

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 of the state in drought increased from 3 percent at the end

November 2017 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	94°F	Altus, Mangum	17
Low Temperature	16°F	Beaver	19
High Precipitation	2.34 in.	Jay	--
Low Precipitation	0.00 in.	Numerous	--

Only a minor storm system late in the month prevented November from entering the record books as the direst 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.

November 2017 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2017)
Month (November)	52.5°F	3.2°F	13th Warmest
Season-to-Date (Sept-Nov)	62.6°F	1.8°F	30th Warmest
Year-to-Date (Jan-Nov)	63.8°F	1.9°F	11th Warmest

Precipitation

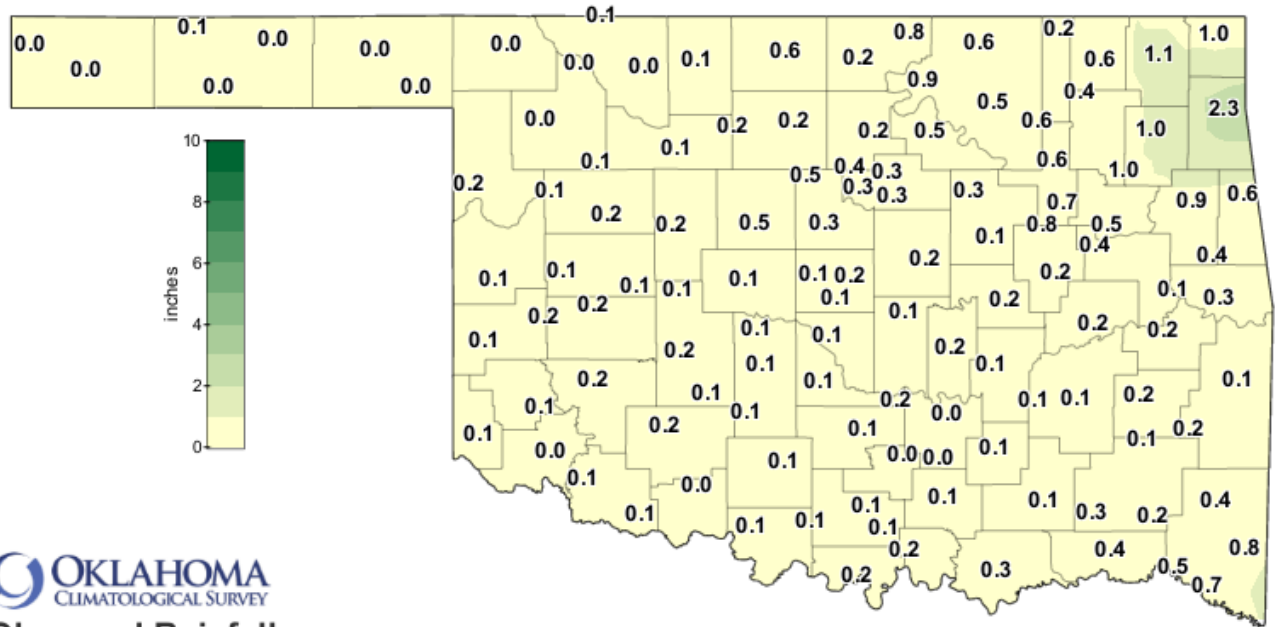
	Total	Depart.	Rank (1895-2017)
Month (November)	0.25 in.	-2.26 in.	5th Driest
Season-to-Date (Sept-Nov)	6.48	-3.10 in.	36th Driest
Year-to-Date (Jan-Nov)	37.59 in.	3.15 in.	16th Wettest

Depart. = departure from 30-year normal

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.

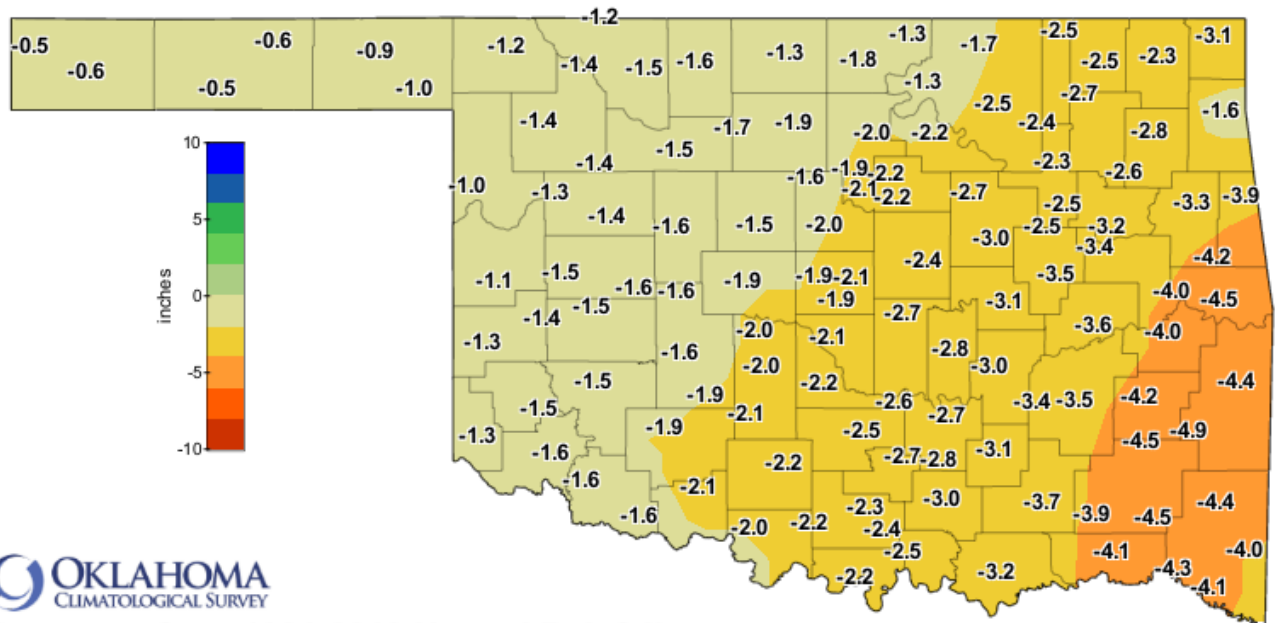
NOVEMBER 2017 OBSERVED PRECIPITATION



OKLAHOMA
CLIMATOLOGICAL SURVEY
Observed Rainfall
Current Month

Nov 01, 2017 through Nov 30, 2017
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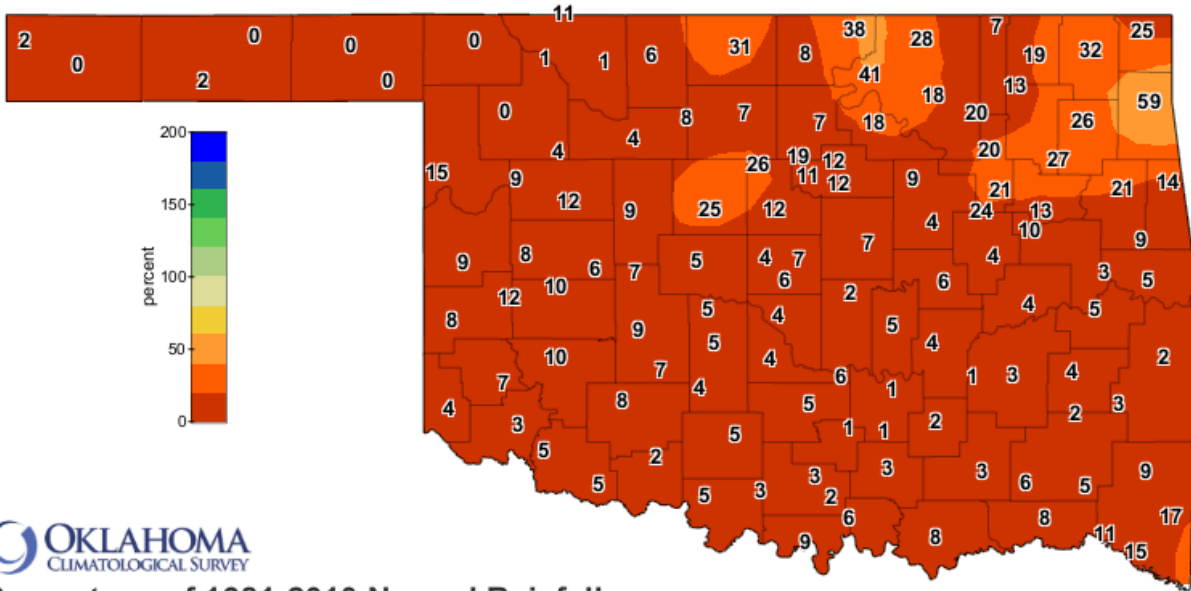
NOVEMBER 2017 DEPARTURE FROM NORMAL PRECIPITATION



OKLAHOMA
CLIMATOLOGICAL SURVEY
Departure from 1981-2010 Normal Rainfall
Current Month

Nov 01, 2017 through Nov 30, 2017
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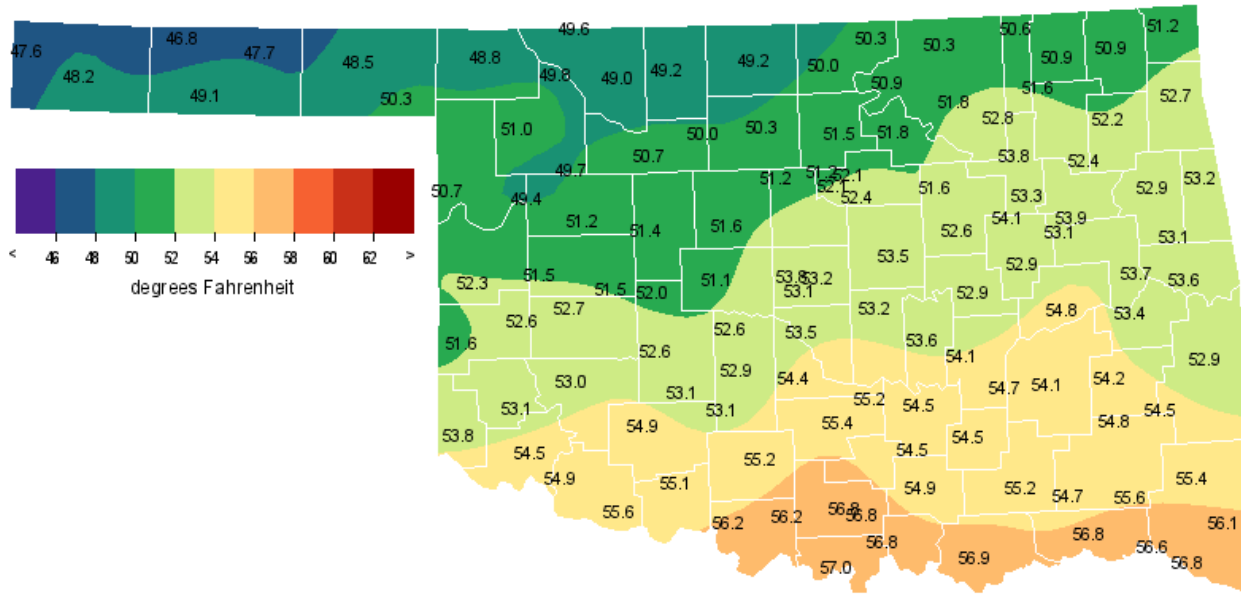
NOVEMBER 2017 PERCENT OF NORMAL PRECIPITATION



Percentage of 1981-2010 Normal Rainfall
Current Month

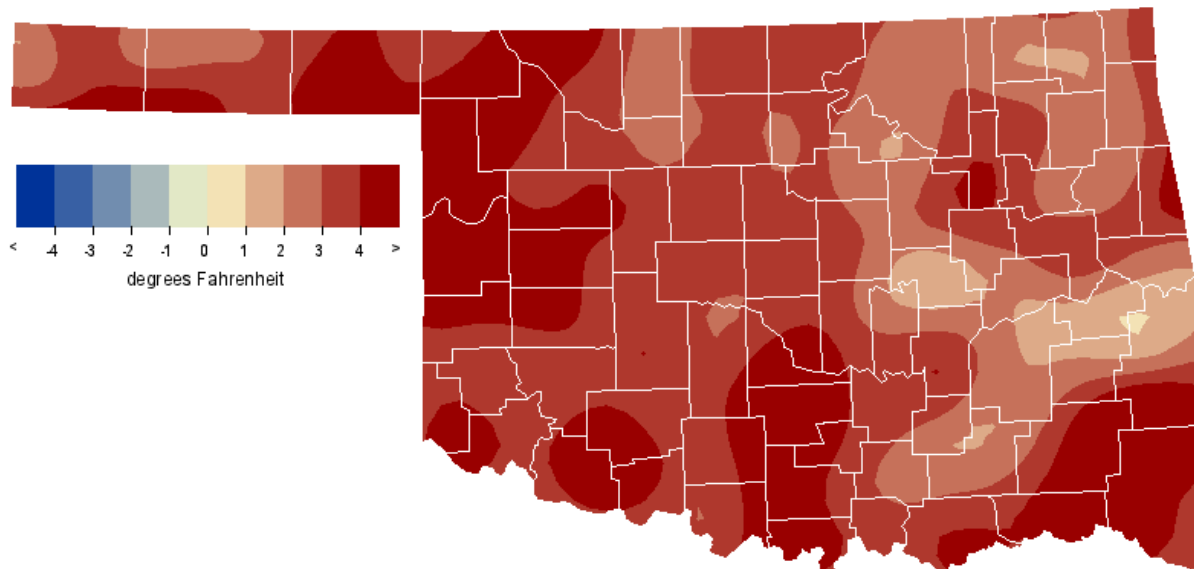
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NOVEMBER 2017 AVERAGE TEMPERATURE



Nov 2017
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NOVEMBER 2017 DEPARTURE FROM NORMAL TEMPERATURE

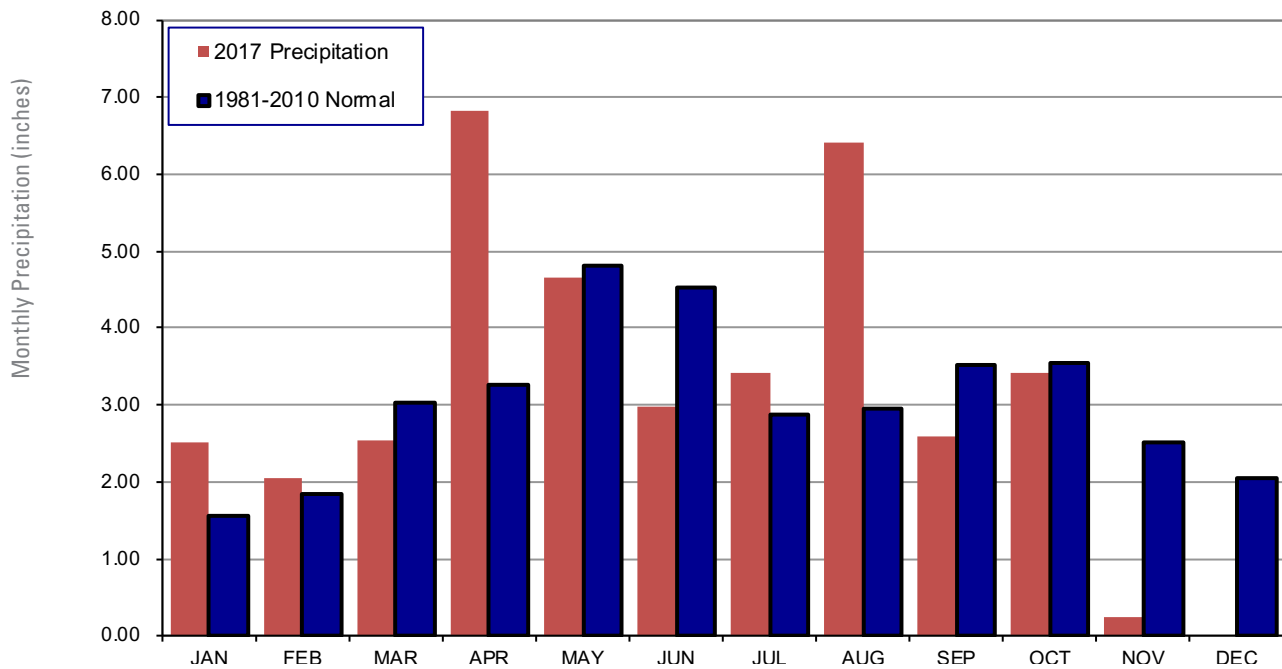


Nov 2017
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MESONET MONTHLY SUMMARY FOR NOVEMBER 2017

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	50.8	85	17	19	19	425	0	.17	.13	8	Goodwell	49.1	83	27	22	19	478	1	.01	.01	6
Beaver	48.5	85	27	16	19	495	0	.00	.00	1	Hooker	47.8	84	27	19	19	517	0	.00	.00	1
Boise City	48.2	85	27	21	29	505	0	.00	.00	1	Kenton	47.5	85	27	19	20	524	0	.01	.01	7
Buffalo	48.8	86	17	19	22	486	0	.00	.00	1	Slapout	50.3	83	27	22	22	441	0	.00	.00	1
Eva	46.9	87	27	18	19	544	0	.05	.02	10											
NORTH CENTRAL																					
Alva	49.1	85	17	21	22	480	4	.02	.01	11	May Ranch	49.5	85	17	22	22	468	4	.14	.07	28
Blackwell	50.0	80	24	21	22	453	3	.16	.06	28	Medford	49.2	81	24	20	22	477	3	.61	.32	29
Breckinridge	50.2	81	17	23	22	449	5	.15	.06	28	Newkirk	50.3	81	24	19	22	445	3	.82	.58	28
Cherokee	49.2	82	24	21	22	476	3	.11	.04	11	Red Rock	51.5	82	24	22	22	410	5	.16	.11	29
Fairview	50.7	84	17	23	22	435	5	.06	.03	14	Seiling	49.7	89	17	20	19	466	7	.06	.05	8
Freedom	49.8	87	17	22	19	462	4	.02	.02	11	Woodward	51.0	86	17	23	22	425	5	.00	.00	1
Lahoma	49.9	82	24	22	22	456	5	.15	.10	28											
NORTHEAST																					
Bixby	53.1	84	2	26	22	370	13	.67	.60	29	Pawnee	51.8	82	17	22	22	400	5	.47	.44	29
Burbank	50.8	83	24	20	22	429	5	.89	.77	29	Porter	53.8	85	5	25	22	349	14	.47	.33	29
Copan	50.6	80	17	21	22	436	4	.18	.13	29	Pryor	52.1	83	5	22	22	399	11	.98	.85	29
Foraker	50.2	82	24	20	22	447	3	.64	.58	29	Skiatook	52.8	82	17	26	22	373	6	.61	.53	29
Inola	52.2	82	5	23	22	395	12	.96	.89	29	Talala	51.5	82	17	22	22	411	6	.42	.38	29
Jay	52.5	83	2	24	22	383	8	2.34	1.70	29	Tulsa	53.7	82	17	26	22	349	9	.56	.53	29
Miami	51.1	79	2	21	22	420	2	.99	.73	29	Vinita	50.8	79	2	18	22	430	3	1.12	.71	29
Nowata	50.7	80	17	21	22	434	5	.57	.48	29	Wynona	51.7	83	17	23	22	405	6	.53	.47	29
WEST CENTRAL																					
Bessie	52.7	90	17	24	22	374	5	.16	.14	8	Erick	51.6	91	17	22	19	407	5	.11	.06	8
Butler	51.5	89	17	21	19	413	7	.12	.08	8	Putnam	51.2	88	17	24	22	420	7	.20	.15	8
Camargo	49.5	89	17	22	22	471	5	.12	.10	8	Watonga	51.4	84	17	25	22	413	6	.17	.11	8
Cheyenne	52.3	86	17	28	22	384	3	.11	.08	8	Weatherford	51.6	85	17	25	22	408	5	.10	.07	8
Elk City	52.6	89	17	26	20	378	6	.18	.11	8											
CENTRAL																					
Acme	53.2	86	4	25	19	363	8	.09	.05	8	Marshall	51.2	81	17	22	22	418	5	.54	.39	29
Bowlegs	53.6	85	2	26	22	350	10	.15	.06	8	Norman	53.6	85	4	28	22	351	8	.09	.07	8
Bristow	52.5	84	2	25	23	386	11	.11	.04	29	Oilton	51.5	82	17	21	22	414	9	.26	.24	29
Lake Carl Blac	51.2	82	24	23	22	419	4	.43	.36	29	OKC East	53.0	82	4	27	22	366	6	.13	.04	8
Chandler	53.5	84	4	22	22	355	10	.19	.06	28	OKC North	53.8	82	17	28	22	341	5	.08	.04	8
Chickasha	52.9	85	4	26	19	371	8	.11	.09	8	Okemah	52.9	85	2	25	22	375	12	.21	.09	29
El Reno	50.9	85	17	21	22	429	7	.10	.05	8	Perkins	52.3	82	17	24	22	386	5	.29	.23	29
Guthrie	52.9	81	17	26	22	368	6	.27	.10	28	Shawnee	53.2	84	4	25	22	360	6	.05	.02	28
Kingfisher	51.6	84	17	25	22	409	7	.52	.42	28	Spencer	53.1	83	4	26	22	363	5	.15	.06	28
Marena	52.1	81	24	23	22	392	4	.27	.16	29	Stillwater	52.1	82	24	24	22	392	4	.30	.25	29
Minco	52.6	82	17	26	22	379	5	.10	.07	8	Washington	54.3	86	4	28	23	331	9	.08	.06	8
EAST CENTRAL																					
Cookson	53.0	85	2	24	22	372	12	.43	.21	15	Sallisaw	53.5	86	2	26	23	363	18	.25	.10	29
Eufaula	54.7	87	5	28	22	327	17	.15	.04	13	Stigler	53.2	87	5	25	23	372	19	.21	.13	14
Haskell	53.0	85	5	26	23	372	13	.38	.17	29	Stuart	54.7	87	5	28	22	324	14	.05	.02	8
Hectorville	54.0	83	2	26	22	341	12	.78	.62	29	Tahlequah	52.9	83	2	25	22	375	12	.86	.54	29
Holdenville	54.0	87	2	24	22	340	11	.12	.05	14	Webbers Falls	53.6	88	5	24	22	365	22	.11	.05	6
McAlester	54.1	87	5	26	23	344	16	.09	.04	15	Westville	53.2	83	2	25	22	365	10	.64	.32	29
Okmulgee	52.7	85	2	24	22	381	14	.16	.09	29											
SOUTHWEST																					
Altus	54.5	94	17	26	22	325	11	.04	.03	8	Hollis	53.8	92	17	24	19	341	6	.05	.04	8
Apache	53.1	85	4	26	22	364	6	.14	.10	8	Mangum	53.2	94	17	23	9	364	8	.11	.07	8
Fort Cobb	52.6	87	17	28	19	378	6	.16	.15	8	Medicine Park	54.9	86	4	29	22	312	8	.16	.08	8
Grandfield	55.6	90	4	27	22	300	17	.08	.06	8	Tipton	54.8	89	1	27	19	320	13	.08	.05	8
Hinton	52.0	84	17	25	22	394	5	.13	.10	8	Walters	55.1	88	4	30	20	313	15	.04	.03	8
Hobart	53.1	92	17	25	19	366	8	.16	.12	8											
SOUTH CENTRAL																					
Ada	54.5	88	2	27	22	329	13	.03	.01	8	Lane	55.1	88	5	24	23	315	19	.11	.08	8
Ardmore	56.8	90	2	29	23	271	24	.05	.04	8	Madill	56.7	91	2	27	23	275	26	.16	.15	8
Burneyville	57.0	93	2	25	23	271	30	.23	.23	8	Newport	56.9	89	2	30	23	269	25	.06	.04	8
Byars	55.2	86	2	27	22	304	10	.16	.09	28	Pauls Valley	55.4	87	4	28	22	303	14	.12	.04	14
Centrahoma	54.5	89	5	25	23	330	16	.06	.03	14	Ringling	56.2	89	2	29	19	286	22	.07	.03	8
Durant	56.8	89	5	28	23	270	26	.30	.29	8	Sulphur	*****	***	***	***	***	*****	*****	.02	.02	8
Fittstown	54.4	87	2	27	23	331	12	.03	.02	8	Tishomingo	54.9	90	2	26	23	322	18	.09	.04	8
Ketchum Ranch	55.3	87	2	29	22	306	15	.11	.05	14	Waurika	56.2	90	2	29	9	287	22	.11	.05	8
SOUTHEAST																					
Antlers	54.7	88	5	24	23	328	18	.25	.14	8	Mt Herman	55.4	84	2	26	23	313	25	.42	.13	12
Broken Bow	56.1	86	2	27	23	304	37	.84	.24	1	Talihina	54.4	86	2	23	23	338	21	.15	.07	15
Clayton	54.8	87	5	25	23	328	21	.11	.05	15	Valliant	56.6	87	2	25	23	285	31	.51	.34	8
Cloudy	55.7	86	2	26	23	305	25	.21	.11	8	Wilburton	54.1	87	5	25	23	345	17	.18	.09	15
Hugo	56.8	87	2	29	23	274	28	.35	.25	8	Wister	52.7	86	2	23	23	381	11	.11	.05	15
Idabel	56.8	87	2	26	23	282	38	.73	.37	8											

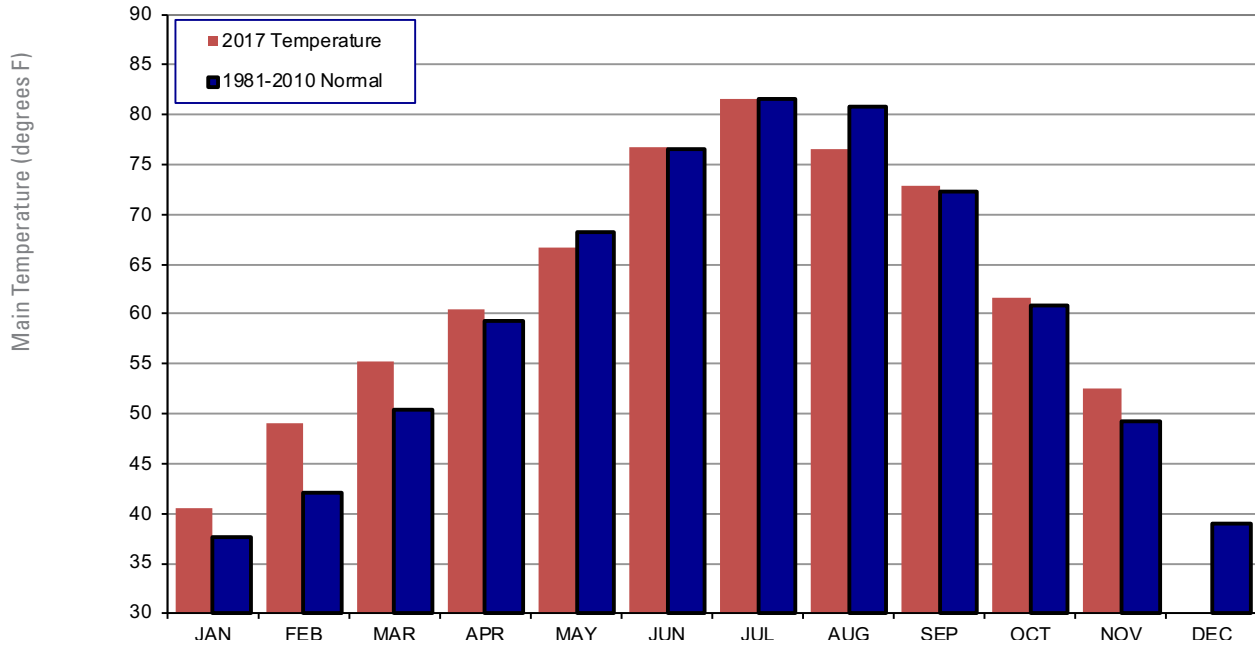
2017 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



November 2017 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Nov-16 (inches)
Panhandle	0.03	-0.80	11th Driest	4.08 (1909)	0.00 (1921)	0.39
North Central	0.19	-1.54	19th Driest	6.61 (1964)	0.00 (1910)	0.57
Northeast	0.78	-2.37	18th Driest	7.04 (1992)	0.05 (1910)	1.03
West Central	0.14	-1.35	22nd Driest	6.96 (1909)	0.00 (1949)	0.92
Central	0.21	-2.20	10th Driest	6.56 (1992)	0.01 (1955)	1.05
East Central	0.33	-3.55	3rd Driest	9.86 (1946)	0.32 (1910)	1.01
Southwest	0.10	-1.61	11th Driest	6.63 (2004)	0.00 (1949)	1.41
South Central	0.11	-2.78	2nd Driest	8.87 (1902)	0.07 (1949)	2.20
Southeast	0.35	-4.30	1st Driest	12.58 (2015)	0.40 (1910)	2.99
Statewide	0.25	-2.26	5th Driest	6.04 (2015)	0.13 (1949)	1.25

2017 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



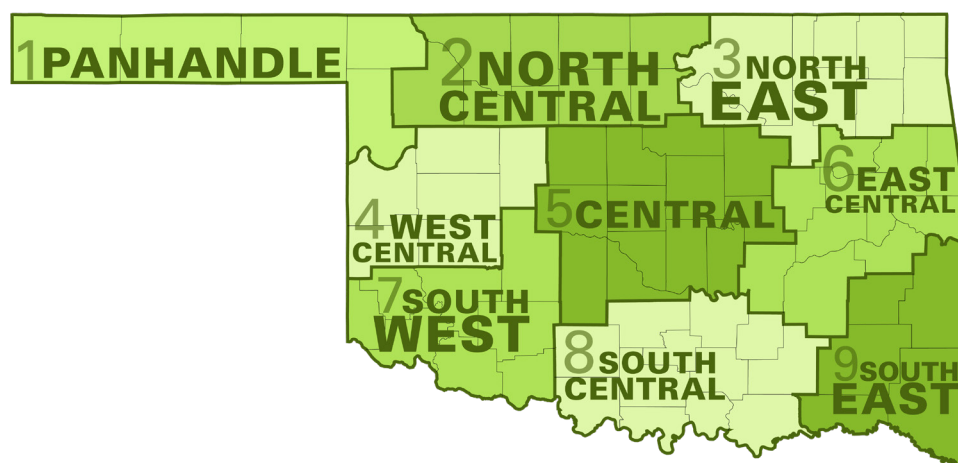
November 2017 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Nov-16 (F)
Panhandle	48.6	3.6	9th Warmest	51.5 (1999)	35.5 (1929)	51.0
North Central	50.0	2.9	17th Warmest	54.5 (1999)	39.0 (1929)	54.1
Northeast	51.9	3.0	16th Warmest	56.4 (1999)	41.1 (1929)	54.8
West Central	51.6	3.6	13th Warmest	54.8 (1999)	39.4 (1929)	54.7
Central	52.6	2.8	21st Warmest	57.1 (1999)	42.0 (1929)	56.4
East Central	53.6	2.8	21st Warmest	58.9 (1909)	43.3 (1929)	56.4
Southwest	53.9	3.4	12th Warmest	56.7 (1999)	42.4 (1929)	56.5
South Central	55.7	3.4	13th Warmest	58.6 (1999)	43.5 (1929)	57.8
Southeast	55.3	3.7	9th Warmest	58.3 (1909)	43.7 (1929)	57.4
Statewide	52.5	3.2	13th Warmest	56.1 (1999)	41.1 (1929)	55.4

MESONET EXTREMES FOR NOVEMBER 2017

Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	87	27th	Eva	16	19th	Beaver	0.17	Arnett	0.13	8th	Arnett
North Central	89	17th	Seiling	19	22nd	Newkirk	0.82	Newkirk	0.58	28th	Newkirk
Northeast	85	5th	Porter	18	22nd	Vinita	2.34	Jay	1.70	29th	Jay
West Central	91	17th	Erick	21	19th	Butler	0.20	Putnam	0.15	8th	Putnam
Central	86	4th	Acme	21	22nd	Oilton	0.54	Marshall	0.42	28th	Kingfisher
East Central	88	5th	Webbers Falls	24	22nd	Webbers Falls	0.86	Tahlequah	0.62	29th	Hectorville
Southwest	94	17th	Mangum	23	9th	Mangum	0.16	Hobart	0.15	8th	Fort Cobb
South Central	93	2nd	Burneyville	24	23rd	Lane	0.30	Durant	0.29	8th	Durant
Southeast	88	5th	Antlers	23	23rd	Wister	0.84	Broken Bow	0.37	8th	Idabel
Statewide	94	17th	Mangum	16	19th	Beaver	2.34	Jay	1.70	29th	Jay

Oklahoma Climate Divisions

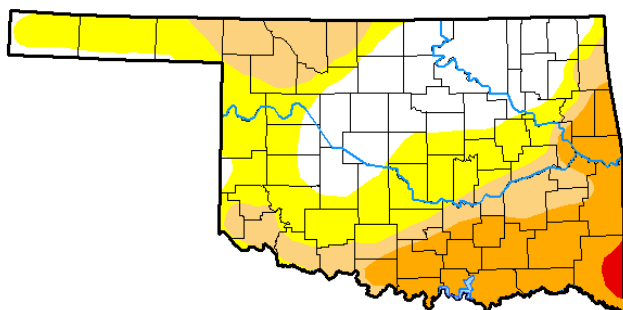


U.S. Drought Monitor Oklahoma

November 28, 2017

(Released Thursday, Nov. 30, 2017)

Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	27.12	72.88	39.90	20.80	0.78	0.00
Last Week 11-21-2017	38.60	61.40	28.26	8.87	0.00	0.00
3 Months Ago 08-29-2017	97.84	2.16	0.00	0.00	0.00	0.00
Start of Calendar Year 01-03-2017	5.61	94.39	83.21	55.75	5.55	0.00
Start of Water Year 09-26-2017	64.46	35.54	0.77	0.00	0.00	0.00
One Year Ago 11-29-2016	15.59	84.41	56.94	18.48	2.80	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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Western Regional Climate Center



<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 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/>



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