrahoma	69.7	88	10	47	29	16	158	5.32	1.93	1
Durant	71.9	89	10	51	29	1	209	6.51	3.76	1
Ketchum Ranch	71.0	90	10	50	20	5	185	*****	*****	***
Lane	70.8	90	4	50	29	6	181	5.29	1.70	1
Madill	71.2	90	10	51	15	****	****	6.91	2.23	11
SOUTHEAST										
Antlers	70.3	91	4	44	28	12	171	4.10	2.37	1
Clayton	70.4	90	4	42	29	15	177	3.96	1.93	12
Cloudy	70.6	89	4	47	29	8	177	3.56	1.66	12
Hugo	71.7	89	10	51	28	****	****	3.22	2.02	1
Idabel	72.1	91	10	45	29	****	****	4.56	1.80	12

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	67.0	96	16	37	19	59	118	1.62	.56	20
Hooker	66.8	94	16	37	19	55	109	1.15	.26	8
Kenton	65.7	93	16	37	19	71	91	.97	.39	6
Slapout	66.9	92	16	38	19	58	114	4.84	1.39	20
Medford	68.4	93	26	39	19	52	155	1.93	.79	21
Newkirk	66.5	88	26	42	19	61	106	4.06	2.55	13
Red Rock	67.6	90	26	43	19	55	133	3.15	1.73	13
Seiling	68.6	94	26	36	19	42	151	3.01	1.02	30
Woodward	67.9	92	10	37	19	48	134	2.97	.89	30
Alva	68.2	95	10	37	19	52	148	2.12	.72	20
Pryor	67.4	87	9	40	29	47	118	*****	*****	***
Skiatook	68.1	87	10	46	30	39	131	4.23	2.21	11
Vinita	66.1	85	9	38	29	56	90	3.06	.95	1
Wynona	67.3	86	10	44	29	47	117	3.65	1.51	11
Porter	69.0	88	10	44	29	30	151	1.93	.51	11
Inola	67.9	87	10	42	29	39	127	2.35	.87	18
Claremore	68.8	87	10	43	29	34	148	3.51	1.63	1
Putnam	69.1	94	10	41	19	34	159	1.17	.39	29
Retrop	71.0	94	10	44	19	13	192	.87	.49	11
Watonga	68.7	92	10	42	19	42	154	1.24	.51	29
Weatherford	69.7	92	10	44	19	28	168	1.08	.39	21
Okemah	68.7	87	10	47	20	****	****	4.95	1.47	11
Perkins	68.8	90	10	45	20	41	155	3.53	1.10	21
Shawnee	69.4	89	9	47	20	24	155	3.38	2.40	11
Spencer	69.4	88	10	47	28	27	160	3.02	1.01	11
Stillwater	68.1	90	10	42	20	50	143	2.97	1.24	13
Washington	69.5	88	10	48	20	****	****	2.22	1.86	11
Ninnekah	70.5	92	10	45	20	16	180	.99	.38	21
Acme	71.0	90	10	45	20	11	192	1.02	.37	21
Norman	69.8	88	10	45	20	21	165	2.42	1.53	11
Marshall	*****	***	***	***	***	****	****	*****	*****	***
Stigler	69.4	89	10	41	29	27	159	3.24	1.49	1
Stuart	69.4	87	10	47	29	16	149	3.32	1.44	1
Tahlequah	68.1	86	9	40	29	44	135	3.87	1.65	1
Webbers Falls	70.1	90	10	43	29	25	177	3.97	1.72	1
Westville	67.8	85	9	39	29	41	126	2.85	1.63	1
Hectorville	68.9	87	10	46	29	33	149	3.71	1.36	12
Medicine Park	72.0	92	10	52	20	3	214	.88	.48	11
Tipton	73.0	97	10	49	19	3	244	.41	.36	11
Walters	72.5	92	10	49	28	2	228	.71	.63	11
Apache	70.1	90	10	48	19	11	163	.61	.20	30
Grandfield	73.2	96	10	50	20	****	****	.74	.36	11
Pauls Valley	71.0	90	10	46	20	9	188	3.31	1.62	11
Ringling	71.5	90	10	50	28	3	197	2.01	.95	11
Sulphur	69.8	87	4	48	15	14	159	3.82	1.90	11
Tishomingo	70.4	89	10	50	15	8	169	5.07	2.60	11
Waurika	72.2	92	10	49	20	3	219	1.67	1.23	11
Vanoss	69.4	88	4	45	20	19	151	3.42	1.91	11
Bee	71.3	88	4	48	28	4	192	6.68	3.45	11
Newport	71.7	90	10	52	20	2	202	2.78	1.74	11
Mt Herman	70.2	88	4	45	29	****	****	3.97	1.65	12
Talihina	70.2	89	9	39	29	17	172	3.98	2.12	12
Wilburton	69.6	88	9	44	29	22	160	5.65	2.43	12
Wister	69.1	90	9	37	29	28	151	2.54	1.08	12
Broken Bow	*****	***	***	***	***	****	****	4.44	2.23	2

September 2003 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Sep-02 (inches)
Panhandle	2.16	0.28	27th Wettest	4.57 (1985)	0.05 (1956)	1.22
North Central	2.45	-0.68	53rd Driest	7.08 (1945)	0.04 (2000)	2.66
Northeast	3.00	-1.78	45th Driest	12.42 (1986)	0.13 (1948)	2.35
West Central	1.84	-1.19	41st Driest	8.64 (1986)	0.02 (2000)	2.51
Central	2.75	-1.36	49th Driest	10.68 (1945)	0.19 (1956)	3.58
East Central	3.45	-1.51	47th Driest	10.40 (1970)	0.23 (1948)	0.84
Southwest	0.76	-2.63	14th Driest	8.68 (1936)	0.00 (1898)	2.34
South Central	4.11	-0.23	38th Wettest	9.98 (1936)	0.00 (1909)	2.55
Southeast	4.00	-0.57	44th Wettest	11.75 (1974)	0.29 (1948)	2.66
Statewide	2.75	-1.06	47th Driest	7.86 (1945)	0.27 (1956)	2.35

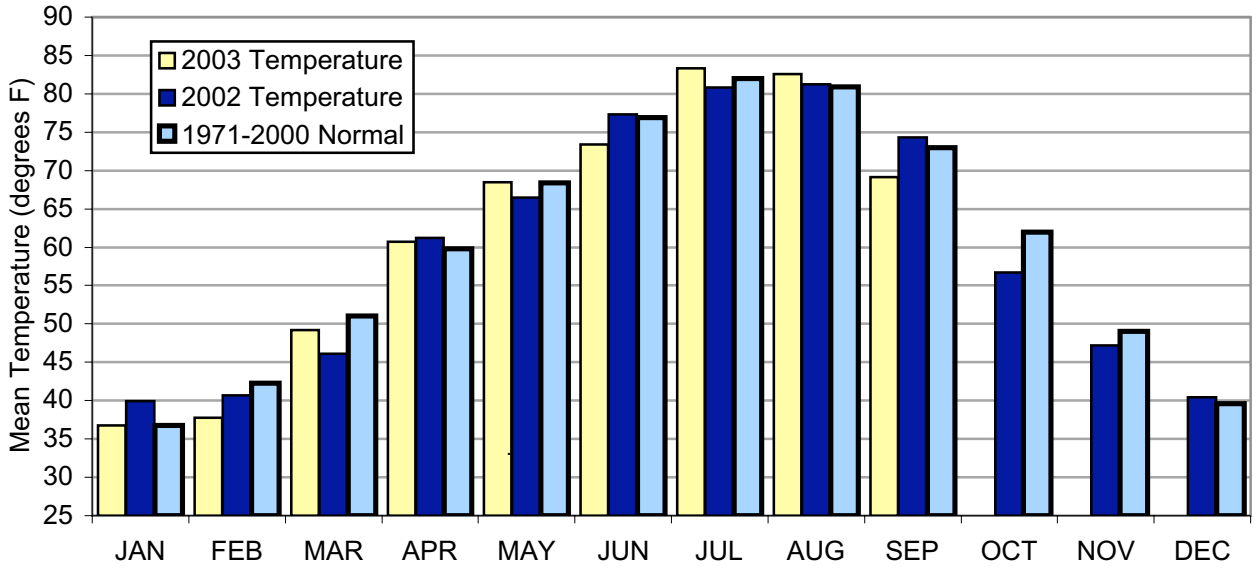
2002 and 2003 Statewide Precipitation Monthly Totals vs. Normal



September 2003 Mesonet Temperature Comparison

Climate Division	Average Temp (°F)	Departure from Normal (°F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Sep-02 (°F)
Panhandle	66.8	-2.6	11th Coolest	76.2 (1931)	62.4 (1974)	70.6
North Central	68.1	-4.0	6th Coolest	80.8 (1931)	64.0 (1974)	73.2
Northeast	67.4	-4.3	7th Coolest	79.1 (1931)	63.4 (1974)	74.3
West Central	69.6	-2.3	22nd Coolest	80.4 (1931)	64.4 (1974)	72.9
Central	69.1	-3.7	7th Coolest	81.3 (1931)	65.0 (1974)	74.1
East Central	69.0	-3.7	9th Coolest	80.5 (1939)	65.1 (1974)	75.7
Southwest	71.3	-2.4	15th Coolest	81.2 (1931)	66.4 (1974)	75.0
South Central	70.8	-3.3	10th Coolest	81.3 (1998)	66.3 (1974)	75.3
Southeast	70.6	-2.5	11th Coolest	81.2 (1939)	65.9 (1974)	74.7
Statewide	69.1	-3.3	8th Coolest	79.8 (1931)	64.7 (1974)	74.0

2002 and 2003 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for September 2003

Climate Division	High Temp (ºF)	Day	Station	Low Temp (ºF)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	96	16th	Goodwell	33	19th	Beaver	4.84	Slapout	1.39	20th	Slapout
North Central	95	10th	Alva	36	19th	Seiling	4.06	Newkirk	2.88	13th	Blackwell
Northeast	89	10th	Pawnee	38	29th	Vinita	4.23	Skiatook	2.21	11th	Skiatook
West Central	95	10th	Butler	38	19th	Camargo	6.29	Erick	5.70	10th	Erick
Central	92	26th	Kingfisher	41	29th	Bristow	5.72	Oilton	2.50	11th	Oilton
East Central	90	10th	Webbers Falls	39	29th	Cookson	4.06	Okmulgee	1.72	1st	Webbers Falls
Southwest	97	10th	Tipton	42	19th	Hinton	1.41	Hollis	1.26	11th	Hollis
South Central	92	10th	Waurika	45	20th	Vanoss	7.25	Madill	3.76	1st	Durant
Southeast	91	10th	Idabel	37	29th	Wister	5.65	Wilburton	2.43	12th	Wilburton
Statewide	97	10th	Tipton	33	19th	Beaver	7.25	Madill	5.70	10th	Erick

October Climatological Outlook

October typically brings Oklahoma some of its most pleasant weather. Days are usually pleasantly warm and nights typically are refreshingly cool. On the occasions that the weather does turn nasty, however, the result too often is flood, as October seems to be a favored time for extreme precipitation events. The year's tenth month is Oklahoma's 6th warmest and 4th wettest, according to the most recently compiled statewide normals. From 1971 through 2000, the period from which current normals of temperature and precipitation were calculated, Oklahoma's October average temperature was 62.0 degrees Fahrenheit and the average reporting station received a monthly precipitation of 3.38 inches.

Temperature
Mean: 62.0 degrees
Warmest October: 1963, 70.7 degrees
Coolest October: 1974, 65.4 degrees
Warmest location: Waurika, 66.3 degrees
Coolest location: Turpin, 56.6 degrees
Hottest recorded: 110 degrees, Waukomis, October 2, 1898
Coldest recorded: 6 degrees, Kenton, October 30, 1993

October is given to wide extremes of precipitation. The larger monthly figures are usually impacted by one or two very large events. Remnants of tropical storms or hurricanes, usually from the Gulf of Mexico, but occasionally originating in the Pacific Ocean, occasionally bring widespread heavy rains to the state during October. At other times, mid-latitude storm systems have stalled over the state and, taking advantage of moisture borne from the Gulf by the prevailing southerly winds, produced prodigious amounts of rain. In many other years, October is virtually without rain. Monthly precipitation totals include a statewide-averaged high of 11.32 inches in 1941, the largest total ever recorded for Oklahoma (any month), and a low of 0.14 inch, attained in 1917 and, again, in 1952. The remnants of Hurricane Norma provided enough rain over a three-day period in October 1981 to give Madill the greatest monthly precipitation total (25.80 inches) ever recorded at a recognized reporting station in Oklahoma (all months). A thoroughly extra-tropical thunderstorm system inundated Enid with 15.68 inches of rain in about 12 hours (12 inches in just 3 hours) on October 10, 1973. That total, reported the following morning, is the state's greatest 24-hour precipitation in any month, as measured at an official reporting station.

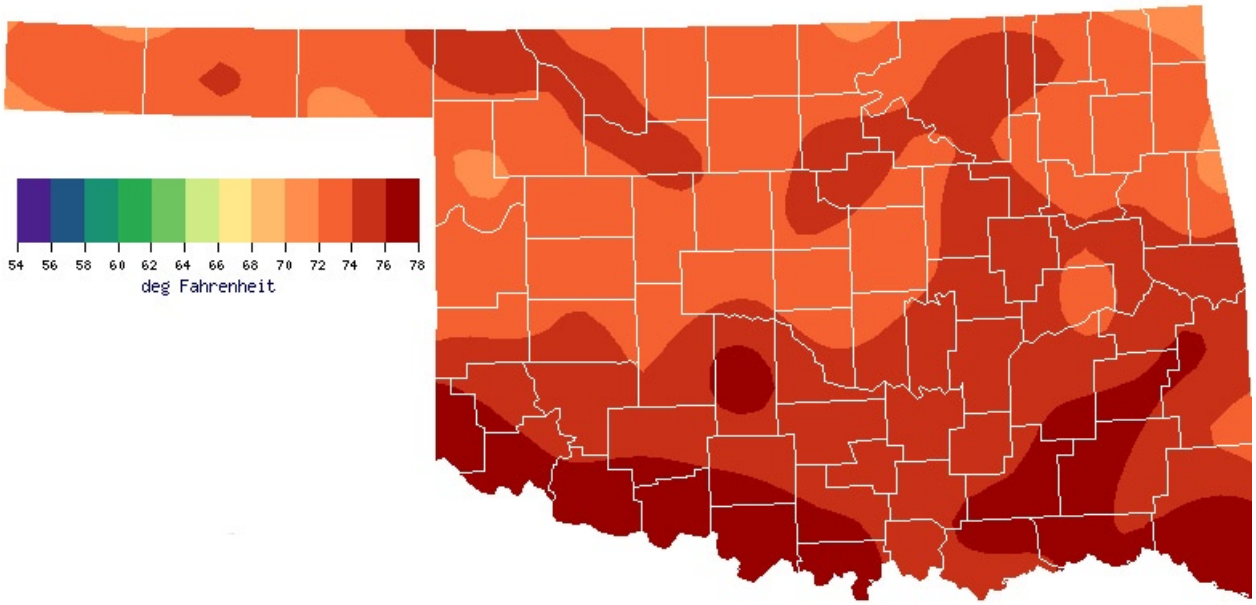
Precipitation
Mean: 3.38 inches
Wettest year: 1941, 11.32 inches
Driest year: 1917 and 1952, 0.14 inches
Wettest location: Smithville, 6.22 inches
Driest location: Kenton, 0.99 inches
Most recorded: 25.80 inches, Madill, 1981

The normal precipitation pattern across Oklahoma in October returns to its familiar configuration with eastern stations receiving substantially more rainfall than those in the west. Normal monthly precipitation across the state during October ranges from 6.22 inches at Smithville to 0.99 inches at Kenton. Snowfall is not common during October, but Regnier, Kenton, and Boise City each average receiving about one inch of snow during the month. Those averages were inflated by a freak snowstorm on October 25 and 26, 1997 that dropped 15 inches of snow on Kenton. As many as 15,000 head of cattle across the panhandle died during that snowstorm.

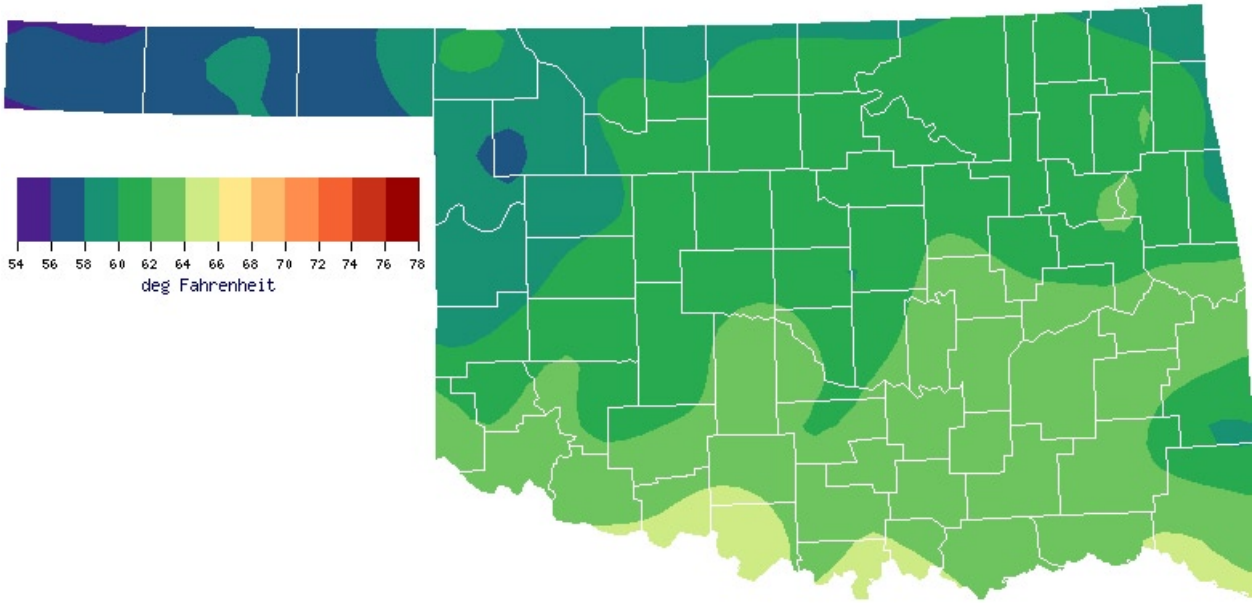
Severe thunderstorms, apart from the floods, historically have been little more than footnotes in October for most of the state's history. However, recent occurrences have altered that notion somewhat. Reasonably comprehensive and well-documented tornado records in the state date from 1950. During those 52 years, 123 October tornadoes have been identified in Oklahoma, an average of 2.3 per year. There were no October tornadoes reported during 21 of those years. However, 25 tornadoes were reported in the state on October 4, 1998 and 19 more were reported on October 9, 2001. Those two days account for over one-third of the tornadoes reported (and confirmed) within the state in October during that 52-year period. The state's monthly total of 27 tornadoes during October 1998 represents the most tornadoes ever reported within any state during an October.

Tornadoes
Average October Tornadoes: 2
Most: 27 (1998)

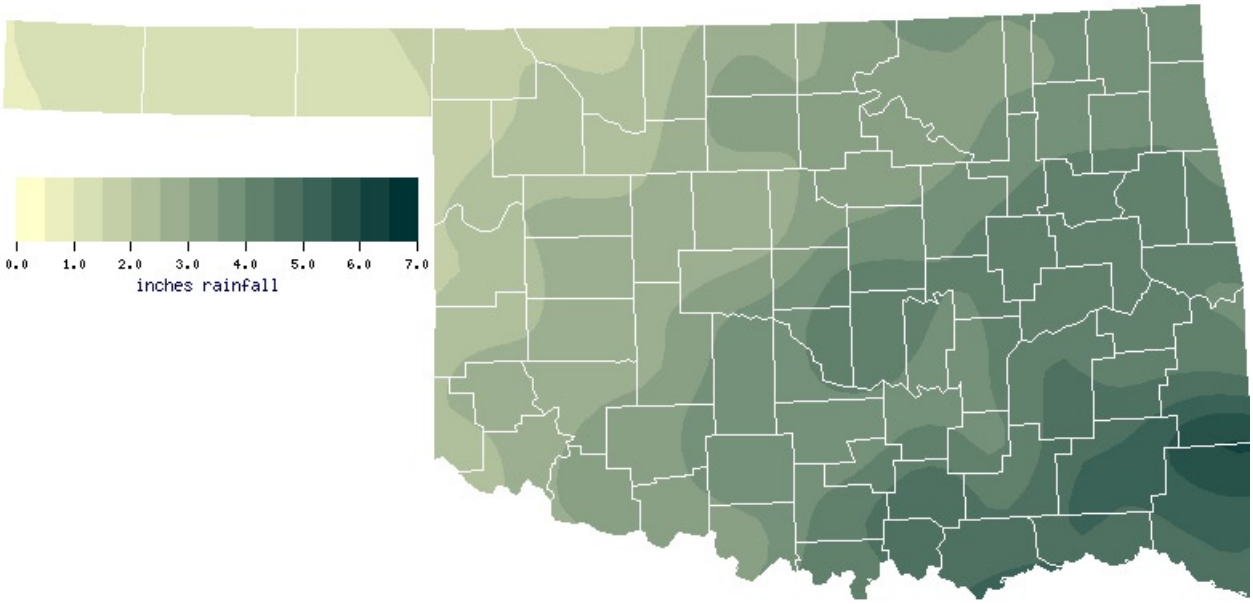
October Normal Monthly Maximum Temperature (1971-2000)



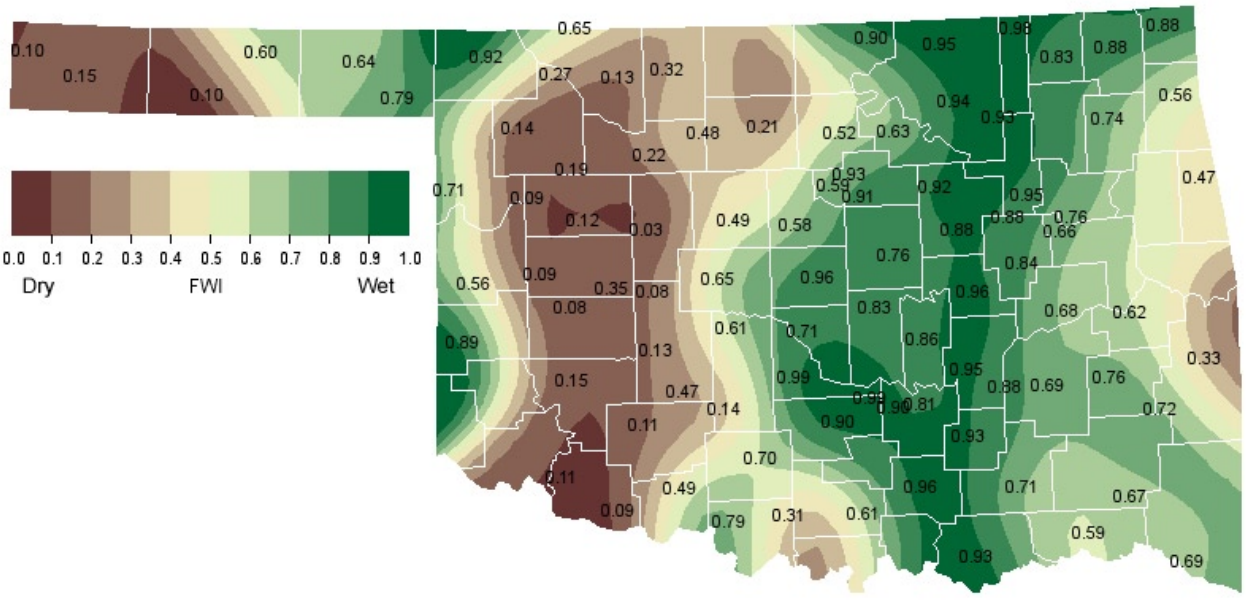
October Normal Monthly Minimum Temperature (1971-2000)



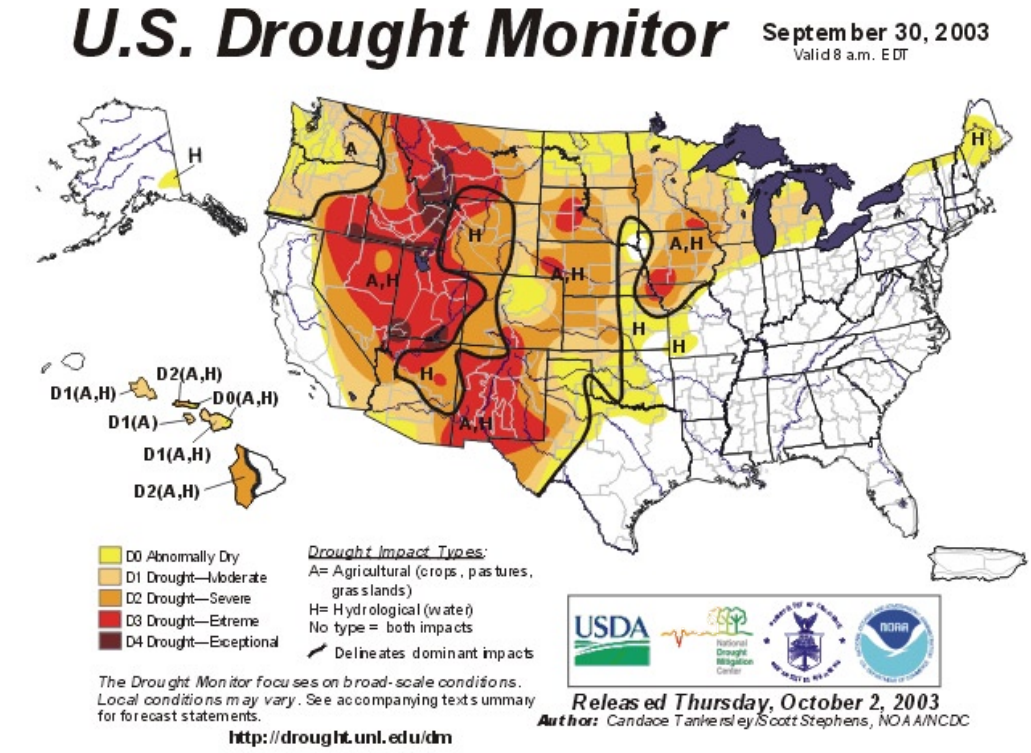
October Normal Precipitation (1971-2000)

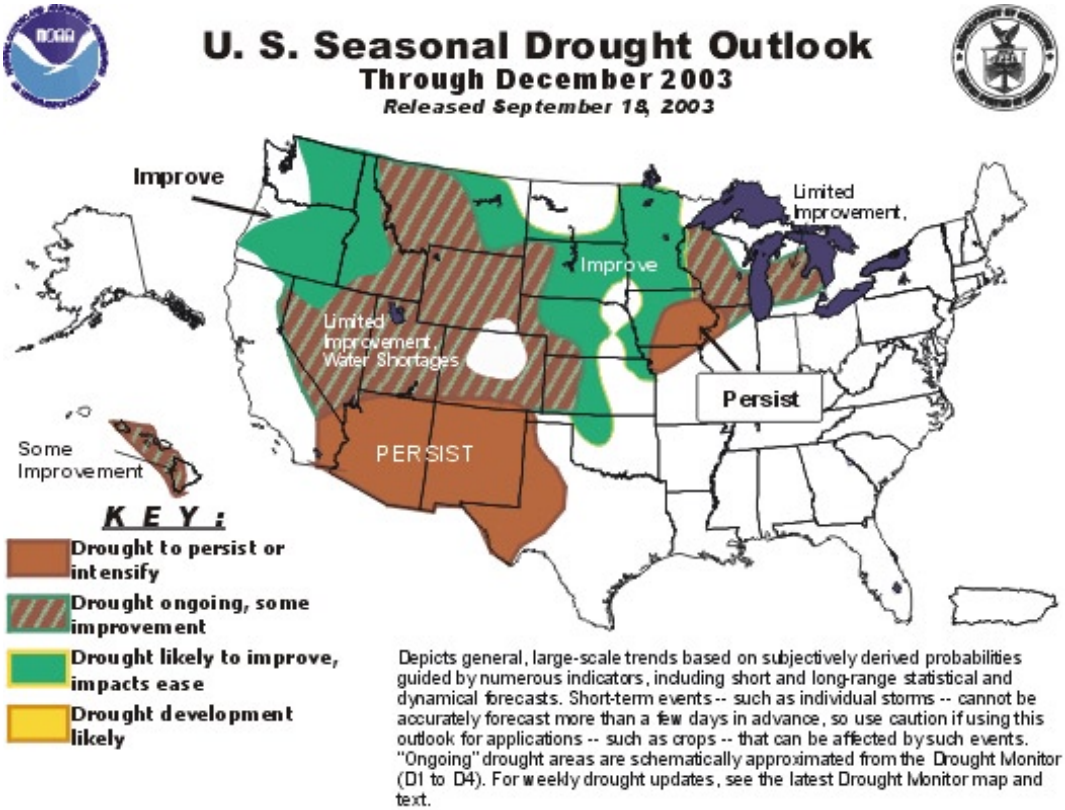


October 1, 2003 Soil Moisture Conditions at 25cm

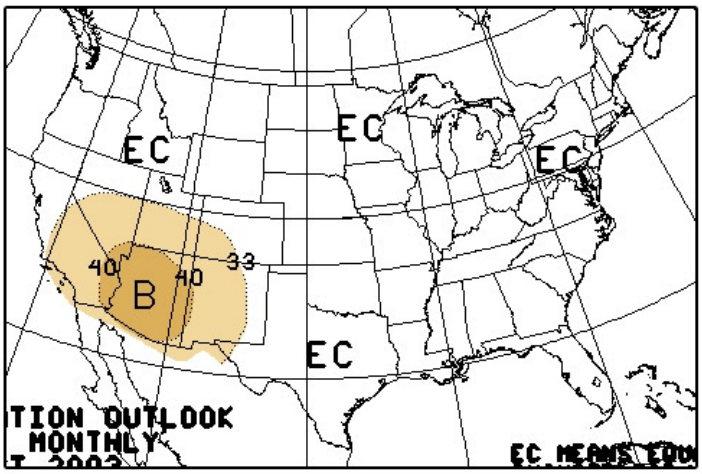


October 2003 Drought Indices





October 2003 U.S. Precipitation Forecast



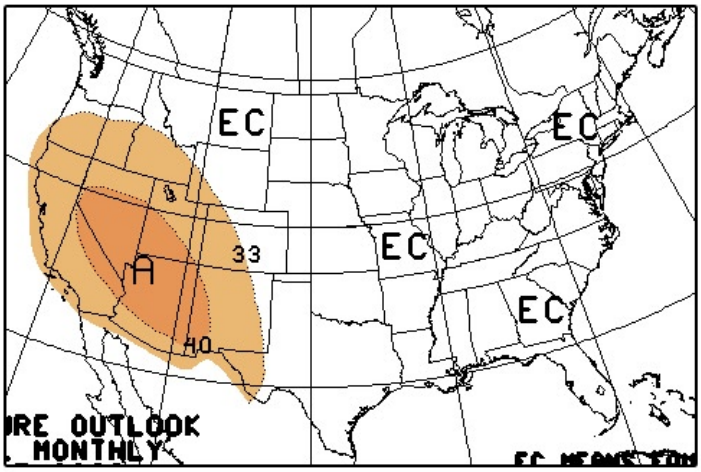
Percent Likelihood of Above or Below Average Precipitation*

5% - 10%
0% - 5%
A = Above

0% - 5%
5% - 10%
B = Below

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

October 2003 U.S. Temperature Forecast



Percent Likelihood of Above and Below Average Temperatures*

10% - 20%
5% - 10%
0% - 5%
A = Above

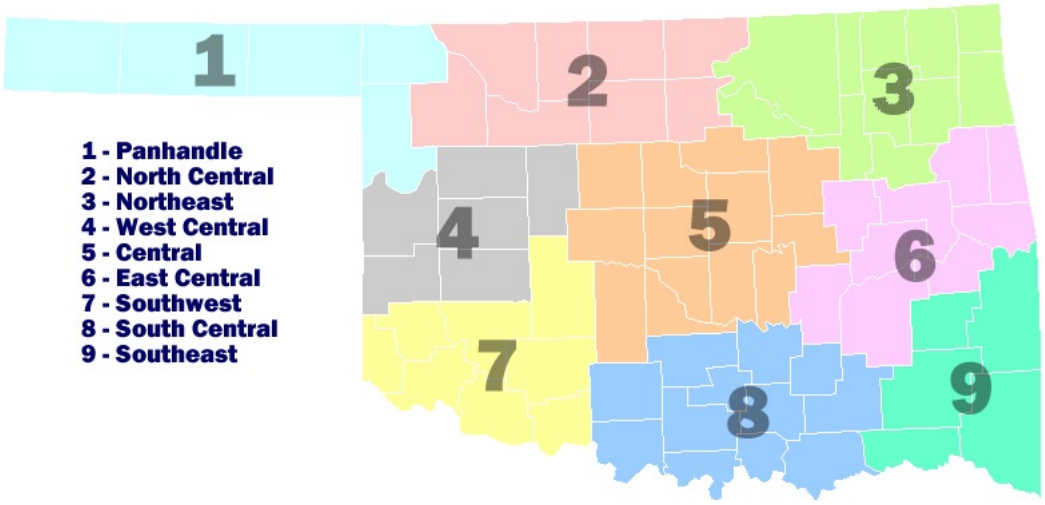
0% - 5%
5% - 10%
B = Below

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

October Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	73.70	42.90	58.30	1.49
2	73.50	46.50	60.00	2.66
3	73.80	48.70	61.30	3.62
4	73.70	47.20	60.50	2.47
5	74.40	49.30	61.80	3.64
6	74.50	50.00	62.30	4.19
7	75.80	48.90	62.30	2.99
8	76.10	50.80	63.50	4.17
9	76.10	49.50	62.80	4.98
Statewide	74.60	48.30	61.50	3.48

Oklahoma Climate Divisions



Interpretation Information

Mean Daily Temperature: Calculated from an average of the daily maximum and minimum temperatures. Daily averages are summed for each day, and then divided by the number of valid data points – typically the number of days in the month. Although this may differ from the "true" daily average, it is consistent with historical methods of observation and comparable to the normals and extremes for stations and regions of the state.

Degree Days: Degree Days are calculated each day of the month for which there is a temperature report and the mean temperature for the day is less than (Heating Degree Days) or greater than (Cooling Degree Days) 65 degrees. Daily values are summed to arrive at a monthly total. HDD/CDD are qualitative measures of how much heating/cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value.

Severe Weather Reports: Only the most significant events are listed. Tornadoes of F2 or greater strength (on the 0-5 Fujita scale), hail of two inches diameter or greater, and wind speeds of 70 miles per hour or above are listed. National Weather Service defines storms as severe when they produce a tornado, hail of three-quarters inch or greater, or wind speeds above 57 miles per hour (50 knots). For additional reports, contact the Oklahoma Climatological Survey, Storm Prediction Center, or your local National Weather Service forecast office.

Soil Moisture: The soil moisture variable displayed is the Fractional Water Index (FWI), measured at a depth of 25 cm. This unitless value ranges from very dry soil having a value of 0, to saturated soils having a value of 1.

Additional Resources

Sunrise / Sunset tables
U.S. Naval Observatory**:** http://aa.usno.navy.mil/data

Severe Storm Reports
Storm Prediction Center: http://spc.noaa.gov/climo/

National Climatic Data Center (more than about 4-5 months old):
http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

Seasonal Outlooks
Climate Prediction Center:
http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.html

Climate Calendars and other local weather and climate information
Oklahoma Climatological Survey: http://climate.ocs.ou.edu or
http://www.ocs.ou.edu/
E-mail (ocs@ou.edu) or telephone (405/325-2541)

Oklahoma Climatological Survey

Oklahoma Climatological Survey is the State Climate Office for Oklahoma

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