

Oklahoma’s July was mild for the most part, and a bit wet for much of the state. Extreme temperatures—at least as read on the thermometer—were in short supply, but the pressure cooker heat due to high humidity seemed to be well stocked. Severe weather did strike sporadically through the month, mostly in the form of severe winds as is common to summer months in the Southern Plains. One tornado touched down near Yale in Payne County on July 7, an EF-1 twister that damaged homes and outbuildings. That brought 2021’s preliminary tornado total through July to 25 according to the National Weather Service. Oklahoma has averaged 50 tornadoes during the first seven months of the year from 1951-2020, with an annual average of 57.2 tornadoes.

The statewide average temperature as measured by the Oklahoma Mesonet finished at 79.5 degrees for the month, 2.4 degrees below normal and ranked as the 22nd coolest

The statewide average rainfall total finished at 3.33 inches for the month, 0.13 inches above normal and ranked as the 47th wettest July since records began in 1895. Heavier rains fell across northeastern and southwestern sections of the state, with the southwest corner averaging 4.07 inches for the month, its 13th wettest July on record. Northeastern Oklahoma’s average of 5.22 inches ranked as the 22nd wettest on record. The Mesonet site at Bixby collected 9.38 inches to lead the state’s July rainfall tallies. Rains were not so plentiful across northern Oklahoma, where Buffalo’s 0.62 inches was July’s lowest total. A strip of Oklahoma from the northwest to the southeast experienced July rainfall deficits of over an inch, while most areas to either side of that strip enjoyed surpluses of 1-4 inches. The first seven months of the year remained on the wet side for nearly all of Oklahoma with a statewide average of 23.09 inches, 1.07 inches above

July 2021 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	103°F	Alva, Cherokee	1
Low Temperature	52°F	Eva	12
High Precipitation	9.38 in.	Bixby	--
Low Precipitation	0.62 in.	Buffalo	--

July since records began in 1895. A decade previous in July 2011, Oklahoma established its record highest statewide average monthly temperature at 89.2 degrees. The mark was not only the highest for any Oklahoma calendar month, but for any calendar month for any state since records began in 1895. Oklahoma’s lowest monthly average temperature for July, 76.4 degrees, came in both 1906 and 1950. Cherokee captured the highest reading for July 2021 at 103 degrees on the month’s final day, a somewhat tame extreme for an Oklahoma summer month. Oppressive heat was still present thanks to the generous rains that had fallen during the previous months. The Mesonet’s 120 sites hit triple digits only 62 times during July but reached a heat index of at least 105 degrees 639 times, and 110 degrees 99 times. The lowest recorded July temperature was 52 degrees from Eva on the 12th. The first seven months of the year were 1.8 degrees below normal with a statewide average of 58.2 degrees, the 26th coolest January-July period on record.

July 2021 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2021)
Month (July)	79.5°F	-2.4°F	22nd Coolest
Season-to-Date (Jun-Jul)	78.5°F	-1.2°F	46th Coolest
Year-to-Date (Jan-Jul)	58.2°F	-1.8°F	26th Coolest

Precipitation

	Total	Depart.	Rank (1895-2021)
Month (July)	3.33 in.	0.13 in.	47th Wettest
Season-to-Date (Jun-Jul)	8.02 in.	0.56 in.	42nd Wettest
Year-to-Date (Jan-Jul)	23.09 in.	1.07 in.	41st Wettest

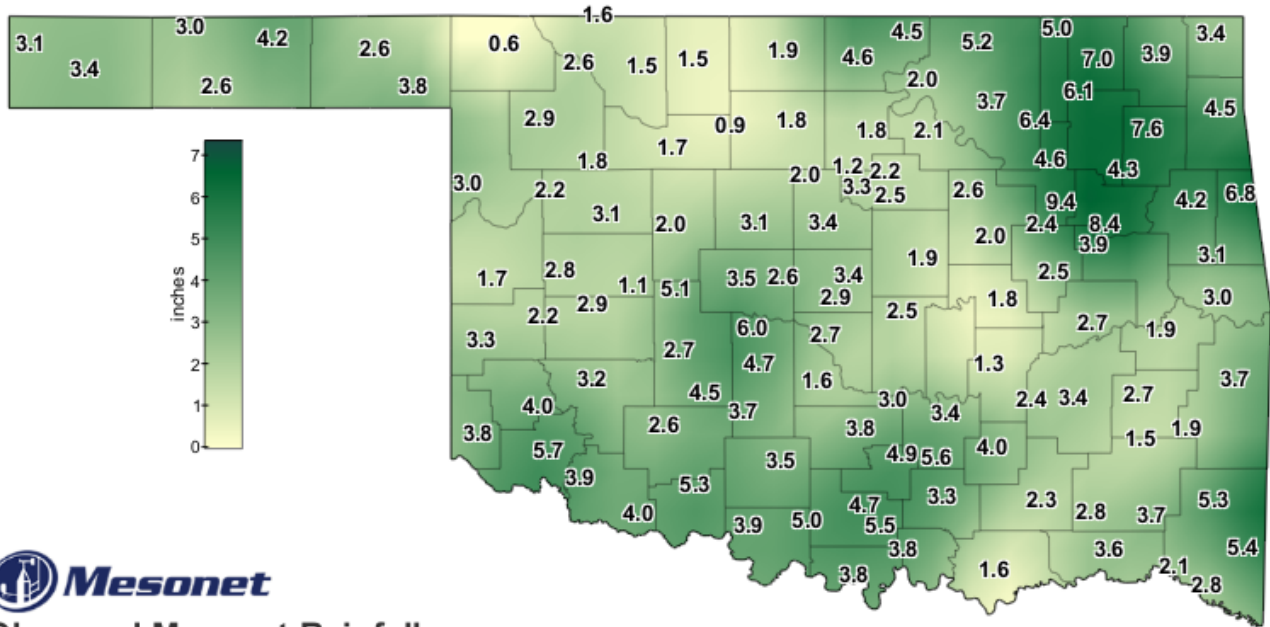
Depart. = departure from 30-year normal

normal and ranked as the 41st wettest January-July on record. Deficits of 3-6 inches were evident across north central and southeastern Oklahoma, as well as a localized region in the southwest. Surpluses of 4-8 inches were common from central through northeastern Oklahoma, ballooning to 12-14 inches across the far southeast.

Drought coverage remained low with only 1.13 percent of the state considered to be in drought at the end of July according

to the U.S. Drought Monitor. A little over 7 percent of the state remained in abnormally dry conditions at the end of the month, mostly in far northwestern Oklahoma. That small area of moderate drought in the northwest is expected to remain through August according to the drought outlook from the Climate Prediction Center (CPC). CPC's August temperature outlook indicates increased odds of below normal temperatures across the southeastern two-thirds of the state, but especially far southern Oklahoma. The precipitation outlook shows increased odds of above normal precipitation across southeastern Oklahoma and the far western Panhandle.

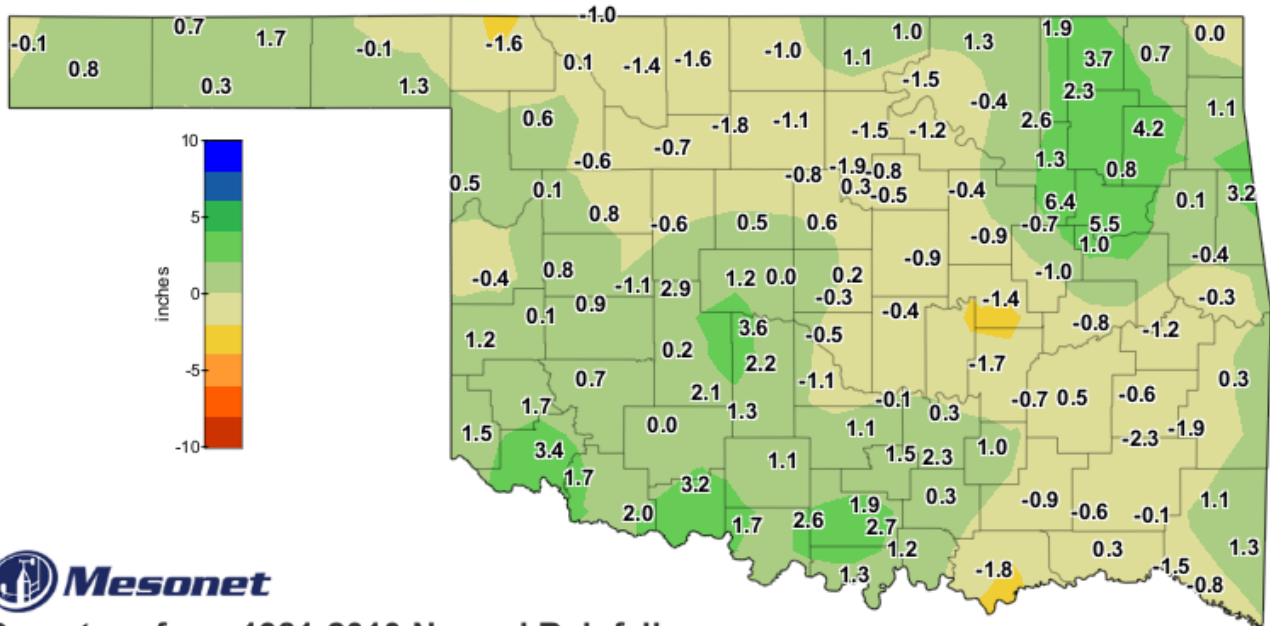
JULY 2021 OBSERVED PRECIPITATION



Observed Mesonet Rainfall
Calendar Month to Date

Jul 1, 2021 through Jul 31, 2021
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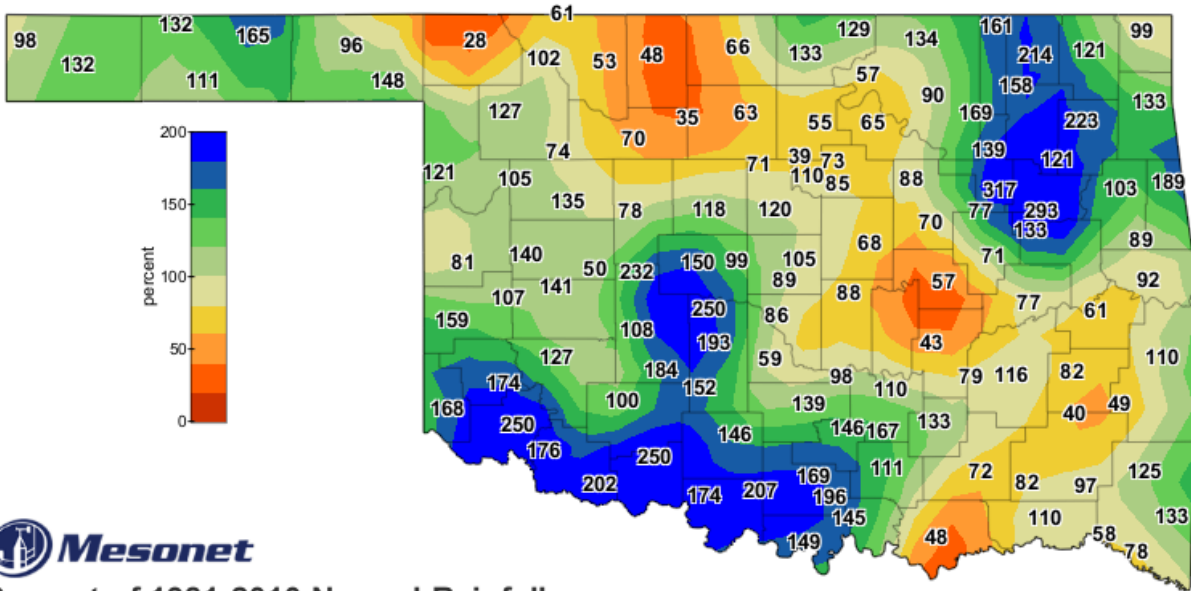
JULY 2021 DEPARTURE FROM NORMAL PRECIPITATION



Departure from 1981-2010 Normal Rainfall
Calendar Month to Date

Jul 1, 2021 through Jul 31, 2021
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JULY 2021 PERCENT OF NORMAL PRECIPITATION



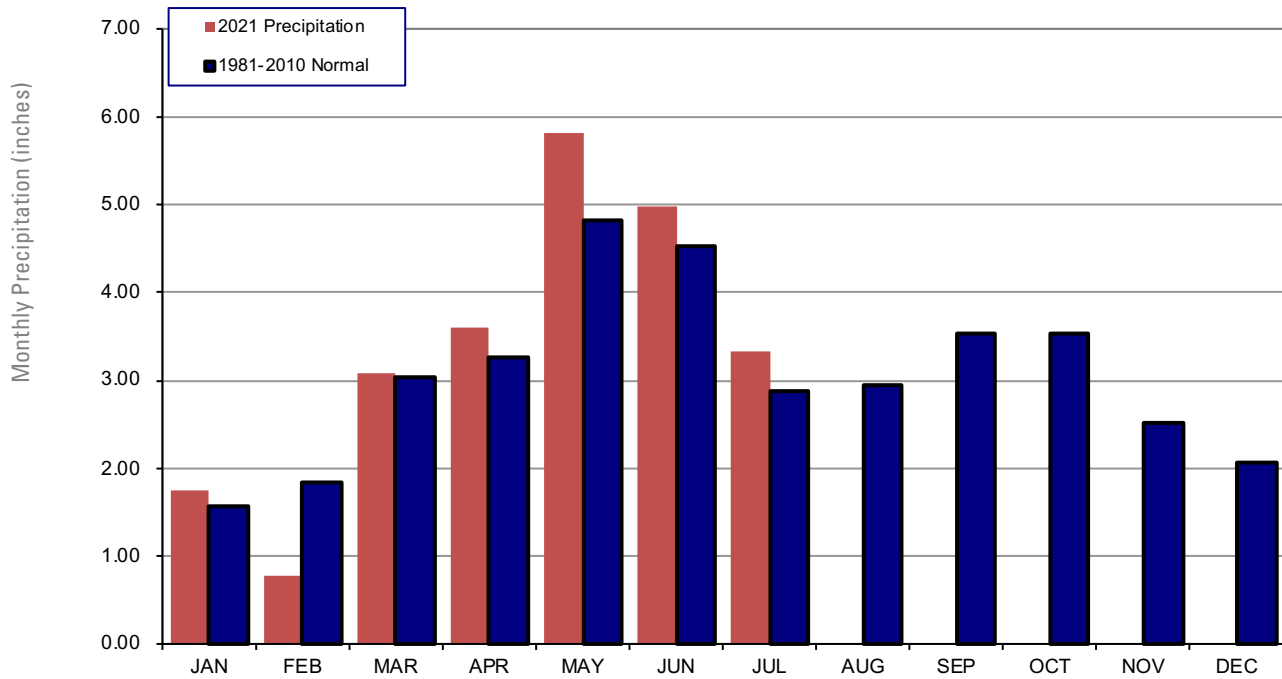
Percent of 1981-2010 Normal Rainfall
Calendar Month to Date

Jul 1, 2021 through Jul 31, 2021
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MESONET MONTHLY SUMMARY FOR JULY 2021

NAME	MEAN		HIGH		LOW		TOT		HDD	CDD	PPT	HIGH		NAME	MEAN		HIGH		LOW		TOT		HDD	CDD	PPT	HIGH			
	TEMP	TEMP	TEMP	TEMP	DAY	DAY	DAY	DAY				DAY	DAY		DAY	DAY	DAY	TEMP	TEMP	TEMP	TEMP	DAY				DAY	DAY	DAY	DAY
PANHANDLE																													
Arnett	78.4	98	31	58	12	0	416	2.95	1.26	18	Goodwell	78.1	101	25	57	12	0	406	2.64	.80	4								
Beaver	79.6	101	31	56	12	0	452	2.59	1.24	18	Hooker	79.4	102	28	58	12	0	448	4.22	1.43	4								
Boise City	76.3	102	9	56	12	0	350	3.44	1.56	18	Kenton	77.1	102	9	57	12	0	375	3.07	.59	14								
Buffalo	81.3	102	31	57	20	0	504	.62	.24	1	Slapout	79.2	99	31	57	12	0	439	3.84	1.97	18								
Eva	76.7	100	25	52	12	0	364	2.97	.81	1																			
NORTH CENTRAL																													
Alva	80.4	103	31	59	12	0	478	1.49	.48	7	May Ranch	79.7	101	31	59	12	0	456	1.60	.91	18								
Blackwell	79.3	99	31	59	12	0	445	4.60	2.23	31	Medford	79.9	101	31	57	12	0	462	1.90	.90	16								
Breckinridge	79.7	100	31	60	21	0	457	1.83	1.04	1	Newkirk	78.3	99	31	59	12	0	412	4.48	1.91	7								
Cherokee	80.8	103	31	57	12	0	490	1.45	.78	1	Red Rock	79.4	101	31	60	12	0	446	1.80	.87	1								
Fairview	81.0	102	31	60	21	0	496	1.70	.60	17	Seiling	79.8	100	31	56	12	0	460	1.79	1.42	1								
Freedom	79.7	101	31	56	12	0	456	2.62	1.28	31	Woodward	79.1	98	31	57	12	0	436	2.91	.92	18								
Lahoma	79.6	101	31	59	12	0	453	.94	.52	25																			
NORTHEAST																													
Bixby	79.8	97	31	62	3	0	457	9.38	4.77	17	Pawnee	79.4	99	31	61	12	0	446	2.13	1.73	1								
Burbank	77.7	99	31	58	3	0	395	1.99	.83	31	Porter	79.7	97	31	62	3	0	455	8.35	4.43	1								
Copan	78.5	96	31	61	3	0	420	5.02	1.48	16	Pryor	79.1	96	31	61	13	0	436	7.60	1.90	17								
Foraker	77.6	96	31	60	12	0	390	5.24	1.43	17	Skiatook	78.9	95	31	63	12	0	431	6.35	2.40	1								
Inola	79.0	96	31	62	13	0	435	4.28	1.76	10	Talala	78.8	96	31	62	13	0	426	6.12	2.76	17								
Jay	77.4	93	27	60	3	0	383	4.45	1.62	16	Tulsa	80.1	98	31	63	3	0	467	4.58	2.36	1								
Miami	77.9	95	31	60	13	0	400	3.43	1.75	17	Vinita	78.2	95	31	58	13	0	410	3.90	2.40	16								
Nowata	77.9	96	31	59	13	0	399	6.96	3.50	10	Wynona	79.1	97	31	60	3	0	436	3.69	1.65	10								
WEST CENTRAL																													
Bessie	80.0	98	31	62	12	0	465	2.94	1.18	25	Erick	79.3	98	31	60	12	0	443	3.26	1.54	18								
Butler	79.8	98	31	59	12	0	459	2.82	1.58	25	Putnam	78.9	96	31	59	12	0	431	3.11	1.76	18								
Camargo	79.2	98	31	56	12	0	440	2.20	.95	18	Watonga	79.9	99	31	61	12	0	460	2.01	.80	17								
Cheyenne	78.8	97	31	62	12	0	428	1.66	.92	1	Weatherford	80.7	100	31	61	12	0	487	1.08	.53	18								
Elk City	79.4	98	27	63	12	0	447	2.20	1.43	18																			
CENTRAL																													
Acme	79.4	96	31	61	12	0	446	3.69	.89	2	Norman	80.0	97	31	63	12	0	464	2.70	1.77	1								
Bristow	78.5	98	31	61	21	0	419	2.03	1.05	1	Oilton	78.5	96	31	60	21	0	417	2.63	1.31	26								
Lake Carl Blac	78.6	100	31	59	21	0	423	1.19	.58	10	OKC East	80.2	98	31	62	21	0	470	2.86	.93	10								
Chandler	79.6	96	25	63	12	0	453	1.92	1.11	10	Okemah	79.5	98	31	63	4	0	451	1.82	1.17	10								
Chickasha	80.2	98	31	61	12	0	471	4.66	1.22	1	Perkins	80.1	98	31	63	12	0	469	2.47	1.51	10								
El Reno	78.2	97	31	59	12	0	410	3.48	1.86	1	Seminole	79.5	96	27	63	4	0	450	2.19	1.42	1								
Guthrie	80.1	98	31	61	12	0	469	3.35	1.40	1	Shawnee	80.5	98	30	64	21	0	481	2.52	1.36	1								
Kingfisher	80.7	99	31	61	12	0	486	3.10	1.85	17	Spencer	79.8	98	31	62	12	0	458	3.43	1.75	1								
Marena	78.9	97	31	61	12	0	430	3.27	1.35	10	Stillwater	79.8	98	25	61	12	0	458	2.20	1.08	26								
Minco	79.4	95	31	63	12	0	445	6.02	1.39	17	Washington	79.9	98	31	63	12	0	461	1.58	.95	1								
Marshall	80.1	100	31	59	12	0	468	2.03	.81	26	Yukon	79.5	97	31	62	12	0	449	2.58	1.43	1								
EAST CENTRAL																													
Cookson	78.2	97	31	56	3	0	408	3.08	.90	10	Sallisaw	79.7	98	31	59	3	0	455	3.00	1.35	18								
Eufaula	80.7	98	25	64	5	0	487	2.66	1.39	27	Stigler	79.6	98	31	61	3	0	452	1.93	.81	1								
Haskell	79.6	97	31	62	3	0	453	3.91	2.00	1	Stuart	79.9	97	29	62	4	0	461	2.42	.63	18								
Hectorville	79.7	98	31	63	3	0	455	2.37	1.83	1	Tahlequah	78.0	96	31	59	3	0	404	4.17	1.72	10								
Holdenville	80.1	98	31	64	21	0	467	1.29	1.14	1	Webbers Falls	79.9	99	31	60	3	****	****	2.90	.91	1								
McAlester	80.0	99	30	62	4	0	465	3.40	1.31	10	Westville	77.3	94	31	60	3	****	****	3.80	6.80	3.33	1							
Okmulgee	79.1	97	30	62	21	0	438	2.52	1.56	10																			
SOUTHWEST																													
Altus	81.1	100	25	66	20	0	500	5.73	1.59	2	Hollis	81.0	100	27	65	12	0	497	3.78	1.79	2								
Apache	78.8	95	31	62	10	0	429	4.50	2.08	16	Mangum	80.1	100	31	60	12	0	467	3.95	1.77	2								
Fort Cobb	79.4	95	25	62	21	0	448	2.71	1.20	10	Medicine Park	79.8	97	31	63	12	0	457	2.59	.72	2								
Grandfield	81.9	101	31	66	21	0	525	4.00	1.88	17	Tipton	81.7	100	31	66	20	0	518	3.93	1.57	2								
Hinton	79.4	96	31	62	12	0	446	5.11	2.57	18	Walters	80.6	98	31	65	12	0	483	5.25	1.35	10								
Hobart	80.7	100	27	63	12	0	487	3.19	.70	2																			
SOUTH CENTRAL																													
Ada	79.8	98	31	62	21	0	458	3.36	1.21	10	Lane	79.9	98	29	61	4	0	463	2.26	.93	1								
Ardmore	80.6	96	27	64	12	0	483	5.51	1.84	18	Madill	80.9	98	27	63	12	0	492	3.81	1.34	19								
Burneyville	80.2	98	31	62	12	0	470	3.84	1.27	16	Newport	80.3	97	31	63	12	0	474	4.71	1.33	2								
Byars	79.6	97	30	63	21	0	451	2.98	1.19	10	Pauls Valley	80.5	97	27	64	21	0	480	3.80	1.18	18								
Centrahoma	80.2	97	31	62	4	0	473	3.99	1.48	1	Ringling	81.0	98	27	65	12	0	496	4.96	1.53	2								
Durant	81.0	100	26	65	4	0	496	1.62	.66	2	Sulphur	79.5	96	26	62	4	0	450	4.92	1.47	7								
Fittstown	78.7	96	31	61	4	0	425	5.59	2.77	19	Tishomingo	80.0	98	31	63	12	0	464	3.28	1.78	1								
Ketchum Ranch	80.1	97	31	64	12	0	468	3.50	.83	10	Waurika	81.0	99	31	64	12	0	496	3.94	1.32	10								
SOUTHEAST																													
Antlers	79.6	97	31	60	4	0	452	2.80	1.48	19	Mt Herman	78.4	95	31	61	12	0	416	5.26	1.48	18								
Broken Bow	79.7	97	31	59	4	0	456	5.40	1.15	11	Talihina	79.4	100	31	59	4	****	****	1.85	.62	10								
Clayton	80.8	101	30	59	4	0	490	1.51	.71	10	Valliant	80.3	98	31	60	4	0	473	2.05	1.29	11								
Cloudy	79.2	96	31	59	4	0	441	3.66	1.38	18	Wilburton	80.2	99	31	62	4	0	473	2.74	.76	10								
Hugo	81.1	98	31	62	4	0	500	3.58	2.71	11	Wister	78.8	99	31	57	3	0	427	3.67	1.06	16								
Idabel	80.6	98	30	60	4	0	484	2.75	1.75	11																			

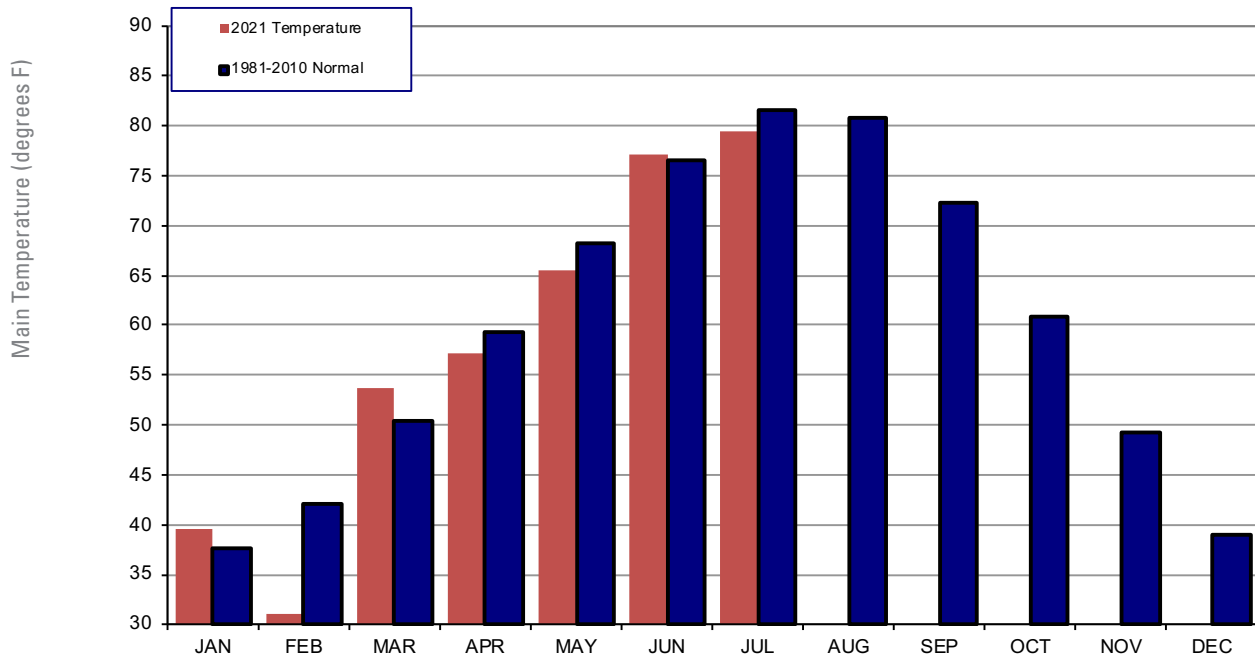
2021 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



July 2021 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Jul-20 (inches)
Panhandle	2.93	0.17	44th Wettest	8.81 (1950)	0.44 (1983)	3.93
North Central	2.24	-1.05	47th Driest	8.59 (1950)	0.12 (1983)	7.49
Northeast	5.22	1.43	22nd Wettest	9.52 (1959)	0.28 (1946)	5.54
West Central	2.36	-0.21	51st Wettest	7.63 (1950)	0.04 (1983)	3.53
Central	2.81	-0.57	62nd Wettest	9.61 (1950)	0.16 (1980)	5.75
East Central	3.11	-0.65	62nd Wettest	10.03 (1950)	0.36 (1993)	4.93
Southwest	4.07	1.59	13th Wettest	6.60 (1950)	0.03 (1980)	3.52
South Central	3.88	0.97	34th Wettest	8.46 (1950)	0.11 (1998)	3.46
Southeast	3.21	-0.50	58th Driest	12.47 (1950)	0.19 (1993)	3.67
Statewide	3.33	0.13	47th Wettest	9.07 (1950)	0.42 (1980)	4.76

2021 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



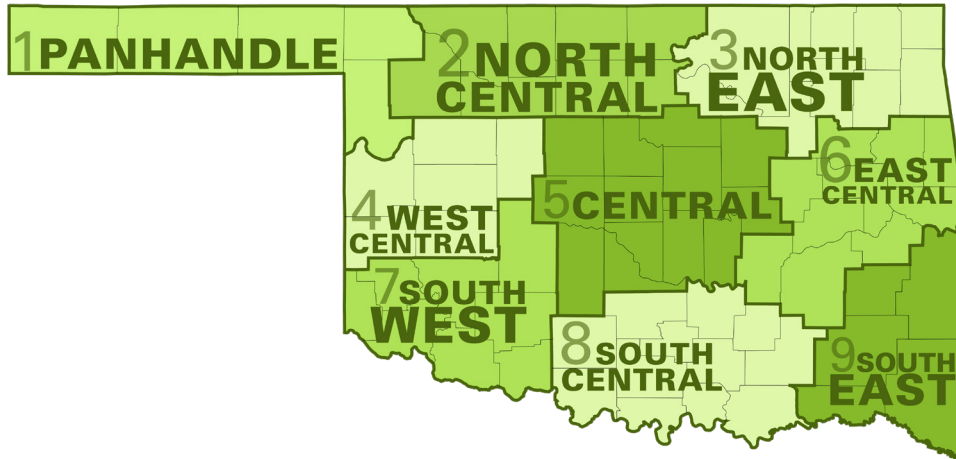
July 2021 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Jul-20 (F)
Panhandle	78.5	-1.3	43rd Coolest	86.0 (1934)	72.8 (1906)	80.8
North Central	79.8	-2.4	27th Coolest	89.6 (2011)	75.9 (1950)	82.1
Northeast	78.7	-2.5	17th Coolest	89.3 (1954)	75.4 (1950)	81.7
West Central	79.5	-2.8	23rd Coolest	89.6 (2011)	75.8 (1906)	83.5
Central	79.6	-2.8	18th Coolest	90.2 (2011)	76.7 (1950)	82.3
East Central	79.2	-2.4	19th Coolest	88.9 (2011)	76.2 (1906)	82.4
Southwest	80.4	-3.4	17th Coolest	91.7 (2011)	78.0 (1908)	84.6
South Central	80.2	-2.8	19th Coolest	90.5 (2011)	77.9 (1950)	83.5
Southeast	79.6	-1.5	39th Coolest	87.5 (2011)	76.0 (1905)	82.8
Statewide	79.5	-2.4	22nd Coolest	89.2 (2011)	76.3 (1906)	82.6

MESONET EXTREMES FOR JULY 2021

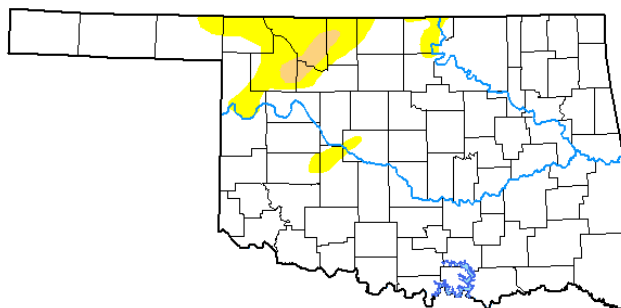
Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	102	28th	Hooker	52	12th	Eva	4.22	Hooker	1.97	18th	Slapout
North Central	103	31st	Cherokee	56	12th	Seiling	4.60	Blackwell	2.23	31st	Blackwell
Northeast	99	31st	Pawnee	58	13th	Vinita	9.38	Bixby	4.77	17th	Bixby
West Central	100	31st	Weatherford	56	12th	Camargo	3.26	Erick	1.76	18th	Putnam
Central	100	31st	Lake Carl Blackwell	59	12th	El Reno	6.02	Minco	1.86	1st	El Reno
East Central	99	31st	Webbers Falls	56	3rd	Cookson	6.80	Westville	3.33	1st	Westville
Southwest	101	31st	Grandfield	60	12th	Mangum	5.73	Altus	2.57	18th	Hinton
South Central	100	26th	Durant	61	4th	Lane	5.59	Fittstown	2.77	19th	Fittstown
Southeast	101	30th	Clayton	57	3rd	Wister	5.40	Broken Bow	2.71	11th	Hugo
Statewide	103	31st	Cherokee	52	12th	Eva	9.38	Bixby	4.77	17th	Bixby

Oklahoma Climate Divisions



U.S. Drought Monitor Oklahoma

July 27, 2021
(Released Thursday, Jul. 29, 2021)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	91.45	8.55	1.13	0.00	0.00	0.00
Last Week 07-20-2021	91.45	8.55	1.13	0.00	0.00	0.00
3 Months Ago 04-27-2021	43.60	56.40	20.02	6.30	0.08	0.00
Start of Calendar Year 12-29-2020	56.83	43.17	25.21	7.75	1.45	0.00
Start of Water Year 09-29-2020	66.79	33.21	17.71	11.97	1.55	0.00
One Year Ago 07-28-2020	39.83	60.17	25.96	10.26	2.79	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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U.S. Department of Agriculture



droughtmonitor.unl.edu

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 is the State Climate Office for Oklahoma

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