Oklahoma Monthly Climate Summary

JUNE 2010

OKLAHOMA CLIMATOLOGICAL SURVEY

June seemed to jump straight into July with an upper-level ridge of high pressure dominating the month's weather. With a hot, moist air mass in place throughout the month, any trigger for showers and storms tended to produce excessive amounts of precipitation. While the month ended as the seventh-warmest June on record at more than 4 degrees above normal, the intense rainfall events managed to steal the weather headlines. The biggest of those events occurred on June 14 in central Oklahoma as heavy storms formed and trained across the northern parts of Oklahoma City. The storms quickly dumped 10-12 inches of rain in what would become a 500-year rainfall event at the 6- and 12-hour intervals. Widespread flooding was reported across Oklahoma City with many residents needing rescue by emergency personnel due to rising floodwaters. Despite the plentitude of heavy rain events, the month still finished with a deficit on a statewide basis and ranked as the 56th wettest June on record.

Even with the abnormal warmth during the month, the January-June statewide temperature average ranked as the 55th coolest such with on record, still a bit less than a half-degree below normal. The January-June statewide precipitation average remained about 2 inches below normal to rank as the 52nd driest on record.

June 2010 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	104°F	Mangum, Hooker	5, 10
Low Temperature	51°F	Boise City	15
High Precipitation	11.77 in.	OKC North	
Low Precipitation	0.63 in.	Camargo	--

TEMPERATURE

The tropical nature of the air mass over Oklahoma kept low temperatures higher than normal while giving maximum temperatures a good running start at the upper-90s and triple-digit mark. Additionally, the added humidity kept heat indices up in the uncomfortable range much of the time. Much of the state was greater than 4 degrees above normal with west central Oklahoma leading the way at 5.1 degrees above normal. That reading ranked June as the sixth warmest on record for that area. Tipton had the highest average temperature with 84.3 degrees and Boise City was the coolest site at 74.7 degrees. The highest temperature of 104 degrees occurred twice, at Hooker on the 10th and Mangum on the fifth. The lowest temperature of 51 degrees was enjoyed by Boise City residents on the 15th.

June 2010 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2010)
Month (Jun)	80.6°F	4.1°F	7th Warmest
Year-to-Date (Jan-Jun)	54.9°F	-0.4°F	55th Coolest

Precipitation

	Average	Depart.	Rank (1895-2010)
Month (Jun)	3.90 in.	-0.36 in.	56th Wettest
Year-to-Date (Jan-Jun)	17.04 in.	-2.11 in.	52nd Driest

Depart. = departure from 30-year normal

PRECIPITATION

While central and eastern Oklahoma generally had generous rainfall totals, the western half of the state did not fare quite so well. West central Oklahoma finished 2.5 inches below normal for the 11th-driest June on record for that area. Meanwhile, central Oklahoma was nearly 2 inches above normal to finish with their 26th-wettest June. The Oklahoma City North Mesonet station led the state totals with 11.77 inches of rain while Camargo brought up the rear, measuring 0.63 inches for the month.

JUNE DAILY HIGHLIGHTS

JUNE 1-3: A meandering cold front brought rains across several parts of the state during the month's first three days. The rain was particularly heavy in the far northeast where Miami ended the period with over 3 inches of rainfall. Temperatures warmed into the 80s and 90s during these three days with lows in the 60s and 70s. A few storms generated strong wind gusts and large hail.

JUNE 4-5: Temperatures climbed under the influence of an upper-level ridge. Lows during these two days were 5-10 degrees above normal in the upper 60s and low 70s. Highs were also 10 degrees above normal in the 90s, with a few 100s thrown in.

JUNE 6-11: A warm, moist air mass moved in and hung around for the duration of this period. High temperatures ranged from the 80s to 100s. The high humidity values kept low temperatures 5-10 degrees above normal in the 70s while providing heat indices in the triple digits. The tropical air fueled periodic showers and storms that dropped 2-4 inches of rain in northern and extreme southeastern Oklahoma. Dying thunderstorms created heat bursts the evening of the 11th that produced wind gusts of 45-55 mph and raised temperatures 10-15 degrees.

JUNE 12-15: Surface low pressure in the Panhandle and an upper-level low pressure system approaching from the west combined to produce four days of extremely agitated weather, complete with tornadoes, large hail, and record rainfall. Storms in the Panhandle on the 12th and 13th generated extremely heavy rainfall to the area and numerous reports of severe weather. Among those reports were a preliminary count of five tornadoes on the 13th – four reports from Beaver County and another from Harper County. Large hail and wind gusts of up to 70 mph were reported on the 12th. There were additional storms farther to the east on those two days that also produced severe weather, but those reports were not as widespread. The most severe day was the 14th, however, with a record-breaking rainfall event in central Oklahoma. The storms that developed along a cold front in the northwest produced an outflow boundary that moved towards central Oklahoma. A moist low-level jet interacted with that boundary over central Oklahoma and produced heavy rains around 3 am. Storms continued to form over central Oklahoma and were continually fed very humid air from the south. Flash flooding became widespread as 9-12 inches of rain fell over north Oklahoma City. The Oklahoma City North Mesonet station recorded more than 11 inches of rainfall in less than 24 hours and Will Rogers Airport in southwest Oklahoma City had 7.62 inches. Will Rogers airport set a record for highest one-day total rainfall at that station. The Oklahoma City North rainfall exceeded the 500-year rainfall events for the 6- and 12-hour intervals. Heavy rains in Lawton also produced flash flooding which claimed the life of one motorist who was swept away by floodwaters. The rain eventually moved off to the east after midnight and allowed a day of cleanup on the 15th. An upper-level ridge moved over the state and temperatures returned to the 80s and 90s later that day following lows in the 50s and 60s.

JUNE 16-22: A very summer-like upper-level ridge of high pressure dominated the weather during this period. Very little rain fell and temperatures soared into the 90s and 100s through the 22nd. Moisture from the previous rains and continued strong southerly winds helped make the heat more miserable by elevating heat indices into the 100s on a consistent basis.

JUNE 23-28: While the warm and muggy conditions continued, a couple of cold fronts provided the focus for bouts with heavy rain and severe weather. The first front moved through on the 23rd and 24th and the second front entered the state on the 27th. The largest totals were in east central Oklahoma with 2-5 inches, although scattered areas in central and southern Oklahoma saw 2-3 inches as well. The moist air helped keep lows during this period well into the 70s and highs ranged from the 90s to 100s.

JUNE 29-30: Drier air made for a nice end to the month. The low humidity helped lows fall into the 50s in the Panhandle and 60s elsewhere. High temperatures were generally in the 80s and 90s.

JUNE 2010 SEVERE WEATHER

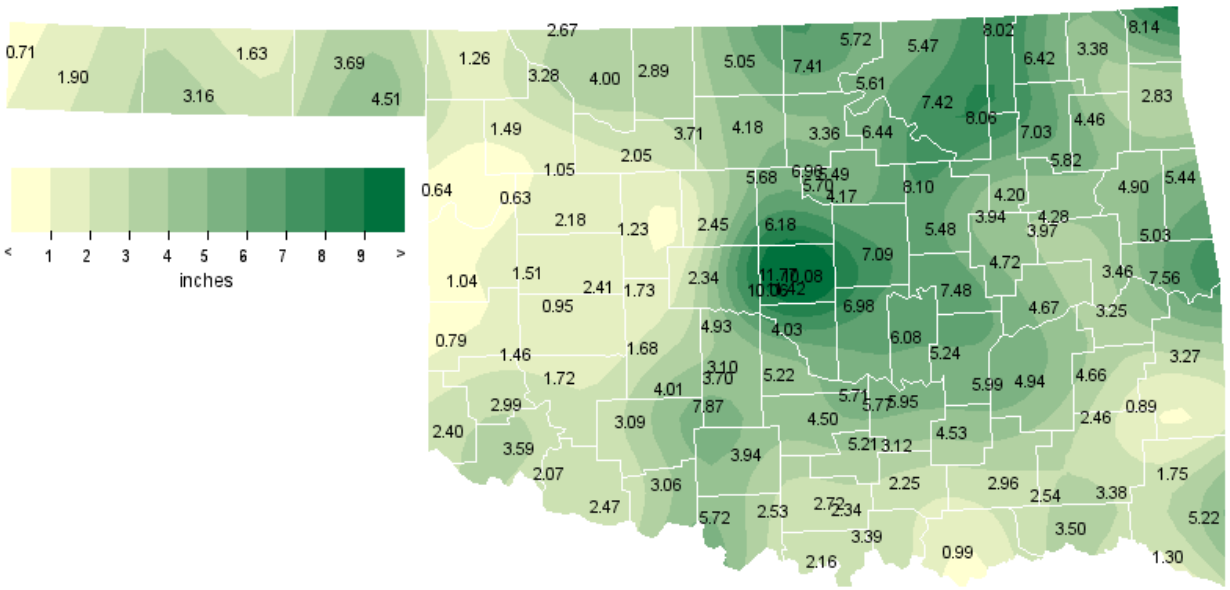
Wind Gusts (70 mph or greater)

Speed (m.p.h)	Location	County	Day
70	Hardesty	Texas	12
70	2 ENE Copan	Washington	23

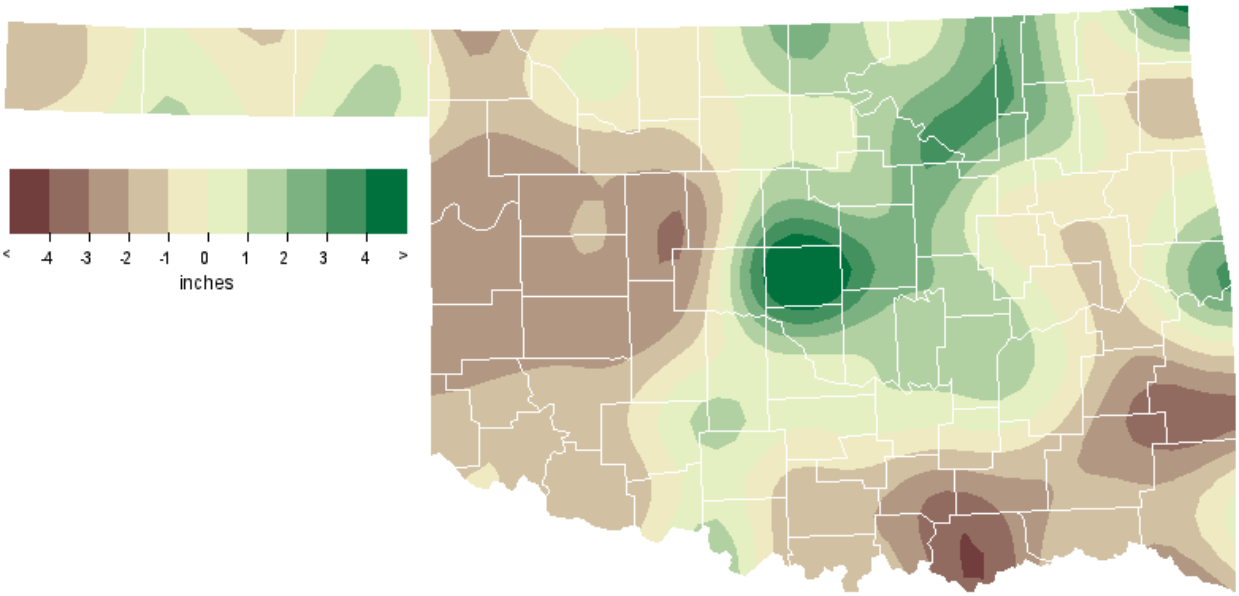
Flooding

Location	County	Day
Hardesty	Texas	12
6 E Elmwood	Beaver	13
6 E Beaver	Beaver	13
1 S Beaver	Beaver	13
Oklahoma City	Oklahoma	14
Shawnee	Pottawatomie	14
1 NNE Tecumseh	Pottawatomie	14
Tecumseh	Pottawatomie	14
Lawton	Comanche	14
2 E Bethel Acres	Pottawatomie	14
Lawton	Comanche	14
8 NW Hominy	Osage	14
Barnsdall	Osage	14
Tulsa	Tulsa	14
7 SE Tulsa	Tulsa	14
1 E Skiatook	Tulsa	14

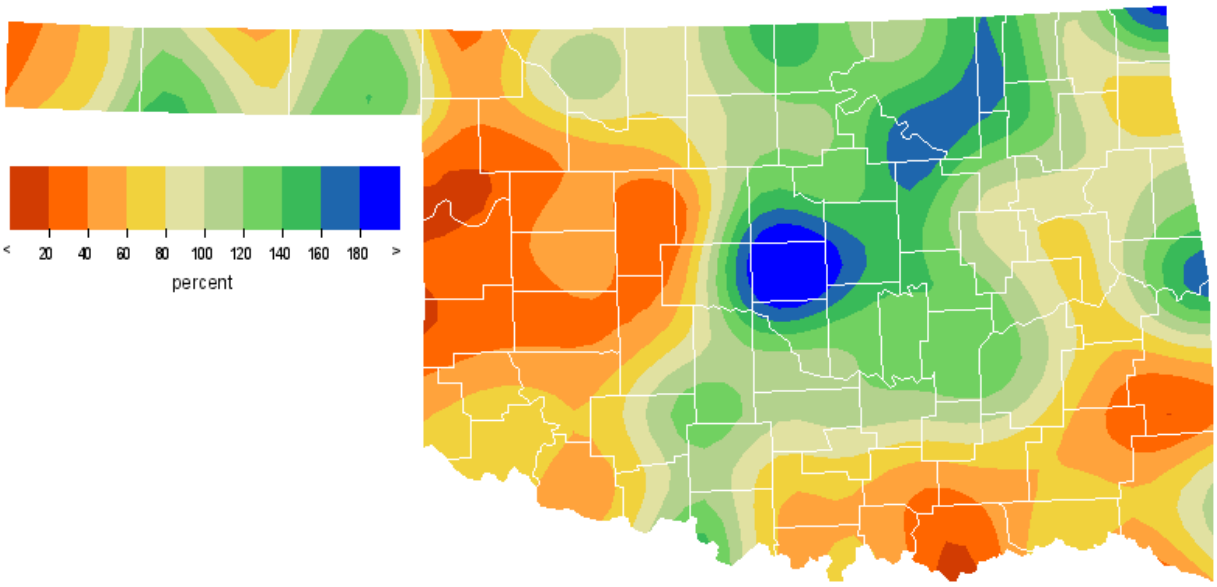
JUNE 2010 OBSERVED PRECIPITATION



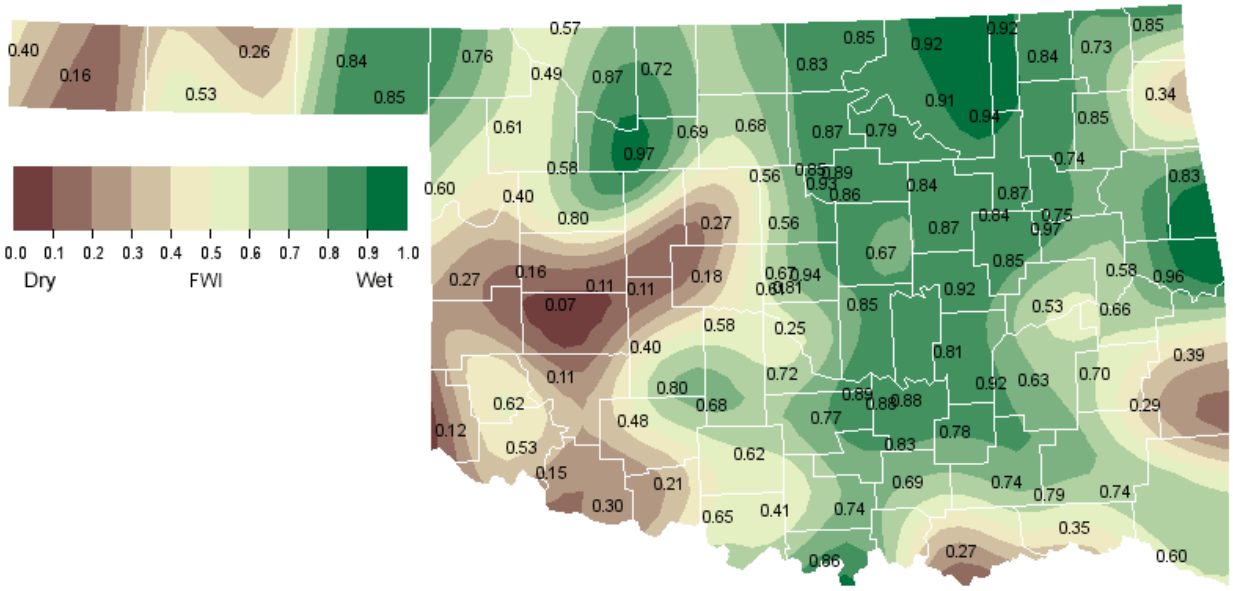
JUNE 2010 DEPARTURE FROM NORMAL PRECIPITATION



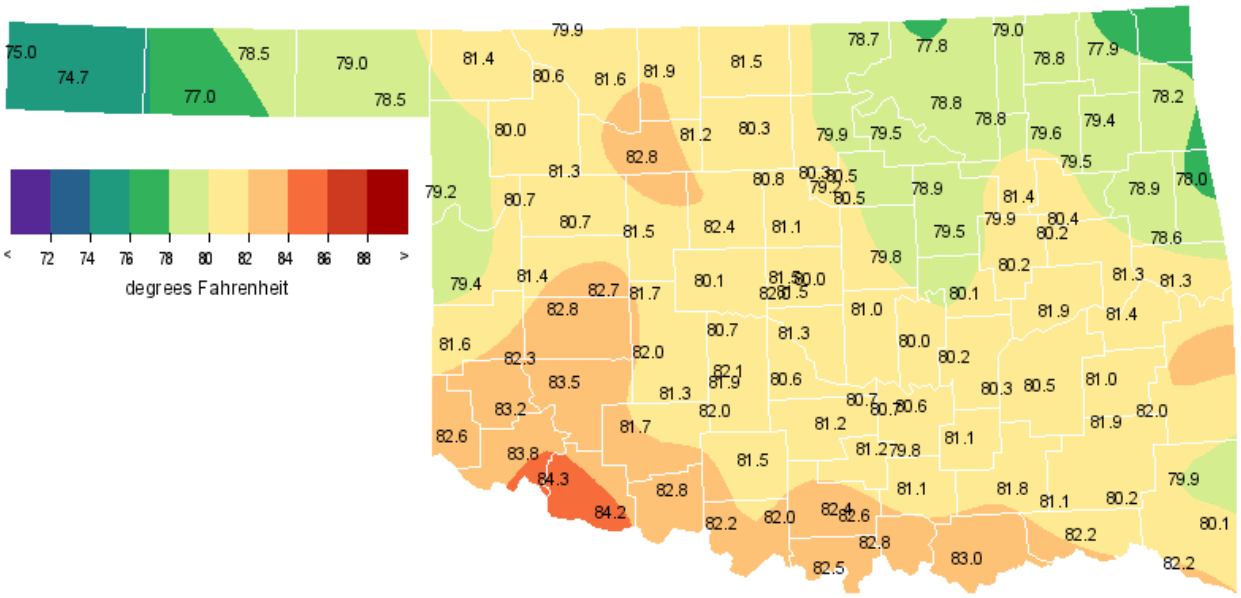
JUNE 2010 PERCENT OF NORMAL PRECIPITATION



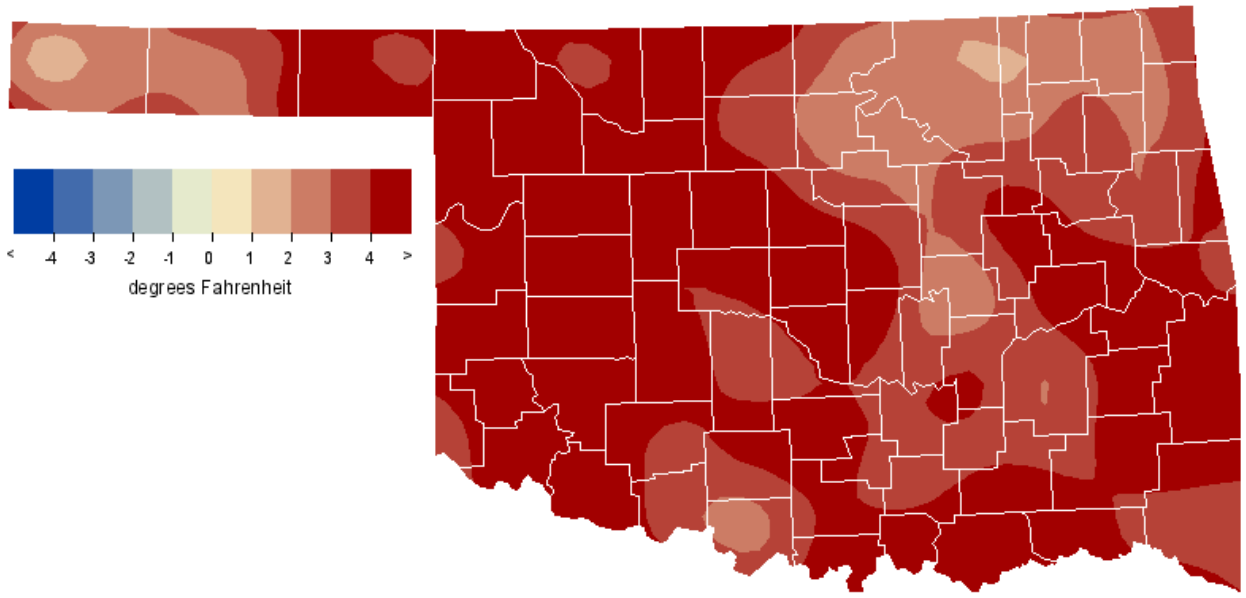
JUNE 2010 AVERAGE SOIL MOISTURE AT 25CM



JUNE 2010 AVERAGE TEMPERATURE



JUNE 2010 DEPARTURE FROM NORMAL TEMPERATURE

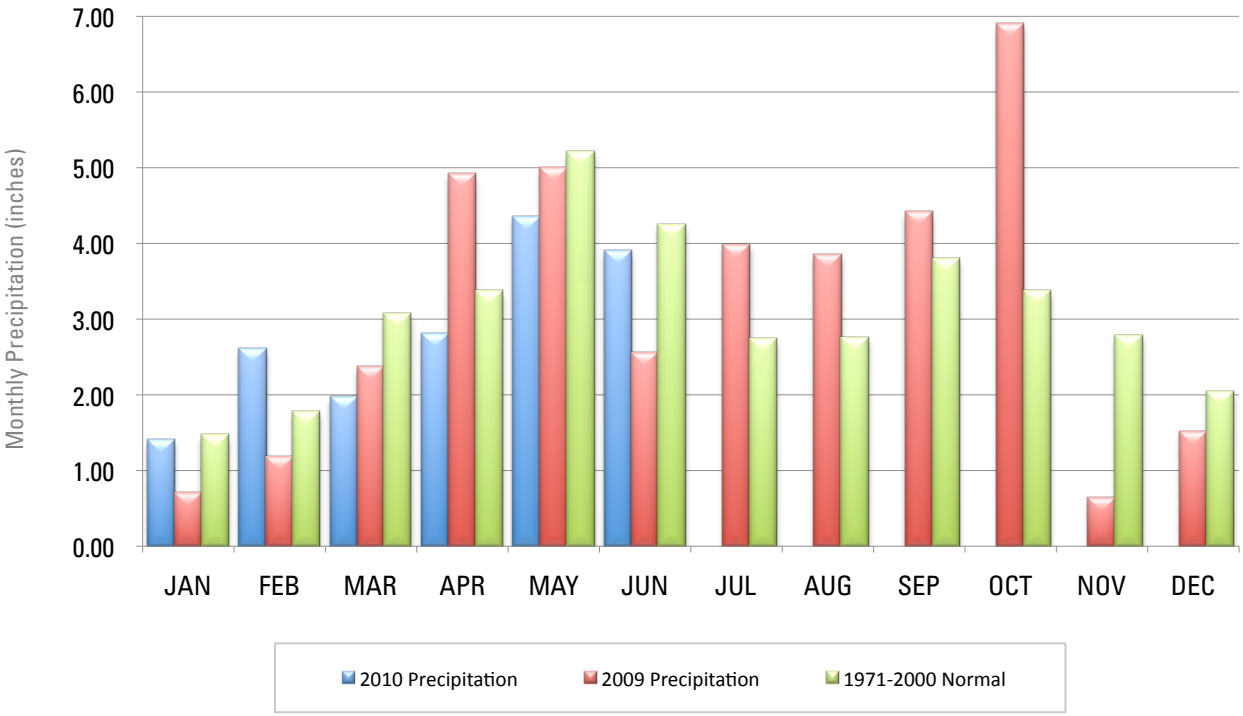


MESONET MONTHLY SUMMARY FOR JUNE 2010

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	79.2	98	26	59	29	0	427	.64	.38	13
Beaver	78.9	101	26	54	3	0	418	3.69	2.69	13
Boise City	74.7	100	10	51	15	1	293	1.90	1.23	13
Buffalo	81.4	102	26	59	29	0	491	1.26	.98	13
NORTH CENTRAL										
Alva	81.5	102	26	61	29	0	496	4.00	2.58	13
Blackwell	*****	***	***	***	***	****	****	7.41	2.19	13
Breckinridge	80.2	97	23	63	29	0	457	4.18	1.91	14
Cherokee	81.9	101	26	61	29	0	506	2.89	1.28	13
Fairview	82.8	102	5	64	29	0	535	2.05	1.75	14
Freedom	80.6	103	26	61	29	0	468	3.28	1.99	13
Lahoma	81.2	100	5	63	14	0	486	3.71	2.08	14
NORTHEAST										
Bixby	81.4	97	22	65	3	0	493	4.20	1.75	14
Burbank	*****	***	***	***	***	****	****	5.61	2.08	9
Claremore	79.6	92	22	65	7	0	439	7.03	2.67	14
Copan	79.0	94	19	62	7	0	420	8.02	2.80	14
Foraker	77.9	92	23	61	30	0	386	5.47	1.82	9
Inola	79.5	93	22	65	4	0	435	5.82	1.76	14
Jay	78.2	93	23	60	30	0	397	2.83	.81	3
Miami	78.5	93	27	59	30	****	****	8.14	3.37	2
WEST CENTRAL										
Bessie	82.8	103	23	64	15	0	535	.95	.38	28
Butler	81.4	101	23	61	29	0	491	1.51	.86	14
Camargo	80.7	101	23	56	29	0	471	.63	.29	14
Cheyenne	79.4	98	23	62	29	0	432	1.04	.40	14
Erick	81.6	103	23	62	2	0	498	.79	.28	27
CENTRAL										
Acme	81.9	97	5	64	3	0	507	7.87	6.65	14
Bowlegs	80.0	95	23	65	15	0	449	6.08	3.62	14
Bristow	79.5	95	22	62	4	0	436	5.48	3.08	14
Lake Carl Blac	80.3	97	26	64	15	0	460	6.96	4.80	14
Chandler	79.7	93	23	65	15	0	442	7.09	4.11	14
Chickasha	82.0	99	5	65	4	0	511	3.10	1.85	14
El Reno	80.1	97	23	62	30	0	452	2.34	1.44	14
Guthrie	81.1	96	23	65	15	0	482	6.18	5.28	14
Kingfisher	82.4	102	23	62	29	0	521	2.45	.89	14
Marena	79.2	94	23	64	15	0	427	5.70	3.58	14
Minco	80.6	96	5	64	15	0	468	4.93	3.69	14
Marshall	80.7	97	23	64	15	0	471	5.68	2.33	14
EAST CENTRAL										
Cookson	78.6	95	23	62	3	0	410	5.03	1.04	14
Eufaula	81.9	97	23	66	3	0	506	4.67	1.57	14
Haskell	80.2	95	23	65	3	0	455	3.97	2.12	14
Hectorville	79.9	92	22	65	3	0	447	3.94	2.14	14
Holdenville	80.2	93	23	66	15	0	455	5.24	2.73	14
McAlester	80.5	96	24	65	4	0	464	4.94	2.55	28
Okmulgee	80.1	94	22	64	4	0	453	4.72	2.54	14
SOUTHWEST										
Altus	83.8	103	5	66	15	0	564	3.59	1.52	14
Apache	81.3	98	5	64	3	0	490	4.01	3.33	14
Fort Cobb	82.0	100	23	65	15	0	509	1.68	.78	14
Grandfield	84.2	102	5	66	4	0	575	2.47	2.02	14
Hinton	81.7	101	23	64	29	0	500	1.73	.85	28
Hobart	83.5	103	5	65	15	0	556	1.72	.72	10
SOUTH CENTRAL										
Ada	80.6	95	23	65	15	0	467	5.95	2.79	14
Ardmore	82.6	98	23	66	30	0	528	2.34	1.52	14
Burneyville	82.5	99	23	63	3	0	524	2.16	.98	15
Byars	80.7	94	23	63	15	0	470	5.71	4.17	14
Centrahoma	81.1	96	23	66	3	0	484	4.53	2.23	28
Durant	83.0	100	23	66	15	0	539	.99	.61	15
Fittstown	79.9	95	27	64	15	0	446	3.12	1.71	14
Ketchum Ranch	81.5	96	5	65	3	0	495	3.94	2.64	14
Lane	81.8	96	23	65	30	0	504	2.96	.92	29
SOUTHEAST										
Antlers	81.1	98	24	60	30	0	482	2.54	1.00	15
Broken Bow	80.1	96	6	64	1	0	453	5.22	2.75	10
Clayton	81.9	98	22	62	30	0	507	2.46	1.16	14
Cloudy	80.1	96	23	65	4	0	454	3.38	1.09	6
Hugo	82.1	99	23	65	15	0	513	3.50	2.18	24

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	77.0	103	10	52	29	1	361	3.16	1.48	12
Hooker	78.6	104	10	54	3	0	408	1.63	1.01	13
Kenton	75.0	99	19	52	15	1	301	.71	.30	14
Slapout	78.5	99	26	59	15	0	404	4.51	2.61	13
May Ranch	80.0	100	26	60	3	0	449	2.67	1.28	13
Medford	81.4	100	26	64	7	0	492	5.05	2.17	13
Newkirk	78.8	93	23	62	7	0	413	5.72	1.82	9
Red Rock	80.0	96	23	64	29	0	449	3.36	1.68	14
Seiling	81.2	101	5	58	29	0	487	1.05	.84	14
Woodward	80.0	100	26	59	29	0	449	1.49	1.07	13
Nowata	78.8	93	23	60	4	0	413	6.42	2.56	14
Pawnee	79.5	94	23	64	7	0	436	6.44	2.41	14
Porter	80.4	94	23	65	3	0	462	4.28	2.04	14
Pryor	79.4	93	23	63	4	0	432	4.46	1.65	3
Skiatook	78.8	92	19	63	7	0	415	8.06	3.16	14
Vinita	77.8	92	22	60	30	0	385	3.38	1.98	14
Wynona	78.8	93	19	64	7	0	414	7.42	3.18	14
Putnam	80.7	99	5	62	29	0	472	2.18	1.18	14
Retrop	82.3	101	23	64	15	0	520	1.46	.57	27
Watonga	81.6	102	23	64	30	0	498	1.23	.83	14
Weatherford	82.7	103	23	64	15	0	530	2.41	.89	28
Ninnekah	81.8	97	23	65	15	0	505	3.70	2.33	14
Norman	81.3	96	23	64	15	0	489	4.03	2.10	28
Oilton	78.9	93	23	63	30	0	417	8.10	5.38	14
OKC East	81.5	96	23	66	15	0	494	11.42	9.15	14
OKC North	81.5	96	23	65	3	0	495	11.77	11.26	14
OKC West	82.0	96	23	66	14	0	509	10.06	8.55	14
Okemah	80.0	94	23	65	3	0	450	7.48	3.19	14
Perkins	80.5	96	23	64	7	0	465	4.17	2.70	14
Shawnee	80.9	96	22	65	15	0	477	6.98	4.96	14
Spencer	80.0	94	23	64	3	0	450	10.08	6.99	14
Stillwater	80.5	95	23	65	7	0	466	5.49	3.23	14
Washington	80.6	95	5	63	15	0	468	5.22	2.77	14
Sallisaw	81.3	98	22	65	3	0	490	7.56	2.24	27
Stigler	81.4	98	22	65	4	0	491	3.25	.88	15
Stuart	80.3	94	23	64	3	0	459	5.99	1.44	28
Tahlequah	78.9	93	23	63	3	0	417	4.90	1.82	3
Webbers Falls	81.3	97	23	66	3	0	490	3.46	1.52	27
Westville	78.1	92	23	62	3	0	392	5.44	1.13	3
Hollis	82.6	103	5	65	15	0	529	2.40	1.21	27
Mangum	83.1	104	5	63	2	0	543	2.99	1.19	27
Medicine Park	81.7	98	5	65	15	0	502	3.09	2.25	14
Tipton	84.4	103	5	63	3	0	581	2.07	1.41	14
Walters	82.8	98	24	64	3	0	535	3.06	2.25	14
Madill	82.8	97	23	66	15	0	533	3.39	1.18	15
Newport	82.4	98	24	66	14	0	521	2.72	1.22	14
Pauls Valley	81.2	95	24	65	15	0	487	4.50	2.46	14
Ringling	82.1	97	27	65	3	0	512	2.53	1.32	14
Sulphur	81.2	96	24	65	15	0	487	5.21	4.22	14
Tishomingo	81.1	97	23	65	15	0	483	2.25	1.05	15
Vanoss	80.7	95	23	64	15	0	472	5.77	4.24	14
Waurika	82.2	97	24	64	3	0	515	5.72	3.03	28
Idabel	82.2	98	23	67	1	0	515	1.30	.84	10
Mt Herman	79.9	96	22	65	29	0	447	1.75	.76	11
Talihina	82.1	102	22	61	30	0	513	.89	.38	15
Wilburton	81.0	96	24	64	4	0	480	4.66	1.47	28
Wister	81.1	101	22	63	4	****	****	3.27	1.09	26

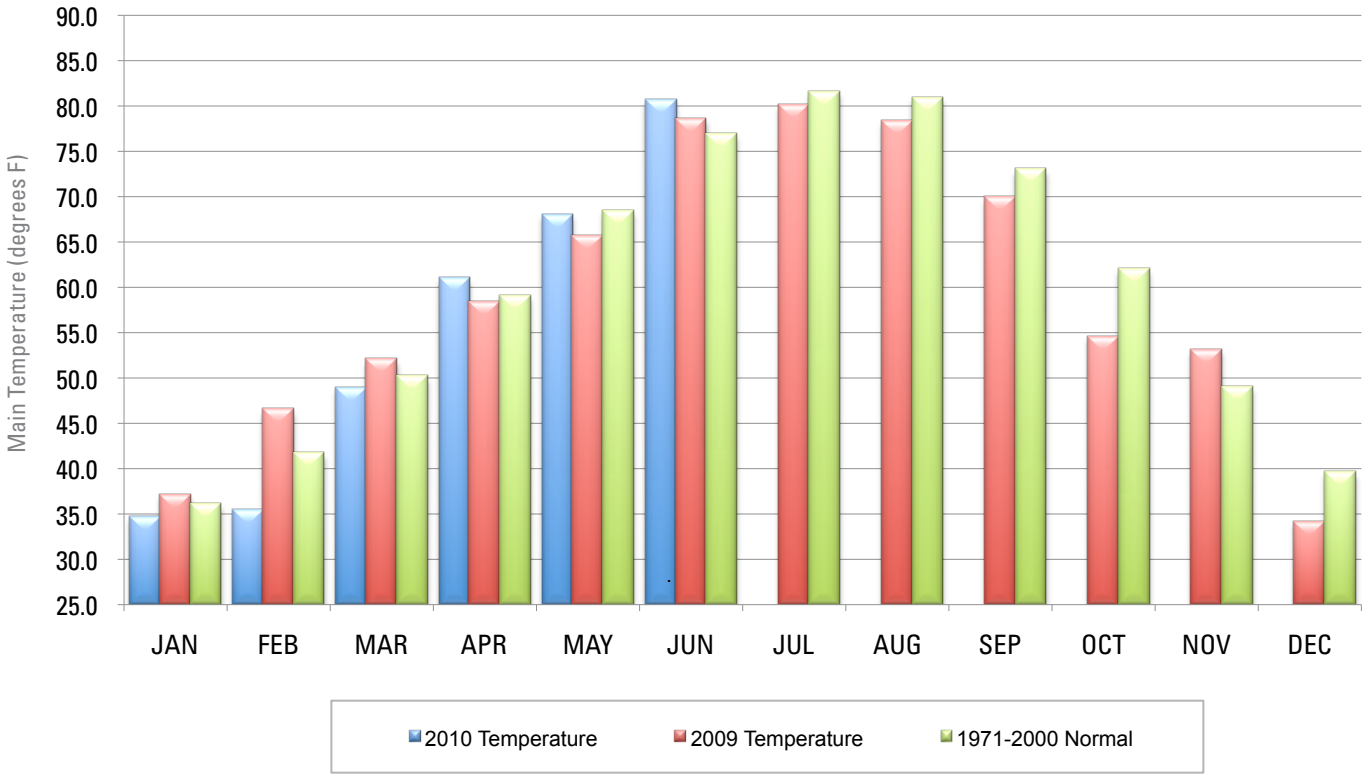
2009 AND 2010 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



June 2010 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jun-09
Panhandle	2.19	-0.74	41st Driest	7.70 (1962)	0.01 (1924)	1.87
North Central	3.60	-0.34	55th Wettest	11.10 (2007)	0.43 (1933)	2.57
Northeast	5.84	1.22	31st Wettest	12.06 (2007)	0.08 (1933)	3.25
West Central	1.36	-2.50	11th Driest	10.48 (2007)	0.32 (1910)	2.28
Central	6.35	1.78	26th Wettest	13.65 (2007)	0.00 (1914)	1.66
East Central	4.85	-0.01	46th Wettest	12.69 (1935)	0.00 (1914)	3.42
Southwest	2.62	-1.54	41st Driest	10.82 (2007)	0.56 (1933)	2.45
South Central	3.75	-0.89	55th Driest	10.91 (2007)	0.00 (1914)	3.12
Southeast	2.90	-1.80	35th Driest	11.00 (1945)	0.00 (1914)	2.51
Statewide	3.90	-0.36	56th Wettest	9.84 (2007)	0.46 (1933)	2.55

2009 AND 2010 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



June 2010 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jun-09 (F)
Panhandle	77.9	3.5	13th Warmest	82.0 (1953)	67.7 (1903)	75.5
North Central	80.8	4.0	10th Warmest	85.7 (1953)	69.7 (1903)	79.3
Northeast	79.2	3.5	12th Warmest	83.7 (1953)	68.9 (1903)	78.0
West Central	81.5	5.1	6th Warmest	85.6 (1953)	69.1 (1903)	78.5
Central	80.7	3.9	7th Warmest	84.4 (1953)	69.9 (1903)	79.6
East Central	80.2	4.0	9th Warmest	84.4 (1953)	69.8 (1903)	78.1
Southwest	82.8	4.4	7th Warmest	86.7 (1953)	71.5 (1903)	79.8
South Central	81.6	3.9	9th Warmest	85.2 (1953)	71.1 (1903)	79.7
Southeast	81.2	4.8	7th Warmest	83.9 (1953)	70.3 (1903)	78.7
Statewide	80.6	4.1	7th Warmest	84.6 (1953)	69.8 (1903)	78.6

MESONET EXTREMES FOR JUNE 2010

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	104	10th	Hooker	51	15th	Boise City	4.51	Slapout	2.69	13th	Beaver
North Central	103	26th	Freedom	58	29th	Seiling	7.41	Blackwell	2.58	13th	Alva
Northeast	97	22nd	Bixby	60	30th	Jay	8.14	Miami	3.37	2nd	Miami
West Central	103	23rd	Bessie	56	29th	Camargo	2.41	Weatherford	1.18	14th	Putnam
Central	102	23rd	Kingfisher	62	30th	El Reno	11.77	Oklahoma City North	11.26	14th	Oklahoma City North
East Central	98	22nd	Sallisaw	62	3rd	Cookson	7.56	Sallisaw	2.73	14th	Holdenville
Southwest	104	5th	Mangum	63	2nd	Mangum	4.01	Apache	3.33	14th	Apache
South Central	100	23rd	Durant	63	3rd	Burneyville	5.95	Ada	4.24	14th	Vanoss
Southeast	102	22nd	Talihina	60	30th	Antlers	5.22	Broken Bow	2.75	10th	Broken Bow
Statewide	104	10th	Hooker	51	15th	Boise City	11.77	Oklahoma City North	11.26	14th	Oklahoma City North

JULY OUTLOOK

July in Oklahoma means summer. By the beginning of the month, the jet stream and its accompanying weather systems have retreated to the U.S.-Canadian border. The western arm of a broad area of high pressure at the earth's surface, centered in the central Atlantic Ocean, has migrated northward and spreads across the state. Winds are persistently from the south, but not as strong as during preceding months. As a result, the seventh month of the year is the Oklahoma's warmest with an average temperature of 82 degrees and is the 4th driest month with a statewide-averaged precipitation of 2.73 inches.

Temperature

Mean	82.0 degrees
Hottest July	1954, 88.6 degrees
Coolest July	1906, 76.4 degrees
Hottest location	Waurika, 85.1 degrees
Coolest location	Boise City, 77.2 degrees
Hottest recorded	120 degrees, Alva, July 18, 1936 Altus, July 19, 1936 Tishomingo, July 26, 1943
Coldest recorded	41 degrees, Goodwell, July 15, 1915

Oklahoma's hottest July, at least since record keeping began in 1892, occurred in 1954. That month produced the highest statewide-averaged temperature (88.6 degrees) of any month during the period of record. The thermometer indicated 120 degrees at Alva July 18, 1936, at Altus July 19, 1936, and at Tishomingo July 26, 1943. The lowest July statewide-averaged monthly temperature on record was 76.4 degrees in 1906. The lowest temperature ever reported in Oklahoma during July is 41 degrees at Goodwell, July 15, 1915. Humidity, vegetation, and elevation contribute to the variations in temperature across the state. The higher elevation and somewhat drier air in the panhandle lead to cooler nights and a greater range in daily temperatures than in other parts of the state. The more humid air in the southeast typically warms less in the daytime, but also retains more heat through the night. Southwestern Oklahoma suffers the most from the heat.

July precipitation, all rainfall unless you count an occasional hailstorm, is primarily a result of localized events. While the panhandle enjoys its summer rainy season and rain certainly doesn't disappear from north central Oklahoma, the forested southeast, though drier than it is in other months, still receives more precipitation than other parts of the state. The wettest July, based on a statewide average of rainfall, was 1950 (9.26 inches). The driest July occurred in 1980 (0.41 inches).

Precipitation

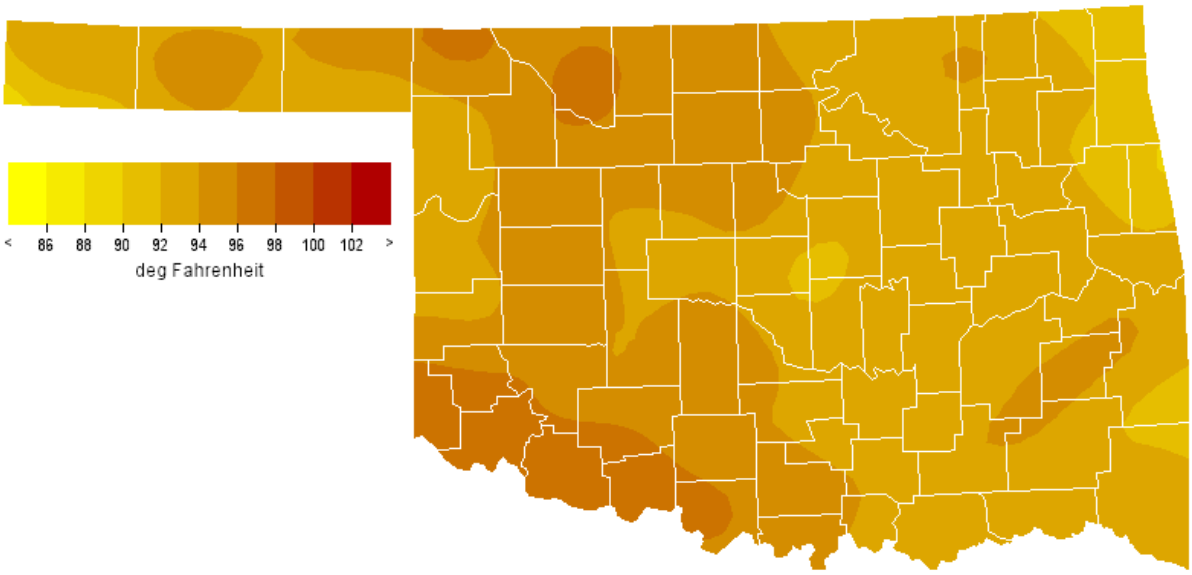
Mean	2.73 inches
Wettest July	1950, 9.26 inches
Driest July	1980, 0.41 inches
Wettest location	Carnasaw Fire Tower (McCurtain County), 4.50 inches
Driest location	Altus and Reydon, 1.77 inches
Most recorded	18.83 inches, Wewoka, 1950

Tornadoes

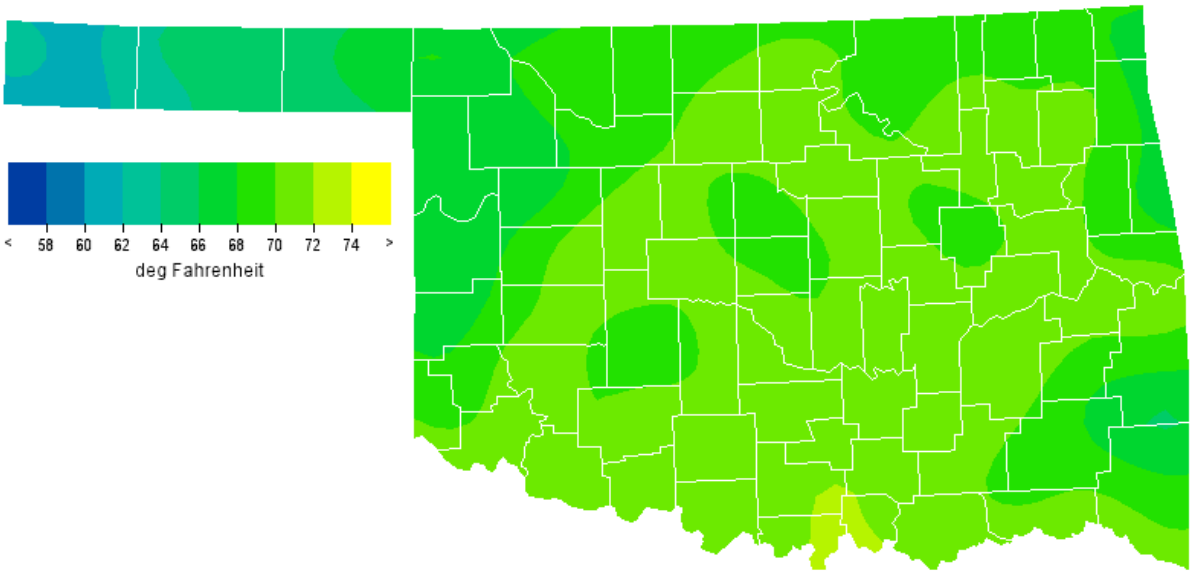
Average July Tornadoes	2
Most	7 (1956)

Oklahoma averages only 2.1 tornadoes in July each year. Since 1950, the July record for tornadoes is seven in 1956. Fifteen of those 52 months have been free of confirmed tornadoes. In the absence of well-organized systems, the vast majority of recorded July tornadoes have been of the weaker variety, and multiple occurrences on the same day are extremely rare. Only one fatality has been attributable to a tornado since 1950, that occurring in Murray County in 1955. Lightning, thunderstorm-induced winds, locally heavy rain, and, of course, heat are more likely to provide Oklahoma with its "weather misery" during the month.

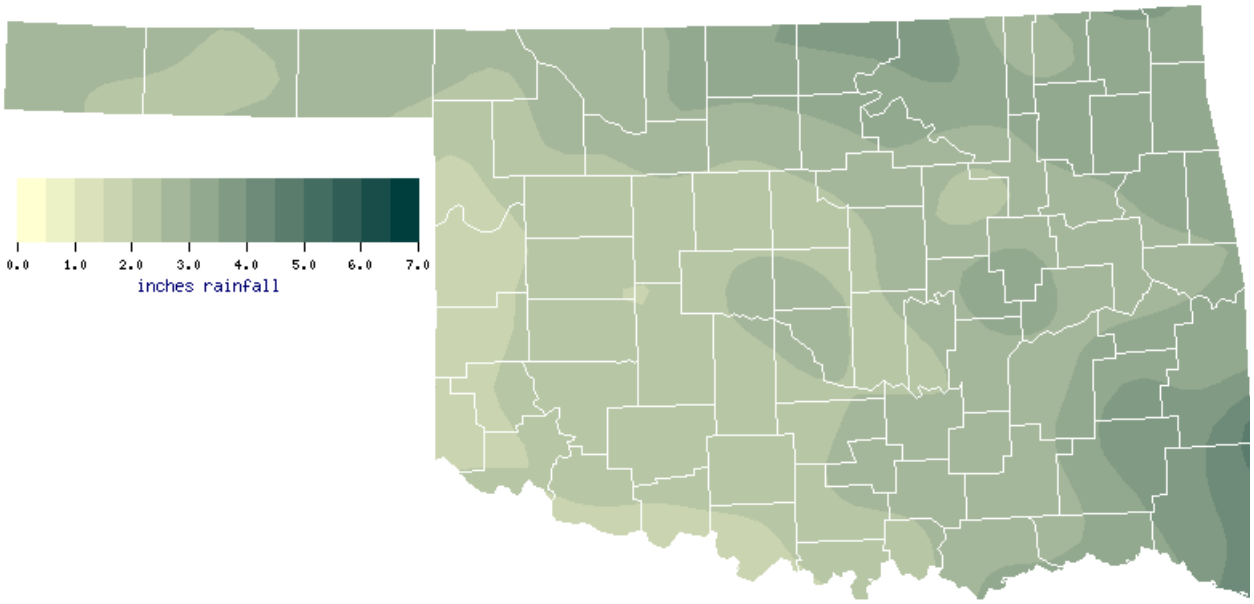
JULY NORMAL DAILY MAXIMUM TEMPERATURE (1971-2000)



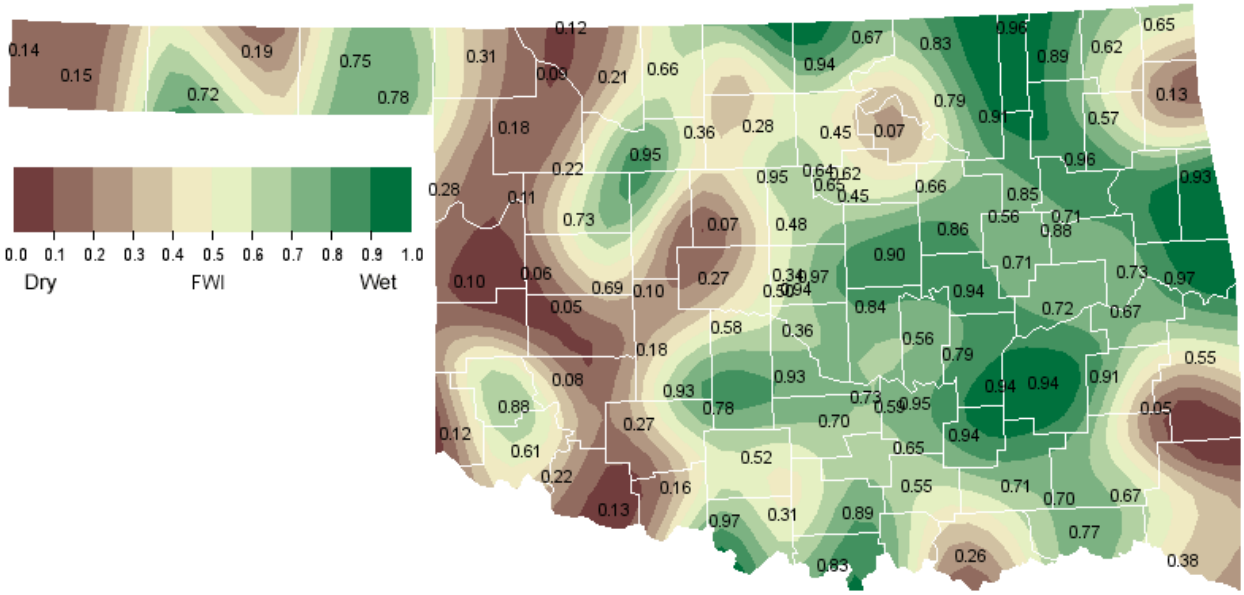
JULY NORMAL DAILY MINIMUM TEMPERATURE (1971-2000)



JULY NORMAL PRECIPITATION (1971-2000)



JULY 1, 2010 SOIL MOISTURE CONDITIONS AT 25CM



JULY 2010 DROUGHT INDICES

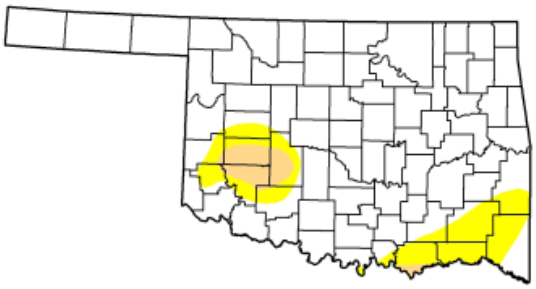
U.S. Drought Monitor

Oklahoma

June 29, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	85.9	14.1	3.2	0.0	0.0	0.0
Last Week (06/22/2010 map)	82.2	17.8	3.2	0.0	0.0	0.0
3 Months Ago (04/06/2010 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Water Year (10/06/2009 map)	98.0	2.0	0.0	0.0	0.0	0.0
One Year Ago (06/30/2009 map)	31.5	68.5	29.6	0.0	0.0	0.0



Intensity:

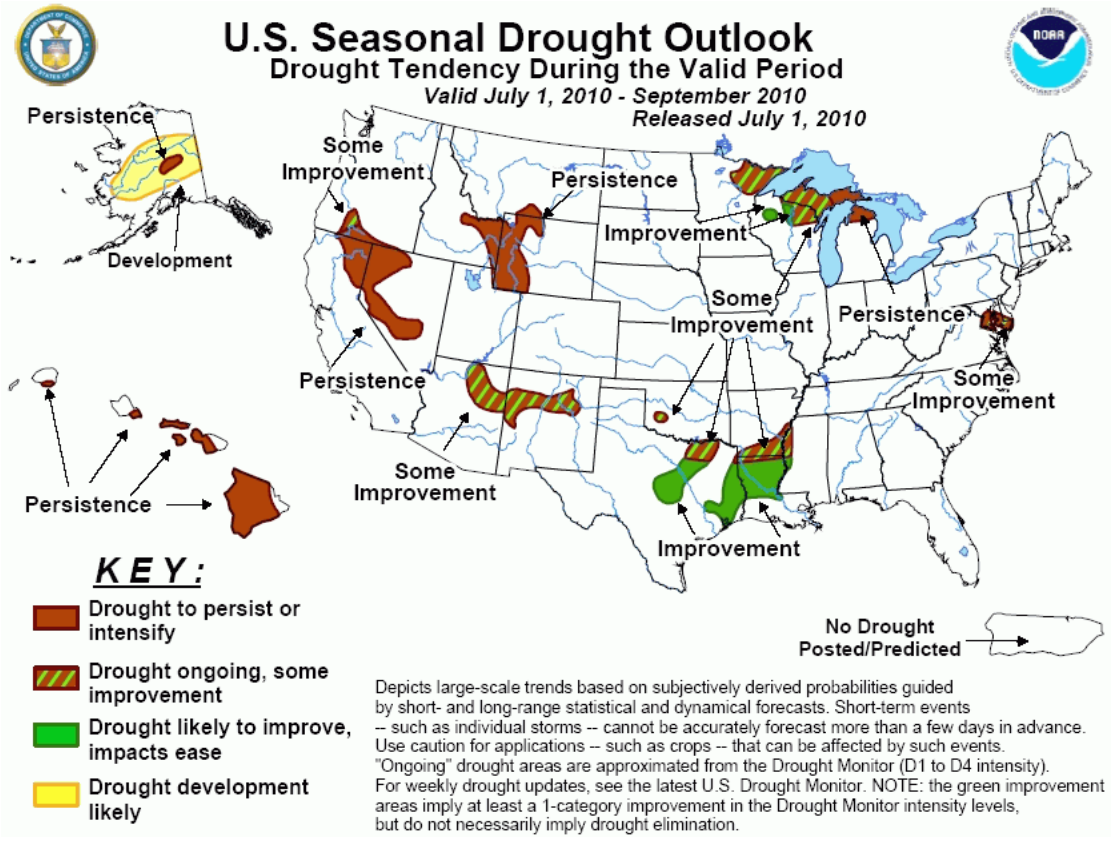
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

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

http://drought.unl.edu/dm

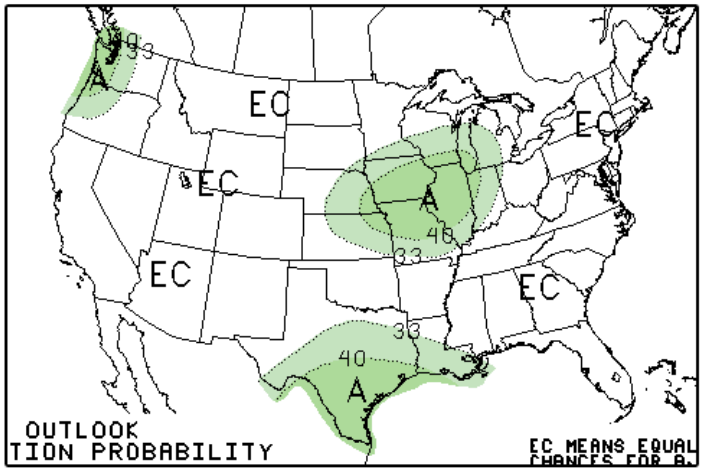
USDA · National Drought Mitigation Center

Released Thursday, July 1, 2010
Author: R. Tinker, CPC/NOAA



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

JULY 2010 U.S. PRECIPITATION FORECAST



Percent Likelihood of Above or Below Average Precipitation*

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

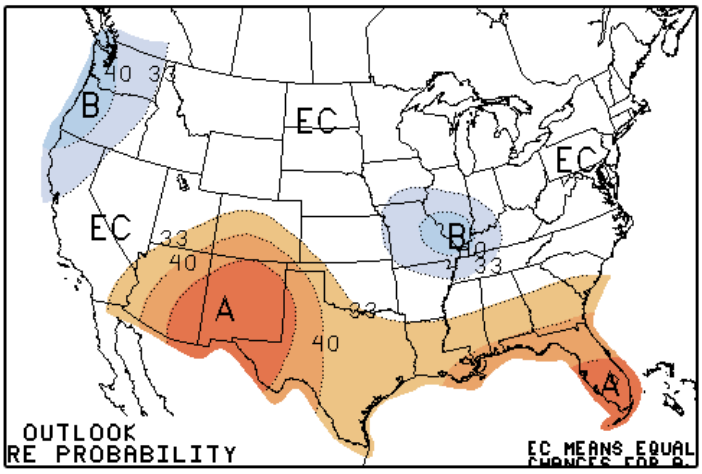
A = Above

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

B = Below

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

JULY 2010 U.S. TEMPERATURE FORECAST



Percent Likelihood of Above or Below Average Temperatures*

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

A = Above

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

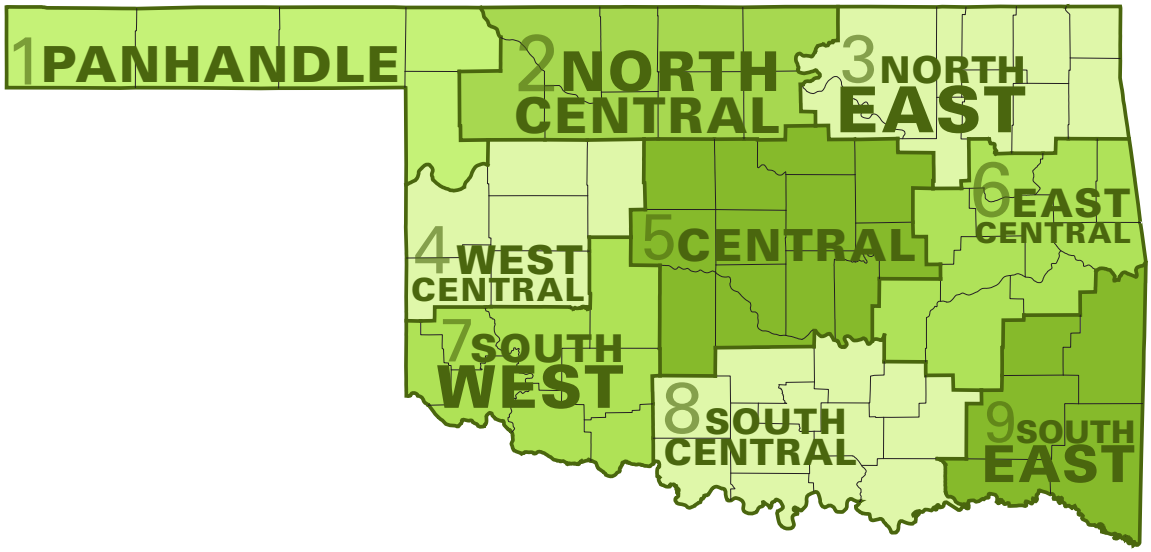
B = Below

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

JULY CLIMATE NORMALS

Climate Division	Max. Temperature (°F)	Min. Temperature (°F)	Avg. Temperature (°F)	Precipitation (inches)
1	94.2	65.6	79.9	2.50
2	94.9	69.4	82.2	2.98
3	92.8	69.9	81.4	3.14
4	94.4	69.2	81.8	2.10
5	93.7	70.5	82.1	2.53
6	92.7	70.1	81.5	2.97
7	96.0	70.1	83.1	2.12
8	94.3	71.1	82.7	2.53
9	93.4	69.0	81.2	3.59
Statewide	94.0	69.6	81.8	2.73

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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