Oklahoma Monthly Climate Summary

JULY 2022

OKLAHOMA CLIMATOLOGICAL SURVEY

The seemingly impenetrable heat wave and dry spell that had punished Oklahoma since early June continued through nearly all of July, giving Oklahoma the type of scorching hot weather unseen in the state since the brutal summers of 2011 and 2012. A strong cold front snuck through the heat dome's defenses near the end of the month to bring some relief, but the damage was done. The combination of hot weather, a lack of significant moisture, and relentless sunshine combined to plunge Oklahoma into flash drought that had covered the entire state by the end of July. Farm ponds evaporated, soils dried out and baked, and vegetation of all types either went dormant or died, turning the state's landscapes a sickly shade of yellow. Drought covered 31 percent of the state at the end of June according to the U.S. Drought Monitor, but coverage skyrocketed to 100 percent by the end of July. Wildfires increasingly became a problem as the arid weather persisted. One large fire

July 2022 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	115°F	Mangum	19
Low Temperature	58°F	Lake Carl Blackwell	19
High Precipitation	7.73 in.	Sallisaw	--
Low Precipitation	0.0 in.	Altus	--

northeast of Mooreland consumed more than 21,000 acres. Significant severe weather was largely absent during the month, although an EF-1 tornado managed to touch down near Broken Arrow that damaged homes and trees. That report brought the number of tornadoes during 2022 up to 41 according to preliminary data from the National Weather Service. The 1950-2021 average through July is 49.5, and the annual average is 57.2.

The statewide average temperature finished at 85.9 degrees according to preliminary date from the Oklahoma Mesonet, 4 degrees above normal and tying both 1998 and 2012 for the seventh warmest July on record. That mark remained far behind July 2011's 89.2 degrees, which still stood as the warmest month of any month, any year, and any state since records began in 1895. This July's temperature topped out at 115 degrees at Mangum on July 19, tying the Mesonet's all-time highest reading with six other sites since it's inception in 1997. Oklahoma had not seen a temperature that high since Kingfisher hit 115 back on Aug. 1, 2012. Oklahoma's all-time highest recorded temperature of 120 degrees was set at three separate locations in 1936. The 19th was also the third time in Mesonet history that all 120 sites reached at least 100 degrees, sharing that honor with July 9 and 10, 2011. However, it was the first time all sites reached at least 103 degrees. Mesonet sites recorded temperatures of at least 110 degrees 72 times during July, and at least 105 degrees 594 times. The heat index soared even higher, hitting 119 degrees at Eufaula on July 8, and 118 degrees at Burneyville on July 20. The Mesonet observed heat index values of at least 110 degrees 383 times during the month. Lake Carl Blackwell had the month's lowest reading at 58 degrees on the 19th. The first two months of summer stand as the 10th warmest on record, 3 degrees above normal, and the first seven months of the year came in as the 26th warmest, 0.6 degrees above normal.

July 2022 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2022)
Month (July)	85.9°F	4°F	7th Warmest
Season-to-Date (Jun-Jul)	82.6°F	3°F	10th Warmest
Year-to-Date (Jan-Jul)	60.6°F	0.6°F	26th Warmest

Precipitation

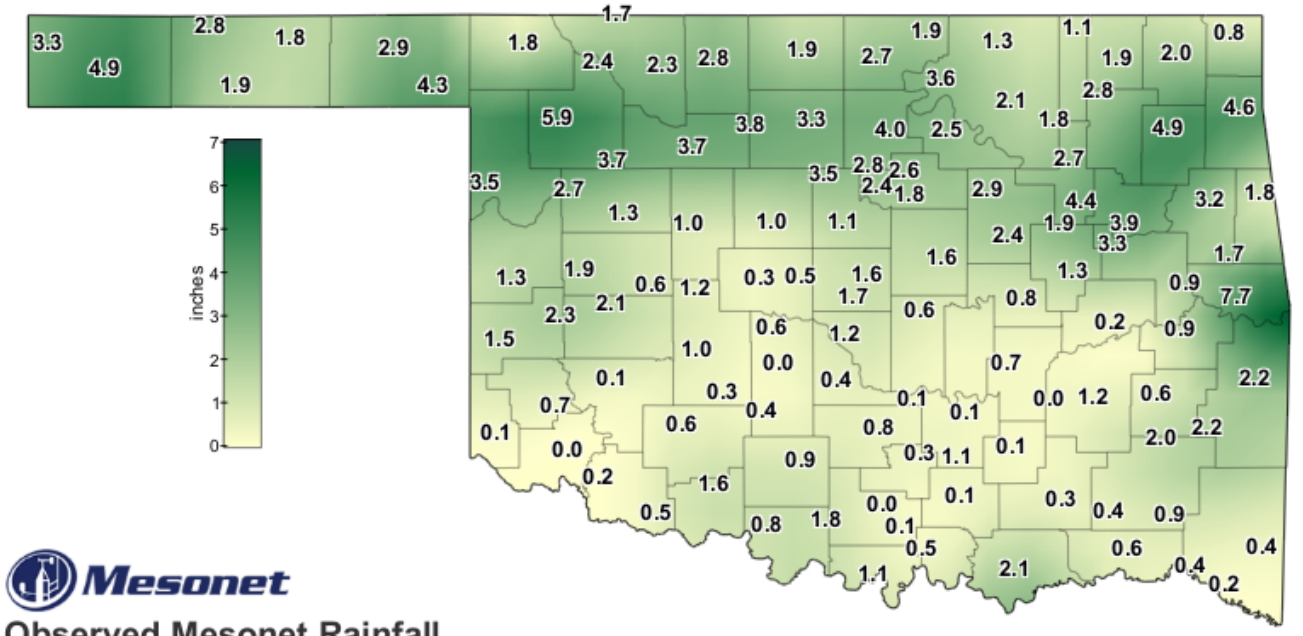
	Total	Depart.	Rank (1895-2022)
Month (July)	1.79 in.	-1.41 in.	32nd Driest
Season-to-Date (Jun-Jul)	5.6 in.	-1.86 in.	40th Driest
Year-to-Date (Jan-Jul)	19.45 in.	-2.57 in.	51st Driest

The statewide average rainfall total ended at 1.79 inches for the month, 1.41 inches below normal and ranked as the 32nd driest July on record. The disparity in rainfall between northern and southern Oklahoma was striking, however. Southwestern, south central, and southeastern Oklahoma suffered through their 14th, 14th, and 8th driest Julys on

record, respectively, while the Panhandle enjoyed its 42nd wettest. Totals ranged from 7.73 inches at Sallisaw to zero at Altus. In addition to Altus' goose egg, nine other sites recorded less than a tenth of an inch of rainfall. Nineteen received at least 3 inches for the month. At the end of July, 20 Mesonet sites had failed to receive at least a quarter-inch of daily rainfall for more than 50 consecutive days, and nine had not received at least a tenth of an inch for the same span. The first seven months of the year ended as the 51st driest on record at 19.45 inches, 2.57 inches below normal.

The same hot and dry conditions that dominated most of June and July are expected to prevail once again in August. The August outlooks from the Climate Prediction Center call for increased odds of above normal temperatures across the entire state and below normal precipitation in all but the western Panhandle. CPC's August drought outlook predicts drought persistence across the southern one-third of Oklahoma, but improvement across the northern two-thirds. However, much of that improvement is based on the heavier rains that fell in late July.

JULY 2022 OBSERVED PRECIPITATION



Mesonet

Observed Mesonet Rainfall
Calendar Month to Date

Jul 1, 2022 through Jul 31, 2022
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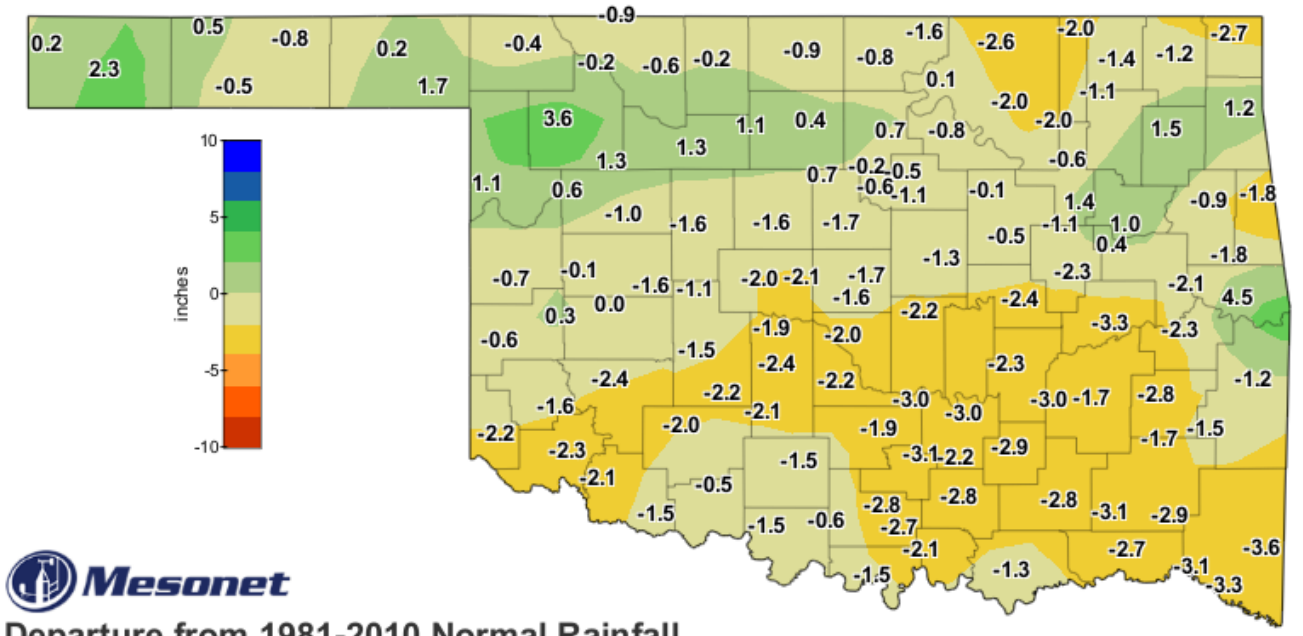
JULY 2022 DEPARTURE FROM NORMAL PRECIPITATION



Mesonet

Departure from 1981-2010 Normal Rainfall
Calendar Month to Date

Jul 1, 2022 through Jul 31, 2022
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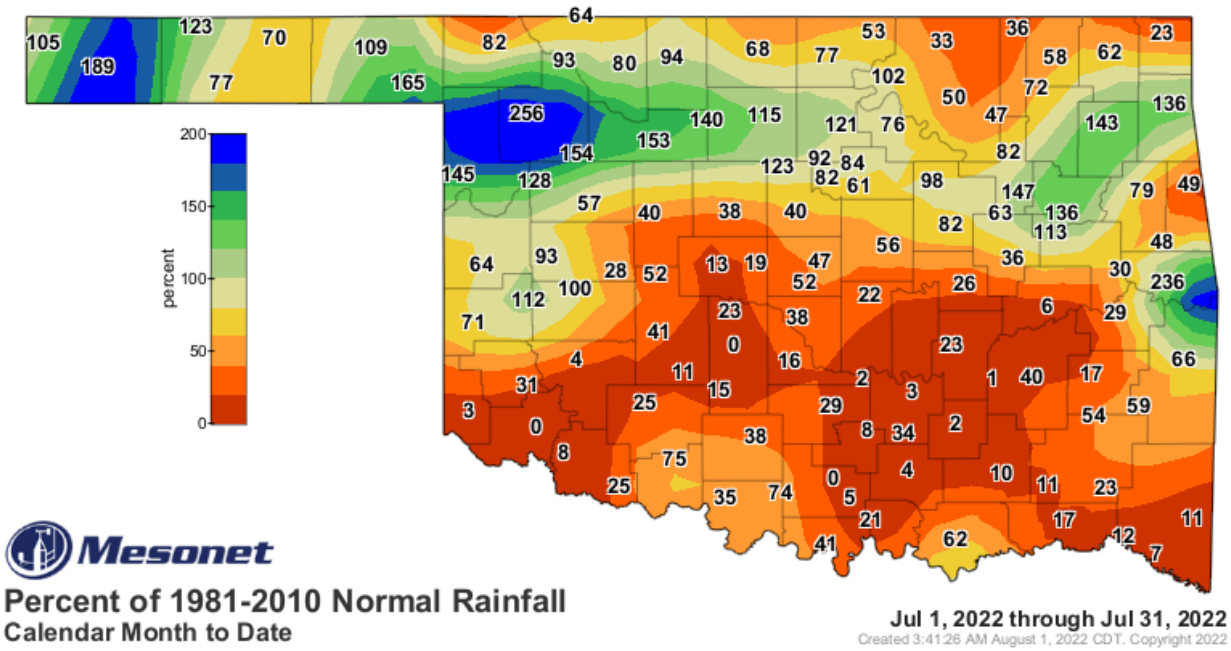
JULY 2022 PERCENT OF NORMAL PRECIPITATION



Mesonet

Percent of 1981-2010 Normal Rainfall
Calendar Month to Date

Jul 1, 2022 through Jul 31, 2022
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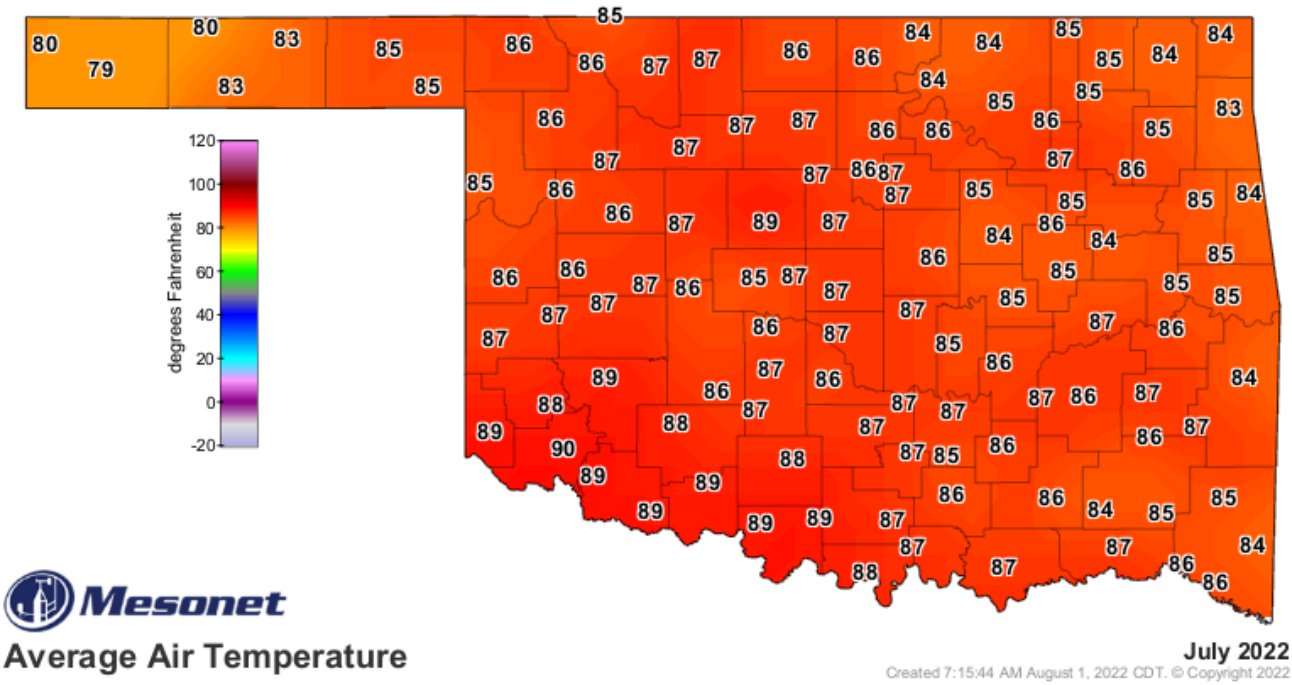
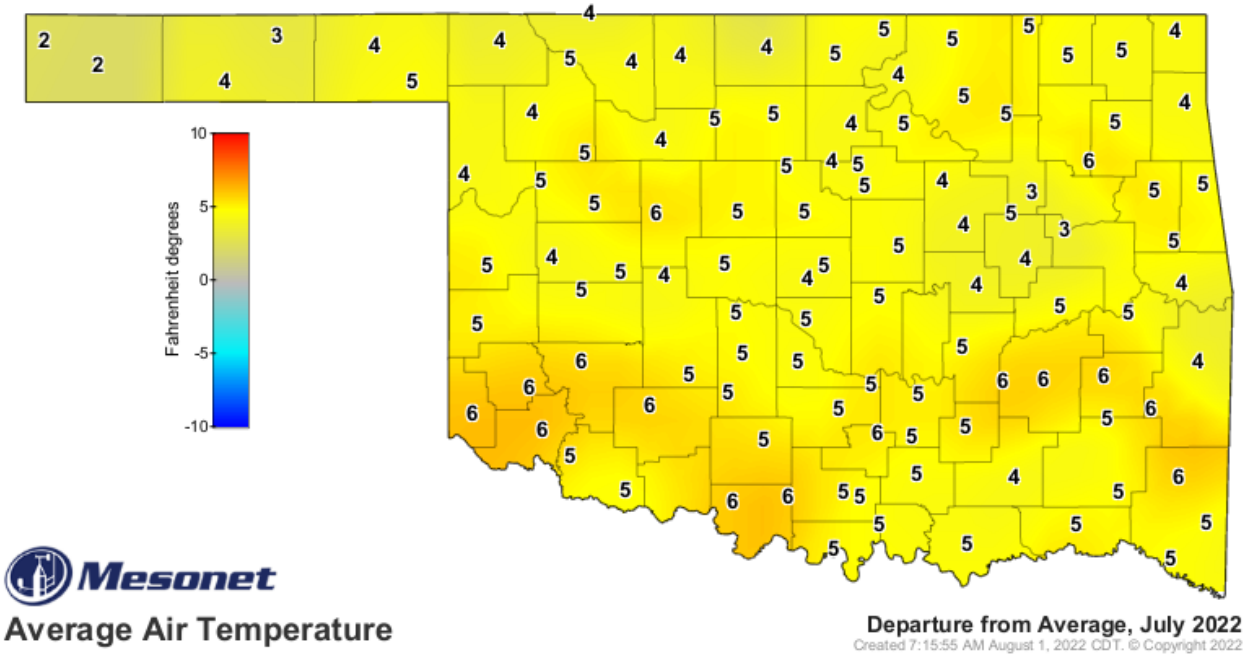
JULY 2022 AVERAGE TEMPERATURE



JULY 2022 DEPARTURE FROM NORMAL TEMPERATURE

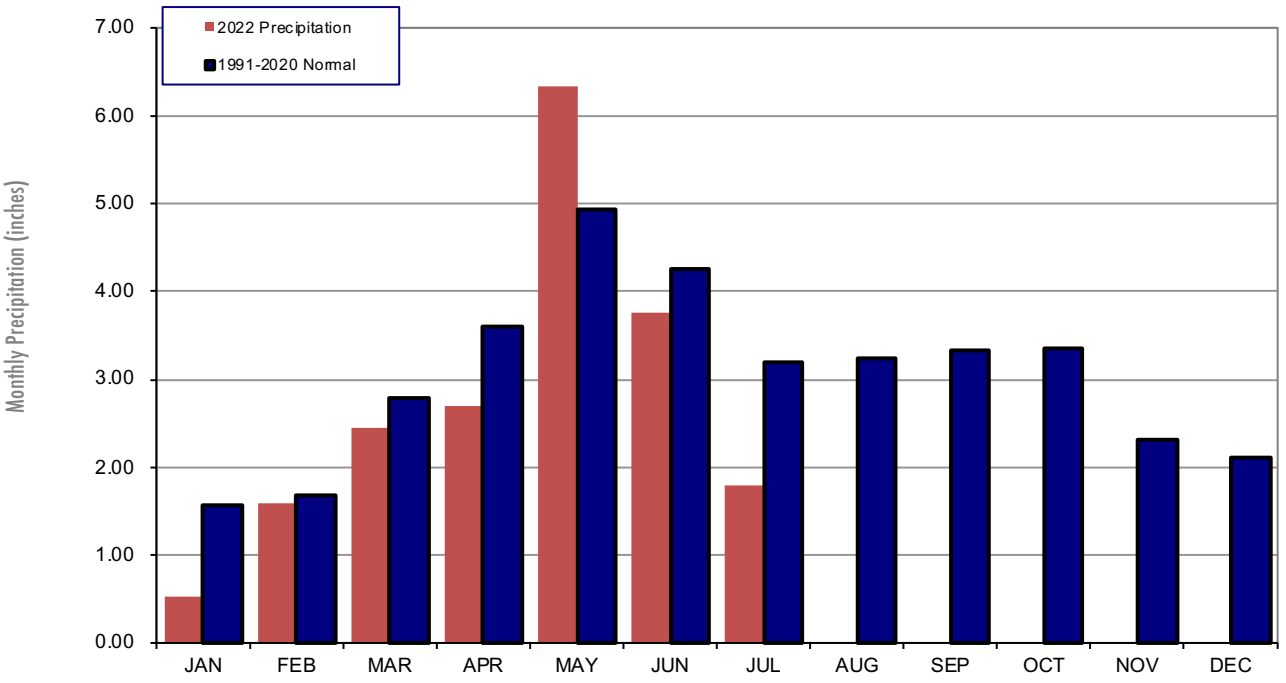


MESONET MONTHLY SUMMARY FOR JULY 2022

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	84.9	113	19	64	11	0	618	3.52	1.78	30
Beaver	85.2	110	19	62	30	0	627	2.92	1.66	29
Boise City	79.4	103	19	61	7	0	447	4.92	1.26	8
Buffalo	86.2	112	19	63	30	0	658	1.79	.83	29
Eva	79.8	105	19	59	7	0	459	2.76	1.32	2
NORTH CENTRAL										
Alva	86.6	113	19	62	13	0	668	2.28	1.27	30
Blackwell	85.5	111	19	61	19	0	635	2.67	1.44	30
Breckinridge	86.6	111	19	61	13	0	668	3.32	1.53	31
Cherokee	86.8	113	19	63	13	0	675	2.83	1.35	30
Fairview	87.2	110	19	65	30	0	689	3.72	1.48	29
Freedom	86.3	113	19	62	30	0	661	2.39	1.19	29
Lahoma	86.7	112	19	64	30	0	671	3.79	1.63	31
NORTHEAST										
Bixby	84.8	105	19	64	14	0	613	4.36	1.72	29
Burbank	83.9	108	19	60	19	0	586	3.55	1.93	30
Copan	85.4	108	19	61	13	0	631	1.13	.67	30
Foraker	83.8	108	26	62	19	0	584	1.28	.98	30
Inola	86.1	107	19	65	14	****	****	*****	.29	27
Jay	84.1	106	19	61	13	0	594	4.57	3.26	30
Miami	84.0	105	26	61	14	0	590	.78	.74	30
Nowata	84.3	108	26	59	14	0	598	1.88	1.77	30
WEST CENTRAL										
Bessie	87.3	111	19	66	30	0	691	2.08	1.23	8
Butler	86.3	112	19	64	11	0	659	1.88	.90	21
Camargo	85.8	114	19	63	10	0	645	2.69	1.16	30
Cheyenne	86.2	111	19	65	30	0	657	1.31	.89	30
Elk City	87.0	114	19	66	30	0	683	2.31	1.01	30
CENTRAL										
Acme	87.4	110	19	63	11	0	694	.37	.28	28
Bristow	84.0	106	19	60	19	0	590	2.38	1.76	28
Lake Carl Blac	85.0	110	19	58	19	0	621	2.81	1.42	29
Chandler	85.9	108	19	67	14	0	648	1.58	.86	31
Chickasha	87.0	111	19	64	11	0	681	.01	.01	31
El Reno	85.4	110	19	61	10	0	633	.30	.10	8
Guthrie	88.2	111	19	66	30	0	719	1.12	.39	31
Kingfisher	88.3	113	19	63	11	0	722	.99	.35	31
Marena	85.8	110	19	65	19	0	644	2.42	1.55	29
Minco	86.6	109	19	68	15	0	671	.55	.34	28
Marshall	86.9	111	19	64	19	0	679	3.53	1.83	29
EAST CENTRAL										
Cookson	85.3	105	19	65	10	0	629	1.65	.67	29
Eufaula	87.2	108	19	65	14	0	688	.22	.10	21
Haskell	84.6	105	19	62	14	0	608	3.31	1.06	29
Hectorville	86.6	108	19	67	13	0	670	1.94	.88	29
Holdenville	86.4	109	19	67	10	0	664	.68	.42	28
McAlester	86.7	107	19	67	12	0	672	1.18	.60	30
Okmulgee	85.0	108	19	60	14	0	621	1.29	.53	29
SOUTHWEST										
Altus	89.6	114	19	70	11	0	762	.00	.00	1
Apache	86.5	111	19	66	15	0	666	.26	.19	21
Fort Cobb	*****	***	***	***	***	****	****	1.03	.58	28
Grandfield	89.1	114	19	67	15	0	747	.49	.21	21
Hinton	86.4	110	19	66	30	0	664	1.15	.70	8
Hobart	88.7	114	19	67	11	0	736	.09	.07	30
SOUTH CENTRAL										
Ada	86.5	111	19	66	12	0	667	.08	.08	20
Ardmore	87.6	110	19	69	12	0	701	.14	.08	21
Burneyville	88.2	112	19	62	12	0	719	1.06	.68	29
Byars	87.1	110	19	67	14	0	684	.07	.05	31
Centrahoma	86.6	109	19	66	12	0	671	.07	.05	30
Durant	87.3	107	19	70	12	0	690	2.08	2.03	3
Fittstown	85.5	111	19	66	12	0	635	1.12	.95	8
Ketchum Ranch	88.2	112	19	67	15	0	719	.90	.50	3
SOUTHEAST										
Antlers	84.9	106	19	66	16	0	617	.36	.35	31
Broken Bow	85.2	108	9	65	12	0	626	.44	.21	30
Clayton	86.5	107	19	68	23	0	667	2.04	.75	22
Cloudy	85.0	105	19	66	23	0	620	.87	.73	30
Hugo	87.3	106	19	69	12	0	691	.57	.19	22
Idabel	86.5	105	9	65	12	0	666	.23	.12	30

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	82.9	107	16	60	7	0	555	1.85	1.14	29
Hooker	83.2	108	15	63	30	0	565	1.78	.91	29
Kenton	80.1	104	16	62	21	0	468	3.32	.72	26
Slapout	85.0	111	19	63	30	0	621	4.26	3.52	29
May Ranch	84.8	111	19	62	30	0	613	1.70	.76	29
Medford	85.6	111	19	63	19	0	638	1.94	1.09	30
Newkirk	84.7	108	26	64	30	0	611	1.85	1.11	30
Red Rock	85.8	111	19	62	19	0	645	3.98	1.28	30
Seiling	86.9	113	19	63	10	0	680	3.72	1.47	31
Woodward	86.0	110	19	64	30	0	652	5.89	2.12	29
Pawnee	86.1	109	19	62	19	0	654	2.48	.82	30
Porter	85.6	106	19	64	14	0	638	3.88	2.33	29
Pryor	85.1	107	26	62	14	0	623	4.89	2.87	30
Skiatook	86.0	107	19	65	30	0	652	1.77	1.10	30
Talala	85.6	108	26	64	13	0	639	2.80	2.43	30
Tulsa	87.4	107	19	67	19	0	694	2.68	1.17	29
Vinita	83.9	107	26	60	13	0	586	1.99	1.58	30
Wynona	85.4	108	19	62	19	0	633	2.06	1.70	30
Erick	86.9	114	19	64	11	0	680	1.46	1.11	30
Putnam	86.8	113	19	64	30	0	676	1.32	.54	30
Watonga	87.6	110	19	65	30	0	699	1.02	.59	30
Weatherford	87.1	110	19	66	30	0	685	.61	.30	7
Norman	87.4	110	19	68	11	0	695	1.19	1.03	28
Oilton	85.3	108	19	59	19	0	628	2.93	1.79	29
OKC East	87.2	110	19	67	14	0	688	1.65	1.16	8
Okemah	85.9	108	19	64	14	0	648	.83	.42	29
Perkins	86.8	110	19	64	19	0	677	1.79	1.33	29
Seminole	86.0	109	19	63	14	0	652	.44	.19	28
Shawnee	87.2	110	19	67	10	0	687	.63	.19	22
Spencer	86.8	110	19	65	10	0	677	1.55	1.14	28
Stillwater	86.4	110	19	62	19	0	664	2.55	1.68	29
Washington	86.0	111	19	66	12	0	652	.42	.22	28
Yukon	86.4	109	19	67	30	0	664	.50	.31	8
Sallisaw	85.1	104	19	67	11	0	622	7.73	5.92	21
Stigler	85.9	107	19	65	14	0	649	.90	.44	21
Stuart	87.2	107	19	68	14	0	689	.04	.02	22
Tahlequah	85.4	106	19	66	11	0	632	3.20	2.22	29
Webbers Falls	85.5	108	19	66	14	0	635	.86	.32	31
Westville	84.5	104	19	68	10	0	605	1.78	.70	29
Hollis	88.9	114	19	68	11	0	740	.06	.05	21
Mangum	87.4	115	19	62	11	0	696	.70	.70	28
Medicine Park	88.8	112	19	71	1	0	737	.64	.43	8
Tipton	89.1	113	19	68	12	0	748	.18	.11	22
Walters	88.2	112	19	66	15	0	720	1.57	1.44	8
Lane	86.0	106	19	68	12	0	652	.33	.29	29
Madill	87.8	110	19	67	15	0	706	.54	.30	30
Newport	87.9	111	19	69	15	****	****	.01	.01	20
Pauls Valley	87.3	111	19	69	12	0	691	.80	.34	8
Ringling	89.4	113	19	69	15	0	756	1.78	1.23	29
Sulphur	87.2	110	19	66	15	0	688	.27	.13	8
Tishomingo	86.0	109	19	66	12	0	650	.11	.06	30
Waurika	89.0	113	19	63	15	0	743	.80	.50	8
Mt Herman	85.5	103	19	66	11	****	****	.33	.16	29
Talihina	86.9	107	19	66	11	0	679	2.21	1.85	30
Valliant	86.2	105	19	66	12	0	657	.42	.36	3
Wilburton	86.8	108	19	68	14	0	676	.57	.40	22
Wister	84.6	107	19	62	11	0	607	2.19	1.34	21

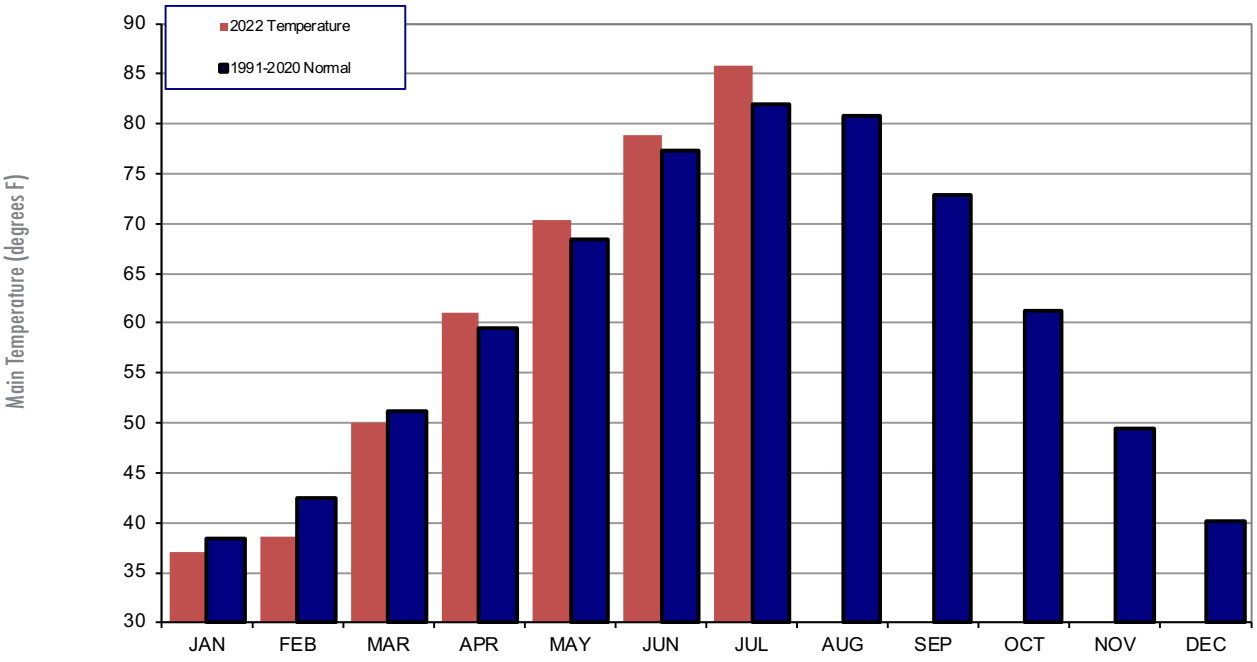
2022 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



July 2022 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jul-21 (inches)
Panhandle	3.01	0.25	42nd Wettest	8.81 (1950)	0.44 (1983)	2.55
North Central	3.08	-0.21	55th Wettest	8.59 (1950)	0.12 (1983)	2.55
Northeast	2.67	-1.12	52nd Driest	9.52 (1959)	0.28 (1946)	4.91
West Central	1.63	-0.94	43rd Driest	7.63 (1950)	0.04 (1983)	3.00
Central	1.39	-1.99	30th Driest	9.61 (1950)	0.16 (1980)	3.31
East Central	1.91	-1.85	38th Driest	10.03 (1950)	0.36 (1993)	5.27
Southwest	0.56	-1.92	14th Driest	6.60 (1950)	0.03 (1980)	3.86
South Central	0.64	-2.28	14th Driest	8.46 (1950)	0.11 (1998)	3.61
Southeast	0.99	-2.72	8th Driest	12.47 (1950)	0.19 (1993)	4.16
Statewide	1.79	-1.41	32nd Driest	9.07 (1950)	0.42 (1980)	3.67

2022 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



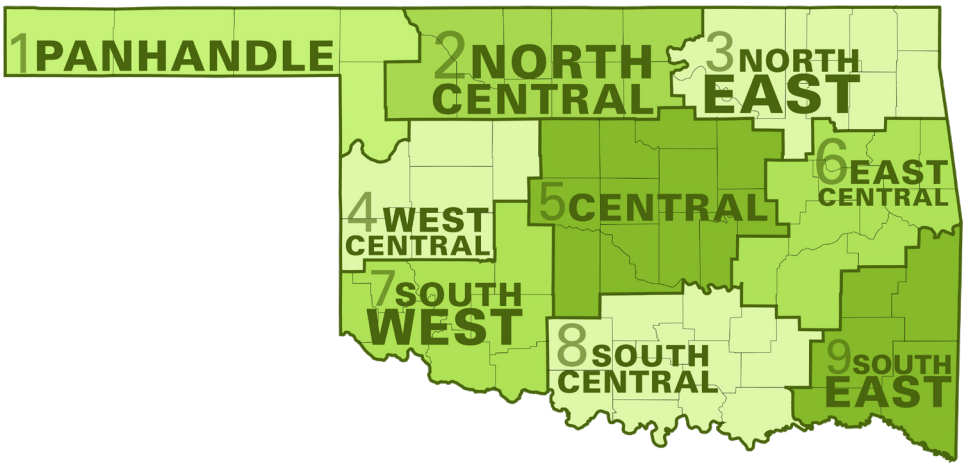
July 2022 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jul-21 (F)
Panhandle	83.0	3.2	12th Warmest	86.0 (1934)	72.8 (1906)	78.1
North Central	86.1	3.9	9th Warmest	89.6 (2011)	75.9 (1950)	79.7
Northeast	84.6	3.4	11th Warmest	89.3 (1954)	75.4 (1950)	79.2
West Central	86.8	4.5	6th Warmest	89.6 (2011)	75.8 (1906)	79.9
Central	86.5	4.1	9th Warmest	90.2 (2011)	76.7 (1950)	80.2
East Central	85.8	4.2	9th Warmest	88.9 (2011)	76.2 (1906)	80.2
Southwest	88.3	4.5	6th Warmest	91.7 (2011)	78.0 (1908)	81.1
South Central	87.2	4.2	7th Warmest	90.5 (2011)	77.9 (1950)	81.0
Southeast	85.5	4.4	5th Warmest	87.5 (2011)	76.0 (1905)	80.3
Statewide	85.9	4.0	7th Warmest	89.2 (2011)	76.3 (1906)	79.9

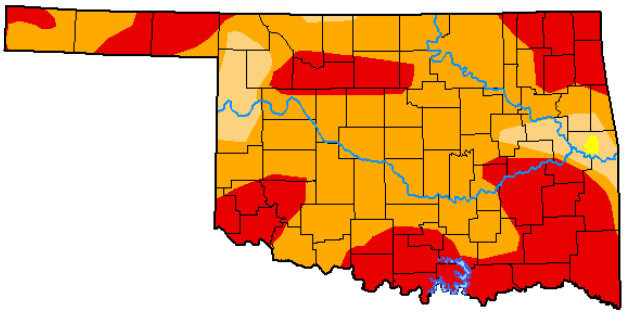
MESONET EXTREMES FOR JULY 2022

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	113	19th	Arnett	59	7th	Eva	4.92	Boise City	3.52	29th	Slapout
North Central	113	19th	Cherokee	61	13th	Breckinridge	5.89	Woodward	2.12	29th	Woodward
Northeast	109	19th	Pawnee	59	14th	Nowata	4.89	Pryor	3.26	30th	Jay
West Central	114	19th	Elk City	63	10th	Camargo	2.69	Camargo	1.23	8th	Bessie
Central	113	19th	Kingfisher	58	19th	Lake Carl Blackwell	3.53	Marshall	1.83	29th	Marshall
East Central	109	19th	Holdenville	60	14th	Okmulgee	7.73	Sallisaw	5.92	21st	Sallisaw
Southwest	115	19th	Mangum	62	11th	Mangum	1.57	Walters	1.44	8th	Walters
South Central	113	19th	Ringling	62	12th	Burneyville	2.08	Durant	2.03	3rd	Durant
Southeast	108	19th	Wilburton	62	11th	Wister	2.21	Talihina	1.85	30th	Talihina
Statewide	115	19th	Mangum	58	19th	Lake Carl Blackwell	7.73	Sallisaw	5.92	21st	Sallisaw

Oklahoma Climate Divisions



U.S. Drought Monitor
Oklahoma



July 26, 2022
(Released Thursday, Jul. 28, 2022)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.81	92.11	37.45	0.00
Last Week *07-19-2022*	0.00	100.00	99.69	57.51	6.80	0.00
3 Months Ago *04-26-2022*	22.73	77.27	65.40	55.30	39.39	11.03
Start of Calendar Year *01-04-2022*	5.02	94.98	88.14	72.26	40.44	0.00
Start of Water Year *09-28-2021*	6.45	93.55	73.23	23.72	2.65	0.00
One Year Ago *07-27-2021*	91.45	8.55	1.13	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

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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 November 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 November result in an artificially high or low value.

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 Centers for Environmental Information:
https://www.ncdc.noaa.gov/stormevents/

SEASONAL OUTLOOKS
Climate Prediction Center:
http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.shtml

CLIMATE CALENDARS AND OTHER LOCAL WEATHER AND CLIMATE INFORMATION
Oklahoma Climatological Survey:
http://climate.mesonet.org or http://climate.ok.gov/

OKLAHOMA CLIMATOLOGICAL SURVEY

Oklahoma Climatological Survey is the State Climate Office for Oklahoma

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