

Drought flourished across Oklahoma over the past month, fed by one of the state’s driest and warmest Novembers on record. Six of the Oklahoma Mesonet’s 120 stations recorded no precipitation for the month, and another 77 recorded a quarter of an inch or less. High temperatures rose into the 70s and 80s with regularity. The temperature at the Altus and Mangum Mesonet sites soared to 94 degrees on the 17th, the second highest November temperature on record in Oklahoma, dating back to 1892. It was also the highest temperature ever recorded in the state that late in the calendar year. The warm, dry weather took its toll. Reports of winter wheat stressed by the dry conditions were common, especially in the wheat belt of western Oklahoma. According to USDA officials, 75 percent of the state’s topsoil moisture was rated as “short to very short” by the end of November. Reservoirs across southeastern Oklahoma were several feet below normal. Broken Bow Lake fell 8 feet below its normal capacity.

November finished as the 13th warmest on record with a statewide average temperature of 52.5 degrees, 3.2 degrees above normal. Outside of the Panhandle, freezing weather was infrequent. Many stations across the southern half of the state spent less than 20 hours below freezing for the month. Newport, located in Carter County, spent 3 hours at or below freezing. Eva in northern Texas County led the state at 85 hours. Beaver recorded the lowest November temperature with a reading of 16 degrees on the 19th. The fall season finished decidedly warm with a statewide average of 62.6 degrees, 1.8 degrees above normal to rank as the 29th warmest on record. The first 11 months of the year were the 11th warmest such period on record, nearly 2 degrees above normal.

Drought increased dramatically across Oklahoma through the month. According to the U.S. Drought Monitor, the area

December 2018 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	69°F	Multiple Multiple	5
Low Temperature	-2°F	Eva	29
High Precipitation	9.12 in.	Broken Bow	--
Low Precipitation	0.38 in.	Kenton	--

Only a minor storm system late in the month prevented November from entering the record books as the driest in state history. According to preliminary data from the Oklahoma Mesonet, the statewide average precipitation total was 0.25 inches, 2.26 inches below normal and ranked as the fifth driest since records began in 1895. The southeast experienced its driest November on record at more than 4 inches below normal. The Mesonet sites at Beaver, Boise City, Buffalo, Hooker, Slapout and Woodward recorded no precipitation during the month. Jay recorded 2.34 inches to lead the Mesonet. The climatological fall (August-November) precipitation pattern varied wildly across the state, from the 13th wettest on record in the southwest to the 30th driest in the southeast. The statewide average was 6.1 inches to rank as the 31st driest fall on record, nearly 3.5 inches below normal. The January-November period was the 18th wettest on record, however, nearly 3 inches above normal.

December 2018 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2018)
Month (December)	40.3°F	1.4°F	50th Warmest
Year-to-Date (Jan-Dec)	60.3°F	0.4°F	41st Warmest

Precipitation

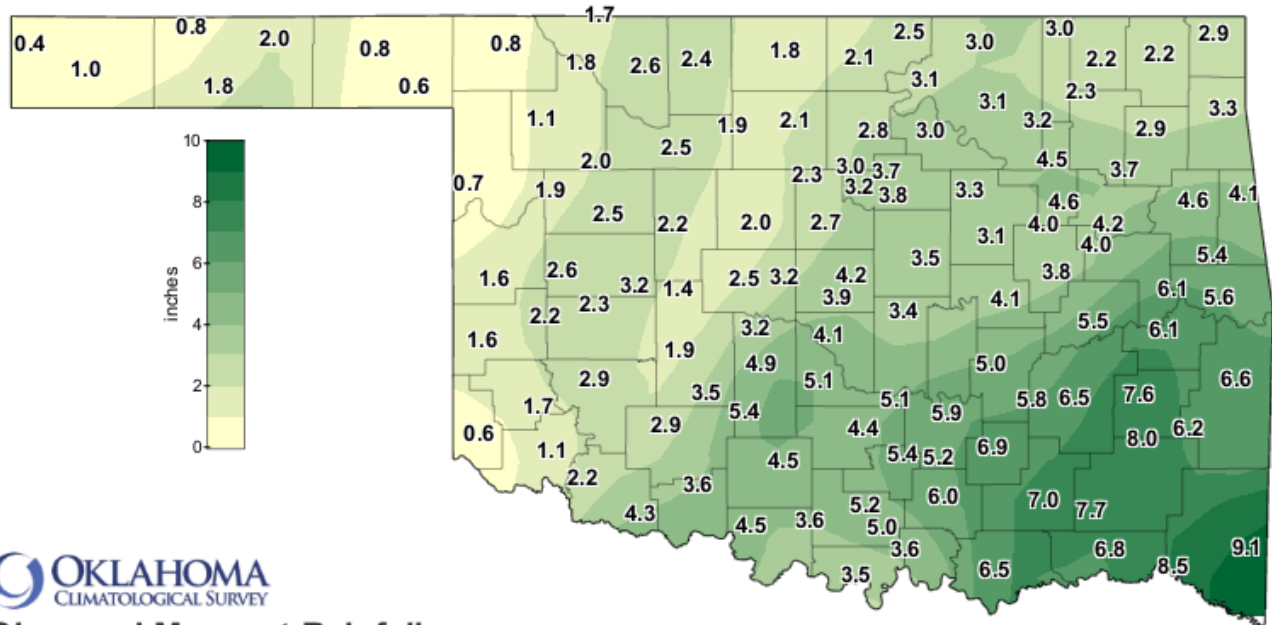
	Total	Depart.	Rank (1895-2018)
Month (December)	3.54 in.	1.48 in.	14th Wettest
Year-to-Date (Jan-Dec)	40.52 in.	4.02 in.	15th Wettest

Depart. = departure from 30-year normal

of the state in drought increased from 3 percent at the end of October to 40 percent at the end of November. Another 32 percent of the state was considered abnormally dry, a drought precursor. More than 19 percent of the state’s drought coverage was considered moderate in intensity, while another 20 percent was labeled as severe. About 1 percent was in the extreme category. The Drought Monitor’s intensity scale slides from moderate-severe-extreme-exceptional, with exceptional being the worst classification. The December precipitation outlook from the Climate

Prediction Center (CPC) indicated a clear bullseye of increased odds for below normal precipitation located directly over Oklahoma. There was no definite indication in the temperature outlook. CPC's December Drought Outlook showed drought persisting based on November's final Drought Monitor map, and possible development across the western half of Oklahoma.

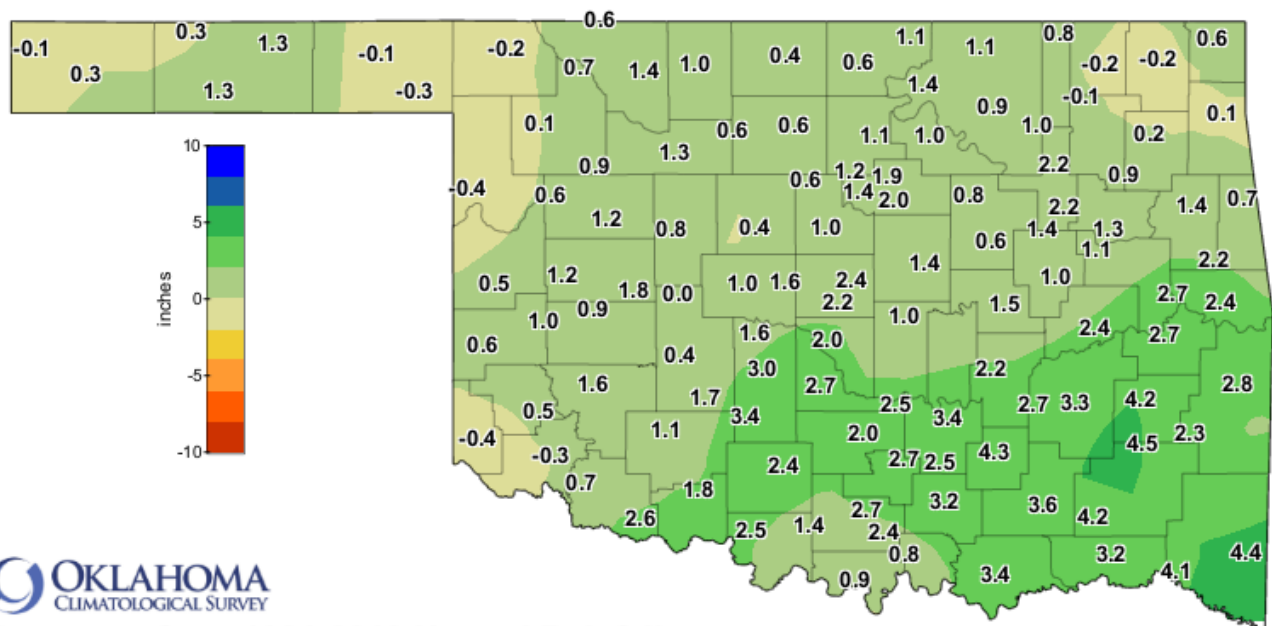
DECEMBER 2018 OBSERVED PRECIPITATION



Observed Mesonet Rainfall
Calendar Month to Date

Dec 1, 2018 through Dec 31, 2018
Created 12:01:13 PM January 1, 2019 UTC. Copyright 2019

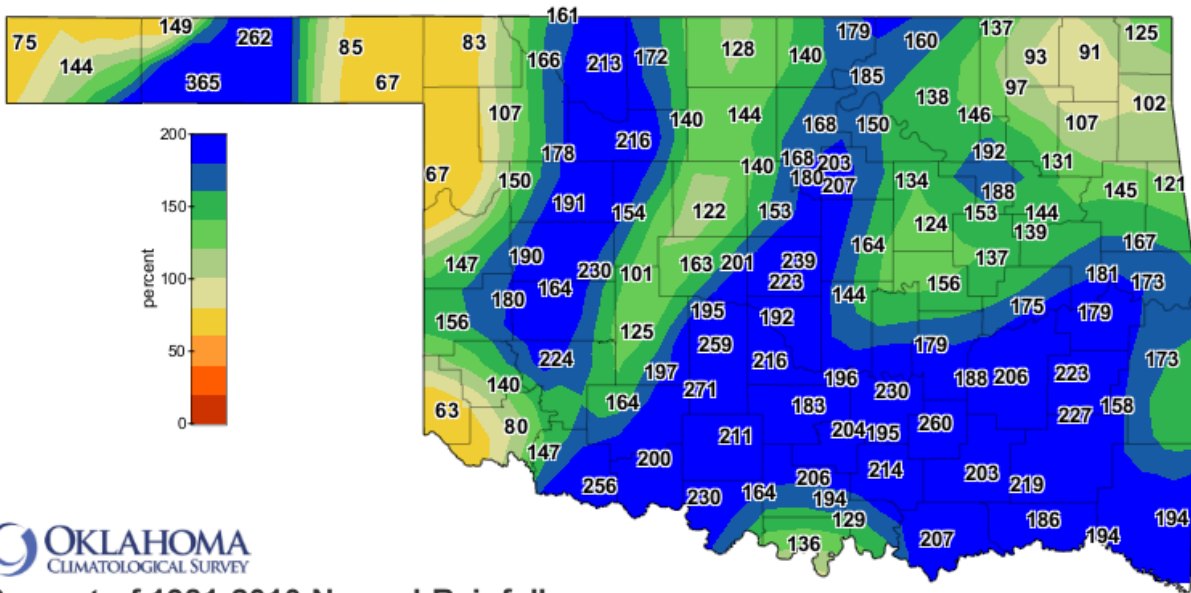
DECEMBER 2018 DEPARTURE FROM NORMAL PRECIPITATION



Departure from 1981-2010 Normal Rainfall
Calendar Month to Date

Dec 1, 2018 through Dec 31, 2018
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DECEMBER 2018 PERCENT OF NORMAL PRECIPITATION



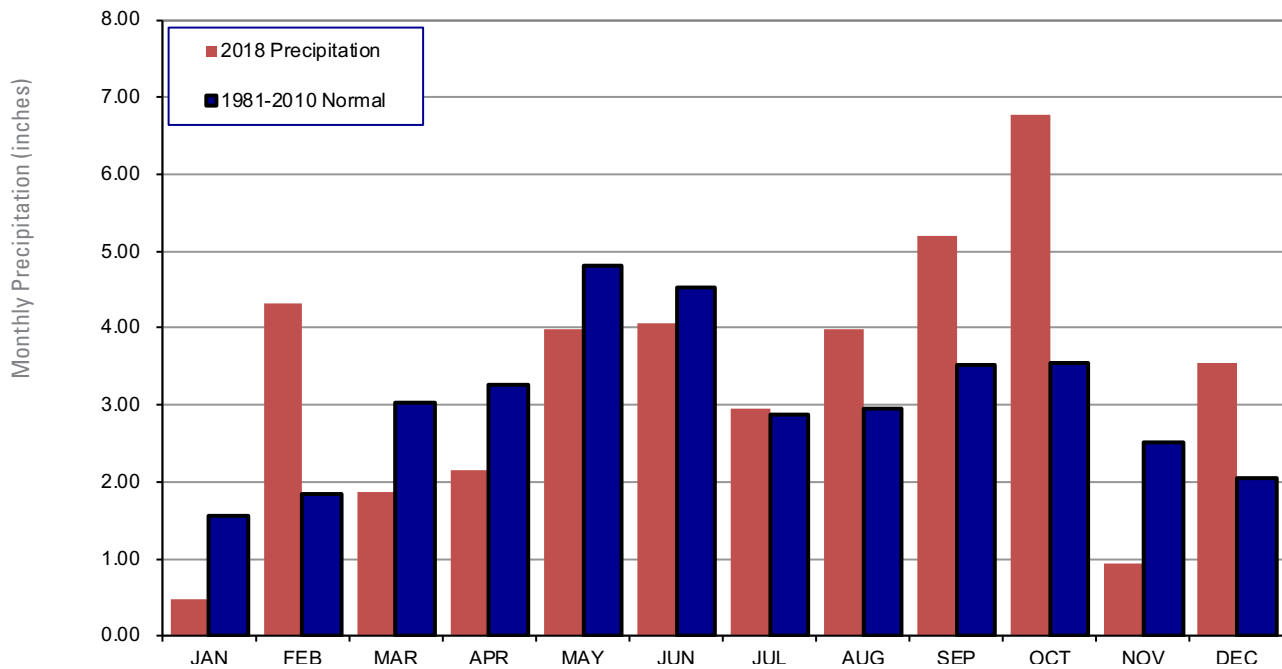
Percent of 1981-2010 Normal Rainfall
Calendar Month to Date

Dec 1, 2018 through Dec 31, 2018
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MESONET MONTHLY SUMMARY FOR DECEMBER 2018

NAME	MEAN TEMP	HIGH TEMP	LOW TEMP	DAY	DAY	HDD	CDD	TOT PPT	HIGH 24-HR	DAY	NAME	MEAN TEMP	HIGH TEMP	LOW TEMP	DAY	DAY	HDD	CDD	TOT PPT	HIGH 24-HR	DAY
PANHANDLE																					
Arnett	38.0	63	16	14	5	838	0	.70	.70	26	Goodwell	34.9	63	15	5	29	934	0	1.79	1.74	26
Beaver	36.1	66	15	12	5	897	0	.79	.66	26	Hooker	34.6	69	11	8	30	942	0	2.02	1.77	26
Boise City	33.8	65	15	7	29	966	0	.95	.95	26	Kenton	33.8	69	21	6	29	967	0	.38	.36	26
Buffalo	37.3	63	11	15	15	858	0	.80	.70	26	Slapout	37.6	65	15	15	4	849	0	.63	.54	26
Eva	32.5	66	11	-2	29	1008	0	.82	.81	26											
NORTH CENTRAL																					
Alva	38.0	62	11	16	9	836	0	2.58	2.44	26	May Ranch	38.2	64	11	19	8	830	0	1.67	1.47	26
Blackwell	38.2	63	11	17	9	831	0	2.12	1.78	26	Medford	37.9	61	11	17	9	841	0	1.82	1.81	26
Breckinridge	38.7	62	11	18	9	815	0	2.11	1.97	26	Newkirk	38.0	62	16	16	9	837	0	2.54	1.92	26
Cherokee	38.1	61	16	17	5	834	0	2.36	2.32	26	Red Rock	39.0	63	11	18	9	807	0	2.83	1.91	26
Fairview	39.4	62	1	19	9	793	0	2.50	2.49	26	Seiling	38.2	62	1	15	15	831	0	1.97	1.96	26
Freedom	37.8	64	11	15	9	842	0	1.81	1.68	26	Woodward	38.7	62	18	16	4	816	0	1.14	1.09	26
Lahoma	38.4	62	11	17	9	****	****	1.91	1.89	26											
NORTHEAST																					
Bixby	41.7	62	11	19	10	724	0	4.64	2.71	13	Pawnee	39.7	63	11	17	10	784	0	2.96	1.74	26
Burbank	39.1	63	11	17	10	804	0	3.12	1.99	26	Porter	42.0	62	25	21	10	713	0	4.15	1.77	13
Copan	39.0	61	11	19	10	807	0	2.95	1.52	26	Pryor	39.6	62	26	17	10	788	0	2.92	1.19	13
Foraker	38.4	62	11	18	9	823	0	3.04	1.60	26	Skiatook	40.5	62	11	21	29	761	0	3.19	1.43	26
Inola	40.5	61	11	18	10	758	0	3.67	1.81	13	Talala	39.3	61	16	19	30	795	0	2.26	.80	31
Jay	40.3	63	16	16	10	766	0	3.30	1.21	31	Tulsa	41.5	60	11	22	10	729	0	4.50	2.89	13
Miami	39.2	62	26	18	10	800	0	2.85	1.53	31	Vinita	38.9	62	16	16	10	810	0	2.22	.94	31
Nowata	38.5	61	16	16	10	823	0	2.17	.79	26	Wynona	39.7	63	11	18	10	783	0	3.09	1.73	26
WEST CENTRAL																					
Bessie	39.8	65	1	19	4	782	0	2.26	2.24	26	Erick	38.7	64	16	15	5	815	0	1.62	1.61	26
Butler	38.7	65	1	14	5	814	0	2.58	2.55	26	Putnam	38.7	61	1	18	9	817	0	2.45	2.45	26
Camargo	37.9	62	16	12	5	841	0	1.87	1.87	26	Watonga	39.9	62	1	21	9	779	0	2.20	2.20	26
Cheyenne	39.8	63	16	18	4	782	0	1.60	1.57	26	Weatherford	39.5	63	1	19	9	789	0	3.19	3.18	26
Elk City	39.9	64	1	19	5	778	0	2.16	2.15	26											
CENTRAL																					
Acme	41.0	66	1	20	4	745	0	5.44	2.91	26	Norman	41.1	65	1	23	10	740	0	4.11	2.64	26
Bristow	40.5	63	1	17	5	759	0	3.12	1.11	13	Oilton	39.4	63	11	16	10	795	0	3.87	1.83	26
Lake Carl Blac	38.9	63	11	17	11	810	0	2.96	1.88	26	OKC East	41.0	64	1	21	10	744	0	3.92	2.50	26
Chandler	41.2	63	1	21	10	736	0	3.45	1.54	26	Okemah	41.6	63	1	20	5	727	0	4.09	1.65	13
Chickasha	40.8	66	1	17	5	752	0	4.89	3.35	26	Perkins	40.3	62	11	21	10	767	0	3.83	2.29	26
El Reno	38.9	64	1	16	9	811	0	2.47	1.98	26	Seminole	42.4	65	1	22	10	701	0	4.37	1.71	13
Guthrie	40.4	63	1	20	9	764	0	2.74	1.83	26	Shawnee	41.5	64	1	22	10	727	0	3.39	1.26	26
Kingfisher	39.3	64	1	18	10	798	0	1.97	1.57	26	Spencer	41.1	63	1	22	29	741	0	4.18	2.43	26
Marena	39.9	63	11	19	30	777	0	3.22	1.97	26	Stillwater	39.8	63	11	19	10	781	0	3.66	2.28	26
Minco	40.2	64	1	19	5	770	0	3.21	2.40	26	Washington	42.0	66	1	22	5	714	0	5.09	2.15	26
Marshall	38.8	62	11	17	9	811	0	2.26	1.75	26	Yukon	39.9	63	1	19	9	778	0	3.24	2.40	26
EAST CENTRAL																					
Cookson	41.5	62	17	17	10	730	0	5.37	1.95	26	Sallisaw	43.0	64	1	18	5	683	0	5.64	2.01	26
Eufaula	43.1	64	16	22	10	679	0	5.54	1.74	26	Stigler	42.4	65	26	19	5	700	0	6.13	2.36	26
Haskell	41.3	62	1	19	10	734	0	3.96	1.44	13	Stuart	43.2	65	1	22	5	675	0	5.78	1.66	13
Hectorville	41.8	62	1	23	5	719	0	3.95	1.89	13	Tahlequah	41.1	62	16	18	10	741	0	4.58	1.80	13
Holdenville	42.6	64	1	22	5	696	0	5.00	1.87	13	Webbers Falls	43.0	63	1	22	5	681	0	6.11	2.03	26
McAlester	43.1	65	1	19	5	678	0	6.46	2.22	26	Westville	41.0	61	16	21	5	744	0	4.14	1.29	26
Okmulgee	41.1	63	1	17	10	740	0	3.78	1.18	13											
SOUTHWEST																					
Altus	40.9	67	1	21	5	748	0	1.09	1.04	26	Hollis	40.3	66	1	18	5	765	0	.64	.58	26
Apache	40.0	66	1	18	5	774	0	3.54	2.38	26	Mangum	39.5	67	1	16	5	791	0	1.66	1.52	26
Fort Cobb	39.8	65	1	17	5	781	0	1.86	1.44	26	Medicine Park	41.6	66	1	23	4	726	0	2.91	1.90	26
Grandfield	*****	***	***	***	***	****	****	4.27	2.92	26	Tipton	40.8	68	1	19	5	749	0	2.16	1.65	26
Hinton	39.5	63	1	19	9	791	0	1.36	1.22	26	Walters	42.3	67	1	21	5	704	0	3.62	1.75	26
Hobart	39.9	66	1	18	4	779	0	2.89	2.79	26											
SOUTH CENTRAL																					
Ada	42.7	66	1	22	5	690	0	5.92	2.57	13	Lane	44.4	67	1	22	5	639	0	7.03	2.37	13
Ardmore	44.4	66	1	23	5	640	0	5.03	1.49	13	Madill	44.4	67	1	20	5	637	0	3.55	.68	13
Burneyville	44.4	68	1	19	5	639	0	3.47	1.06	26	Newport	44.0	67	1	22	5	652	0	5.17	1.89	13
Byars	42.6	65	1	22	5	693	0	5.06	2.13	13	Pauls Valley	42.8	67	1	20	5	687	0	4.40	2.12	13
Centrahoma	43.3	67	1	19	5	673	0	6.94	2.49	13	Ringling	43.5	67	1	20	5	666	0	3.63	1.01	26
Durant	45.5	67	1	23	5	604	0	6.53	1.94	26	Sulphur	42.5	66	1	17	5	697	0	5.36	2.24	13
Fittstown	42.6	65	1	21	10	695	0	5.20	1.85	13	Tishomingo	43.5	66	1	21	5	665	0	6.00	3.02	13
Ketchum Ranch	42.5	67	1	20	5	697	0	4.48	1.71	26	Waurika	43.6	68	1	19	5	663	0	4.48	1.16	13
SOUTHEAST																					
Antlers	44.3	68	1	20	5	641	0	7.65	2.78	26	Mt Herman	44.1	66	1	21	5	647	0	6.39	1.43	27
Broken Bow	45.1	69	1	23	4	617	0	9.12	1.72	31	Talihina	43.8	67	1	18	5	657	0	6.61	1.73	26
Clayton	44.1	67	1	20	5	649	0	8.03	2.54	13	Valliant	45.4	68	1	22	5	608	0	8.52	2.32	26
Cloudy	44.3	67	1	22	5	640	0	6.09	1.65	26	Wilburton	43.5	66	26	19	5	668	0	7.64	2.98	13
Hugo	45.6	68	1	24	5	602	0	6.80	2.09	26	Wister	42.7	66	1	18	5	693	0	6.60	1.62	26
Idabel	45.9	69	1	24	10	591	0	8.57	1.69	14											

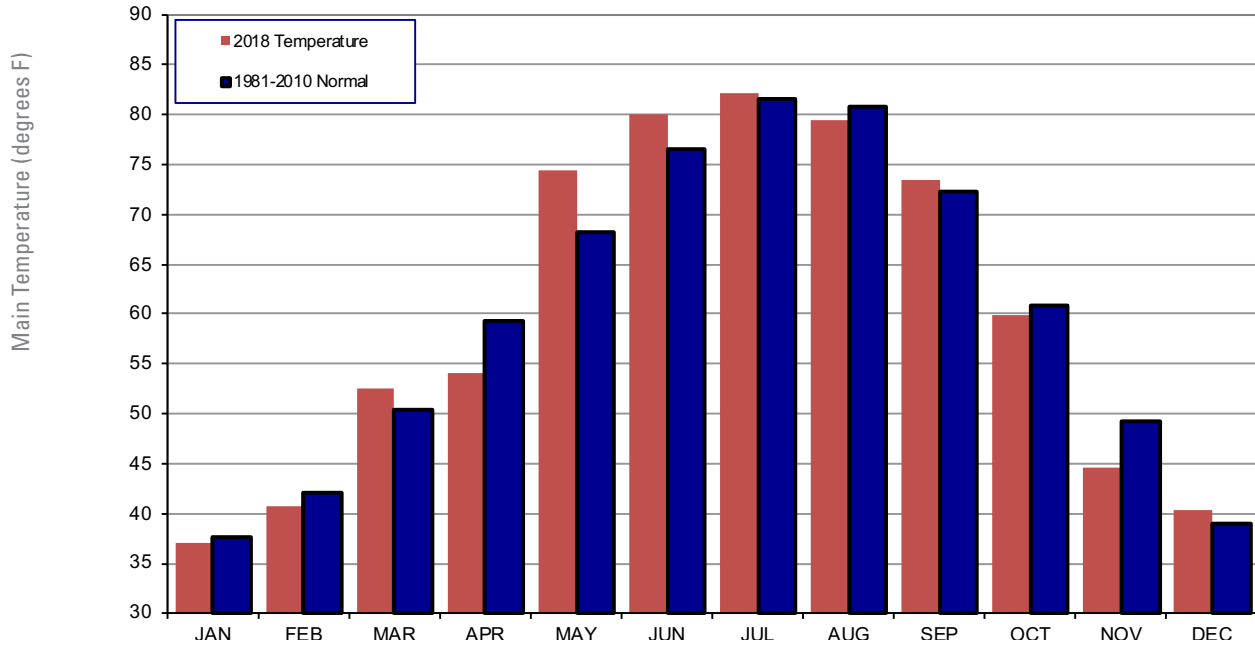
2018 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



December 2018 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Dec-17 (inches)
Panhandle	0.99	0.25	23rd Wettest	3.28 (2006)	0.00 (1976)	0.01
North Central	2.10	0.81	20th Wettest	3.59 (1984)	0.01 (1950)	0.07
Northeast	3.19	0.84	17th Wettest	7.61 (1895)	0.14 (1950)	0.84
West Central	2.21	1.02	14th Wettest	4.04 (1911)	0.00 (1908)	0.09
Central	3.61	1.61	11th Wettest	6.45 (1984)	0.03 (1908)	0.75
East Central	5.11	2.02	13th Wettest	11.09 (2015)	0.20 (1917)	1.63
Southwest	2.36	0.95	20th Wettest	5.65 (1911)	0.00 (1908)	0.34
South Central	5.14	2.51	10th Wettest	6.97 (1991)	0.06 (1917)	1.81
Southeast	7.46	3.46	6th Wettest	12.32 (2015)	0.19 (1917)	3.46
Statewide	3.53	1.47	14th Wettest	5.54 (2015)	0.09 (1950)	0.97

2018 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



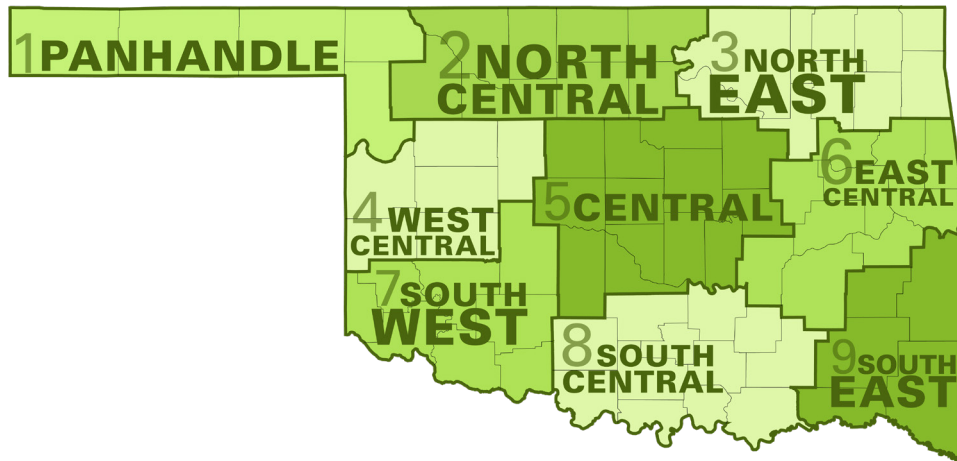
December 2018 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Dec-17 (F)
Panhandle	35.4	0.4	61st Warmest	42.1 (1933)	22.6 (1983)	35.9
North Central	38.2	2.1	39th Warmest	42.9 (1965)	21.5 (1983)	38.2
Northeast	39.9	2.1	46th Warmest	44.9 (1965)	23.6 (1983)	40.0
West Central	39.2	1.6	41st Warmest	44.1 (1965)	24.1 (1983)	38.7
Central	40.4	1.1	54th Warmest	46.0 (1965)	25.5 (1983)	40.7
East Central	42.2	1.7	50th Warmest	48.1 (1933)	27.6 (1983)	42.1
Southwest	40.5	0.3	60th Coolest	46.6 (1965)	27.4 (1983)	41.0
South Central	43.6	1.5	52nd Warmest	48.4 (1933)	29.4 (1983)	43.2
Southeast	44.0	2.1	37th Warmest	49.7 (1984)	30.4 (1983)	44.4
Statewide	40.3	1.4	50th Warmest	45.1 (1965)	25.7 (1983)	40.4

MESONET EXTREMES FOR DECEMBER 2018

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	69	21st	Kenton	-2	29th	Eva	2.02	Hooker	1.77	26th	Hooker
North Central	64	11th	May Ranch	15	15th	Seiling	2.83	Red Rock	2.49	26th	Fairview
Northeast	63	11th	Burbank	16	10th	Nowata	4.64	Bixby	2.89	13th	Tulsa
West Central	65	1st	Bessie	12	5th	Camargo	3.19	Weatherford	3.18	26th	Weatherford
Central	66	1st	Acme	16	10th	Oilton	5.44	Acme	3.35	26th	Chickasha
East Central	65	1st	McAlester	17	10th	Okmulgee	6.46	McAlester	2.36	26th	Stigler
Southwest	68	1st	Tipton	16	5th	Mangum	4.27	Grandfield	2.92	26th	Grandfield
South Central	68	1st	Burneyville	17	5th	Sulphur	7.03	Lane	3.02	13th	Tishomingo
Southeast	69	1st	Idabel	18	5th	Talihina	9.12	Broken Bow	2.98	13th	Wilburton
Statewide	69	1st	Idabel	-2	29th	Eva	9.12	Broken Bow	3.35	26th	Chickasha

Oklahoma Climate Divisions

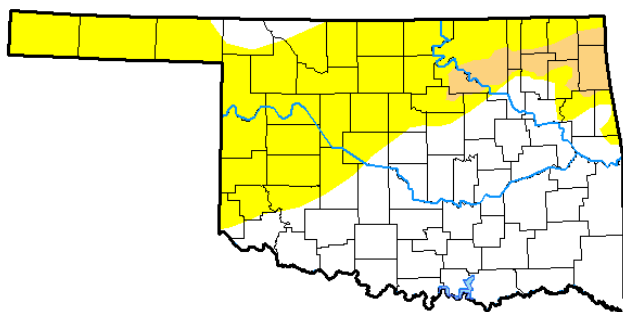


U.S. Drought Monitor Oklahoma

December 25, 2018

(Released Thursday, Dec. 27, 2018)

Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	50.34	49.66	5.08	0.00	0.00	0.00
Last Week 12-18-2018	68.41	31.59	5.08	0.00	0.00	0.00
3 Months Ago 09-25-2018	72.93	27.07	9.11	4.16	0.00	0.00
Start of Calendar Year 01-02-2018	0.00	100.00	77.15	38.76	0.00	0.00
Start of Water Year 09-25-2018	72.93	27.07	9.11	4.16	0.00	0.00
One Year Ago 12-26-2017	0.00	100.00	75.97	28.19	0.00	0.00

Intensity:

- 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.

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CPC/NOAA/NWS/NCEP



<http://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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