OKLAHOMA MONTHLY CLIMATE SUMMARY
MAY 2003

Oklahoma Climatological Survey

Overview

The violent severe weather outbreaks that occurred throughout the month were the preeminent story of Oklahoma's climate during May. That the outbreaks struck during Oklahoma's most active severe weather month was not wholly unexpected. But to suffer through 47 tornadoes, more than twice the 20 that May normally averages, was both unexpected and unwanted. The preliminary count of 47 tornadoes was the greatest number experienced in a single month since the infamous May 1999 outbreaks produced 90, and the 4th highest total recorded for any month since accurate record-keeping of tornadoes began in 1950. In a bitter twist of irony, the most violent tornadoes of the May 1999 and 2003 outbreaks traveled along nearly the same path through south Oklahoma City and Moore, with catastrophic results.

The severe weather overshadowed a dry spell which had continued to intensify since the beginning of the year into drought conditions in southern Oklahoma. The rainfall which accompanied the numerous thunderstorms helped to alleviate the precipitation deficit somewhat, although the statewide-averaged precipitation for the month still finished as the 33rd driest in the last 112 years. The month, which experienced both unusually warm and cool episodes, was the 45th warmest on record.

May 2003 Statewide Extremes

Description	Extreme	Station	Date
High Temperature	107ºF	Altus	May 30
Low Temperature	32ºF	Boise City	May 11
Max Precipitation	9.34 in.	Jay	
Min Precipitation	0.68 in.	Slapout	

Precipitation

The rainfall received from the convective systems that traversed the state during May was not enough to erase the large deficits which had accumulated since the beginning of the year. The statewide-averaged precipitation deficit for the year-to-date increased to 5.47 inches, the 12th driest such period since 1892. Southern Oklahoma, which had been experiencing mild to moderate drought conditions, was largely skipped over by any significant rainfall. Despite recording more than four inches of rain, the south central region still fell more than an inch below normal for the month. As it stood, the January-May period for most of southern Oklahoma ranked within the top ten driest since 1895. The northeast was the only region which reached near-normal rainfall for the month. For the year, however, the northeast remained 2.67 inches below normal. Jay led the state with a precipitation total of 9.34 inches, with Ardmore trailing close behind at 8.32 inches.

Temperature

Bolstered by the excessive warmth of the southern regions, the statewide-averaged temperature managed to remain 0.6 degrees above normal for the month at 68.5 degrees Fahrenheit. Parts of northern Oklahoma fell below normal for the month, however. Warm frontal boundaries intruding from the south, associated with the surface low pressure systems that generated the abundant severe weather, often never made it to extreme northern Oklahoma. North-central Oklahoma experienced the 37th coolest May since 1895, falling one degree below normal. An unusually strong cold front swept through the state on the 19th, bringing unseasonably cool temperatures and daytime highs up to 15 degrees below normal. After occasional teases of summertime heat, the real thing appeared in the month's last week. Triple-digit temperatures were widespread, and the state's high temperature for the month of 107 degrees was recorded on the 30th at Altus.

May 2003 Daily Highlights

May 1-2: A cold front overnight on the 1st ushered in cooler and drier air behind it, and severe storms ahead of it, including an outbreak of tornadoes in east central and southeast sections. The most significant twister, rated an F2 on the Fujita scale, traveled through areas north and east of Broken Bow, destroying 25 homes and damaging 31 others. Seven other tornadoes touched down in eastern Oklahoma the same day. Numerous reports of large hail accompanied the storms, including 2.75-inch hail near Hulbert.

May 3-10: Oklahoma entered into a week of turbulent weather. A large upper-level low pressure system stalled over the western U.S., ejecting several disturbances towards the east throughout the week. Strong southerly winds pumped abundant moisture northward from the Gulf of Mexico, producing a sharp dryline, with dry air to the west and moist air to the east. Morning lows were quite cold in the dry air, with lows in the 30s and 40s, while in eastern sections of the state, lows ranged from the upper 60s to mid 70s. Unfortunately, this scenario generated a massive amount of severe weather within the state, including 21 tornadoes. The most destructive period was the 8th-9th, during which a series of tornadoes struck Oklahoma City and the surrounding areas on successive days, including an F4 which struck portions of Moore. Damages for the outbreak include: 432 single family dwellings destroyed, 2889 damaged; 5 public buildings with major damage; and more than 100 businesses damaged. Monetarily, damages may exceed $750 million. The injured from these storms total 144, with one fatality attributed to the F3 tornado that struck Oklahoma City on the 9th.

May 11-12: As the upper-level trough swept east, a ridge of high pressure built in across the region, bringing clear skies, light winds, and generally tranquil weather – a welcome respite after the violent weather of the past week. Temperatures were quite seasonable during this period.

May 13-16: Southerly winds returned, laden with moisture, as surface low pressure entered western Oklahoma, once again accompanied by a dryline. Seventeen tornadoes were reported during this period, mainly in the Panhandle or eastern regions of Oklahoma. An F2 tornado traveled through McCurtain County from near Valiant to Harris before exiting into Texas. Only minor damage was reported from these tornadoes. An abundance of large hail and heavy rain was reported, however. Hail up to 3.0 inches in diameter struck near Weatherford (Custer) on the 14th, while 4.5-inch hail fell near Velma (Stephens) on the same day. Kingfisher (Kingfisher) accumulated 4.36 inches of rain on the 16th. One fatality occurred on the 16th in Hoffman (Okmulgee) when strong winds blew a tree onto a residence.

May 17-18: High pressure dominated as the unsettled weather pulled to the east. The state once again enjoyed cool weather behind the passage of a cold front. Winds quickly swung back to southerly in response to a surface low over southeastern Colorado on the 18th, which brought temperatures back into the 90s.

May 19-23: An unusually potent cold front brought cool temperatures and occasional thunderstorms with heavy rainfall to the state for almost an entire week. Winds behind the front on the 19th were northerly at 40 mph, and daytime high temperatures the next day were in the mid-60s, up to 15 degrees below normal.

May 24-28: A secondary front entered the state, triggering severe thunderstorms. Numerous reports of damage due to strong winds were reported in north central and central sections. Beneficial rains fell over most of the state, especially in the parched southern sections. Unfortunately, the rain came at the beginning of the winter wheat harvest, and curtailed any chance of getting machinery into the field. The surface high that followed the front into the state brought cool temperatures and northerly winds. In the front's aftermath, light winds and low humidities accompanied temperatures in the 70s and 80s.

May 29-31: Strong southerly winds returned, along with a teaser of summertime heat. Temperatures soared into the triple-digits as Oklahoma City reached 100 degrees for the first time since August 2001. Altus and Grandfield were 107 and 106 degrees, respectively. Only a cold front moving through the northwest kept the entire state from reaching the 100 degree mark. As the cold front moved across the state on the month's final day, temperatures cooled off into the 70s and 80s.

May 2003 Statewide Statistics

Temperature

	Avgerage	Depart.	Rank (1892-2003)
Month (May)	68.5ºF	0.6ºF	45th Warmest
Season (Mar-May)	60.9ºF	1.8ºF	23rd Warmest
Year-to-Date (Jan-May)	52.6ºF	1.5ºF	40th Warmest

Precipitation

	Total	Depart.	Rank (1892-2003)
Month (May)	3.60 in.	-1.61 in.	33rd Driest
Season (Mar-May)	7.58 in.	-4.10 in.	17th Driest
Year-to-Date (Jan-May)	9.42 in.	-5.47 in.	12th Driest

Depart. = Departure from 30-year normal

May 2003 Severe Weather

Significant Tornadoes (F2 or greater)

Strength	Location	County	Date
F2	5 NW - 8 SE Broken Bow	McCurtain	May 1
F4	Moore - Oklahoma City (SE) - Midwest City (SE) - Choctaw	Cleveland/Oklahoma	May 8
F3	1 NW Fairfax - 1 W Bowring	Osage	May 8
F3	Oklahoma City (NE of Wilshire and Eastern) - Jones (N) - 2 S Luther	Oklahoma	May 9
F2	2.9 SE Valliant - 1.6 S Harris	McCurtain	May 14

Hail (2 inches in diameter or greater)

Size (inches)	Location	County	Date
2.75	Hulbert	Cherokee	May 1
2.50	2 W Tahlequah	Cherokee	May 1
2.00	9 NW Vain	Sequoyah	May 1
2.00	9 E Nashoba	Pushmataha	May 1
2.75	3 E Wagoner	Wagoner	May 4
2.75	9 NE Wagoner	Wagoner	May 4
2.75	Miami	Ottawa	May 4
2.75	6 N Peggs	Cherokee	May 4
2.75	5 NNE Wyandotte	Ottawa	May 4
4.25	5 E Miami	Ottawa	May 4
2.75	Wilburton	Latimer	May 4
3.00	1 SW Nowata	Nowata	May 4
2.00	Red Oak	Latimer	May 4
2.00	5 E Stringtown	Atoka	May 6
2.75	7 E Vinita	Craig	May 6
2.00	7 SW Cordell	Washita	May 7
2.75	Geary	Blaine	May 9
2.75	Yukon	Canadian	May 9
2.75	6 S Corn	Washita	May 9
2.75	Yukon	Canadian	May 9
2.50	Lacy	Kingfisher	May 9
2.50	Bartlesville	Washington	May 9
2.75	7 E Hanna	McIntosh	May 10
2.00	7 N Scipio	Pittsburg	May 10
2.50	Sallisaw	Sequoyah	May 10
2.75	7 N Muldrow	Sequoyah	May 10
3.00	Weatherford	Custer	May 14
2.75	1 S Lone Grove	Carter	May 14
4.50	2 SE Velma	Stephens	May 14
2.00	Alma	Stephens	May 14
2.75	5 E Gene Autry	Carter	May 14
2.00	5 SW Kenton	Cimarron	May 23

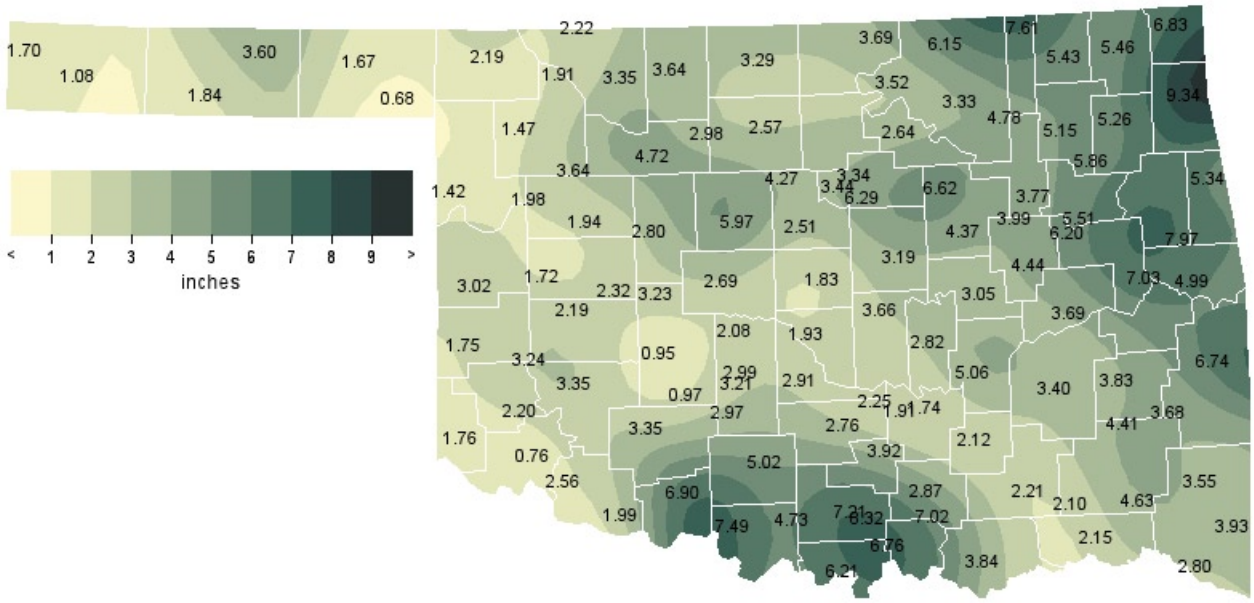
Wind Gusts (70 mph or greater)

Speed (mph)	Location	County	Date
80	3 S Poteau	Le Flore	May 4
75	5 W McCurtain	Haskell	May 6
70	Panama	Le Flore	May 6
92	Bryan's Corner	Beaver	May 15
90	Hooker	Texas	May 15
81	6 SW Cheyenne	Roger Mills	May 16
70	15 S Cherokee	Alfalfa	May 16
90	Cherokee	Alfalfa	May 16
73	Pauls Valley	Garvin	May 16
74	Byars	McClain	May 16
74	5 NW Stratford	Garvin	May 16
76	2 SW Enid	Garfield	May 16
75	4 W Dill City	Washita	May 16
72	7 SSE Red Rock	Noble	May 24
70	2 N Blair	Jackson	May 24

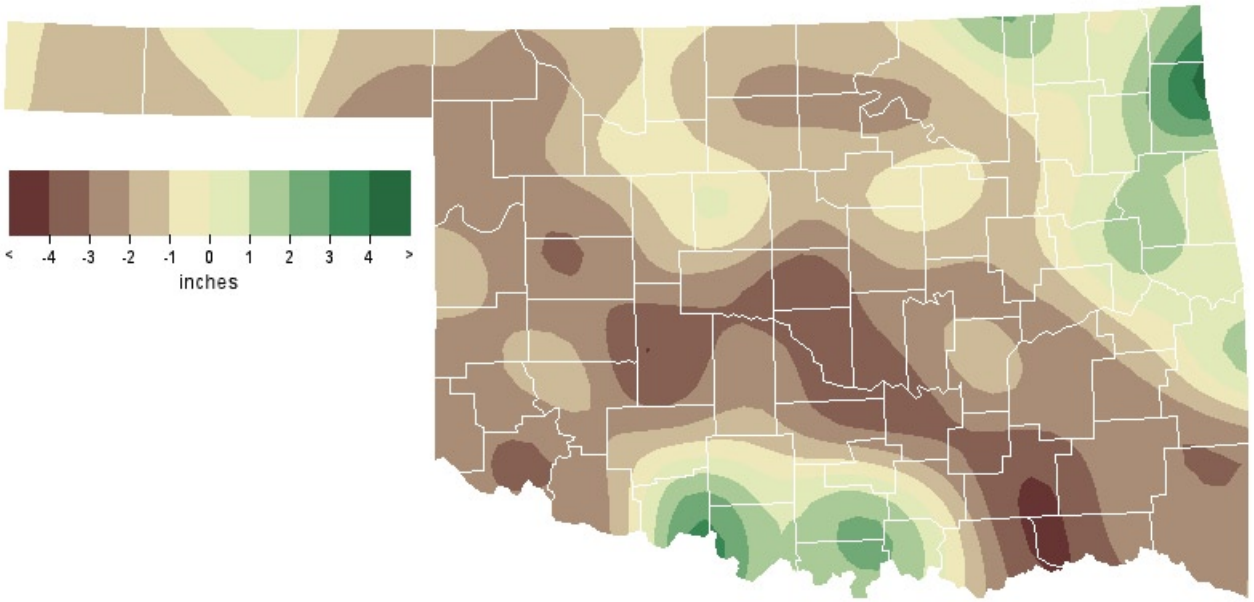
Flooding

Location	County	Date
Tahlequah	Cherokee	May 1
Tahlequah	Cherokee	May 13
1 N Okarche	Kingfisher	May 16
Kingfisher	Kingfisher	May 16
1 E Kingfisher	Kingfisher	May 16
Tulsa	Tulsa	May 16
Copan	Washington	May 16
Owasso	Tulsa	May 19
El Dorado	Jackson	May 25

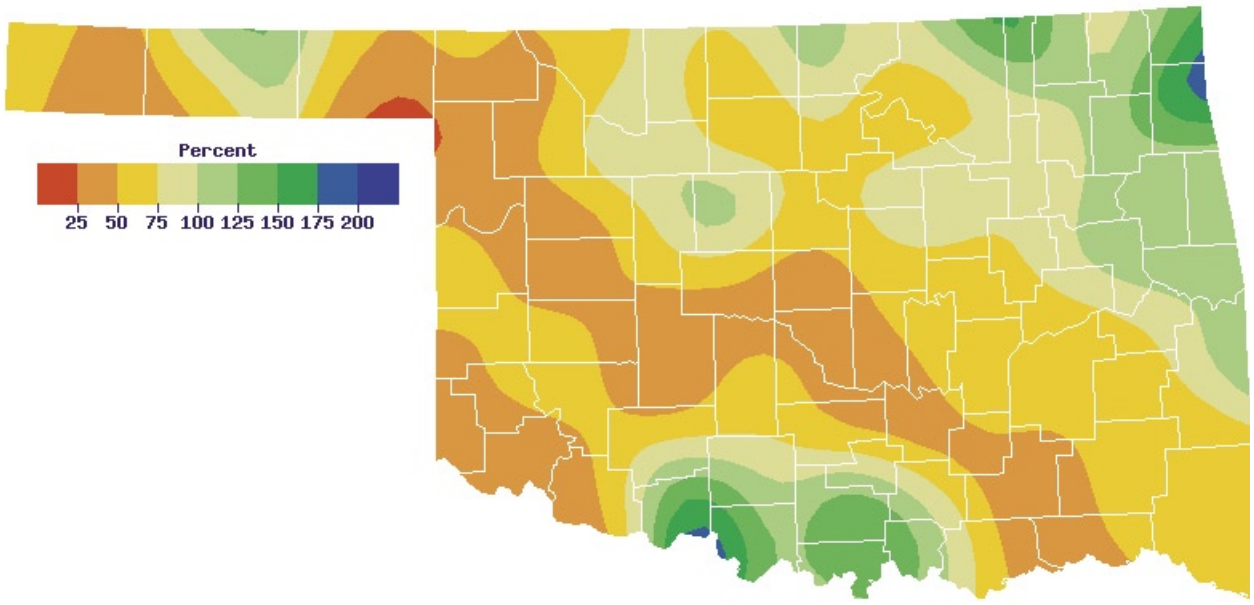
May 2003 Observed Precipitation



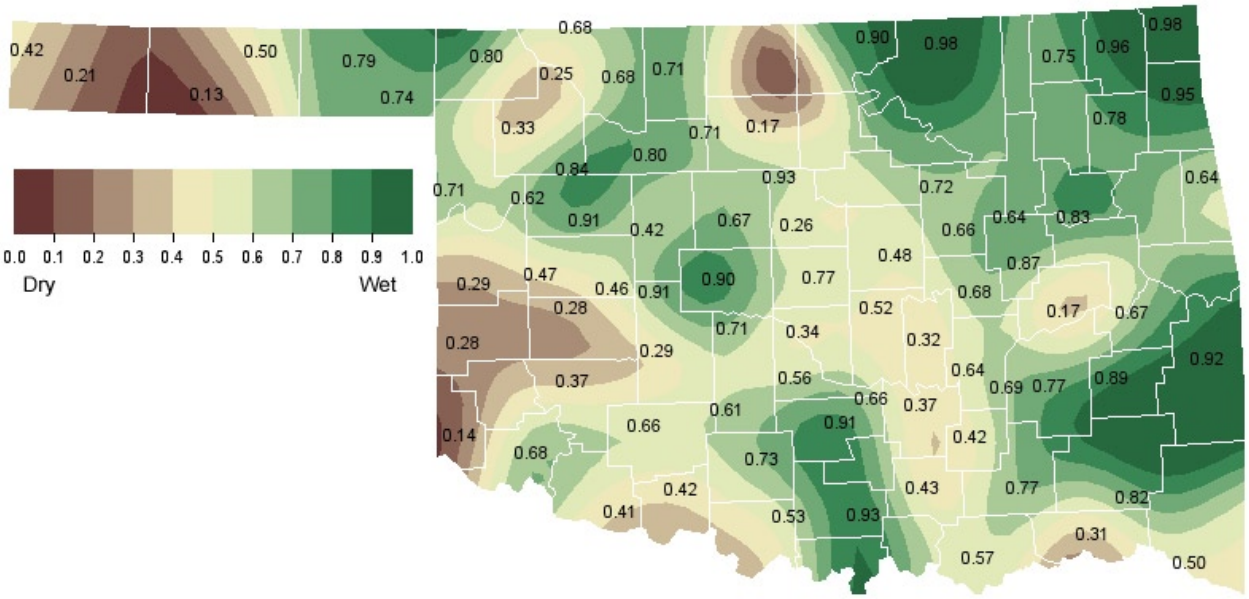
May 2003 Departure from Normal Precipitation



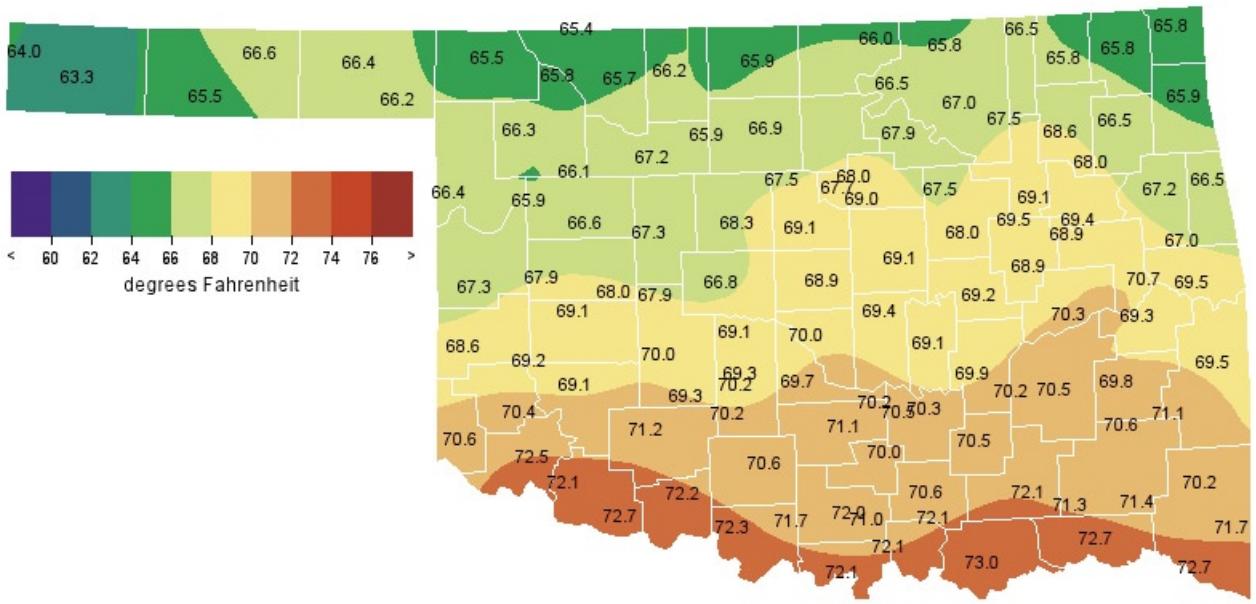
May 2003 Percent of Normal Precipitation



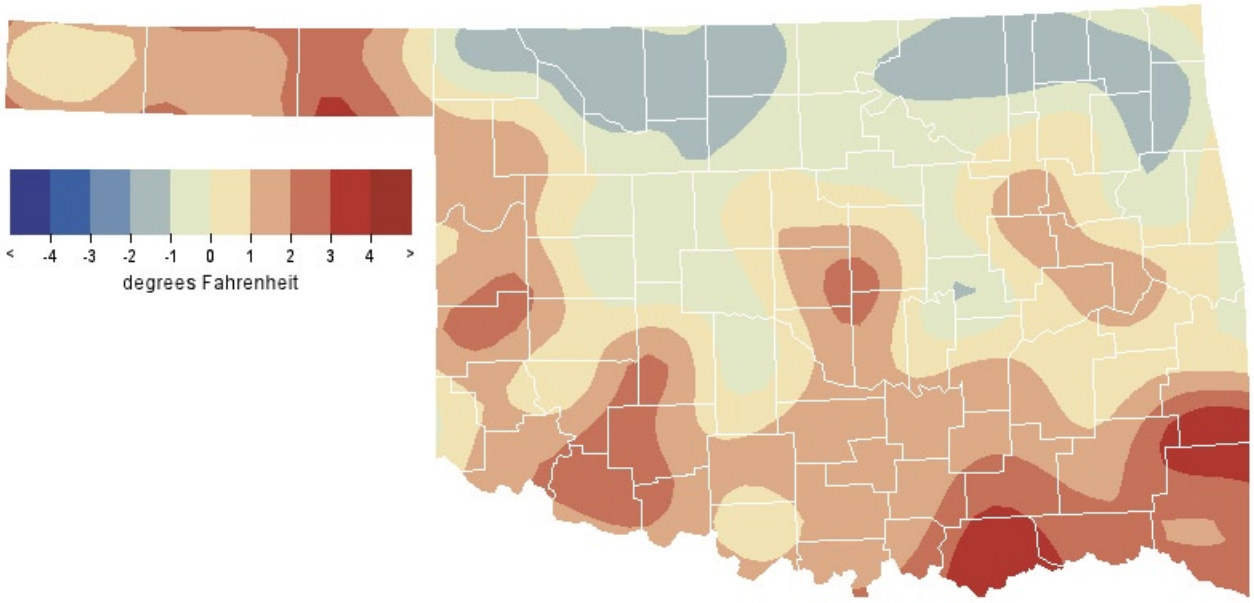
May 2003 Average Soil Moisture at 25cm



May 2003 Average Temperature



May 2003 Departure from Normal Temperature



Mesonet Monthly Summary for May 2003

NAME	MEAN TEMP	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HDD	CDD	TOT PPT	MAX 24-HR	MAX DAY
PANHANDLE										
Arnett	66.5	97	30	42	11	60	106	1.42	.54	25
Beaver	66.5	101	29	38	11	64	109	1.67	1.50	15
Boise City	63.3	98	29	32	11	122	69	1.08	.65	24
Buffalo	65.5	100	30	40	9	78	93	2.19	1.78	15
NORTH CENTRAL										
Blackwell	*****	***	***	***	***	****	****	*****	*****	***
Breckenridge	66.9	96	30	41	11	44	102	2.57	1.49	16
Cherokee	66.2	96	30	42	11	57	93	3.64	2.16	16
Fairview	67.2	98	30	43	11	46	113	4.72	2.11	16
Freedom	65.8	99	30	42	11	69	94	1.91	.83	15
Lahoma	65.9	96	30	42	11	58	87	2.98	2.11	16
May Ranch	65.4	95	29	42	11	73	85	2.22	1.26	15
NORTHEAST										
Bixby	69.0	95	30	47	12	19	144	3.77	1.76	16
Burbank	66.5	91	30	45	12	42	88	3.52	1.79	16
Copan	66.5	91	30	44	11	42	89	7.61	2.86	16
Foraker	65.8	89	30	42	11	53	77	6.15	3.02	16
Jay	65.9	89	30	41	12	57	86	9.34	2.94	16
Miami	65.7	90	30	45	11	55	78	6.83	1.31	13
Nowata	65.8	91	30	41	12	56	80	5.43	1.70	16
Pawnee	67.9	94	30	44	12	27	117	2.64	1.38	16
WEST CENTRAL										
Bessie	69.0	103	30	44	11	24	149	2.19	1.23	16
Butler	68.0	100	30	41	11	32	125	1.72	1.16	15
Camargo	65.9	98	30	39	11	65	92	1.98	1.68	15
Cheyenne	67.4	95	30	41	11	45	119	3.02	1.60	15
Erick	68.7	100	30	44	5	29	142	1.75	.68	25
CENTRAL										
Bowlegs	69.0	98	30	43	12	31	155	2.82	1.04	16
Bristow	68.0	94	30	42	12	37	129	4.37	1.82	16
Chandler	69.1	97	30	46	11	22	149	3.19	1.22	16
Chickasha	69.3	99	30	43	12	****	****	2.99	1.87	14
El Reno	66.7	99	30	41	11	46	100	2.69	.76	9
Guthrie	69.0	97	30	44	11	22	146	2.51	1.55	16
Kingfisher	68.2	102	30	43	12	26	126	5.97	4.36	16
Marena	67.7	94	30	45	11	29	113	3.44	1.44	16
Marshall	67.6	96	30	43	11	33	113	4.27	1.61	16
Minco	69.1	103	30	44	11	****	****	2.08	.84	14
EAST CENTRAL										
Calvin	69.9	98	30	45	12	19	170	5.06	2.62	19
Cookson	67.0	91	30	43	12	47	109	7.97	2.42	16
Eufaula	70.2	95	30	48	12	16	177	3.69	1.53	16
Haskell	68.9	95	30	44	12	24	145	6.20	3.50	16
McAlester	70.5	98	30	46	12	15	186	3.40	1.37	8
Okmulgee	68.9	96	30	42	12	29	149	4.44	2.90	16
Sallisaw	69.5	93	30	45	12	18	157	4.99	2.47	16
SOUTHWEST										
Altus	72.5	107	30	47	11	9	241	.76	.34	21
Fort Cobb	70.0	103	30	47	11	14	168	.95	.32	9
Hinton	67.8	101	30	44	11	34	121	3.23	1.52	9
Hobart	69.1	103	30	43	11	23	151	3.35	1.69	24
Hollis	70.5	105	30	43	11	18	189	1.76	.52	21
Mangum	70.3	105	30	41	11	14	179	2.20	1.05	25
SOUTH CENTRAL										
Ada	70.2	100	30	45	12	****	****	1.74	.96	16
Ardmore	71.0	96	30	51	12	17	203	8.32	1.95	14
Burneyville	72.1	99	30	45	12	12	233	6.21	3.03	25
Byars	70.2	98	30	48	11	22	183	2.25	.80	16
Centrahoma	70.5	99	30	45	12	14	184	2.12	.90	16
Durant	72.8	98	30	50	12	****	****	3.84	1.77	14
Ketchum Ranch	70.6	99	30	49	11	16	191	5.02	1.87	19
Lane	72.0	98	30	46	12	3	220	2.21	1.39	20
Madill	72.0	96	30	48	12	10	227	6.76	1.63	19
SOUTHEAST										
Antlers	71.2	99	30	44	12	8	202	2.10	.94	20
Clayton	70.7	96	30	46	12	11	188	4.41	1.27	6
Cloudy	71.4	96	30	47	12	3	202	4.63	3.44	14
Hugo	72.7	97	30	52	12	1	240	2.15	.87	14
Idabel	72.7	98	30	49	12	1	241	2.80	1.03	24

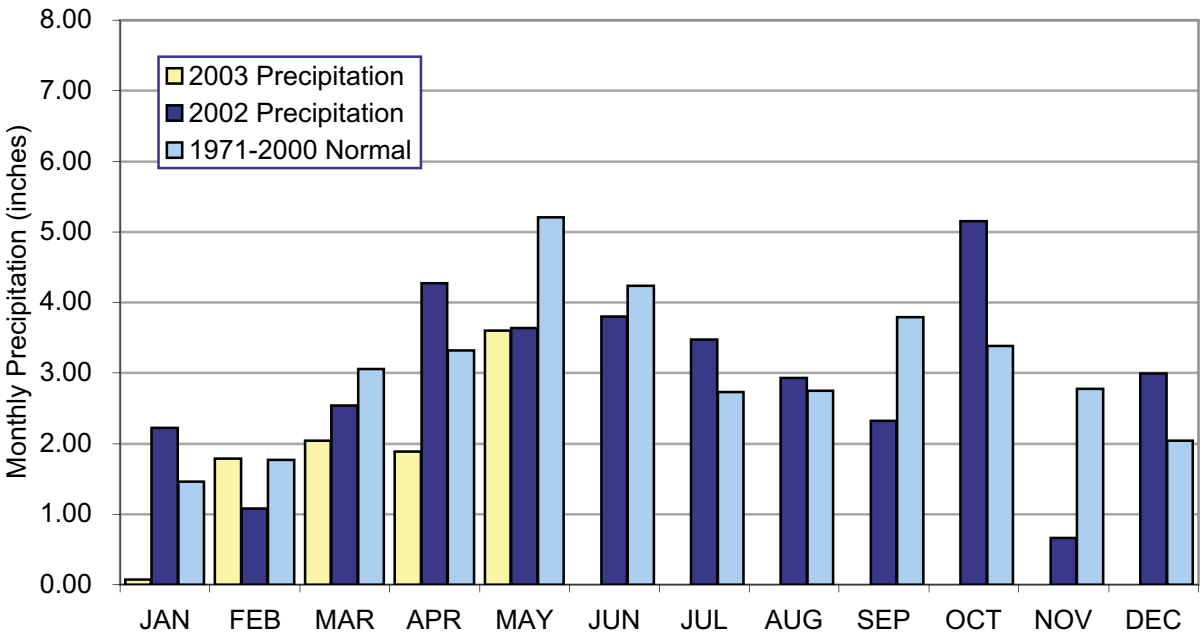
NAME	MEAN TEMP	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HDD	CDD	TOT PPT	MAX 24-HR	MAX DAY
Goodwell	65.5	98	29	36	11	84	100	1.84	.52	25
Hooker	66.6	99	30	36	11	61	112	3.60	1.25	15
Kenton	63.9	97	29	33	9	114	81	1.70	.84	24
Slapout	66.2	100	29	41	11	70	106	.68	.64	15
Medford	65.9	95	30	43	11	55	83	3.29	2.16	16
Newkirk	66.0	91	30	44	11	46	77	3.69	2.50	16
Red Rock	*****	***	***	***	***	****	****	*****	*****	***
Seiling	66.1	96	30	40	11	59	94	3.64	3.26	15
Woodward	66.3	97	30	41	11	67	108	1.47	.67	16
Alva	65.7	97	30	41	11	69	92	3.35	2.08	16
Pryor	66.6	91	30	41	12	50	98	5.26	1.99	16
Skiatook	67.5	93	30	44	11	35	113	4.78	1.70	16
Vinita	65.9	90	30	42	11	55	82	5.46	1.41	16
Wynona	66.5	92	30	43	11	****	****	3.18	1.68	16
Porter	69.3	95	30	47	12	18	152	5.51	3.52	16
Inola	68.0	93	30	43	12	31	124	5.86	2.93	16
Claremore	68.6	93	30	45	11	23	136	5.15	1.49	16
Putnam	66.6	98	30	42	11	54	105	1.94	.83	15
Retrop	69.3	101	30	43	11	21	153	3.24	1.34	25
Watonga	67.3	97	30	44	11	49	119	2.80	1.09	16
Weatherford	68.0	102	30	44	11	34	128	2.32	1.98	16
Oilton	67.5	95	30	42	12	41	117	6.62	2.68	16
Okemah	69.3	97	30	45	12	24	156	3.05	1.57	16
Perkins	69.0	95	30	46	11	19	142	6.29	2.39	16
Shawnee	69.4	99	30	45	11	25	161	3.66	1.49	16
Spencer	68.8	99	30	46	11	31	150	1.83	.65	8
Stillwater	68.0	95	30	43	12	30	124	3.34	1.63	16
Washington	69.7	99	30	46	11	19	164	2.91	1.13	19
Ninnekah	70.2	101	30	45	12	15	176	3.21	1.85	14
Acme	70.1	101	30	44	11	****	****	2.97	1.52	19
Norman	69.9	103	30	47	12	20	172	1.93	1.04	20
Stigler	69.3	94	30	45	12	19	152	*****	*****	***
Stuart	70.3	97	30	47	12	18	181	*****	*****	***
Tahlequah	67.2	90	30	44	11	40	109	*****	*****	***
Webbers Falls	70.8	94	30	48	12	10	189	7.03	2.94	16
Westville	66.6	91	30	44	11	47	95	5.34	1.84	16
Hectorville	69.6	95	30	48	11	17	158	3.99	1.55	16
Medicine Park	71.2	101	30	51	11	13	206	3.35	2.72	25
Tipton	72.1	105	30	47	6	12	233	2.56	.87	7
Walters	72.1	102	30	48	11	11	233	6.90	2.69	25
Apache	69.3	102	30	45	11	22	156	.97	.24	25
Grandfield	72.7	106	30	47	11	11	251	1.99	.58	19
Pauls Valley	71.1	100	30	48	12	14	202	2.76	.98	16
Ringling	71.7	98	30	50	12	14	221	4.73	1.22	19
Sulphur	70.1	97	30	46	12	20	177	3.92	1.41	16
Tishomingo	70.6	97	30	45	12	14	188	2.87	1.01	16
Waurika	72.3	101	30	50	12	11	238	7.49	2.79	25
Vanoss	71.0	100	30	44	12	****	****	1.77	.89	16
Bee	72.1	98	30	49	12	7	226	7.02	2.93	14
Newport	72.0	97	30	53	11	13	229	7.21	1.76	16
Mt Herman	70.2	95	30	49	12	7	168	3.55	.79	1
Talihina	70.6	89	21	45	12	****	****	3.68	1.11	20
Wilburton	69.7	96	30	44	12	19	165	3.83	.94	8
Wister	69.5	96	30	45	12	15	154	6.74	1.38	8
Broken Bow	71.7	98	30	47	12	4	212	3.93	2.01	14

**** = Data archive not complete

May 2003 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	May 2002 (inches)
Panhandle	1.77	-1.60	21st Driest	6.37 (1951)	0.00 (1927)	1.64
North Central	3.04	-1.68	39th Driest	11.70 (1957)	0.25 (1924)	3.99
Northeast	5.38	-0.10	48th Wettest	19.10 (1943)	1.38 (1917)	6.12
West Central	2.33	-2.57	25th Driest	12.40 (1982)	0.00 (1924)	3.04
Central	3.51	-2.12	32nd Driest	12.53 (1902)	0.96 (1988)	3.74
East Central	5.21	-0.68	49th Driest	14.72 (1943)	1.25 (1941)	4.77
Southwest	2.55	-2.42	26th Driest	11.96 (1902)	0.38 (1984)	1.53
South Central	4.49	-1.11	40th Driest	12.66 (1982)	0.46 (1988)	3.16
Southeast	3.78	-2.58	23rd Driest	14.36 (1990)	1.24 (1963)	4.67
Statewide	3.60	-1.61	33rd Driest	10.68 (1957)	1.30 (1988)	3.66

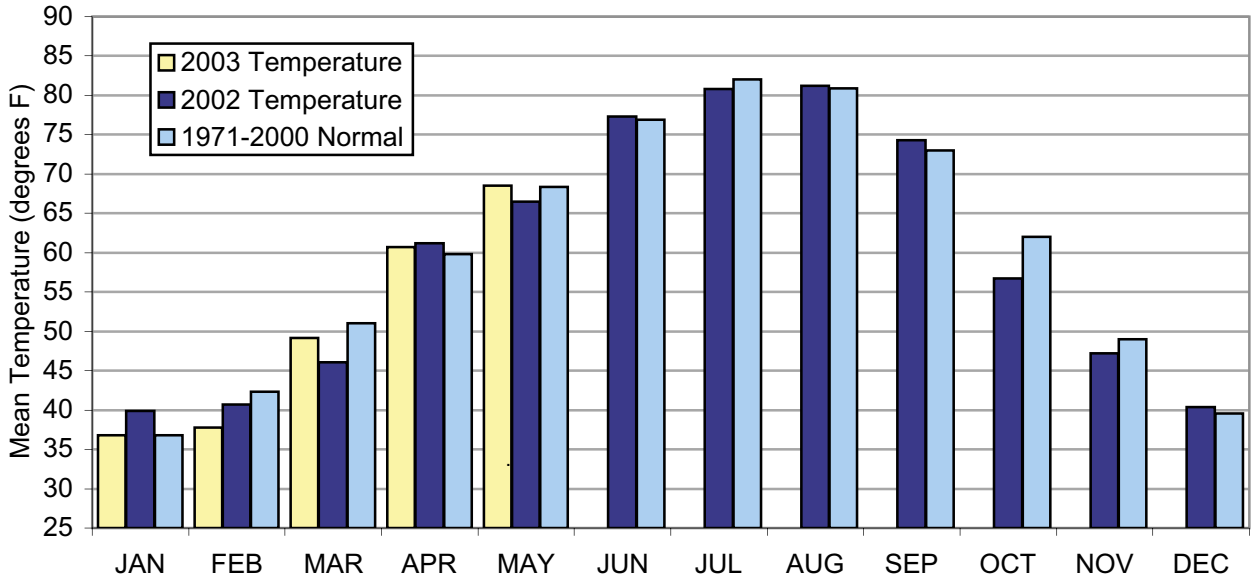
2002 and 2003 Statewide Precipitation Monthly Totals vs. Normal



May 2003 Mesonet Temperature Comparison

Climate Division	Average Temp (°F)	Departure from Normal (°F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	May 2002 (°F)
Panhandle	65.5	+1.1	38th Warmest	72.0 (1896)	56.8 (1917)	65.4
North Central	66.1	-1.0	37th Coolest	75.2 (1896)	60.7 (1907)	65.0
Northeast	67.1	-0.1	49th Coolest	74.1 (1962)	61.2 (1907)	65.8
West Central	67.8	+0.6	49th Warmest	75.6 (1896)	60.9 (1907)	65.8
Central	68.8	+0.3	47th Warmest	75.5 (1896)	62.0 (1907)	65.9
East Central	69.1	+0.8	44th Warmest	74.8 (1896)	62.2 (1907)	66.8
Southwest	70.7	+1.1	36th Warmest	77.8 (1896)	62.8 (1907)	67.4
South Central	71.3	+1.6	25th Warmest	76.0 (1896)	63.6 (1907)	68.1
Southeast	71.1	+2.3	24th Warmest	75.3 (1896)	62.8 (1907)	68.1
Statewide	68.5	+0.6	45th Warmest	75.0 (1896)	61.5 (1907)	66.4

2002 and 2003 Statewide Temperature Monthly Averages vs. Normal



Mesonet Extremes for May 2003

Climate Division	High Temp (°F)	Day	Station	Low Temp (°F)	Day	Station	High Monthly Rainfall (in.)	Station	High Daily Rainfall (in.)	Day	Station
Panhandle	101	29th	Beaver	32	11th	Boise City	3.60	Hooker	1.78	15th	Buffalo
North Central	99	30th	Freedom	40	11th	Seiling	4.72	Fairview	3.26	15th	Seiling
Northeast	95	30th	Porter	41	12th	Pryor	9.34	Jay	3.52	16th	Porter
West Central	103	30th	Bessie	39	11th	Camargo	3.24	Retrop	1.98	16th	Weatherford
Central	103	30th	Norman	41	11th	El Reno	6.62	Oilton	4.36	16th	Kingfisher
East Central	98	30th	Calvin	42	12th	Okmulgee	7.97	Cookson	3.50	16th	Haskell
Southwest	107	30th	Altus	41	11th	Mangum	6.90	Walters	2.72	25th	Medicine Park
South Central	101	30th	Waurika	44	12th	Vanoss	8.32	Ardmore	3.03	25th	Burneyville
Southeast	99	30th	Antlers	44	12th	Antlers	6.74	Wister	3.44	14th	Cloudy
Statewide	107	30th	Altus	32	11th	Boise City	9.34	Jay	4.36	16th	Kingfisher

June Climatological Outlook

June marks a transition from spring into summer, and is considered the first of the Climatological summer months. About the middle of the month, weather patterns change from mild and wet to dry and hot. The transition is especially apparent across Western Oklahoma, where the wheat harvest replaces vegetation with exposed soil. Sunlight heats the bare ground more quickly, pushing temperatures higher. Buffalo and Mangum each average more than five days with temperatures at or above 100 degrees.

Temperature
Mean: 76.9 degrees
Hottest year: 1953, 85.1 degrees
Coolest year: 1903, 70.3 degrees
Hottest location: Waurika, 80.3 degrees
Coolest location: Boise City, 72.6 degrees
Hottest recorded: 120 degrees, Tipton, June 27, 1994
Coldest recorded: 34 degrees, Kenton, June 13, 1919

Rainfall across the state generally decreases from its springtime peak, but the Panhandle has its wettest months ahead of it. While most of the state follows the patterns of the Great Plains, weather patterns in far western Oklahoma are more controlled by the Rocky Mountains to the west, which typically develop late afternoon thunderstorms. Even with its peak rainfall occurring in June, most Panhandle locations are still drier than the rest of the state. Rainfall totals over an inch are rare, even in their rainy season. The Panhandle is also notable for dust storms during the dry years, especially during the 1930s and 1950s. In 1937, Goodwell reported 11 days with visibility less than one mile due to dust storms, and a dust storm near Hooker in 1957 led to a 12-car pile-up. A "black blizzard" was reported at Kenton in 1939, when rain washed thick dust from the air.

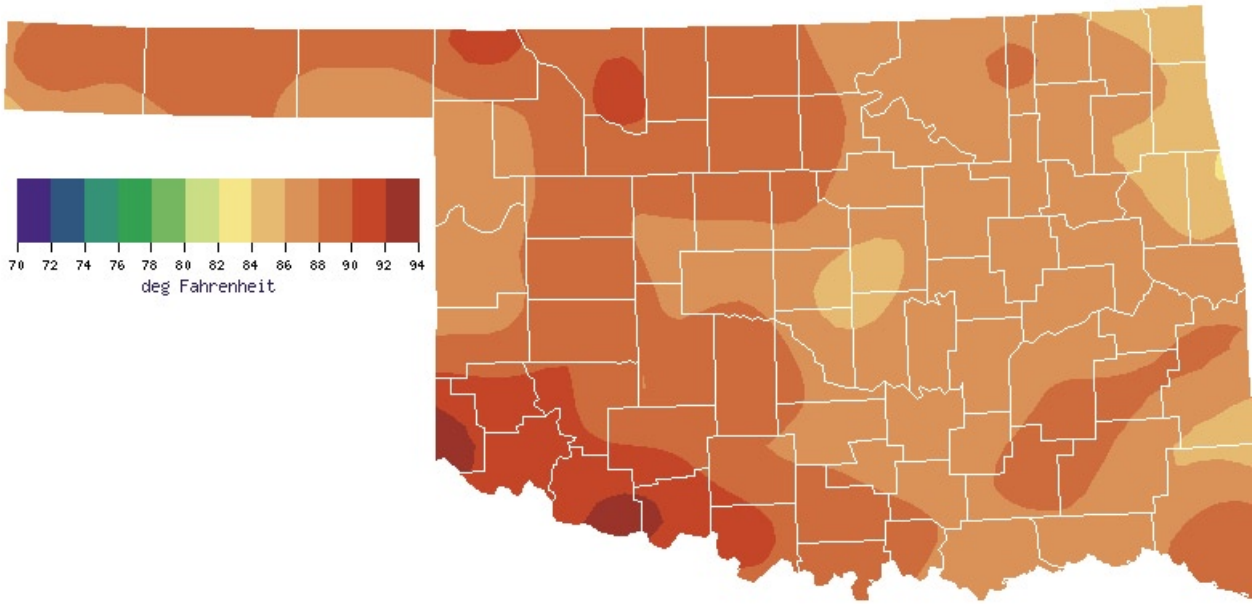
Precipitation
Mean: 4.24 inches
Wettest year: 1908, 8.73 inches
Driest year: 1933, 0.46 inches
Wettest location: Durant, 5.49 inches
Driest location: Kenton, 2.18 inches
Most recorded: 18.87 inches, Meeker, 1932

Flooding is a major hazard during June. Flooding can occur from localized heavy rainfall, or from persistent rains in a river basin. As much as twenty inches may have fallen near Hydro within a 14-hour period one June 22, 1948, although official reports showed 11.25 inches. Resulting flash floods killed 11 people who found themselves trapped along Route 66. Basin flooding in 1923 was described as Unusually disastrous on the North Canadian, Arkansas, Cimarron, and Neosho rivers from June 7-11. The Washita River flooded Pauls Valley in 1941, contributing to an extensive development effort to control the river through a series of small dams upstream. In 1957, waters first topped the spillway at Lake Texoma, and the Red River remained in flood stage downstream of the dam for the entire month. Waurika, Guthrie, and areas north and east of the Arkansas River have frequently dealt with flooding in past Junes.

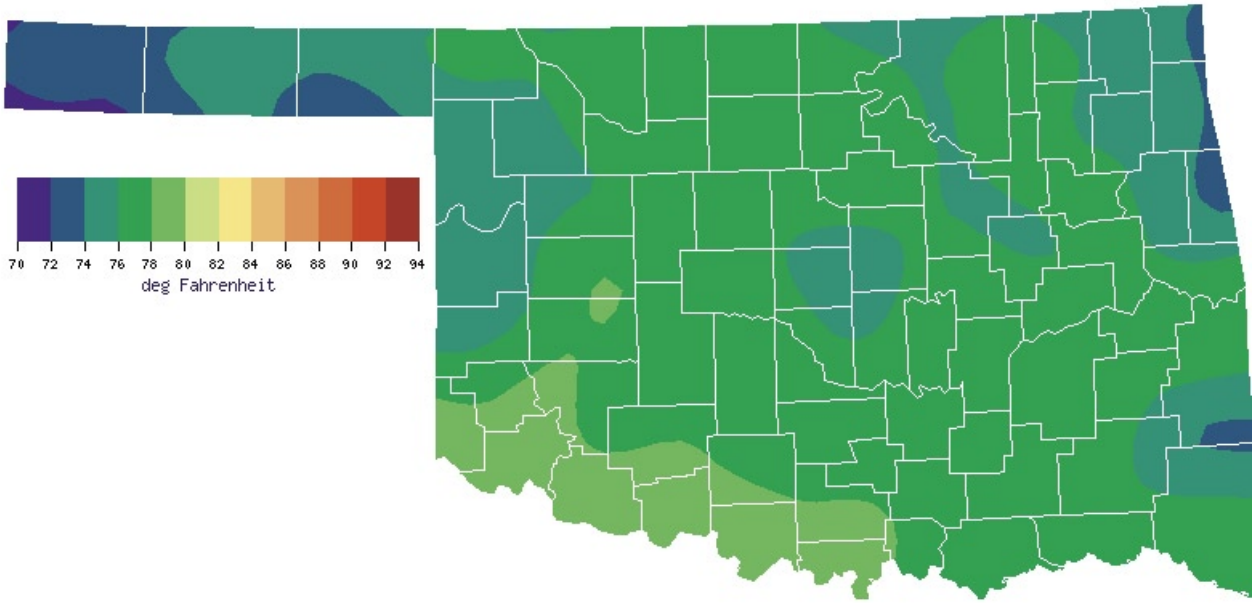
Tornadoes
Average June Tornadoes: 9
Most: 28 (1995)

Springtime severe weather patterns are common in early June. The state averages nine tornadoes per year, with as many as 28 occurring in 1995 and as few as none in 1987. Especially violent tornadoes include one on June 1, 1917 that killed 14 people in Coalgate, one that left 35 dead in southwest Oklahoma City on June 12, 1942, and a June 8, 1974 tornado that killed 14 in Drumright. Hail also plagues the state. Farmers have lost wheat crops to hailstorms just before the fields were ready for harvest. One hailstorm cut a 25-mile by 10-mile swath west of Gage on June 14, 1938. In 1993, hailstorms from Tyrone to Grove caused more than $70 million in damage to the wheat crop alone. Hail up to six inches in diameter was reported in Enid from the storm, and extensive property damage occurred in Blackwell. A nearly-stationary storm dropped hailstones on Woodward for one hour in 1957, causing extensive damage to property. Straight-line winds from thunderstorms have been recorded as high as 110 miles per hour, leaving many customers without power.

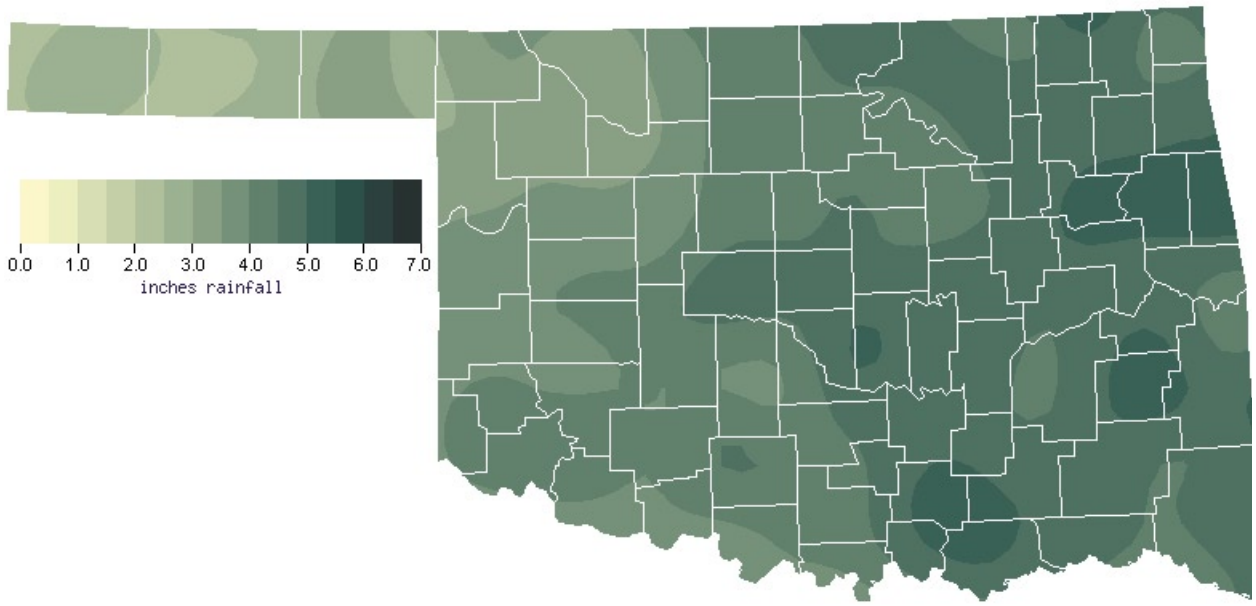
June Normal Monthly Maximum Temperature (1971-2000)



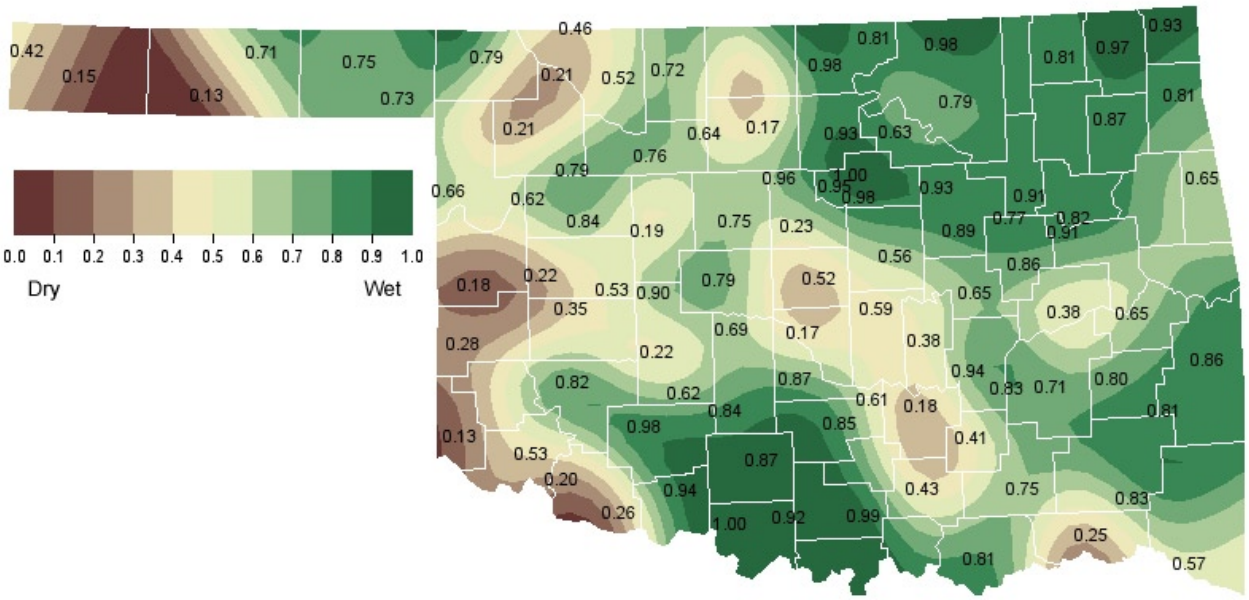
June Normal Monthly Minimum Temperature (1971-2000)



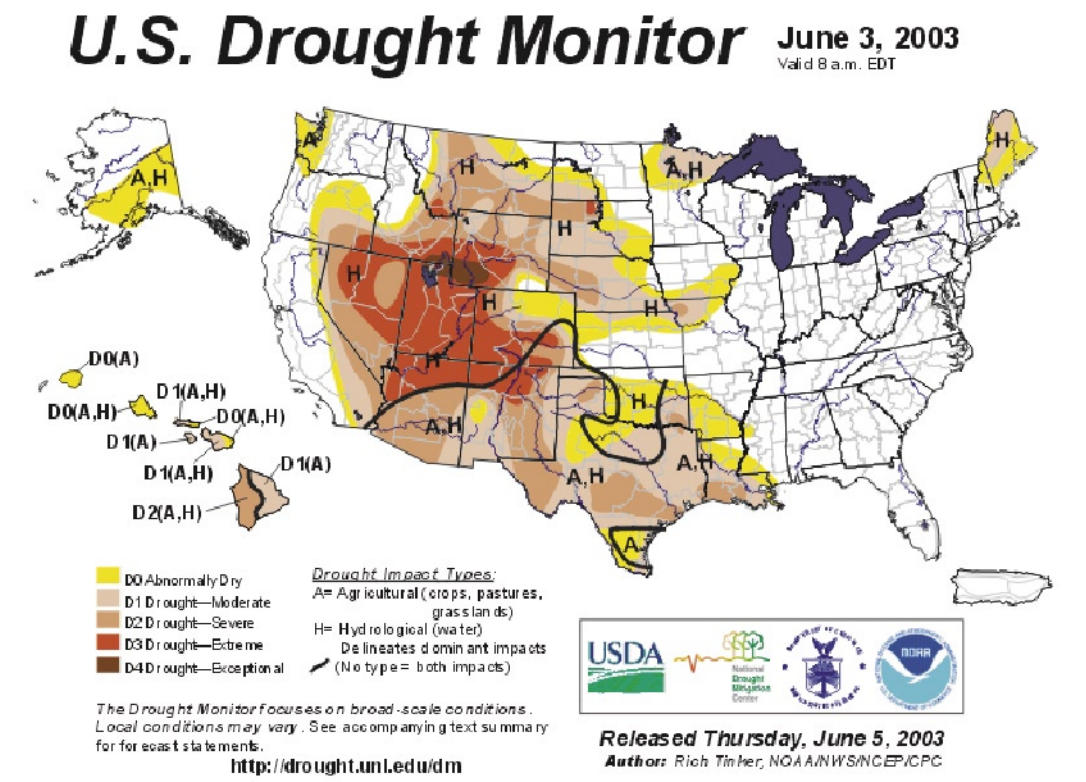
June Normal Precipitation (1971-2000)

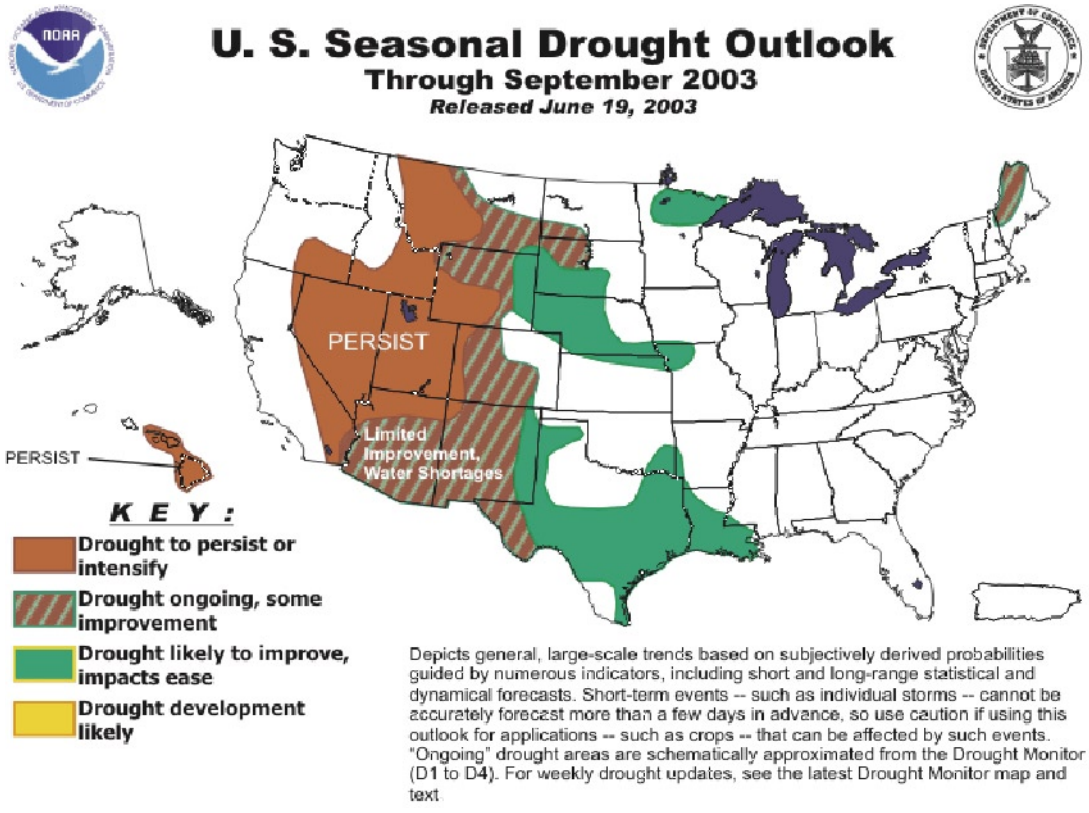


June 1, 2003 Soil Moisture Conditions at 25cm

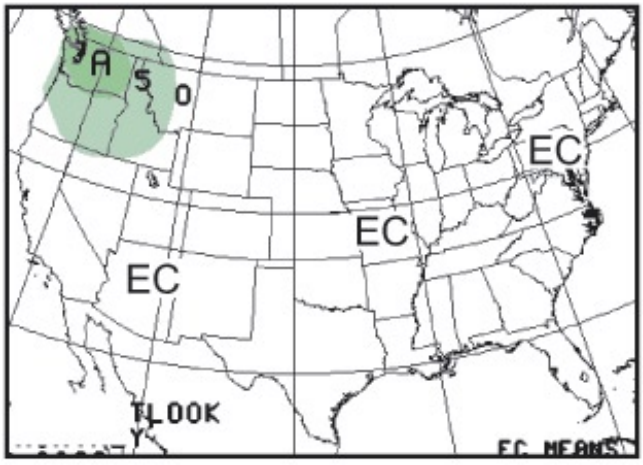


June 2003 Drought Indices





June 2003 U.S. Temperature Forecast



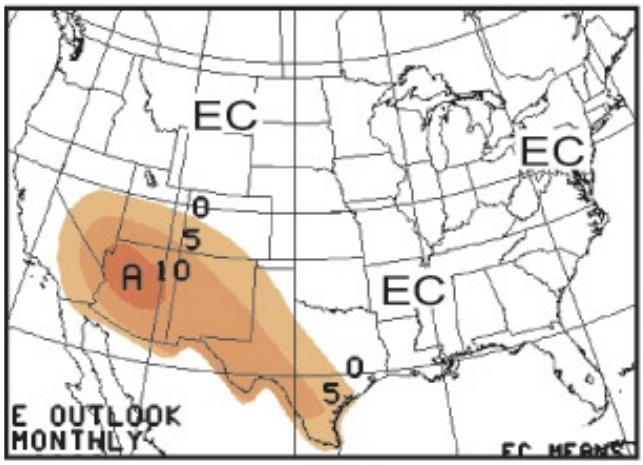
Percent Likelihood of Above Average Precipitation*

20% - 30%
10% - 20%
5% - 10%
0% - 5%

A = Above

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

June 2003 U.S. Precipitation Forecast



Percent Likelihood of Above and Below Average Temperatures*

20% - 30%
10% - 20%
5% - 10%
0% - 5%

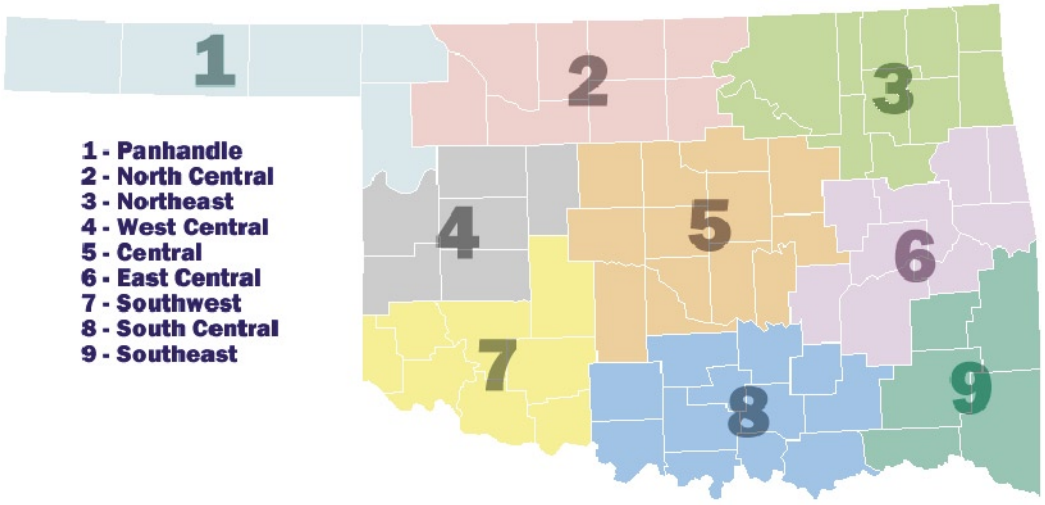
A = Above

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

June Climate Normals

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	88.9	60.6	74.8	2.90
2	88.9	64.5	76.7	3.92
3	86.8	65.3	76.1	4.59
4	88.6	64.7	76.6	3.78
5	87.7	66.0	76.8	4.45
6	86.8	65.9	76.3	4.70
7	90.5	65.9	78.3	4.01
8	88.5	66.9	77.7	4.56
9	87.9	65.2	76.6	4.63
Statewide	88.2	65.1	76.7	4.26

Oklahoma Climate Divisions



Interpretation Information

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

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

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

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

Additional Resources

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

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

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

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

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

Oklahoma Climatological Survey

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