

Oklahoma Monthly Climate Summary

AUGUST 2021

A run of hot, dry weather finished off climatological summer in true Oklahoma fashion following a delightfully mild first two months of the season. There was very little in the way of severe weather during the month, just a smattering of hail and high wind reports scattered about the state. A hazard of another kind managed to flourish in the arid conditions, however, with drought once again gaining a toehold across parts of northwestern Oklahoma. The USDA indicated 43% of the state's topsoil was considered short to very short of moisture by the end of the month. Reports of withered crops and depleted ponds began to multiply in areas plagued by the extended dry weather. Some areas had gone nearly 2 months without a single day with at least a quarter-inch of rainfall.

According to preliminary data from the Oklahoma Mesonet, the statewide average precipitation total for the month

average surplus of only 0.42 inches across the state at 25.67 inches, the 42nd wettest January-August on record.

The statewide average temperature came in at 80.8 degrees, exactly normal for the month and ranked as the 62nd warmest August since records began in 1895. Some areas of the state were significantly warmer than others. The Panhandle was 1.2 degrees above normal for the month, the 41st warmest August on record for that area of the state, while south central Oklahoma enjoyed their 43rd coolest at 1.1 degrees below normal. The month's highest reading of 106 degrees occurred at Beaver and Hooker on the 24th and again at Alva on the 25th. Heat index values reached as high as 113 degrees at Okmulgee and Porter, and the Mesonet's 120 sites recorded values of at least 110 degrees 86 times throughout the month. The lowest actual air temperature reading was 52 degrees from Kenton on Aug. 5. The summer

August 2021 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	106°F	Several	24, 25
Low Temperature	52°F	Kenton	5
High Precipitation	7.63 in.	Hugo	--
Low Precipitation	0.24 in.	Freedom	--

finished at 2.44 inches, 0.79 inches below normal and ranked as the 51st driest August since records began in 1895. Deficits of 1-3 inches were common across the northern one-third of the state, while surplus amounts of 2-5 inches were found along Oklahoma's southern border. Most sites fell below normal by 1-2 inches, in general. The Mesonet site at Hugo led the state with 7.63 inches during August, a surplus of 5.2 inches. Freedom brought up the rear with 0.24 inches, 2.7 inches below normal. The climatological summer—June 1 through Aug. 31—was 0.09 inches below normal statewide with an average of 10.6 inches, the 44th wettest such period on record. Significant dryness was evident across northern Oklahoma during summer with deficits of 3-6 inches common from the western Panhandle through north central regions. The Mesonet site at Cloudy in far southeastern Oklahoma led the summer months with 21.8 inches of rain for a surplus of 10.5 inches. Buffalo's summer total of 3 inches was 6.1 inches below normal. The first 8 months of the year saw an

August 2021 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2021)
Month (Aug)	80.8°F	0°F	62nd Warmest
Season-to-Date (Jun-Aug)	79.4°F	-0.7°F	48th Coolest
Year-to-Date (Jan-Aug)	61.1°F	-1.6°F	34th Coolest

Precipitation

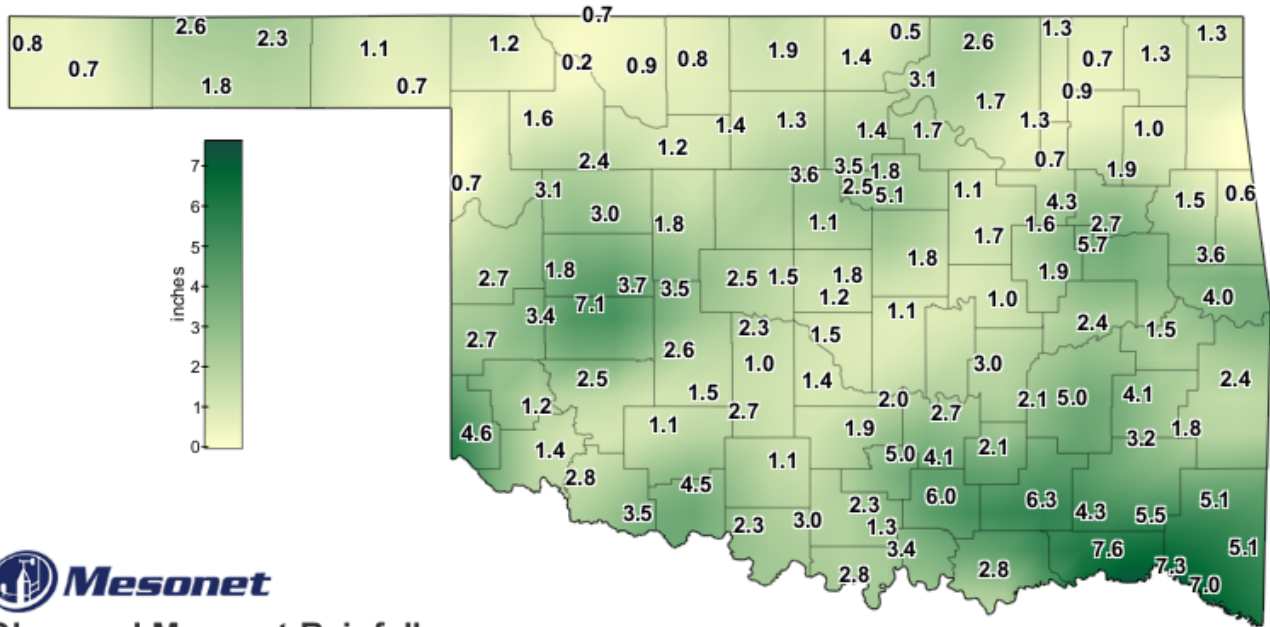
	Total	Depart.	Rank (1895-2021)
Month (Aug)	2.44 in.	-0.79 in.	51st Driest
Season-to-Date (Jun-Aug)	10.60 in.	-0.09 in.	44th Wettest
Year-to-Date (Jan-Aug)	25.67 in.	0.42 in.	42nd Wettest

Depart. = departure from 30-year normal

finished at 79.4 degrees, 0.7 degrees below normal and ranked as the 48th coolest June-August period on record. The highest temperature of the summer was 107 degrees, reported at both Eva and Goodwell on June 23, and the lowest was Boise City's 47 degrees back on June 2. The year remained solidly on the cool side at 61.1 degrees, 1.6 degrees below normal and the 34th coolest January-August on record.

Drought increased from just over 1% of the state at the end of July to nearly 5% to end August. The latest outlooks from the Climate Prediction Center show equal chances for above-, below-, and near-normal precipitation and temperature values across the entire state for September. Despite the lack of a clear signal, the threat of more hot, dry weather in early September brought concerns for more drought development. CPC's September Drought Outlook deems drought development "likely" through much of the Panhandle into southwest Oklahoma, and northwestern down through east central Oklahoma. A larger area of existing drought in the northwest is expected to persist through the month.

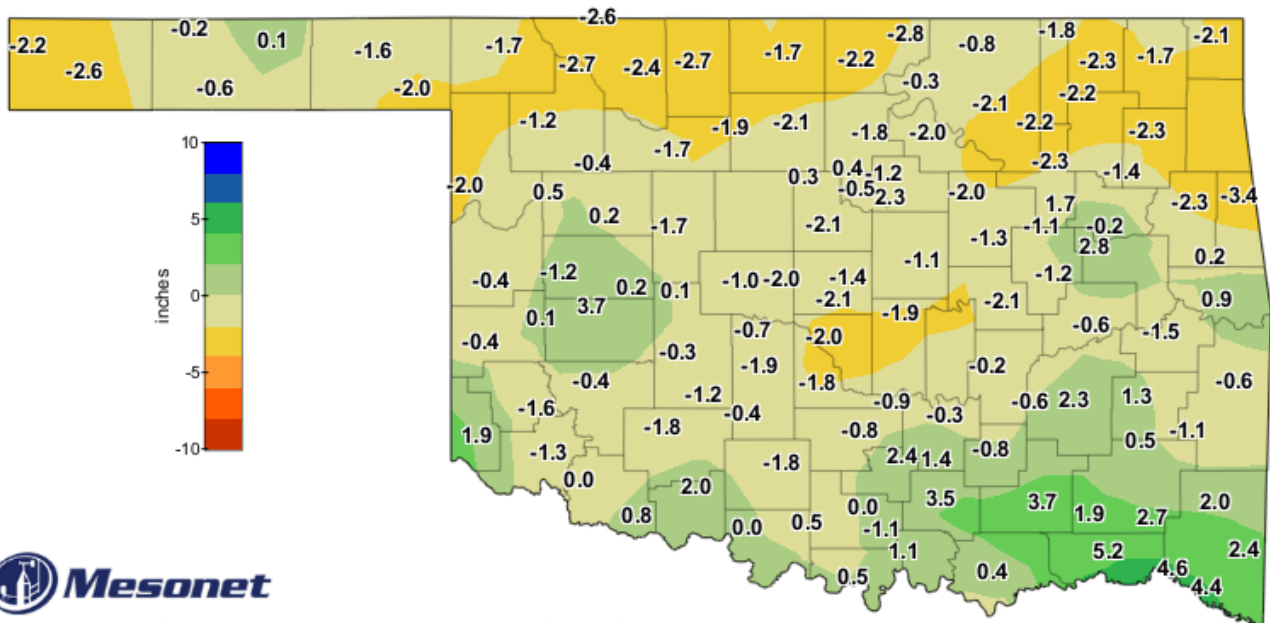
AUGUST 2021 OBSERVED PRECIPITATION



Observed Mesonet Rainfall
Calendar Month to Date

Aug 1, 2021 through Aug 31, 2021
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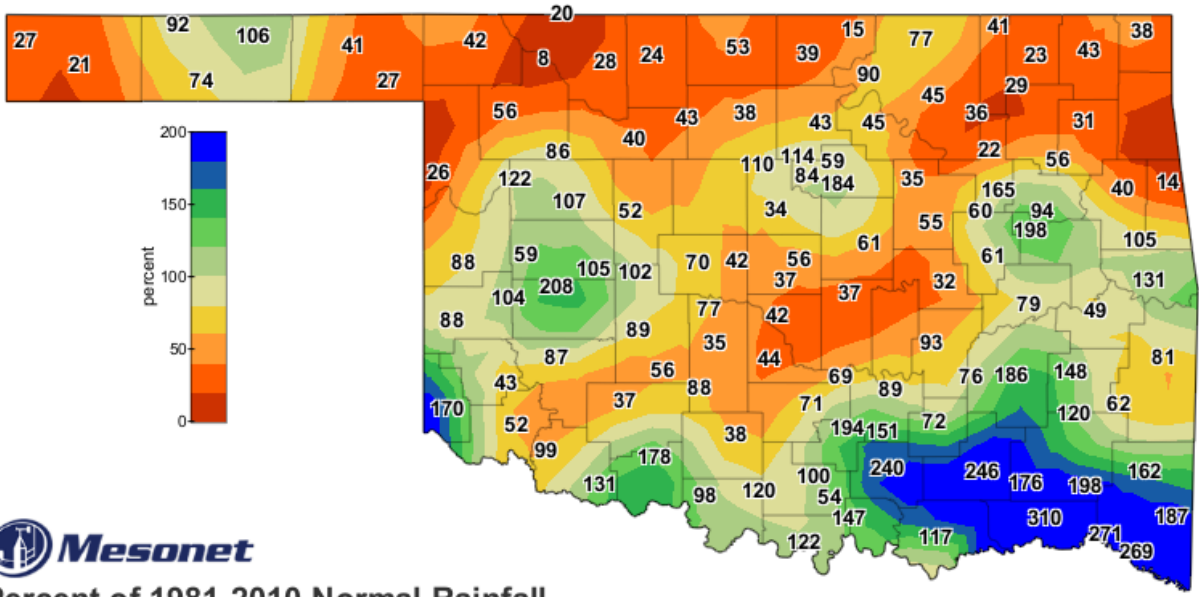
AUGUST 2021 DEPARTURE FROM NORMAL PRECIPITATION



Departure from 1981-2010 Normal Rainfall
Calendar Month to Date

Aug 1, 2021 through Aug 31, 2021
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AUGUST 2021 PERCENT OF NORMAL PRECIPITATION



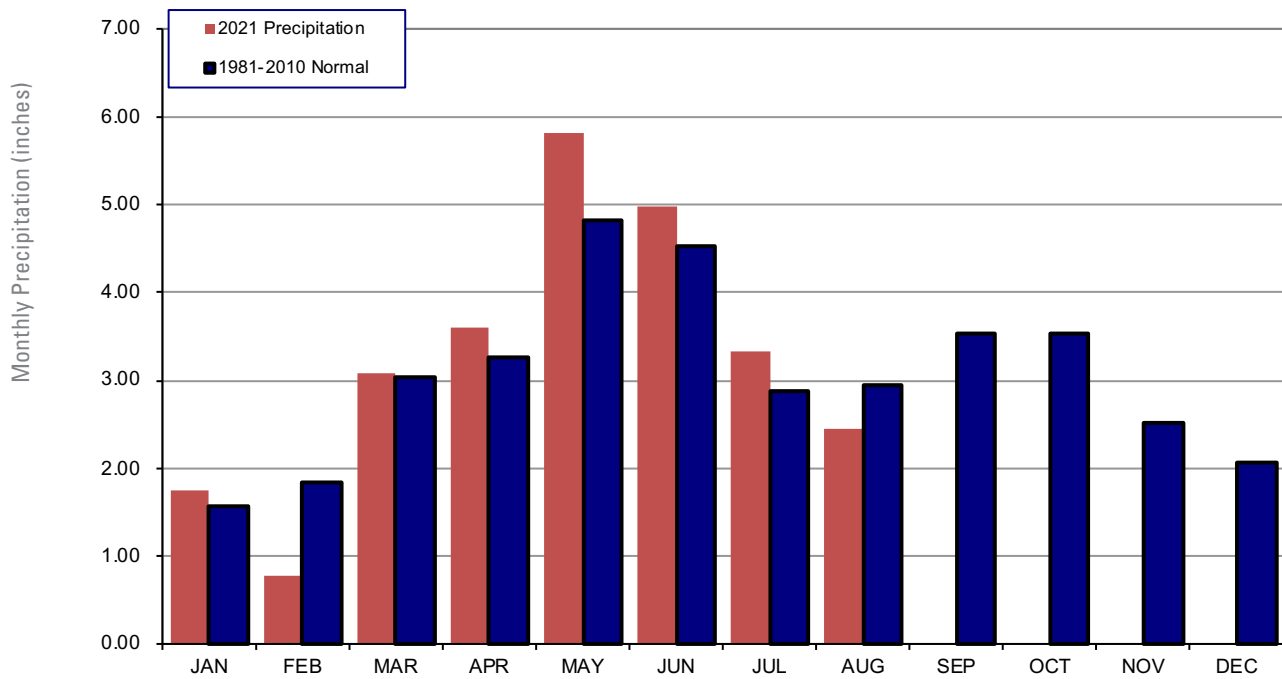
Percent of 1981-2010 Normal Rainfall
Calendar Month to Date

Aug 1, 2021 through Aug 31, 2021
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MESONET MONTHLY SUMMARY FOR AUGUST 2021

NAME	MEAN TEMP	HIGH TEMP	LOW TEMP	DAY	HDD	CDD	TOT PPT	HIGH 24-HR	DAY	NAME	MEAN TEMP	HIGH TEMP	LOW TEMP	DAY	HDD	CDD	TOT PPT	HIGH 24-HR	DAY		
PANHANDLE																					
Arnett	79.6	102	24	55	3	0	452	.70	.20	13	Goodwell	79.0	105	24	56	17	0	435	1.75	.78	7
Beaver	81.0	106	24	57	2	0	495	1.09	.33	13	Hooker	79.2	106	24	56	17	0	441	2.27	1.48	7
Boise City	76.4	102	9	55	5	1	353	.68	.38	15	Kenton	77.1	102	9	52	5	0	376	.82	.51	27
Buffalo	82.6	105	24	58	3	0	547	1.19	.56	1	Slapout	80.0	105	24	59	3	0	464	.73	.34	29
Eva	77.2	104	24	55	5	0	378	2.56	1.99	1											
NORTH CENTRAL																					
Alva	82.5	106	25	57	3	0	541	.91	.56	7	May Ranch	82.0	105	25	57	3	0	528	.65	.47	29
Blackwell	80.6	99	25	61	3	0	482	1.35	.54	16	Medford	81.8	102	25	59	3	0	519	1.86	.88	1
Breckinridge	81.5	101	25	59	4	0	510	1.29	.92	1	Newkirk	80.6	99	25	60	2	0	484	.48	.29	21
Cherokee	83.2	105	25	58	2	0	564	.83	.29	1	Red Rock	81.1	100	25	59	4	0	500	1.35	.51	1
Fairview	82.1	102	25	57	3	0	530	1.15	.77	8	Seiling	80.8	99	12	55	3	0	491	2.41	1.19	17
Freedom	81.7	105	25	58	2	0	519	.24	.07	1	Woodward	80.8	102	25	57	3	0	490	1.56	.53	7
Lahoma	81.1	101	25	59	3	0	501	1.43	.49	1											
NORTHEAST																					
Bixby	81.2	98	12	60	4	0	503	4.26	3.82	13	Pawnee	81.4	99	25	61	4	0	508	1.66	.47	1
Burbank	79.9	99	12	58	4	0	462	3.12	1.40	16	Porter	81.2	98	12	62	4	0	502	2.70	2.09	21
Copan	80.7	99	25	61	3	0	487	1.25	.66	13	Pryor	80.5	97	12	62	4	0	482	1.00	.49	13
Foraker	79.2	96	25	59	4	0	441	2.60	1.03	21	Skiatook	81.1	97	25	64	4	0	498	1.26	1.00	13
Inola	80.7	97	12	62	4	0	485	1.86	.90	13	Talala	80.7	98	23	60	4	0	486	.87	.51	13
Jay	80.0	98	26	61	4	0	465	*****	*****	***	Tulsa	83.0	99	25	63	4	0	558	.66	.24	21
Miami	79.8	96	25	59	4	0	459	1.27	.42	19	Vinita	79.3	96	25	61	4	0	444	1.30	.71	17
Nowata	80.0	98	25	56	4	0	466	.68	.30	13	Wynona	81.0	98	25	60	4	0	495	1.73	1.02	21
WEST CENTRAL																					
Bessie	80.5	98	9	60	3	0	480	7.08	2.66	13	Erick	80.4	101	9	57	3	0	477	2.66	1.31	1
Butler	80.5	100	25	57	3	0	482	1.76	.92	1	Putnam	79.7	97	12	58	3	0	456	2.96	1.42	21
Camargo	79.5	99	12	53	3	0	451	3.05	1.33	21	Watonga	81.3	99	9	60	2	0	505	1.81	1.04	21
Cheyenne	79.8	99	24	61	3	0	460	2.67	1.04	13	Weatherford	81.0	100	9	60	3	0	495	3.69	1.09	21
Elk City	80.3	98	9	62	3	0	473	3.35	1.55	1											
CENTRAL																					
Acme	80.6	96	25	58	3	0	485	2.68	1.35	19	Norman	81.5	98	25	63	3	0	512	1.46	.43	17
Bristow	79.9	97	25	56	4	0	461	1.65	1.03	21	Oilton	80.3	98	25	57	4	0	473	1.08	.66	8
Lake Carl Blac	80.4	97	12	57	4	0	478	3.53	2.59	21	OKC East	81.7	99	25	61	4	0	518	1.20	.42	8
Chandler	80.6	97	25	61	4	0	484	1.81	.83	21	Okemah	81.6	99	25	61	4	0	516	.99	.49	8
Chickasha	81.4	99	25	59	3	0	508	1.03	.44	13	Perkins	81.0	98	25	60	4	****	****	5.10	2.18	13
El Reno	79.5	97	25	57	4	0	451	2.45	1.17	1	Seminole	80.7	96	25	62	4	0	486	1.77	1.29	19
Guthrie	82.0	100	25	62	4	0	526	1.09	.61	8	Shawnee	81.9	100	25	61	4	0	525	1.11	.58	8
Kingfisher	81.7	102	25	60	3	****	****	1.88	1.01	1	Spencer	81.4	99	25	61	3	0	508	1.75	.96	1
Marena	80.1	96	25	61	4	0	467	2.49	1.15	21	Stillwater	81.4	99	25	60	4	0	508	1.75	.68	21
Mingo	79.9	95	25	63	3	0	463	2.33	.72	17	Washington	81.1	99	25	62	3	0	500	1.43	.47	5
Marshall	81.4	99	25	61	3	0	508	3.59	1.59	1	Yukon	80.7	98	31	61	3	0	486	1.47	.60	13
EAST CENTRAL																					
Cookson	80.6	99	12	62	4	0	482	3.62	1.67	17	Sallisaw	81.5	98	12	65	6	0	513	3.95	1.15	13
Eufaula	82.2	99	12	64	4	0	534	2.35	1.15	21	Stigler	81.9	101	25	64	4	0	523	1.49	.56	5
Haskell	80.9	98	12	63	4	0	492	5.70	3.37	21	Stuart	80.9	97	25	65	3	0	494	2.06	1.52	5
Hectorville	82.0	98	20	62	4	0	526	1.64	1.40	21	Tahlequah	80.4	98	12	62	6	0	477	1.51	.58	13
Holdenville	80.9	97	26	64	4	0	492	2.96	1.58	5	Webbers Falls	82.1	101	12	65	6	0	531	3.74	1.85	13
McAlester	80.9	97	13	65	4	0	492	4.96	2.55	5	Westville	79.9	97	12	63	4	0	460	.56	.42	17
Okmulgee	81.0	98	25	60	4	0	497	1.88	.73	21											
SOUTHWEST																					
Altus	82.1	100	9	60	3	0	531	1.44	1.17	19	Hollis	81.8	104	9	59	3	0	522	4.60	2.43	13
Apache	79.5	95	9	60	3	0	449	1.47	.72	13	Mangum	80.9	101	9	56	4	0	493	1.24	.65	1
Fort Cobb	79.9	97	9	59	3	0	462	2.62	1.62	13	Medicine Park	81.7	98	9	65	3	0	516	1.06	.32	18
Grandfield	83.1	102	13	61	3	0	561	3.47	2.13	19	Tipton	82.6	101	9	60	3	0	545	2.81	1.37	19
Hinton	79.4	96	31	60	3	0	447	3.46	1.10	8	Walters	81.2	99	9	64	3	0	503	4.51	2.69	13
Hobart	82.0	102	9	58	3	0	527	2.45	1.83	16											
SOUTH CENTRAL																					
Ada	80.9	97	31	62	4	0	494	2.70	1.45	5	Lane	81.0	98	12	67	3	0	497	6.30	2.96	15
Ardmore	81.6	97	31	65	3	0	514	1.25	.45	17	Madiill	81.8	97	12	64	3	0	522	3.42	1.75	17
Burneyville	81.6	99	12	61	3	0	514	2.76	1.66	14	Newport	81.5	98	12	65	3	0	511	2.32	1.39	17
Byars	81.1	97	25	63	3	0	500	2.00	1.75	5	Pauls Valley	81.4	97	12	64	3	0	508	1.86	1.05	17
Centrahoma	81.1	97	12	64	3	0	499	2.11	.63	5	Ringling	81.9	98	31	65	3	0	524	2.98	1.08	5
Durant	82.3	100	12	67	6	0	537	2.81	.87	19	Sulphur	80.8	95	31	63	3	0	490	5.02	2.47	17
Fittstown	79.7	95	12	64	3	0	456	4.14	1.83	19	Tishomingo	81.2	98	12	65	6	0	503	6.00	4.02	19
Ketchum Ranch	82.0	100	31	64	3	0	528	1.09	.36	13	Waurika	82.2	100	31	63	3	0	532	2.34	1.67	1
SOUTHEAST																					
Antlers	80.7	99	13	65	6	0	486	4.33	1.69	19	Mt Herman	80.0	94	25	67	5	0	467	5.11	2.01	17
Broken Bow	80.9	97	13	66	5	0	494	5.05	1.92	19	Talihina	82.2	100	12	64	4	0	532	1.80	.69	19
Clayton	81.9	101	12	65	3	0	524	3.17	.97	13	Valliant	81.3	99	12	66	2	0	504	7.33	4.12	19
Cloudy	80.3	98	12	65	6	0	474	5.50	4.02	19	Wilburton	*****	***	***	***	***	*****	*****	4.05	3.21	5
Hugo	81.6	97	12	68	6	0	514	7.63	3.48	19	Wister	81.0	100	25	65	4	0	497	2.36	.89	5
Idabel	81.5	97	13	66	3	0	510	6.98	2.80	19											

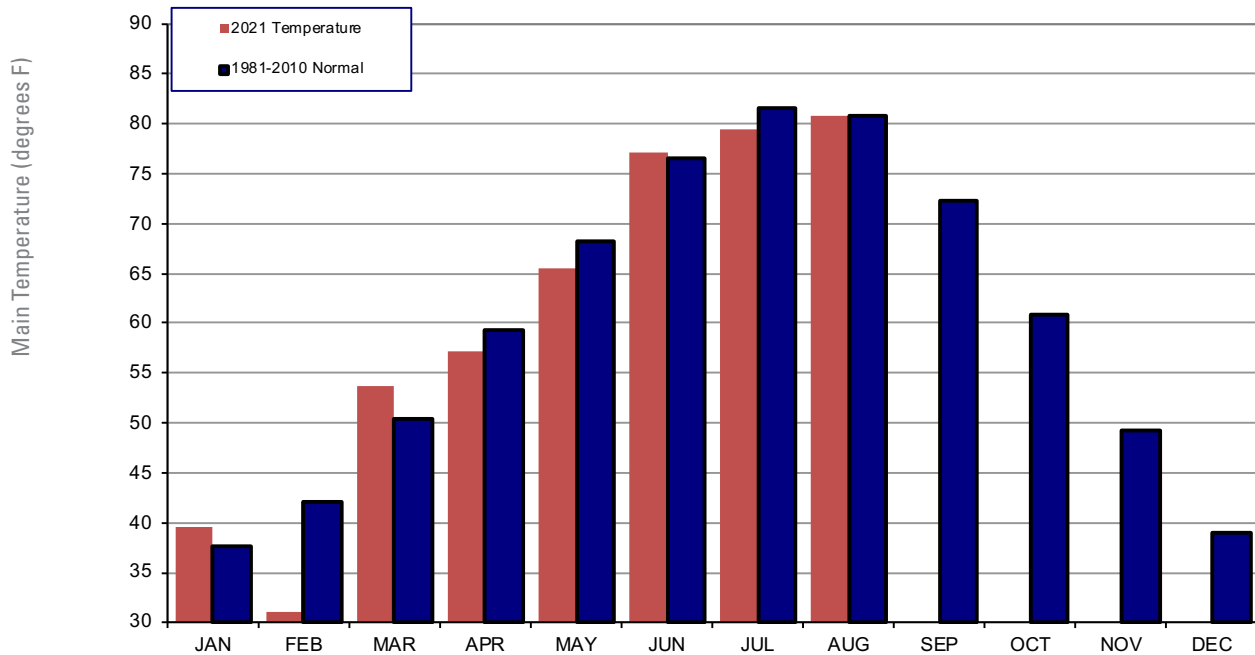
2021 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



August 2021 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Aug-20 (inches)
Panhandle	1.31	-1.58	21st Driest	5.81 (1917)	0.54 (1936)	2.04
North Central	1.19	-2.25	16th Driest	8.10 (1974)	0.14 (2000)	1.86
Northeast	1.75	-1.90	23rd Driest	8.86 (2019)	0.03 (2000)	2.44
West Central	3.23	0.05	42nd Wettest	6.93 (2017)	0.02 (2000)	1.63
Central	1.99	-1.36	40th Driest	8.18 (1906)	0.02 (2000)	2.21
East Central	2.80	-0.65	58th Driest	10.88 (1915)	0.02 (2000)	4.17
Southwest	2.65	-0.23	50th Wettest	7.38 (1996)	0.00 (2000)	1.62
South Central	3.07	0.23	39th Wettest	8.72 (1906)	0.01 (2000)	3.05
Southeast	4.85	1.55	27th Wettest	9.68 (1915)	0.25 (1936)	6.78
Statewide	2.44	-0.79	51st Driest	6.47 (1915)	0.12 (2000)	2.79

2021 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



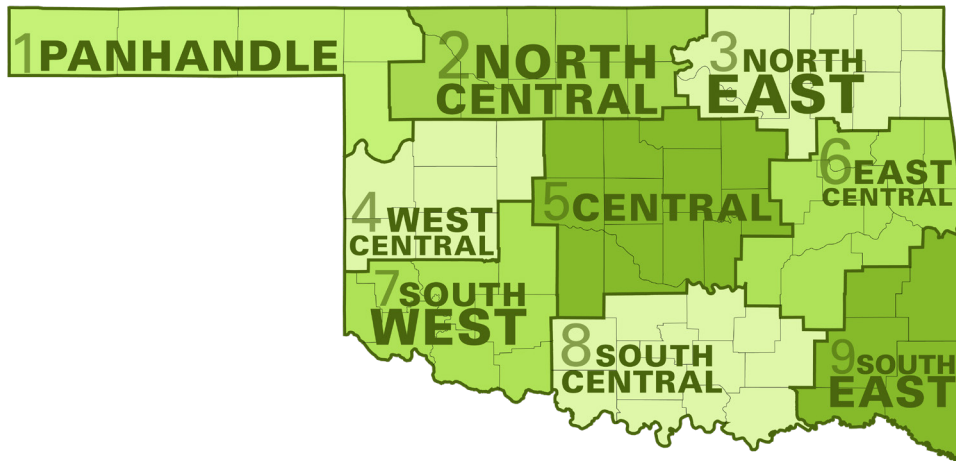
August 2021 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Aug-20 (F)
Panhandle	79.1	1.2	41st Warmest	83.7 (1937)	71.4 (1915)	78.1
North Central	81.5	0.9	48th Warmest	88.2 (1936)	72.9 (1915)	78.3
Northeast	80.6	0.5	59th Warmest	88.8 (1936)	72.7 (1915)	77.7
West Central	80.3	-0.6	57th Coolest	87.9 (2011)	73.6 (1915)	80.4
Central	80.7	-0.7	54th Coolest	88.7 (1936)	74.1 (1915)	79.6
East Central	81.2	0.4	59th Warmest	88.6 (1936)	73.5 (1915)	78.6
Southwest	81.3	-1.4	48th Coolest	91.4 (2011)	76.1 (1915)	82.4
South Central	81.4	-1.1	43rd Coolest	90.8 (2011)	76.1 (1992)	81.4
Southeast	81.1	0.5	51st Warmest	87.5 (2011)	74.2 (1915)	79.2
Statewide	80.8	0.0	62nd Warmest	87.7 (2011)	73.9 (1915)	79.5

MESONET EXTREMES FOR AUGUST 2021

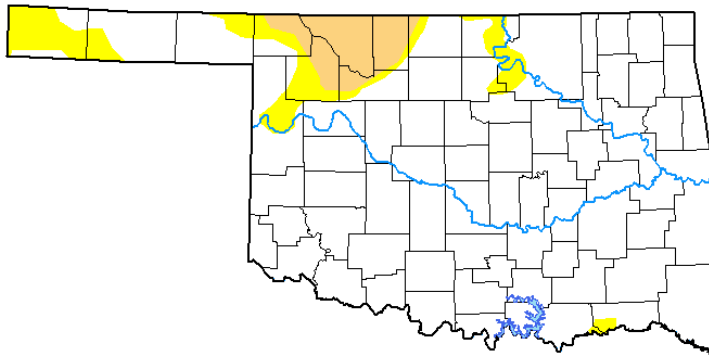
Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	109	28th	Slapout	54	11th	Eva	3.08	Buffalo	1.86	29th	Eva
North Central	109	28th	Seiling	56	1st	Seiling	3.30	May Ranch	2.30	10th	May Ranch
Northeast	101	28th	Pawnee	54	4th	Nowata	5.42	Tulsa	2.59	13th	Tulsa
West Central	110	28th	Camargo	56	1st	Camargo	2.20	Erick	1.29	5th	Watonga
Central	106	28th	Chickasha	54	19th	Bristow	6.34	Yukon	5.29	31st	Yukon
East Central	102	28th	Holdenville	53	19th	Cookson	10.81	Webbers Falls	4.28	7th	Webbers Falls
Southwest	110	28th	Hollis	56	19th	Mangum	2.79	Grandfield	2.07	30th	Grandfield
South Central	107	28th	Waurika	57	19th	Ada	5.62	Centrahoma	2.67	5th	Centrahoma
Southeast	99	28th	Wilburton	55	4th	Wister	11.13	Broken Bow	5.24	26th	Broken Bow
Statewide	110	28th	Hollis	53	19th	Cookson	11.13	Broken Bow	5.29	31st	Yukon

Oklahoma Climate Divisions









U.S. Drought Monitor
Oklahoma

August 24, 2021
(Released Thursday, Aug. 26, 2021)
Valid 8 a.m. EDT



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>

Author:

Curtis Riganti
National Drought Mitigation Center



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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