Oklahoma Monthly Climate Summary

SEPTEMBER 2018

OKLAHOMA CLIMATOLOGICAL SURVEY

Many of Oklahoma's most extreme rainfall events have occurred during the fall, the result of a rare conjunction of meteorological ingredients converging over the Southern Plains. Those ingredients – the remnants of a pacific tropical system, a stalled front, and abundant moisture from the Gulf of Mexico – came together late in the month to produce massive rainfall totals across south central Oklahoma. The Oklahoma Mesonet site at Fittstown recorded 14.2 inches of rain on Sept. 21, the second-highest daily total observed in the state since individual station records began in the 1880s, and the highest total in the 25-year history of the Mesonet. Enid remains in the top historical spot with 15.68 inches on Oct. 11, 1973, while the Mesonet's previous record of 12.42 inches at Burneyville on April 29, 2009, was easily bested. There were numerous unofficial and radar-estimated reports of 15-20 inches in the Pontotoc County area during the storm. The rain totals represent a greater than 1,000-year 24-hour event according to the Oklahoma Conservation Commission and USDA-Natural Resources Conservation Service. Widespread flooding was reported across the southern half of the state, and the National Weather Service (NWS) issued a flash flood emergency for Pontotoc County and the surrounding area.

September 2018 Statewide Extremes

Description	Extreme	Station	Day
High Temperature	100°F	Multiple	Multiple
Low Temperature	36°F	Eva	22
High Precipitation	18.75 in.	Fittstown	--
Low Precipitation	0.26 in.	Kenton	--

Heavy rains during the first week combined with that later storm to produce a statewide average total of 5.21 inches, a surplus of 1.68 inches, to rank as the 19th wettest September since climate division records began in 1895. Much of southern Oklahoma received between 8-10 inches of rain, although the far southwest struggled to reach 4 inches. South central Oklahoma's average of 11.04 inches was 7.11 inches above normal, the wettest September on record for that section of the state. The northern third of the state did not fare as well with 1-2 inches commonly reported. The northeast corner's average of 2.9 inches was 1.6 inches below normal, 48th driest on record. Fifteen of the Mesonet's 120 stations recorded at least 10 inches, led by Fittstown's 18.75 inches, and another 48 sites received at least 5 inches. The NWS cooperative observer at Pontotoc reported 20.89 inches for the month. Kenton had the lowest total at 0.26 inches. Statewide, August and September combined to produce the eighth wettest such period on record at 9.21 inches, 2.63 inches above normal. The average for the first nine months of the year rose to 29.15 inches, 0.76 inches above normal to rank as the 40th wettest January-September on record.

The Mesonet's 120 sites recorded only five triple-digit temperatures during September, versus 10 readings in the 30s. The state's highest temperature of 100 degrees was observed at five different locations, the last at Talihina on the 19th. Barring a rare triple-digit temperature during the final three months, that was undoubtedly 2018's last such occurrence. The Eva Mesonet site recorded the lowest September temperature of 36 degrees on the 22nd. Despite the lack of extreme heat, the statewide average temperature still managed to finish 1.1 degrees above normal to rank as the 59th warmest September on record. The positive temperature anomaly was due mainly to September's minimum temperatures, which were nearly 4 degrees above normal.

September 2018 Statewide Statistics

Temperature

	Average	Depart.	Rank (1895-2018)
Month (September)	73.4°F	1.1°F	59th Warmest
Year-to-Date (Jan-Sept)	64.2°F	0.8°F	31st Warmest

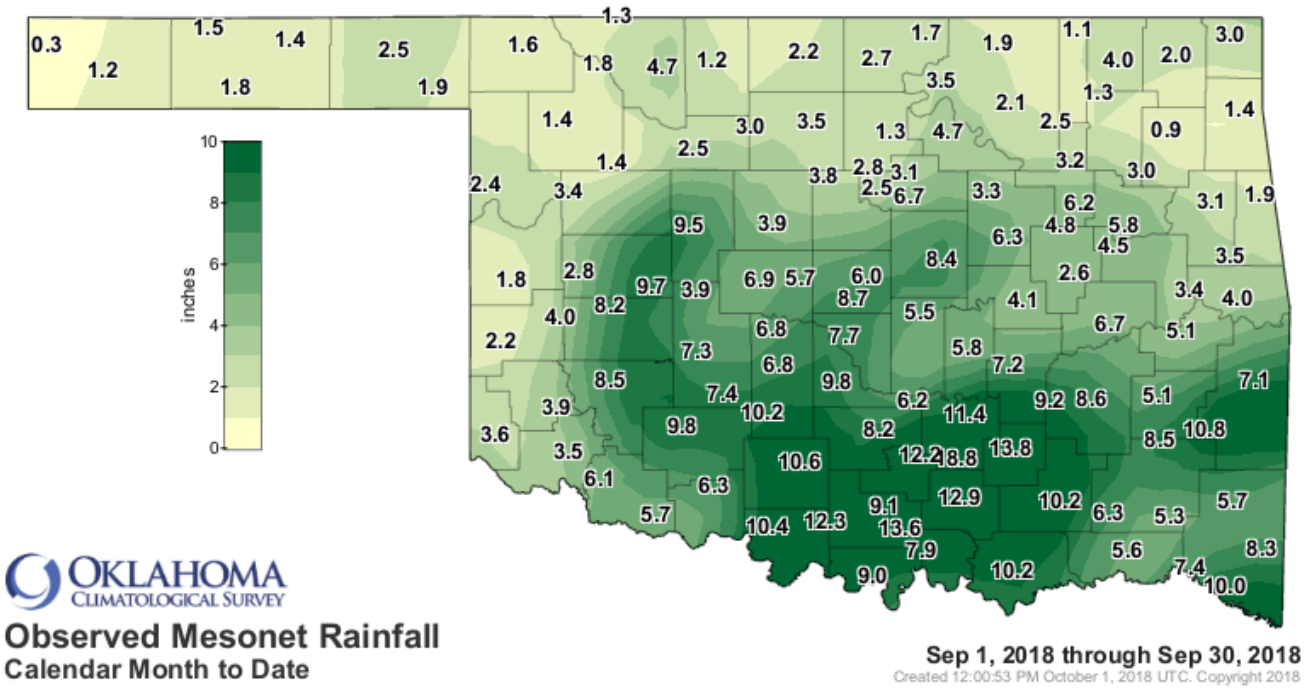
Precipitation

	Total	Depart.	Rank (1895-2018)
Month (September)	5.21 in.	1.68 in.	19th Wettest
Year-to-Date (Jan-Sept)	29.15 in.	0.76 in.	40th Wettest

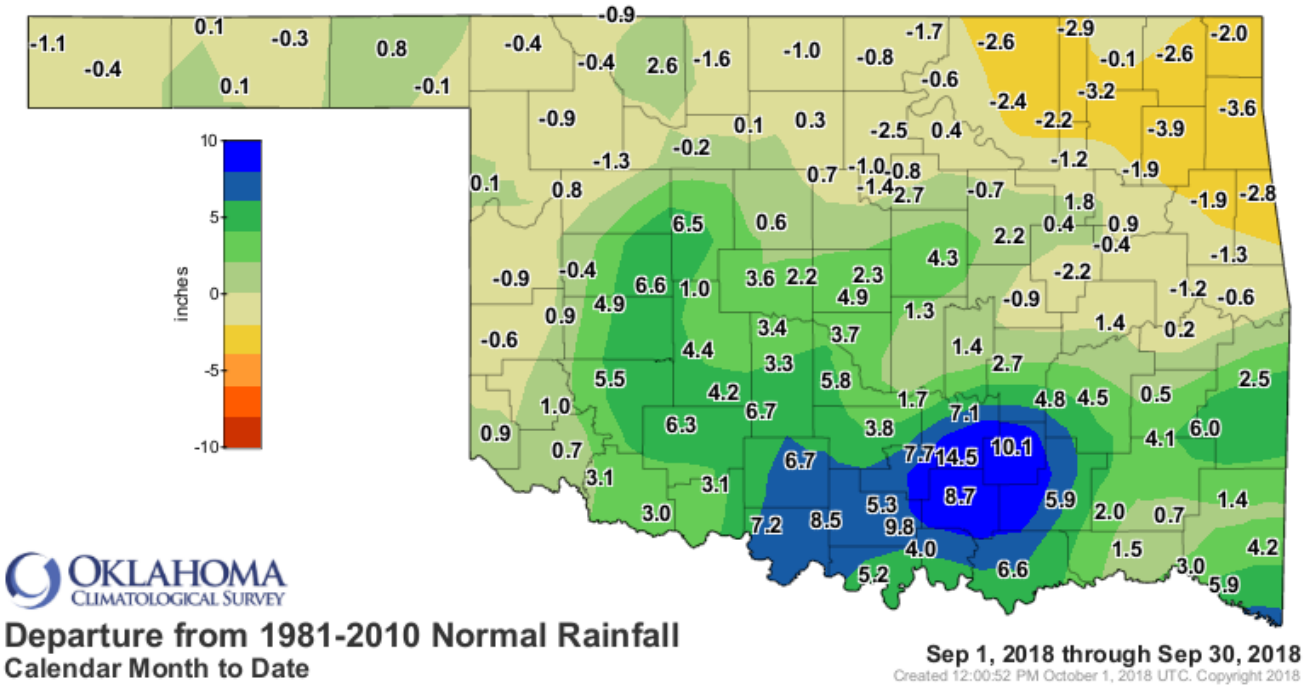
Depart. = departure from 30-year normal

Drought took a large step back for the second consecutive month. Drought coverage dropped from 55 percent of the state at the beginning of August to 9 percent at the end of September. Only two small core areas of drought remained – across far southwestern Oklahoma and a smaller area centered on eastern Osage and southern Washington counties. The October outlooks from the Climate Prediction Center (CPC) indicate increased odds of above normal temperatures across the entire state, but especially eastern Oklahoma, and above normal precipitation. Given those outlooks, CPC's October Drought Outlook sees improvement across the remaining drought areas in Oklahoma by the end of October.

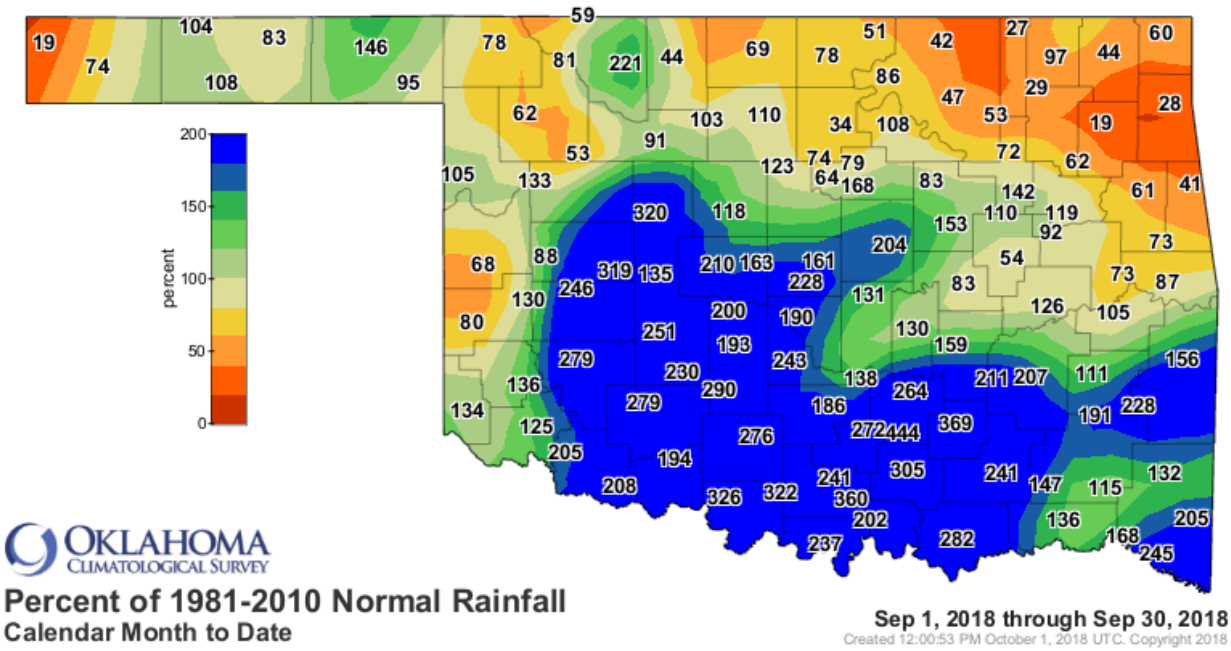
SEPTEMBER 2018 OBSERVED PRECIPITATION



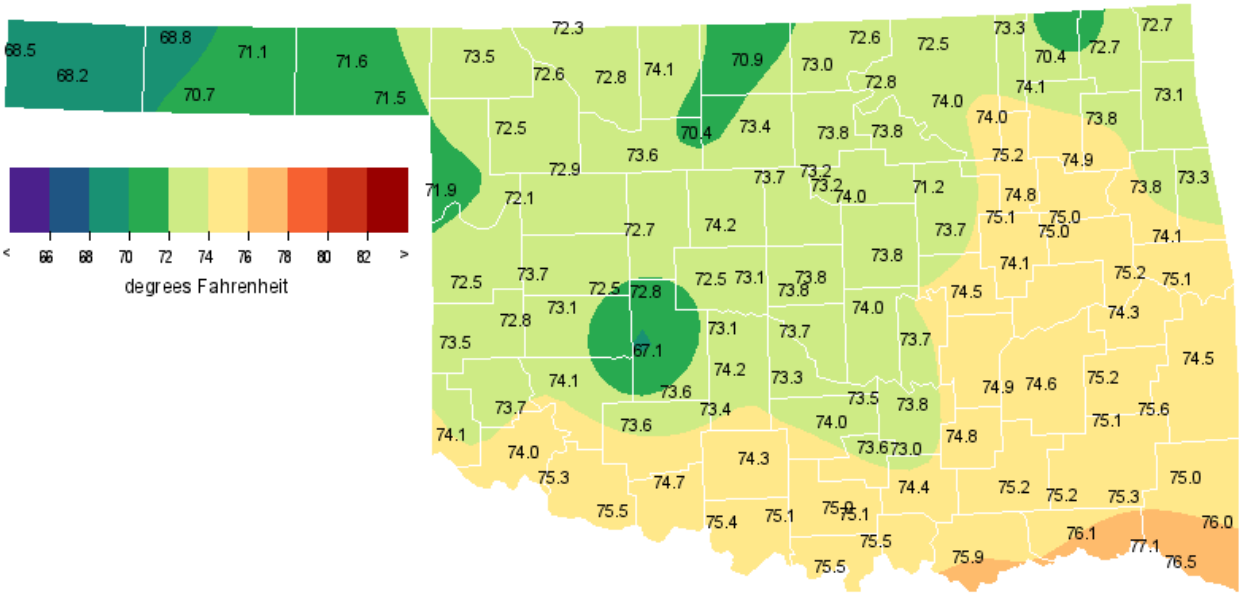
SEPTEMBER 2018 DEPARTURE FROM NORMAL PRECIPITATION



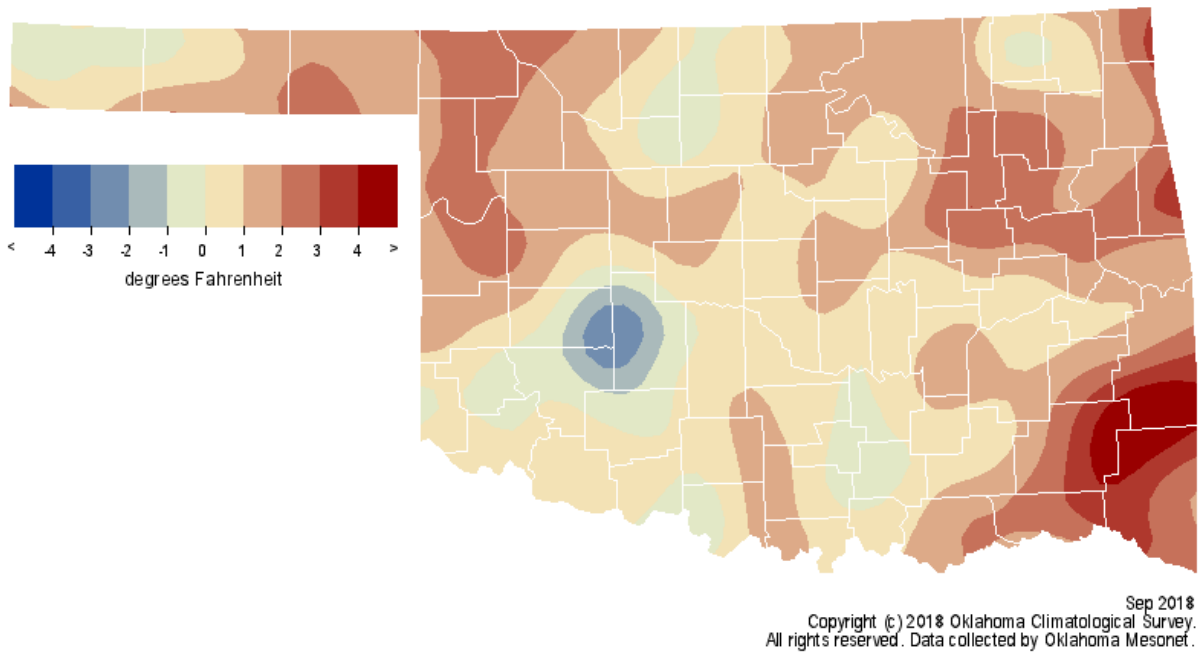
SEPTEMBER 2018 PERCENT OF NORMAL PRECIPITATION



SEPTEMBER 2018 AVERAGE TEMPERATURE



SEPTEMBER 2018 DEPARTURE FROM NORMAL TEMPERATURE

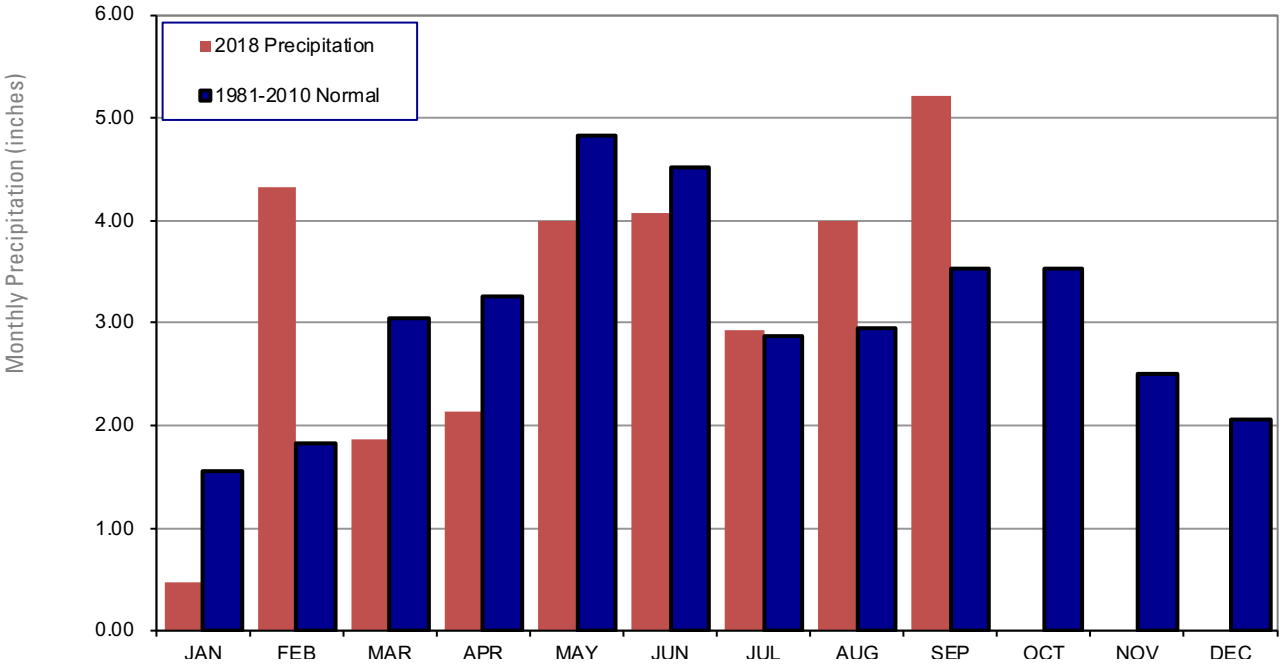


MESONET MONTHLY SUMMARY FOR SEPTEMBER 2018

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
PANHANDLE										
Arnett	71.9	94	1	40	27	23	230	2.35	1.28	21
Beaver	71.4	95	1	43	22	33	226	2.45	1.12	21
Boise City	68.1	93	13	38	22	53	146	1.15	.94	3
Buffalo	73.4	99	1	41	27	19	271	1.60	.77	20
Eva	68.7	94	17	36	22	55	165	1.54	1.00	4
NORTH CENTRAL										
Alva	72.8	98	1	42	27	17	251	4.72	1.30	2
Blackwell	73.0	98	1	38	27	19	258	2.66	1.46	4
Breckinridge	73.4	95	1	41	27	16	267	3.46	1.52	4
Cherokee	74.0	100	1	43	27	9	280	1.23	.47	4
Fairview	73.5	99	1	42	27	14	270	2.54	.59	4
Freedom	72.5	97	1	41	27	21	247	1.81	.72	3
Lahoma	72.8	97	1	44	27	****	****	3.03	1.69	7
NORTHEAST										
Bixby	74.8	95	19	49	27	7	300	6.20	4.59	21
Burbank	72.8	93	1	37	27	21	254	3.49	1.97	4
Copan	73.2	95	19	38	27	20	267	1.07	.50	6
Foraker	72.4	94	1	39	27	21	245	1.87	.97	4
Inola	74.9	98	19	46	27	13	309	3.01	2.88	21
Jay	73.2	95	19	44	27	16	261	1.39	.51	21
Miami	72.7	93	19	42	27	20	251	3.02	1.83	7
Nowata	72.7	94	19	39	27	****	****	4.00	1.77	5
WEST CENTRAL										
Bessie	73.2	99	1	45	27	19	264	8.18	4.00	21
Butler	73.6	99	1	40	27	16	274	2.79	.82	6
Camargo	72.1	95	1	40	27	19	232	3.41	2.45	21
Cheyenne	72.5	93	1	44	27	20	245	1.80	.95	21
Elk City	72.9	97	1	45	27	15	250	3.99	1.13	5
CENTRAL										
Acme	73.5	97	1	42	27	17	271	10.19	3.76	21
Bowlegs	73.7	94	1	47	27	15	277	5.83	3.32	21
Bristow	73.6	95	19	45	27	11	271	6.30	4.38	21
Lake Carl Blac	73.3	96	1	40	27	17	265	2.78	1.08	21
Chandler	73.8	93	1	46	27	12	277	8.39	5.51	21
Chickasha	74.1	97	1	47	27	11	284	6.77	2.74	21
El Reno	72.5	95	1	43	27	20	245	6.88	3.01	21
Guthrie	74.0	97	1	44	27	13	281	3.76	1.62	21
Kingfisher	74.2	98	1	44	27	13	290	3.91	1.72	21
Marena	73.1	94	1	43	27	14	257	2.47	.93	21
Minco	73.1	96	1	45	27	14	256	6.76	3.43	21
EAST CENTRAL										
Cookson	74.1	95	19	46	27	13	285	3.47	2.75	21
Eufaula	*****	***	***	***	***	****	****	6.65	5.70	21
Haskell	74.9	97	19	49	27	8	306	4.50	2.48	21
Hectorville	75.1	98	19	50	27	7	310	4.77	3.83	21
Holdenville	*****	***	***	***	***	****	****	7.18	4.63	21
McAlester	74.6	95	19	49	27	7	295	8.61	6.33	21
Okmulgee	74.1	98	19	47	27	11	284	2.64	2.25	21
SOUTHWEST										
Altus	74.1	95	2	46	27	10	283	3.51	1.49	26
Apache	73.6	97	1	45	27	14	272	7.40	3.11	21
Fort Cobb	71.9	90	19	44	27	****	****	7.31	2.45	21
Grandfield	75.5	100	1	50	27	8	324	5.74	2.90	21
Hinton	72.7	96	1	44	27	21	253	3.94	1.59	21
Hobart	74.1	100	2	46	27	15	288	8.51	3.19	7
SOUTH CENTRAL										
Ada	73.7	93	1	48	27	15	275	11.37	7.83	21
Ardmore	75.1	95	1	51	27	6	308	13.56	5.67	21
Burneyville	75.5	97	1	49	27	5	321	8.99	4.26	21
Byars	73.4	92	1	48	27	17	270	6.19	3.51	21
Centrahoma	74.8	95	19	49	27	8	302	13.83	9.69	21
Durant	75.8	95	19	55	27	0	325	10.16	4.55	22
Fittstown	72.9	92	1	50	27	14	252	18.75	14.20	21
Ketchum Ranch	74.2	96	1	48	27	12	289	10.55	4.93	21
SOUTHEAST										
Antlers	75.2	96	19	53	28	2	307	6.30	3.79	21
Broken Bow	76.1	97	19	57	26	1	334	8.26	2.56	21
Clayton	75.1	97	19	53	27	1	305	8.54	4.17	21
Cloudy	75.4	95	18	56	28	2	313	5.31	2.27	21
Hugo	76.1	96	19	57	28	0	334	5.56	1.98	21
Idabel	76.5	97	19	58	27	0	346	10.01	3.54	21

NAME	MEAN TEMP	HIGH TEMP	HIGH DAY	LOW TEMP	LOW DAY	HDD	CDD	TOT PPT	HIGH 24-HR	HIGH DAY
Goodwell	70.5	94	24	39	22	35	199	1.76	.89	6
Hooker	70.9	96	1	40	22	37	215	1.37	.50	2
Kenton	68.4	96	13	39	27	48	149	.26	.14	3
Slapout	71.3	95	1	40	27	31	221	1.93	.47	2
May Ranch	72.3	97	1	44	27	27	246	1.33	.59	3
Medford	37.6	97	1	***	18	15	254	2.18	.86	7
Newkirk	72.6	94	1	42	27	16	243	1.73	.93	5
Red Rock	73.7	95	1	39	27	17	278	1.26	.46	21
Seiling	72.9	97	1	40	27	20	259	1.41	.77	21
Woodward	72.5	94	1	43	27	18	243	1.38	.87	21
Pawnee	73.7	94	1	41	27	16	278	4.65	2.20	4
Porter	75.1	97	19	49	27	8	311	5.76	4.60	21
Pryor	73.7	96	19	43	27	14	277	.90	.77	21
Skiatook	73.9	95	19	44	27	15	283	2.49	1.02	21
Talala	74.1	97	19	42	27	14	286	1.29	.62	6
Tulsa	75.1	96	19	48	27	11	315	3.21	2.48	21
Vinita	72.7	94	19	40	27	21	252	2.00	1.06	7
Wynona	73.9	95	19	40	27	18	285	2.11	.87	5
Erick	73.5	96	1	44	27	15	269	2.16	.80	26
Putnam	37.4	96	1	***	27	13	245	2.14	.76	21
Watonga	72.7	96	1	47	27	20	251	9.50	3.39	7
Weatherford	72.5	96	1	47	27	20	244	9.67	3.20	6
Marshall	73.7	95	1	42	27	15	275	3.80	1.63	21
Norman	73.6	94	1	47	27	12	270	7.73	2.63	21
Oilton	73.7	94	18	42	27	****	****	3.28	2.47	21
OKC East	73.9	94	1	46	27	13	279	8.68	2.45	4
Okemah	74.5	96	19	50	27	8	292	4.05	2.61	21
Perkins	74.0	95	1	44	27	13	282	6.66	3.34	5
Shawnee	74.0	95	1	47	27	13	282	5.52	2.62	21
Spencer	73.7	95	1	45	27	14	276	5.97	2.57	21
Stillwater	74.0	95	1	42	27	15	285	3.14	1.47	4
Washington	73.2	97	1	47	27	13	260	9.80	4.24	21
Yukon	73.0	93	1	44	27	15	256	5.65	3.29	21
Sallisaw	75.1	96	19	51	27	5	309	3.99	3.29	21
Stigler	74.3	96	19	49	27	7	286	5.06	3.64	21
Stuart	74.9	96	19	49	27	10	307	9.15	6.52	21
Tahlequah	73.9	95	19	45	27	13	279	3.08	1.90	21
Webbers Falls	75.1	96	18	49	27	6	310	3.36	3.10	21
Westville	73.3	94	19	47	27	14	262	1.93	1.18	21
Hollis	74.1	98	2	47	27	9	281	3.60	1.17	21
Mangum	73.6	98	2	41	27	17	276	3.90	1.78	26
Medicine Park	73.6	98	1	48	27	12	271	9.78	3.37	21
Tipton	75.2	100	1	49	27	9	316	6.12	1.94	21
Walters	74.7	97	1	48	27	10	300	6.32	3.05	21
Lane	75.2	95	19	56	26	1	308	10.16	5.83	21
Madill	75.5	96	1	51	27	5	321	7.86	3.04	21
Newport	75.0	95	19	49	27	7	308	9.11	5.56	21
Pauls Valley	74.0	94	1	48	27	13	284	8.23	3.91	21
Ringling	75.1	98	1	48	27	9	314	12.28	6.46	21
Sulphur	73.6	94	1	48	27	12	271	12.23	6.51	21
Tishomingo	74.5	94	1	51	27	7	292	12.91	7.09	21
Waurika	75.4	99	1	47	27	9	321	10.44	5.71	21
Mt Herman	75.1	95	19	57	27	2	305	5.70	2.34	21
Talihina	75.6	100	19	53	27	2	321	10.75	8.27	21
Valliant	77.1	99	18	56	28	0	365	7.40	2.69	22
Wilburton	75.1	98	19	50	27	5	308	5.06	3.78	21
Wister	74.4	98	19	52	28	2	286	7.05	5.49	21

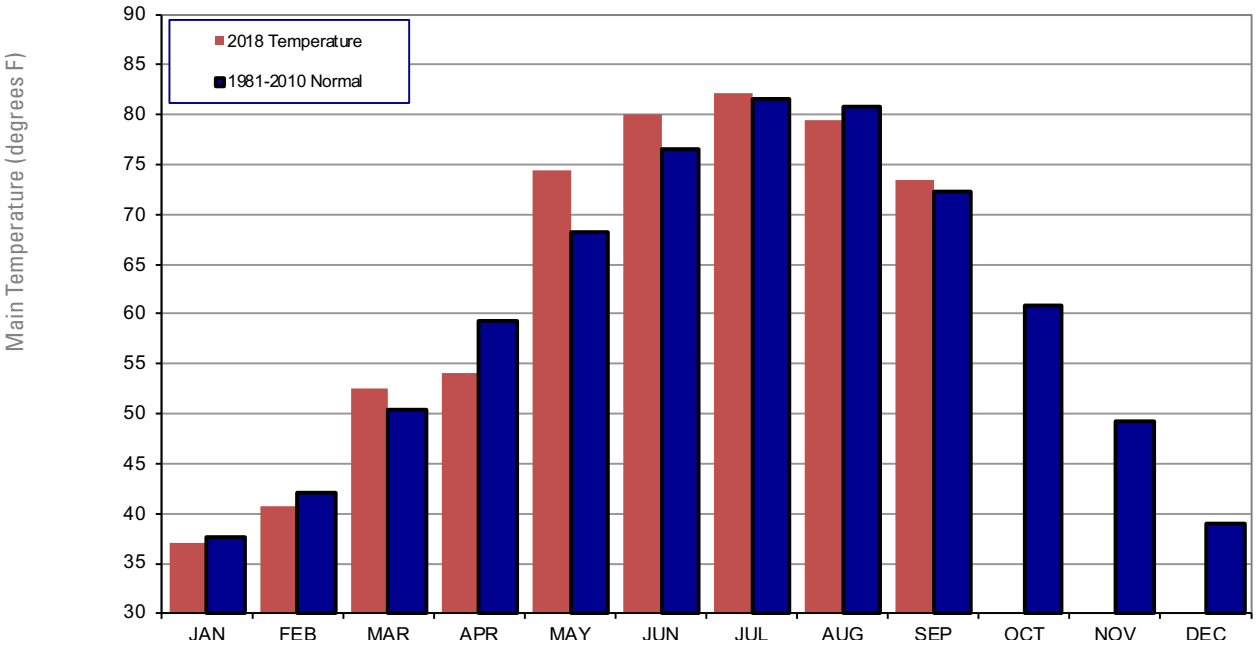
2018 STATEWIDE PRECIPITATION MONTHLY TOTALS VS. NORMAL



September 2018 Mesonet Precipitation Comparison

Climate Division	Precipitation (inches)	Departure from Normal (inches)	Rank since 1895	Wettest on Record (Year)	Driest on Record (Year)	Sep-17 (inches)
Panhandle	1.60	-0.22	56th Driest	5.03 (1925)	0.04 (1956)	2.94
North Central	2.21	-0.63	50th Driest	7.43 (1923)	0.07 (2000)	2.62
Northeast	2.90	-1.60	48th Driest	12.12 (1986)	0.29 (1948)	2.31
West Central	5.19	2.44	15th Wettest	8.68 (1923)	0.06 (1956)	3.00
Central	5.93	2.07	18th Wettest	9.81 (1945)	0.21 (1956)	3.43
East Central	4.95	0.28	39th Wettest	10.16 (1993)	0.24 (1948)	1.35
Southwest	6.01	3.03	10th Wettest	8.48 (1936)	0.04 (1939)	5.33
South Central	11.04	7.11	1st Wettest	9.69 (1936)	0.13 (1956)	1.96
Southeast	7.27	3.00	15th Wettest	11.97 (1974)	0.36 (2017)	0.36
Statewide	5.21	1.68	19th Wettest	7.77 (1945)	0.25 (1956)	2.62

2018 STATEWIDE TEMPERATURE MONTHLY TOTALS VS. NORMAL



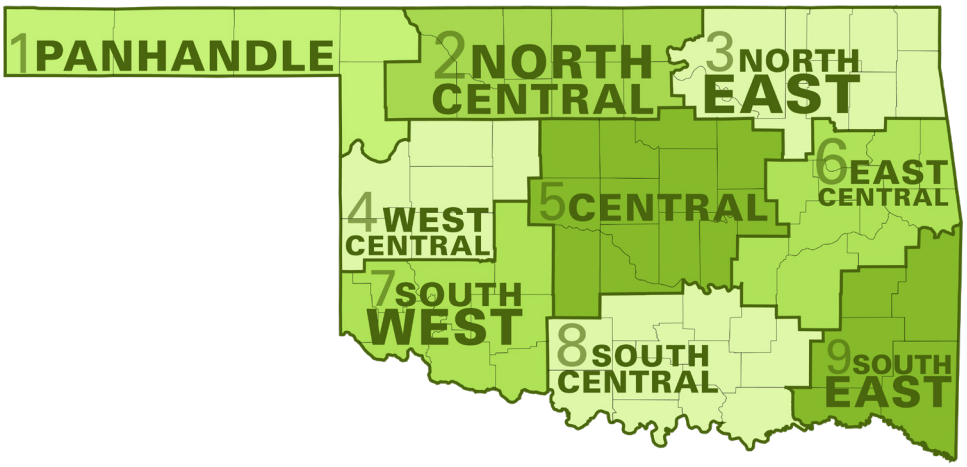
September 2018 Mesonet Temperature Comparison

Climate Division	Average Temp (F)	Departure from Normal (F)	Rank since 1895	Hottest on Record (Year)	Coldest on Record (Year)	Sep-17 (F)
Panhandle	70.5	1.1	50th Warmest	76.9 (1931)	62.3 (1974)	70.1
North Central	72.7	0.8	58th Warmest	80.6 (1931)	63.6 (1974)	73.0
Northeast	73.5	2.0	49th Warmest	79.8 (1939)	63.9 (1974)	72.9
West Central	72.9	0.9	61st Warmest	80.2 (1931)	64.5 (1974)	72.6
Central	73.5	0.7	55th Coolest	81.7 (1931)	64.9 (1974)	73.8
East Central	74.5	1.9	51st Warmest	81.8 (1939)	65.1 (1974)	74.2
Southwest	73.5	-0.4	46th Coolest	81.6 (1931)	66.2 (1974)	74.0
South Central	74.6	0.5	52nd Coolest	81.8 (1939)	66.6 (1974)	74.4
Southeast	75.6	2.9	29th Warmest	81.0 (1939)	65.8 (1974)	74.5
Statewide	73.4	1.1	59th Warmest	80.1 (1931)	64.7 (1974)	73.3

MESONET EXTREMES FOR SEPTEMBER 2018

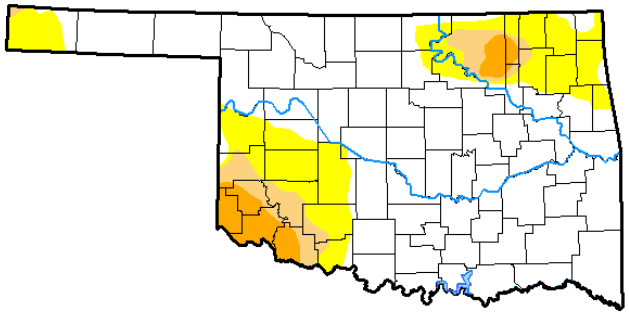
Climate Division	High Temp (F)	Day	Station	Low Temp (F)	Day	Station	High Monthly Rainfall (inches)	Station	High Daily Rainfall (inches)	Day	Station
Panhandle	99	1st	Buffalo	36	22nd	Eva	2.45	Beaver	1.28	21st	Arnett
North Central	100	1st	Cherokee	38	27th	Blackwell	4.72	Alva	1.69	7th	Lahoma
Northeast	98	19th	Inola	37	27th	Burbank	6.20	Bixby	4.60	21st	Porter
West Central	99	1st	Bessie	40	27th	Butler	9.67	Weatherford	4.00	21st	Bessie
Central	98	1st	Kingfisher	40	27th	Lake Carl Blackwell	10.19	Acme	5.51	21st	Chandler
East Central	98	19th	Hectorville	45	27th	Tahlequah	9.15	Stuart	6.52	21st	Stuart
Southwest	100	2nd	Hobart	41	27th	Mangum	9.78	Medicine Park	3.37	21st	Medicine Park
South Central	99	1st	Waurika	47	27th	Waurika	18.75	Fittstown	14.20	21st	Fittstown
Southeast	100	19th	Talihina	50	27th	Wilburton	10.75	Talihina	8.27	21st	Talihina
Statewide	100	19th	Talihina	36	22nd	Eva	18.75	Fittstown	14.20	21st	Fittstown

Oklahoma Climate Divisions



U.S. Drought Monitor

Oklahoma



September 25, 2018

(Released Thursday, Sep. 27, 2018)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	72.93	27.07	9.11	4.16	0.00	0.00
Last Week *09-18-2018*	52.36	47.64	17.50	6.60	0.57	0.00
3 Months Ago *06-26-2018*	27.72	72.28	54.09	28.12	11.75	0.40
Start of Calendar Year *01-02-2018*	0.00	100.00	77.15	38.76	0.00	0.00
Start of Water Year *09-26-2017*	64.46	35.54	0.77	0.00	0.00	0.00
One Year Ago *09-26-2017*	64.46	35.54	0.77	0.00	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.

Author:

Jessica Blunden

NCEI/NOAA

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

Oklahoma Climatological Survey is the State Climate Office for Oklahoma

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