

Oklahoma Monthly Climate Summary

AUGUST 2019

Drought had gained a toehold across western and central Oklahoma during a hot, dry first half of August; further spread and intensification seemed inevitable. All the while eastern Oklahoma was being inundated by heavy rains and flooding. Then the rains spread west, bringing a hefty dose of severe weather and drought relief with them. Mother Nature put an exclamation point on the tumultuous weather on August 26. A stifling day with temperatures in the 100s saw the heat index soar as high as 118 degrees before severe storms – including an EF-1 tornado – blasted the state later that evening. Nearly 100,000 residents were left without power as straight-line winds of up to 90 mph struck central and northeastern Oklahoma. The tornado traveled from Logan County to just north-northwest of Edmond, damaging trees and a few structures along its path. Another weak tornado dropped in Beaver County on the 23rd, again damaging trees and a few structures. The two confirmed twisters brought

that failed to receive at least an inch of rain for the month. The climatological summer (June-August) ended as the 30th wettest on record at 12.14 inches, 1.79 inches above normal. The northeast also experienced its wettest January-August on record at 47.46 inches, 18.57 inches above normal. The statewide average was 33.87 inches, 9.01 inches above normal to rank as the fifth wettest January-August on record.

The statewide average temperature was 81.8 degrees, a degree above normal to rank as the 46th warmest August on record. Drought-stricken western Oklahoma was 3-4 degrees above normal, while the rainy northeast was 2-4 degrees below normal. Several Mesonet sites reached 108 degrees for the highest temperature of the month. Kenton recorded the lowest reading of 55 degrees on three separate days. The actual air temperature failed to adequately describe the oppressive nature of August’s heat, however. Combined

August 2019 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	108°F	Several	Several
Low Temperature	55°F	Several	Several
High Precipitation	13.64 in.	Oilton	--
Low Precipitation	0.81 in.	Valliant	--

Oklahoma’s 2019 total to at least 138, the second highest count since accurate records began in 1950. The highest total of 145 tornadoes occurred in 1999.

The statewide average rainfall total was 5.44 inches according to preliminary data from the Oklahoma Mesonet, 2.49 inches above normal and ranked as the eighth wettest August since records began in 1895. Nearly the entire state had a surplus of moisture, save for southwestern and west central Oklahoma where deficits of up to 2 inches occurred. Surpluses ran from 2-4 inches across northwestern Oklahoma to more than 10 inches across the northeastern quarter of the state. Northeastern Oklahoma experienced its wettest August on record with an average of 8.78 inches, 5.54 inches above normal. Twelve of the Mesonet’s 120 sites recorded at least 10 inches of rain, and another 51 had 5 inches or more. The Mesonet site at Oilton led the state with 13.64 inches. Valliant brought up the rear with 0.81 inches, the only site

August 2019 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2019)
Month (Aug)	81.8°F	1.0°F	46th Warmest
Season-to-Date (Jun-Aug)	79.3°F	-0.3°F	46th Coolest
Year-to-Date (Jan-Aug)	61.6°F	-0.7°F	48th Coolest

Precipitation

	Total	Depart.	Rank (1895-2019)
Month (Aug)	5.44 in.	2.49 in.	8th Wettest
Season-to-Date (Jun-Aug)	12.14 in.	1.79 in.	30th Wettest
Year-to-Date (Jan-Aug)	33.87 in.	9.01 in.	5th Wettest

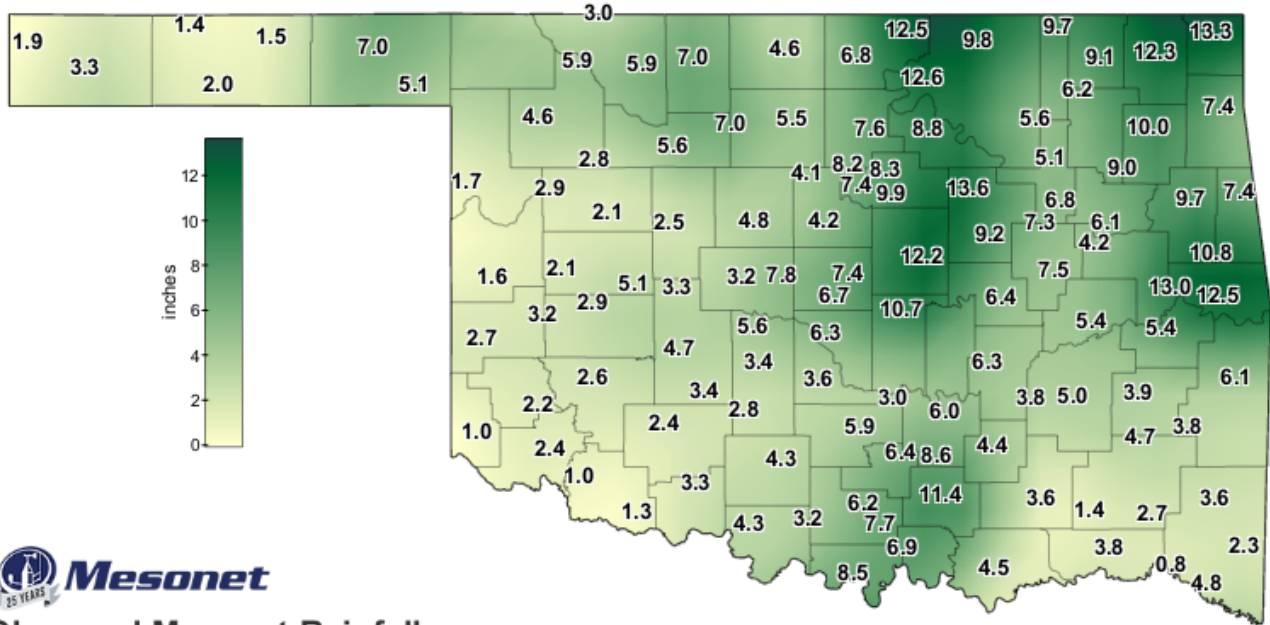
Depart. = departure from 30-year normal

with an abundance of humidity, the heat index soared. The Mesonet’s 120 sites reached a heat index of at least 115 degrees 45 times during August, and at least 110 degrees 566 times. At least one site reached a heat index of 105 degrees on 23 separate days. The summer was a bit mild at 0.3 degrees below normal. The first eight months were on the cool side – about 0.7 degrees below normal, the 48th

coolest January-August on record.

Oklahoma's drought coverage grew from 6 percent at the end of July to nearly 24 percent by August 20, according to the U.S. Drought Monitor. While the total coverage decreased to about 18 percent by month's end, the drought's intensity increased in the parched southwestern corner of the state. The Climate Prediction Center's (CPC) September outlooks called for increased odds of above normal precipitation across the northwestern half of the state, but equal chances for above-, below-, or near-normal rainfall in the remainder of Oklahoma. Equal odds were also indicated across the entire state for temperature. CPC's September drought outlook shows drought persisting in south central Oklahoma, but some improvement is expected farther to the west. No additional development is expected.

AUGUST 2019 OBSERVED PRECIPITATION

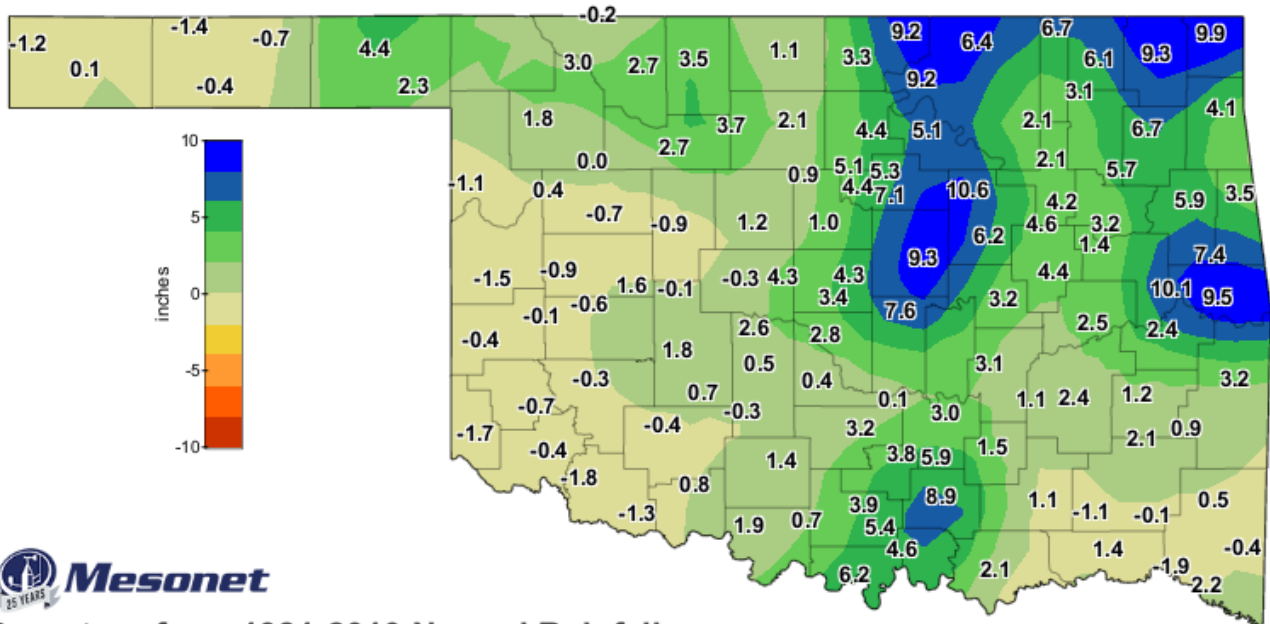


Observed Mesonet Rainfall
Calendar Month to Date

Aug 1, 2019 through Aug 31, 2019

Created 12:00:58 PM September 1, 2019 UTC. Copyright 2019

AUGUST 2019 DEPARTURE FROM NORMAL PRECIPITATION

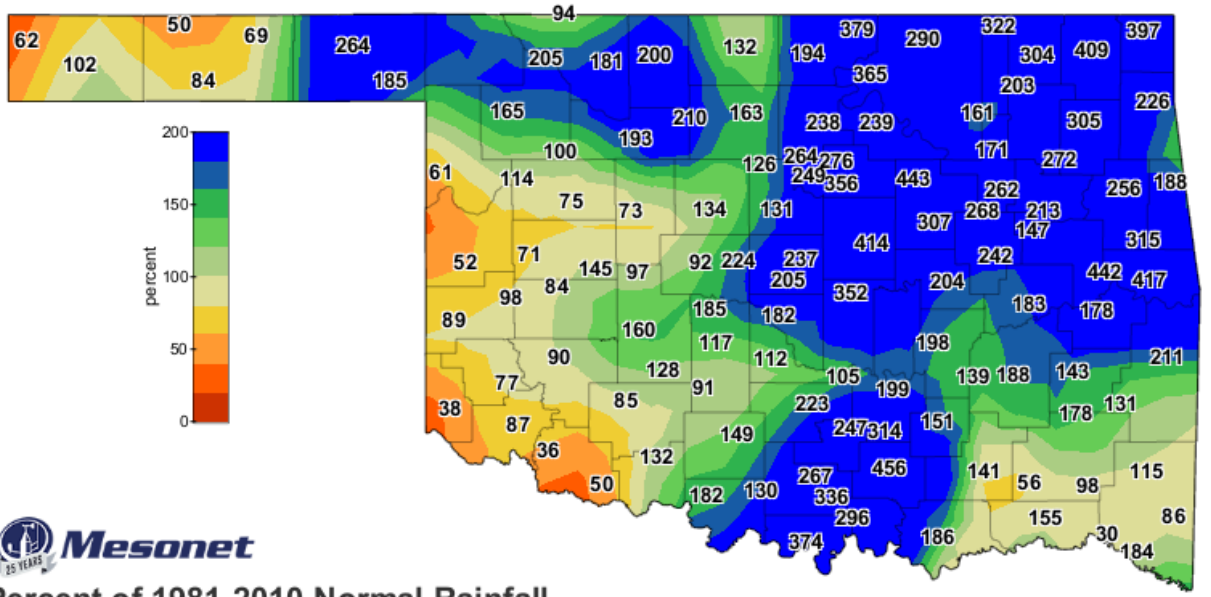


Departure from 1981-2010 Normal Rainfall
Calendar Month to Date

Aug 1, 2019 through Aug 31, 2019

Created 12:00:55 PM September 1, 2019 UTC. Copyright 2019

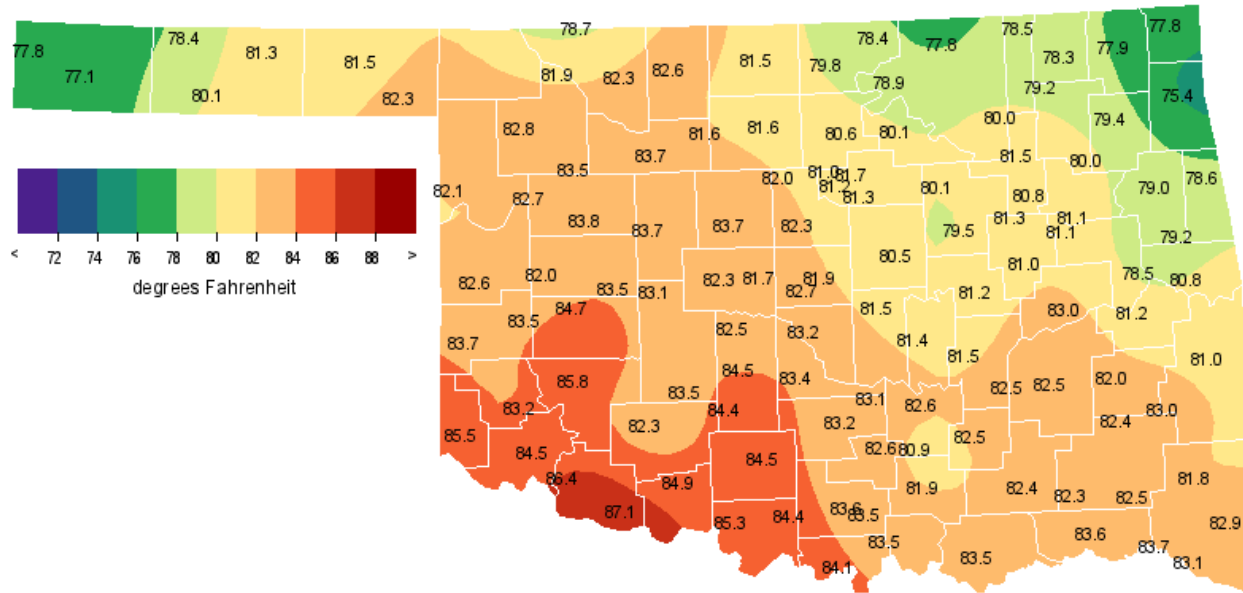
AUGUST 2019 PERCENT OF NORMAL PRECIPITATION



Percent of 1981-2010 Normal Rainfall
Calendar Month to Date

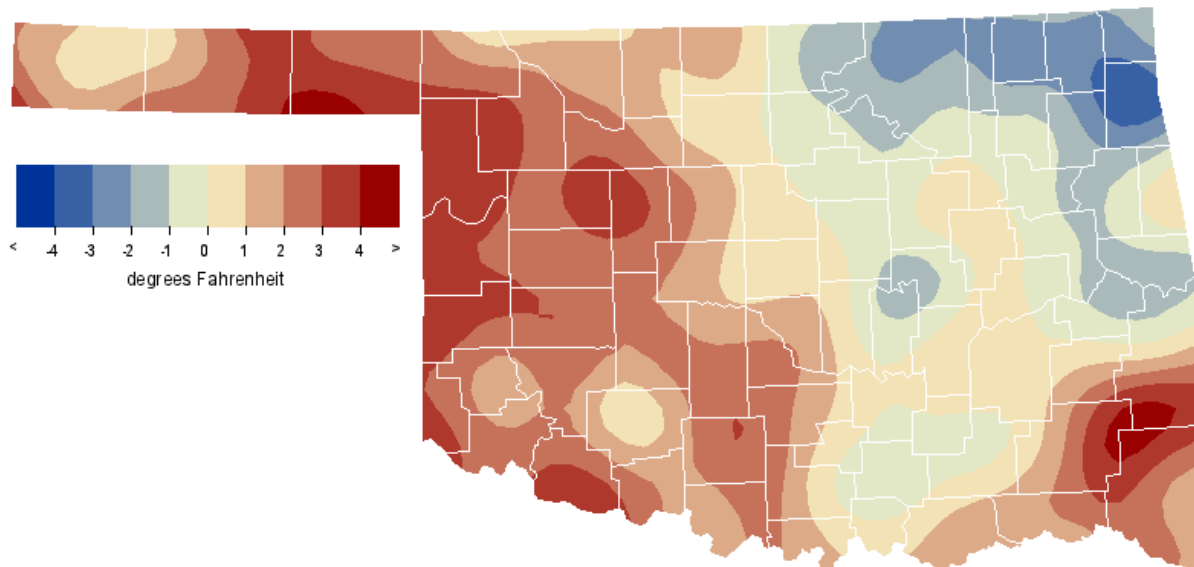
Aug 1, 2019 through Aug 31, 2019
Created 12:00:57 PM September 1, 2019 UTC. Copyright 2019

AUGUST 2019 AVERAGE TEMPERATURE



Aug 2019
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AUGUST 2019 DEPARTURE FROM NORMAL TEMPERATURE

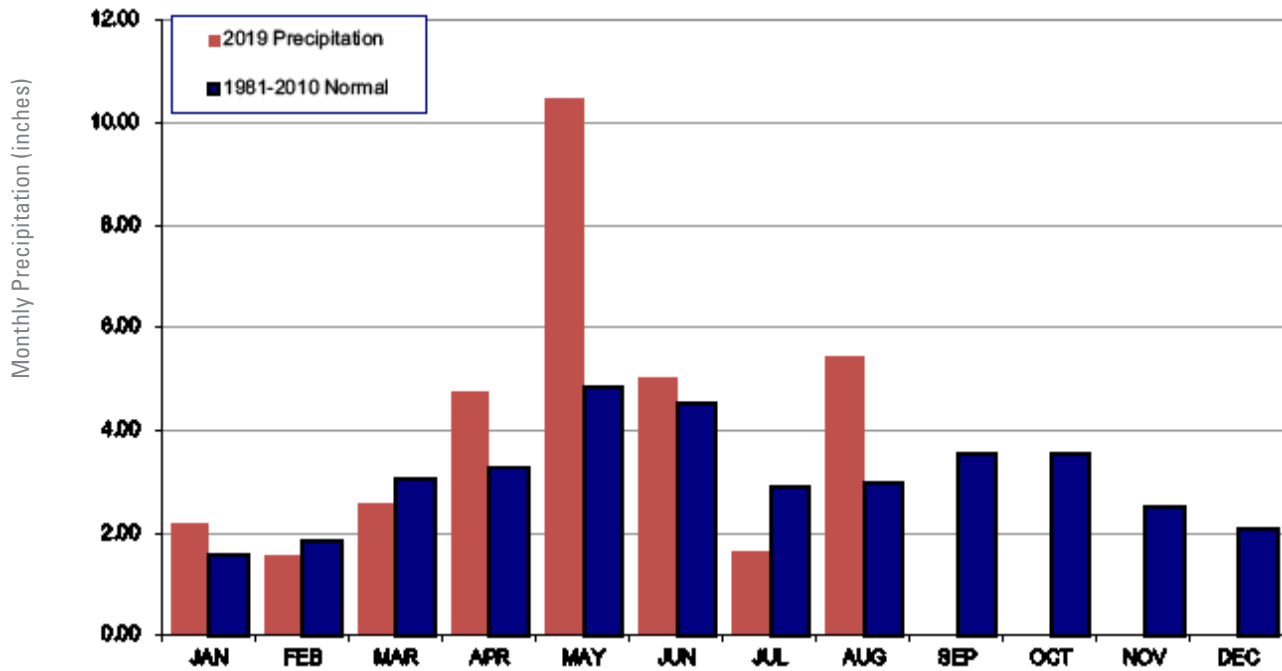


Aug 2019
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MESONET MONTHLY SUMMARY FOR AUGUST 2019

PANHANDLE										NORTH CENTRAL										NORTHEAST										WEST CENTRAL										CENTRAL										EAST CENTRAL										SOUTHWEST										SOUTH CENTRAL										SOUTHEAST																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Arnett	82.1	104	7	62	14	0	529	1.66	.58	12	Goodwell	80.0	106	19	60	13	0	465	1.98	.96	21	Bixby	80.8	100	20	62	28	0	490	6.78	2.46	23	Erick	83.8	107	12	64	14	0	581	2.69	.77	24	Acme	82.9	102	22	65	4	0	555	2.38	1.00	3	Norman	83.2	104	12	66	28	0	566	6.29	2.04	23	Blackwell	79.8	101	12	60	28	0	460	6.78	1.75	3	Porter	81.1	101	20	62	31	0	500	6.08	4.17	23	Bristow	79.5	96	21	60	28	0	449	9.17	3.42	23	Putnam	83.8	106	12	62	28	0	584	2.08	.93	30	Blackwell	79.8	101	12	60	28	0	460	6.78	1.75	3	Pryor	79.4	96	12	62	28	0	445	10.00	1.99	26	Breckinridge	81.7	104	7	61	28	0	518	5.48	1.34	30	Skiatook	80.0	98	20	62	31	0	464	5.71	1.04	26	Cherokee	82.6	106	7	60	28	0	545	6.97	2.25	9	Talala	79.2	98	20	62	31	0	440	6.18	1.49	30	Cherokee	82.6	106	7	60	28	0	545	6.97	2.25	9	Tulsa	81.5	99	20	62	31	0	512	5.08	1.12	9	Fairview	83.7	107	7	62	28	0	581	5.55	2.31	25	Vinita	77.8	95	12	61	31	0	398	12.32	3.05	8	Freedom	81.9	107	7	60	28	0	525	5.91	1.95	16	Wynona	*****	***	***	***	***	***	***	*****	*****	***	Lahoma	81.7	106	7	61	28	0	517	6.97	1.78	9	Camargo	82.7	105	12	63	28	0	483	7.56	2.28	3	Nowata	78.3	96	12	61	31	0	413	9.11	3.63	8	Watonga	83.7	106	12	62	28	0	581	2.54	.92	30	Bessie	84.6	106	11	65	28	0	608	2.85	1.27	27	Weatherford	83.6	103	12	65	28	0	577	5.10	1.62	27	Butler	84.8	106	11	65	14	****	*****	2.11	.82	27	Chickasha	84.5	105	12	65	31	0	605	3.42	1.49	30	Elk City	83.5	106	11	65	31	0	573	3.15	1.30	30	El Reno	82.3	104	12	63	28	0	538	3.19	1.08	25	Chandler	80.5	97	7	63	28	0	480	12.22	4.08	3	Kingfisher	83.7	106	7	64	28	0	579	4.82	1.77	9	Minco	82.5	103	12	65	25	0	543	5.59	.98	25	Marena	81.2	102	7	62	28	0	503	7.38	2.35	30	Marshall	81.9	103	7	61	28	0	525	4.12	.97	9	Marathon	82.2	103	7	64	28	0	535	4.23	1.41	26	Stigler	81.2	101	12	64	31	0	503	5.39	1.96	23	McAlester	82.5	101	20	65	31	0	542	5.03	2.16	23	Stuart	82.5	101	20	65	31	0	543	3.75	1.31	30	Okmulgee	81.0	101	19	62	31	0	496	7.47	5.10	23	Stuart	82.5	101	20	65	31	0	543	3.75	1.31	30	Cookson	79.2	97	12	61	31	0	440	10.83	2.46	9	Stillwater	81.7	102	7	62	28	0	518	8.26	2.99	23	Eufaula	83.1	102	19	67	31	0	561	5.42	3.03	23	Washington	83.3	105	12	65	31	0	569	3.59	1.47	30	Haskell	81.1	101	20	62	31	0	499	4.24	1.96	23	Yukon	81.6	101	7	63	28	0	515	7.77	2.47	8	Hectorville	81.3	102	20	62	31	0	505	7.28	3.89	23	Sallisaw	80.8	99	20	63	31	0	491	12.54	4.24	23	Holdenville	81.5	99	20	65	28	0	512	6.26	2.25	23	Stigler	81.2	101	12	64	31	0	503	5.39	1.96	23	McAlester	82.5	101	20	65	31	0	542	5.03	2.16	23	Stuart	82.5	101	20	65	31	0	543	3.75	1.31	30	Okmulgee	81.0	101	19	62	31	0	496	7.47	5.10	23	Hobart	85.8	107	26	65	31	0	644	2.55	1.43	27	McAlester	82.5	101	20	65	31	0	542	5.03	2.16	23	Webbers Falls	81.2	99	12	64	31	****	*****	13.03	4.41	24	Webbers Falls	81.2	99	12	64	31	****	*****	13.03	4.41	24	Westville	78.6	95	12	62	31	0	421	7.37	1.50	10	Westville	78.6	95	12	62	31	0	421	7.37	1.50	10	Altus	84.4	102	26	66	31	0	602	2.43	2.12	17	Hollis	85.5	108	26	66	24	0	635	1.03	.34	24	Apache	83.5	103	12	64	27	0	573	3.36	1.12	27	Mangum	83.2	104	26	61	31	0	564	2.23	1.00	13	Fort Cobb	*****	***	***	***	***	****	*****	4.70	2.00	27	Medicine Park	85.0	105	26	65	30	****	*****	2.41	1.25	27	Grandfield	87.1	108	26	65	31	0	684	1.32	.75	22	Tipton	86.5	108	26	66	31	0	665	1.01	.75	17	Hinton	83.1	105	12	64	28	0	561	3.30	.90	27	Walters	84.9	105	12	66	31	0	617	3.33	.90	27	Hobart	85.8	107	26	65	31	0	644	2.55	1.43	27	Lane	82.3	100	20	67	31	0	536	3.62	1.12	14	Ada	82.6	100	20	64	31	0	545	6.03	2.26	3	Madill	83.5	101	7	67	30	0	573	6.87	2.72	23	Ardmore	83.5	101	12	65	31	0	574	7.73	3.19	30	Newport	83.6	103	12	66	31	0	578	6.19	1.99	30	Burneyville	84.0	103	12	65	31	0	591	8.49	3.60	30	Pauls Valley	83.2	103	12	64	31	0	565	5.86	2.53	30	Byars	83.1	102	12	65	31	0	561	3.01	1.57	30	Ringling	84.4	103	12	66	27	0	600	3.23	1.34	27	Centrahoma	82.5	101	20	66	31	0	542	4.41	1.04	3	Sulphur	82.7	101	12	66	30	0	548	6.39	1.99	23	Durant	83.4	101	20	68	30	0	571	4.49	2.10	24	Tishomingo	81.9	98	12	67	30	0	523	11.41	3.53	23	Fittstown	80.9	97	20	65	31	0	494	8.60	3.47	3	Waurika	85.3	105	10	66	31	0	629	4.32	1.57	30	Ketchum Ranch	84.5	104	12	66	31	0	603	4.27	1.58	27	Antlers	82.4	101	20	65	16	0	538	1.37	.42	30	Mt Herman	81.8	98	21	67	30	0	520	3.63	1.35	27	Broken Bow	82.9	100	20	66	16	0	554	2.32	.94	6	Talihina	83.0	104	19	66	31	0	557	3.80	1.18	27	Clayton	82.4	103	20	67	31	0	539	4.70	1.50	27	Valliant	83.6	102	20	69	16	0	577	.81	.50	27	Cloudy	82.5	100	20	67	30	0	543	2.73	1.30	30	Wilburton	82.0	102	19	65	31	0	527	3.91	2.77	23	Hugo	83.6	99	13	70	30	0	578	3.81	3.55	3	Wister	81.0	99	19	65	16	0	496	6.14	2.72	3	Idabel	83.1	99	20	68	16	0	561	4.79	2.87	27

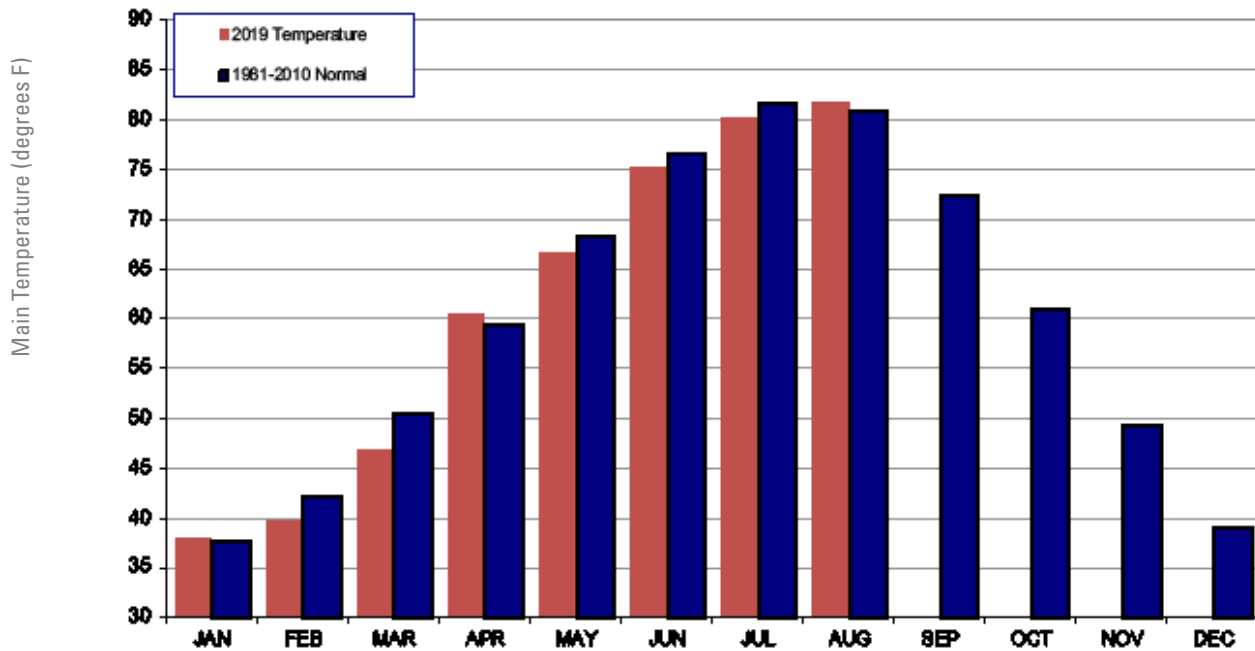
2019 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



August 2019 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Aug-18 (inches)
Panhandle	2.98	0.28	41st Wettest	5.81 (1917)	0.54 (1936)	4.25
North Central	6.05	2.83	8th Wettest	8.10 (1974)	0.14 (2000)	3.87
Northeast	8.78	5.54	1st Wettest	7.51 (1964)	0.03 (2000)	4.82
West Central	2.77	-0.24	50th Wettest	6.93 (2017)	0.02 (2000)	3.14
Central	7.02	3.92	3rd Wettest	8.18 (1906)	0.02 (2000)	4.36
East Central	7.56	4.53	4th Wettest	10.88 (1915)	0.02 (2000)	4.43
Southwest	2.52	-0.25	54th Wettest	7.38 (1996)	0.00 (2000)	2.65
South Central	5.93	3.33	9th Wettest	8.72 (1906)	0.01 (2000)	4.52
Southeast	3.46	0.64	49th Wettest	9.68 (1915)	0.25 (1936)	6.24
Statewide	5.44	2.49	8th Wettest	6.47 (1915)	0.12 (2000)	4.27

2019 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



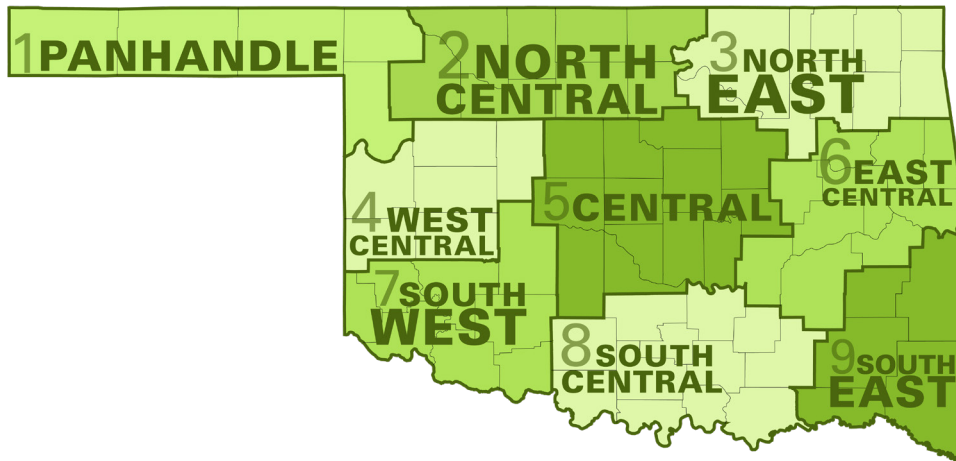
August 2019 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Aug-18 (F)
Panhandle	80.1	2.2	25th Warmest	83.7 (1937)	71.4 (1915)	76.6
North Central	81.5	0.7	48th Warmest	88.2 (1936)	72.9 (1915)	79.2
Northeast	79.1	-1.2	44th Coolest	88.8 (1936)	72.7 (1915)	78.8
West Central	83.4	2.7	21st Warmest	87.9 (2011)	73.6 (1915)	80.4
Central	82.0	0.6	52nd Warmest	88.7 (1936)	74.1 (1915)	80.2
East Central	80.8	-0.1	62nd Coolest	88.6 (1936)	73.5 (1915)	79.4
Southwest	84.6	2.2	25th Warmest	91.4 (2011)	76.1 (1915)	82.9
South Central	83.2	0.7	48th Warmest	90.8 (2011)	76.1 (1992)	81.8
Southeast	82.6	2.2	27th Warmest	87.5 (2011)	74.2 (1915)	79.8
Statewide	81.8	1.0	46th Warmest	87.7 (2011)	73.9 (1915)	79.9

MESONET EXTREMES FOR AUGUST 2019

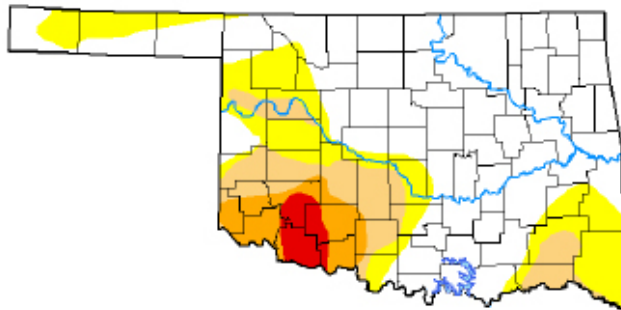
Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	108	19th	Hooker	55	24th	Kenton	7.00	Beaver	5.40	23rd	Beaver
North Central	107	7th	Freedom	58	28th	May Ranch	12.49	Newkirk	3.48	3rd	Newkirk
Northeast	101	20th	Porter	60	28th	Burbank	13.27	Miami	4.17	23rd	Porter
West Central	107	12th	Erick	62	28th	Watonga	5.10	Weatherford	1.62	27th	Weatherford
Central	106	7th	Kingfisher	59	28th	Oilton	13.64	Oilton	4.08	3rd	Chandler
East Central	102	19th	Eufaula	61	31st	Cookson	13.03	Webbers Falls	5.10	23rd	Okmulgee
Southwest	108	26th	Grandfield	61	31st	Mangum	4.70	Fort Cobb	2.12	17th	Altus
South Central	105	10th	Waurika	64	31st	Ada	11.41	Tishomingo	3.60	30th	Burneyville
Southeast	104	19th	Talihina	65	31st	Wilburton	6.14	Wister	3.55	3rd	Hugo
Statewide	108	26th	Grandfield	55	24th	Kenton	13.64	Oilton	5.40	23rd	Beaver

Oklahoma Climate Divisions



U.S. Drought Monitor Oklahoma

August 27, 2019
(Released Thursday, Aug. 29, 2019)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	61.77	38.23	16.47	7.94	2.62	0.00
Last Week 08-20-2019	50.05	40.05	24.24	11.67	0.00	0.00
3 Months Ago 05-25-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2019	94.85	5.15	0.00	0.00	0.00	0.00
Start of Water Year 06-15-2018	72.93	27.07	0.11	4.16	0.00	0.00
One Year Ago 08-25-2018	53.85	46.15	31.47	18.63	5.65	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. See accompanying text summary for forecast statements.

Author:
Jessica Blunden
NCEI/NOAA



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 differs 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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