

NOVEMBER 2021

An extended pattern of warm, dry weather exacerbated drought conditions during November. Drought impacts, including fire danger and soil moisture depletion, increased throughout the month under the pressure from unusually high temperatures and strong winds. At the end of November, much of the area west of Interstate 35 had gone from 20 to 60 days without at least a quarter-inch of rain in a single day. For Boise City, that streak had extended to 95 days. Nearly 42% of the state was in drought by the end of the month according to the U.S. Drought Monitor, but another 38% was considered abnormally dry and in danger of slipping into drought without beneficial moisture soon. There was one burst of excitement from severe weather. An outbreak of severe storms struck central and northeastern Oklahoma the evening of Nov. 10, bringing large hail and damaging winds to those areas of the state. Four tornadoes touched

27th driest autumn on record. Miami's 13.4 inches led the seasonal totals while Kenton's 0.7 inches captured the low mark. The first 11 months of 2021 had a statewide average of 32.34 inches to finish 1.91 inches below normal, the 61st wettest January – November on record.

The statewide average temperature was 51 degrees, 1.6 degrees above normal and ranked as the 29th warmest November on record. The unusually warm weather was sustained throughout the month with just a few transitory reminders of the actual season. The Mesonet recorded temperatures of at least 80 degrees nine days out of the month, including the final two. Beaver managed 90 degrees on Nov. 7, and Mangum also reached that mark on the 16th, to tie for the highest reading of the month. It did get cold at times, especially in the dry air of the Oklahoma Panhandle.

November 2021 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	90°F	Beaver, Mangum	7, 16
Low Temperature	15°F	Boise City	18
High Precipitation	2.38 in.	Sallisaw	--
Low Precipitation	0 in.	Boise City, Kenton	--

down in northeastern Oklahoma that night, raising 2021's preliminary total to 60. The annual average tornado total for Oklahoma is 57.2, based on data from 1950 to 2020.

The statewide average precipitation total for the month finished at 0.82 inches, 1.5 inches below normal and ranked as the 29th driest November since records began in 1895. Sallisaw led the month at 2.38 inches. Only five Oklahoma Mesonet sites reached the 2-inch mark. Sixty-eight sites fell below an inch, and two sites—Boise City and Kenton—failed to register any precipitation at all. November rainfall deficits ranged from over 3 inches in far southeastern Oklahoma to about half an inch across the western Panhandle. There were no areas with a moisture surplus. The parched month capped off an exceedingly dry climatological fall, which runs from Sept. 1 through Nov. 30. The statewide average total was 5.81 inches, 3.19 inches below normal, to rank as the

November 2021 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2021)
Month (November)	51°F	1.6°F	29th Warmest
Season-to-Date (Sept-Nov)	64°F	2.8°F	8th Warmest
Year-to-Date (Jan-Nov)	61.9°F	-0.4°F	55th Warmest

Precipitation

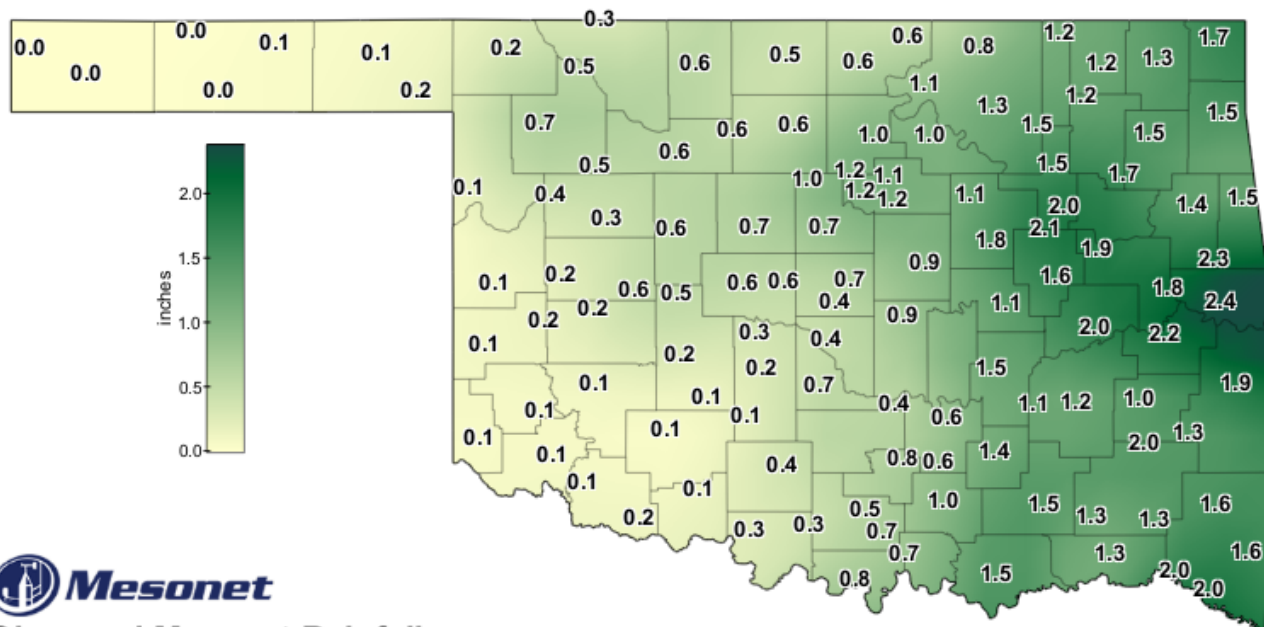
	Total	Depart.	Rank (1895-2021)
Month (November)	0.82 in.	-1.5 in.	29th Driest
Season-to-Date (Sept-Nov)	5.81 in.	-3.19 in.	27th Driest
Year-to-Date (Jan-Nov)	32.34 in.	-1.91 in.	61st Wettest

Depart. = departure from 30-year normal

Boise City reached a low of 15 degrees on the 18th for the lowest temperature of the month. The climatological fall ended as the 8th warmest on record with a statewide average of 64 degrees, 2.8 degrees above normal. The January-November period was 0.4 degrees below normal at 61.9 degrees, the 55th warmest such period on record.

With drought beginning to flourish once again, all eyes turn towards December for hopes of relief. The precipitation outlook from the Climate Prediction Center is not high on optimism, however, with increased odds of below normal precipitation indicated for the entire state. Those odds are even more enhanced across most of western and southern Oklahoma. Warm weather can increase drought impacts, and CPC's December temperature outlook shows odds tilted strongly towards warmer than normal conditions across the state, especially the southern half of Oklahoma. With those considerations in place, CPC's December drought outlook calls for persistence and also intensification of drought across the western two-thirds of the state, but also bleeding into far northeastern Oklahoma. CPC lists their forecast confidence as "high" for the Oklahoma region in December's drought outlook.

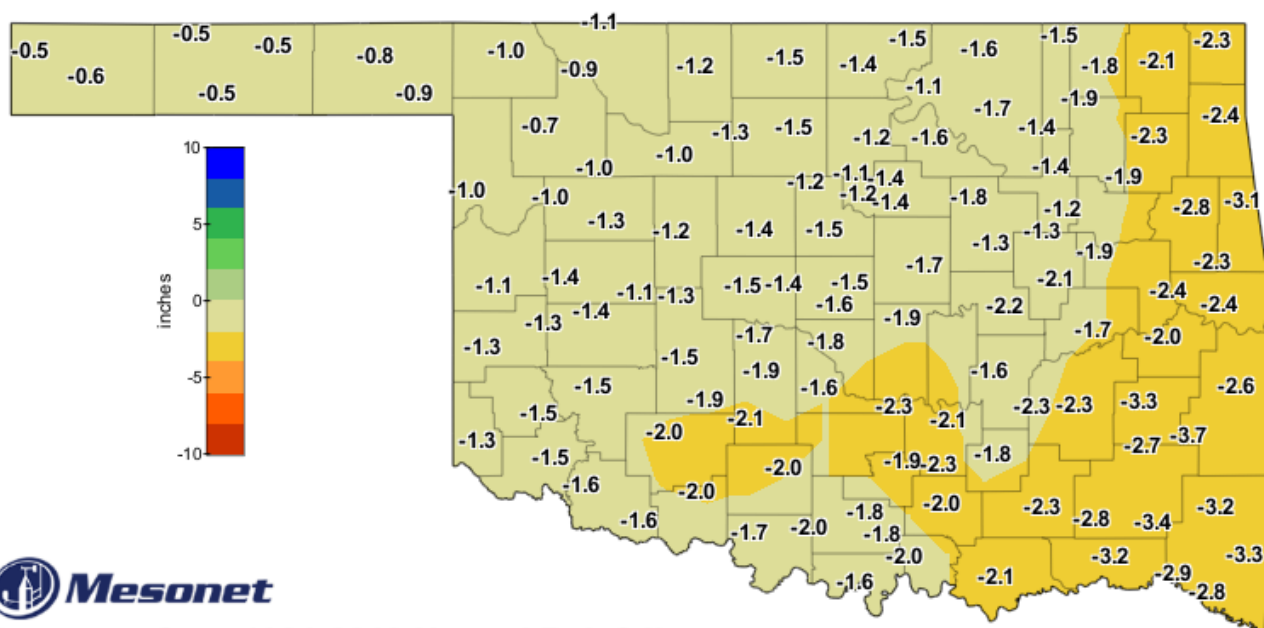
NOVEMBER 2021 OBSERVED PRECIPITATION



Observed Mesonet Rainfall
Calendar Month to Date

Nov 1, 2021 through Nov 30, 2021
Created 2:41:09 AM December 1, 2021 CST. Copyright 2021

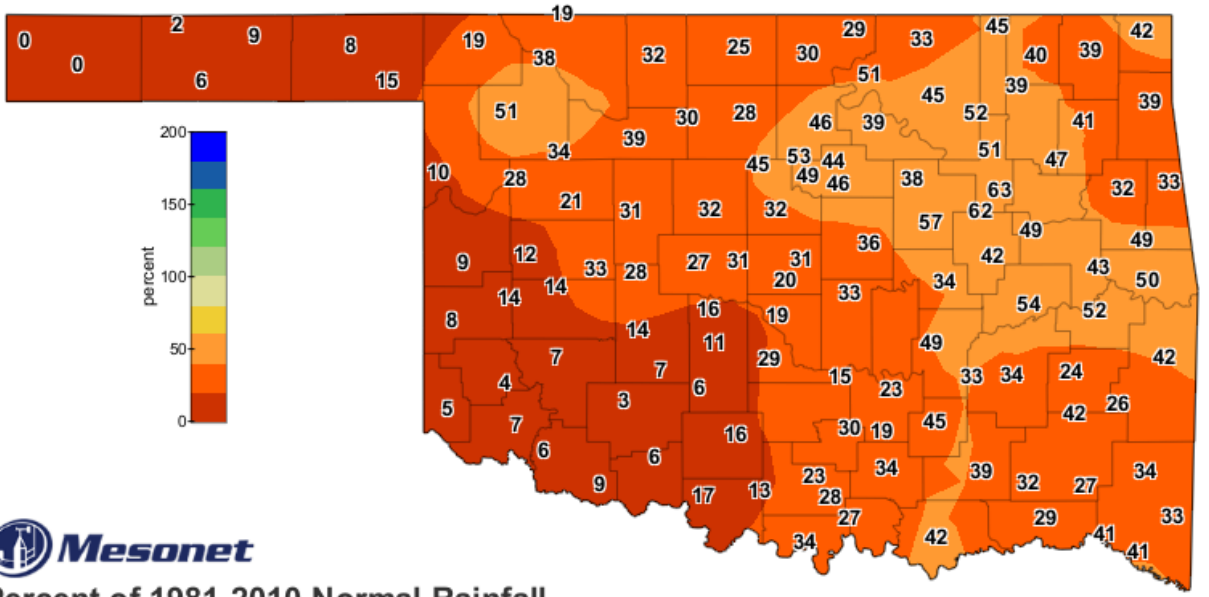
NOVEMBER 2021 DEPARTURE FROM NORMAL PRECIPITATION



Departure from 1981-2010 Normal Rainfall
Calendar Month to Date

Nov 1, 2021 through Nov 30, 2021
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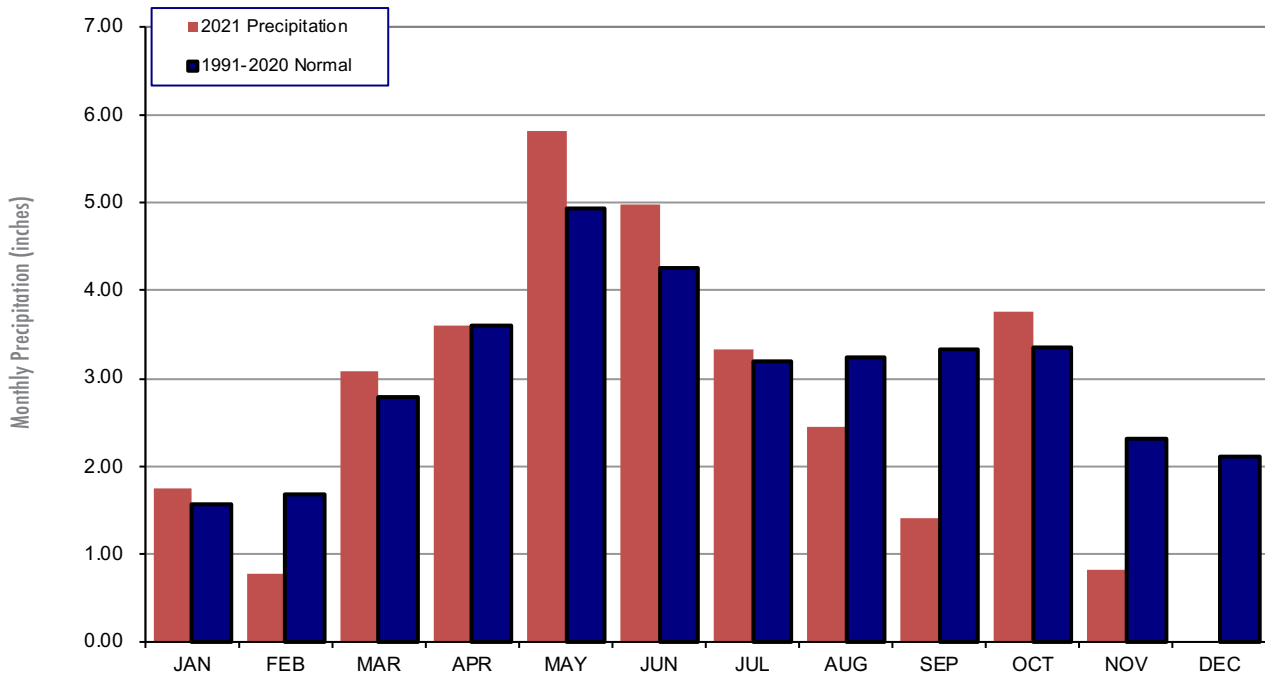
NOVEMBER 2021 PERCENT OF NORMAL PRECIPITATION



Percent of 1981-2010 Normal Rainfall
Calendar Month to Date

Nov 1, 2021 through Nov 30, 2021
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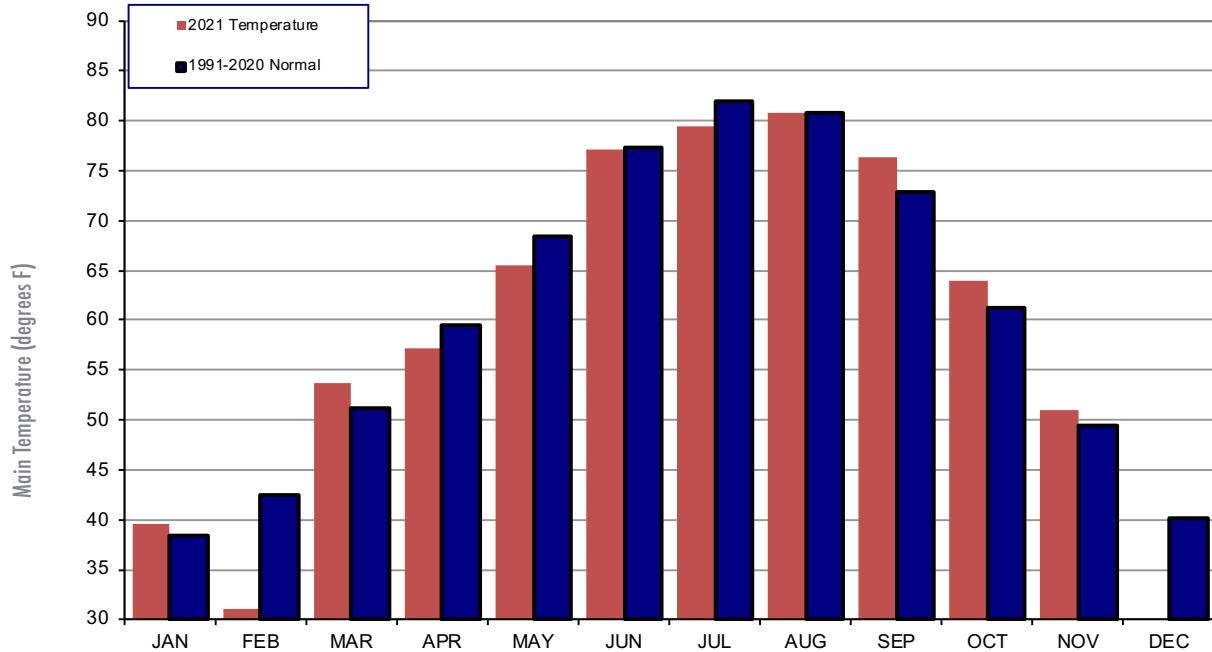
2021 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



November 2021 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Nov-20 (inches)
Panhandle	0.07	-0.65	19th Driest	4.08 (1909)	0.00 (1921)	0.33
North Central	0.58	-0.97	38th Driest	6.61 (1964)	0.00 (1910)	0.97
Northeast	1.38	-1.44	34th Driest	7.04 (1992)	0.05 (1910)	2.16
West Central	0.30	-1.13	31st Driest	6.96 (1909)	0.00 (1949)	0.60
Central	0.79	-1.43	36th Driest	6.56 (1992)	0.01 (1955)	0.78
East Central	1.75	-1.81	42nd Driest	9.86 (1946)	0.32 (1910)	1.68
Southwest	0.15	-1.56	18th Driest	6.63 (2004)	0.00 (1949)	0.54
South Central	0.77	-1.97	23rd Driest	8.87 (1902)	0.07 (1949)	1.06
Southeast	1.56	-2.75	24th Driest	12.58 (2015)	0.37 (2017)	1.82
Statewide	0.82	-1.50	29th Driest	6.04 (2015)	0.13 (1949)	1.10

2021 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



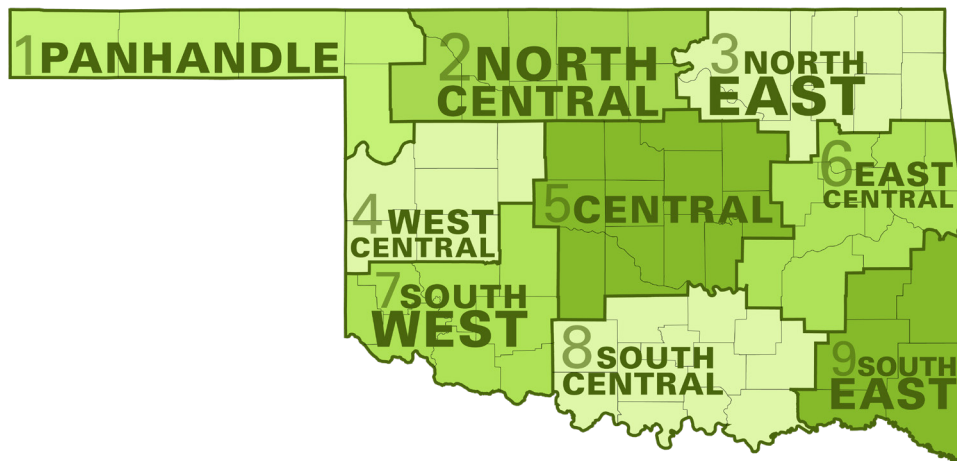
November 2021 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Nov-20 (F)
Panhandle	48.7	3.4	11th Warmest	51.5 (1999)	35.5 (1929)	49.6
North Central	49.6	2.1	24th Warmest	54.5 (1999)	39.0 (1929)	51.8
Northeast	50.0	1.1	39th Warmest	56.4 (1999)	41.1 (1929)	52.7
West Central	51.4	3.1	17th Warmest	54.8 (1999)	39.4 (1929)	52.3
Central	51.2	1.1	38th Warmest	57.1 (1999)	42.0 (1929)	54.2
East Central	51.2	0.4	52nd Warmest	58.9 (1909)	43.3 (1929)	54.5
Southwest	52.5	1.8	25th Warmest	56.7 (1999)	42.4 (1929)	54.6
South Central	53.3	1.1	44th Warmest	58.6 (1999)	43.5 (1929)	56.3
Southeast	51.1	-0.4	61st Warmest	58.3 (1909)	43.7 (1929)	55.1
Statewide	51.0	1.6	29th Warmest	56.1 (1999)	41.1 (1929)	53.5

MESONET EXTREMES FOR NOVEMBER 2021

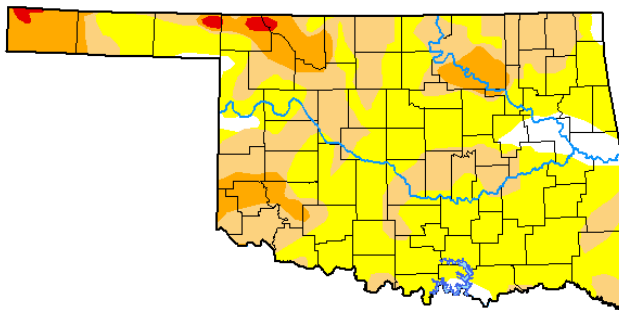
Climate Division	High Temp (F)			Low Temp (F)			High Monthly Rainfall (inches)		High Daily Rainfall (inches)		
	Day	Station	Station	Day	Station	Station	Station	Day	Station		
Panhandle	90	7th	Beaver	15	18th	Boise City	0.23	Buffalo	0.22	2nd	Buffalo
North Central	82	29th	Seiling	21	18th	Freedom	1.01	Red Rock	0.66	2nd	Woodward
Northeast	79	16th	Burbank	19	19th	Vinita	1.99	Bixby	1.22	10th	Bixby
West Central	86	16th	Erick	17	26th	Camargo	0.56	Weatherford	0.44	2nd	Weatherford
Central	82	16th	Acme	19	26th	Chickasha	1.76	Bristow	1.20	10th	Bristow
East Central	78	16th	Hectorville	22	19th	Okmulgee	2.38	Sallisaw	1.42	10th	Stigler
Southwest	90	16th	Mangum	18	26th	Mangum	0.49	Hinton	0.27	2nd	Hinton
South Central	83	16th	Waurika	19	26th	Sulphur	1.49	Durant	0.86	3rd	Durant
Southeast	81	17th	Idabel	21	19th	Wister	1.97	Idabel	1.13	10th	Clayton
Statewide	90	7th	Beaver	15	18th	Boise City	2.38	Sallisaw	1.42	10th	Stigler

Oklahoma Climate Divisions



U.S. Drought Monitor Oklahoma

October 26, 2021
(Released Thursday, Oct. 28, 2021)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5.05	94.95	40.74	10.90	0.77	0.00
Last Week 10-19-2021	6.04	93.96	38.42	10.90	0.77	0.00
3 Months Ago 07-27-2021	91.45	8.55	1.13	0.00	0.00	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 09-28-2021	6.45	93.55	73.23	23.72	2.65	0.00
One Year Ago 10-27-2020	47.94	52.06	32.42	15.58	3.61	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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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/>



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