Oklahoma Water Resources Bulletin
& Summary of Current Conditions

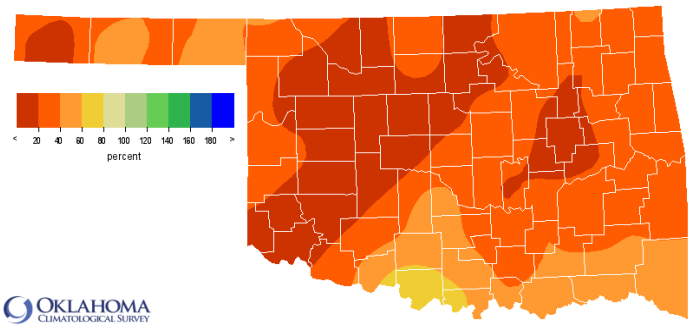
OWRB the water agency

December 13, 2018

Precipitation

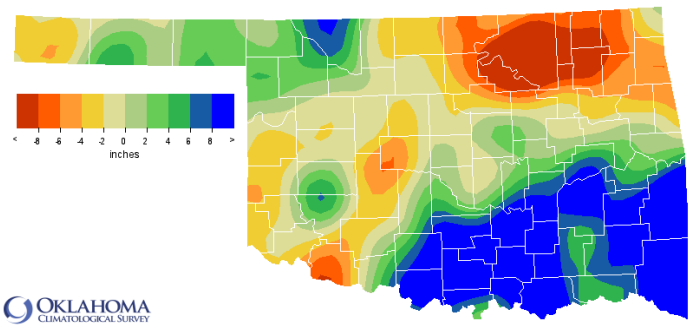
Statewide Precipitation

Climate Division	Last 30 Days (November 13 – December 12, 2018) Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921	Last 365 Days (December 13, 2017 – December 12, 2018) Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921
PANHANDLE	0.24"	-0.48"	33%	32nd driest	21.46"	+0.88"	104%	32nd wettest
NORTH CENTRAL	0.26"	-1.16"	18%	24th driest	31.22"	-0.20"	99%	40th wettest
NORTHEAST	0.72"	-2.00"	27%	19th driest	35.40"	-7.27"	83%	25th driest
WEST CENTRAL	0.24"	-1.04"	19%	27th driest	28.43"	+0.03"	100%	36th wettest
CENTRAL	0.48"	-1.59"	23%	19th driest	37.30"	-0.33"	99%	39th wettest
EAST CENTRAL	0.91"	-2.59"	26%	17th driest	48.13"	+1.99"	104%	22nd wettest
SOUTHWEST	0.26"	-1.20"	18%	19th driest	28.77"	-1.50"	95%	43rd wettest
SOUTH CENTRAL	1.08"	-1.48"	42%	30th driest	51.13"	+10.42"	126%	8th wettest
SOUTHEAST	2.01"	-2.47"	45%	29th driest	61.00"	+10.41"	121%	12th wettest
STATEWIDE	0.67"	-1.55"	30%	22nd driest	37.89"	+1.42"	104%	28th wettest



Percentage of 1981-2010 Normal Rainfall
Last 30 Days

Nov 13, 2018 through Dec 12, 2018

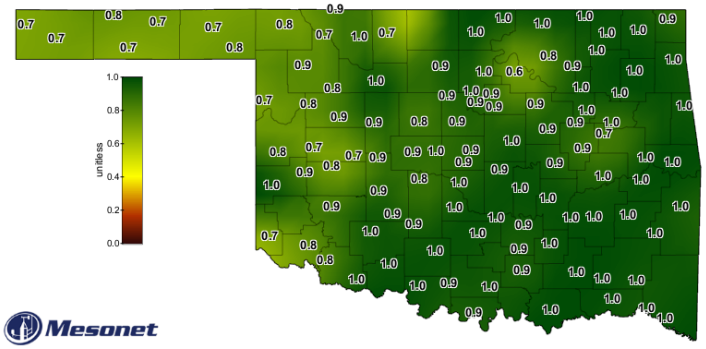


Departure from 1981-2010 Normal Rainfall
Last 365 Days

Dec 13, 2017 through Dec 12, 2018

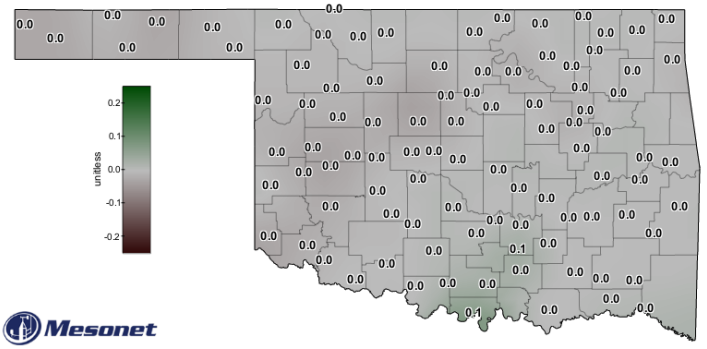
Soil Moisture

Fractional Water Index
December 12, 2018



1-day Average 10-inch Fractional Water Index

December 12, 2018



7-day 10-inch Fractional Water Index Change

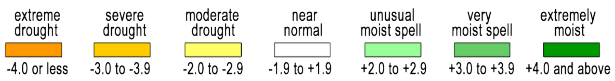
December 12, 2018

The Fractional Water Index ranges from very dry soil having a value of 0 to soil at field capacity illustrated by a value of 1.
[1.0-0.8 = Enhanced Growth; 0.8-0.5 = Limited Growth; 0.5-0.3 = Plants Wilting; 0.3-0.1 = Plants Dying; <0.1 = Barren Soil.]

Drought Indices

Palmer Drought Severity Index (PDSI)

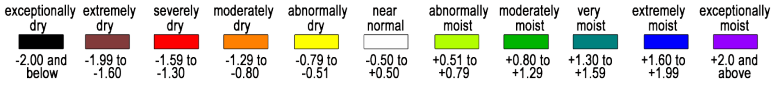
Climate Division	Status 12/08/18	Value 11/10	Value 12/08	Change in Value
NORTHWEST	Unusual Moist Spell	3.33	2.74	0.59 (-)
NORTH CENTRAL	Unusual Moist Spell	2.78	2.59	0.19 (-)
NORTHEAST	Near Normal	0.43	0.04	0.39 (-)
WEST CENTRAL	Unusual Moist Spell	3.06	2.57	0.49 (-)
CENTRAL	Unusual Moist Spell	2.43	2.01	0.42 (-)
EAST CENTRAL	Near Normal	1.66	0.95	0.71 (-)
SOUTHWEST	Very Moist Spell	3.38	3.01	0.37 (-)
SOUTH CENTRAL	Extremely Moist	4.24	4.01	0.23 (-)
SOUTHEAST	Very Moist Spell	3.34	3.14	0.2 (-)



The PDSI is based upon precipitation, temperature, and soil moisture, and is considered most effective for unirrigated cropland, spanning from -10 (dry) to +10 (wet). According to the latest PDSI, as of December 8, all climate regions in the state were experiencing near normal conditions or wetter.

Standardized Precipitation Index (SPI)
Through November 2018

3-month	12-month	24-month
Very Moist	Moderately Moist	Very Moist
Moderately Moist	Abnormally Moist	Moderately Moist
Near Normal	Near Normal	Near Normal
Extremely Moist	Abnormally Moist	Moderately Moist
Moderately Moist	Abnormally Moist	Moderately Moist
Abnormally Moist	Abnormally Moist	Moderately Moist
Exceptionally Moist	Near Normal	Moderately Moist
Exceptionally Moist	Very Moist	Moderately Moist
Moderately Moist	Moderately Moist	Abnormally Moist



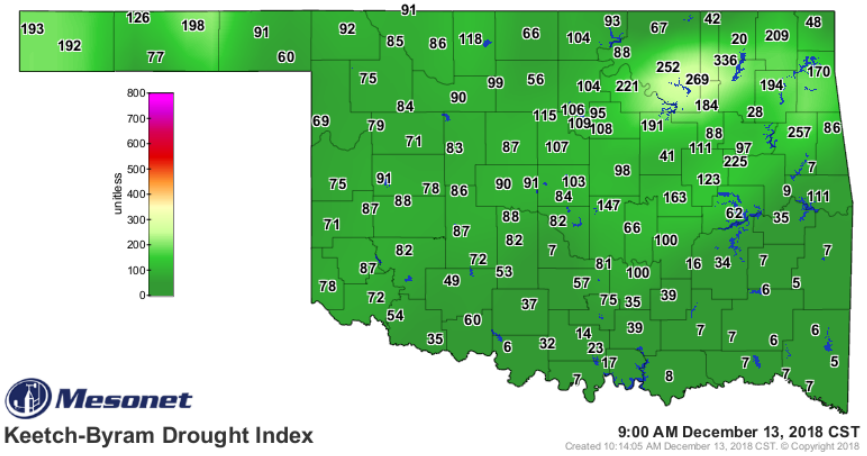
The SPI provides a comparison of precipitation over several specified periods with totals from the same periods for all years included in the historical record. For all three time periods shown, all climate regions were near normal or wetter. For the 3-month period, the Southwest and Sout Central climate regions were Exceptionall Moist, the wettest classification.

Keetch-Byram Drought Fire Index

December 13, 9:00 a.m., zero stations are above 600.

Zero stations were above 600 on November 15, 2018.

The Keetch-Byram Drought Index measures the state of near-surface soil moisture (within the uppermost eight inches of soil) as well as the amount of fuel available for fires. KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.

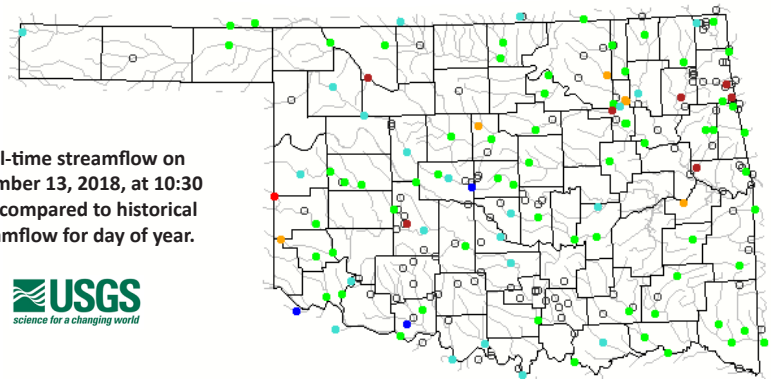


Streamflow Conditions

December 13, 2018

Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Visit waterwatch.usgs.gov for real-time streamflow information.



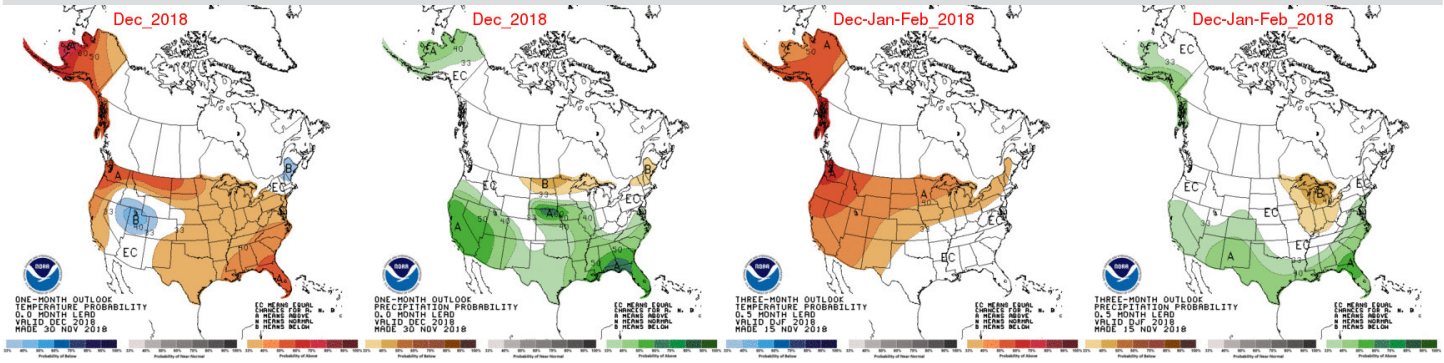
Real-time streamflow on December 13, 2018, at 10:30 a.m. compared to historical streamflow for day of year.

USGS science for a changing world

Weather/Drought Forecast

Seasonal Outlook

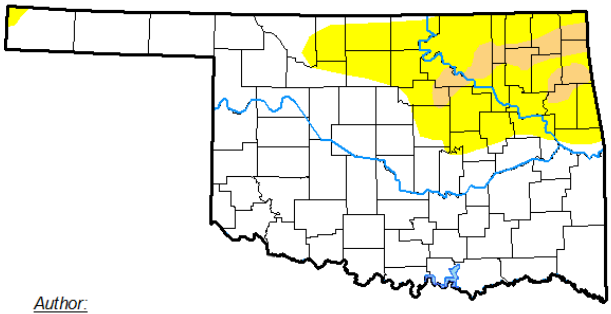
Temperature | Precipitation | Temperature | Precipitation



The contours on the maps show the total probability of three categories—above, indicated by the letter "A"; and below, indicated by the letter "B". "EC" indicates "Equal Chances" for A or B.

Drought Summary & Outlook

U.S. Drought Monitor
Oklahoma



December 11, 2018
(Released Thursday, Dec. 13, 2018)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	73.18	26.82	4.83	0.00	0.00	0.00
Last Week 12-04-2018	81.67	18.33	3.15	0.00	0.00	0.00
3 Months Ago 09-11-2018	60.78	39.22	17.25	6.60	0.57	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 12-12-2017	0.00	100.00	54.98	28.35	3.12	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.

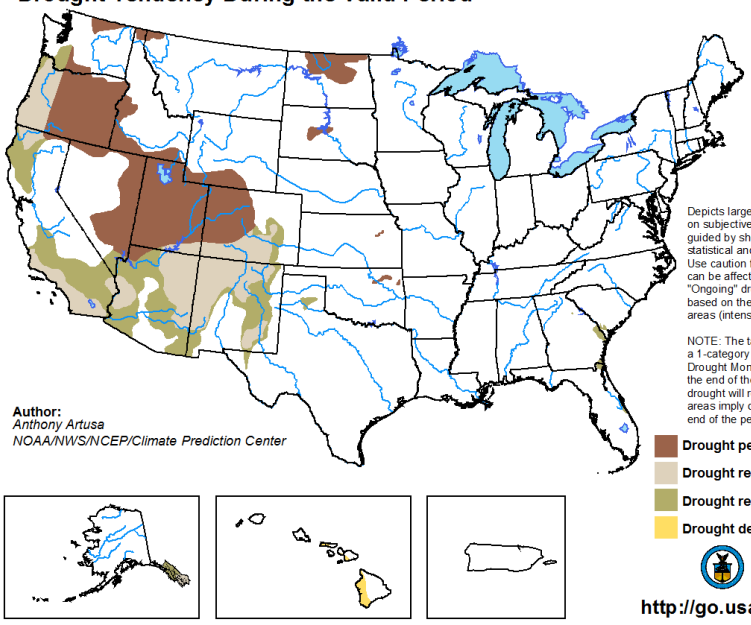
Author:
Curtis Riganti
National Drought Mitigation Center

http://droughtmonitor.unl.edu/

According to the latest U.S. Drought Monitor, as of December 11, the estimated Oklahoma population in drought areas was 223,859, which is up by about 100,000 from this time last month. About 5% of the state (in area) is experiencing drought conditions (D1 or worse), while nearly 27% of the state is experiencing abnormally dry conditions (D0 or worse). The driest areas of the state are in the northeast.

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period

Valid for November 15, 2018 - February 28, 2019
Released November 15, 2018



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- **Drought persists**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

Author:
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NOAA/NWS/NCEP/Climate Prediction Center

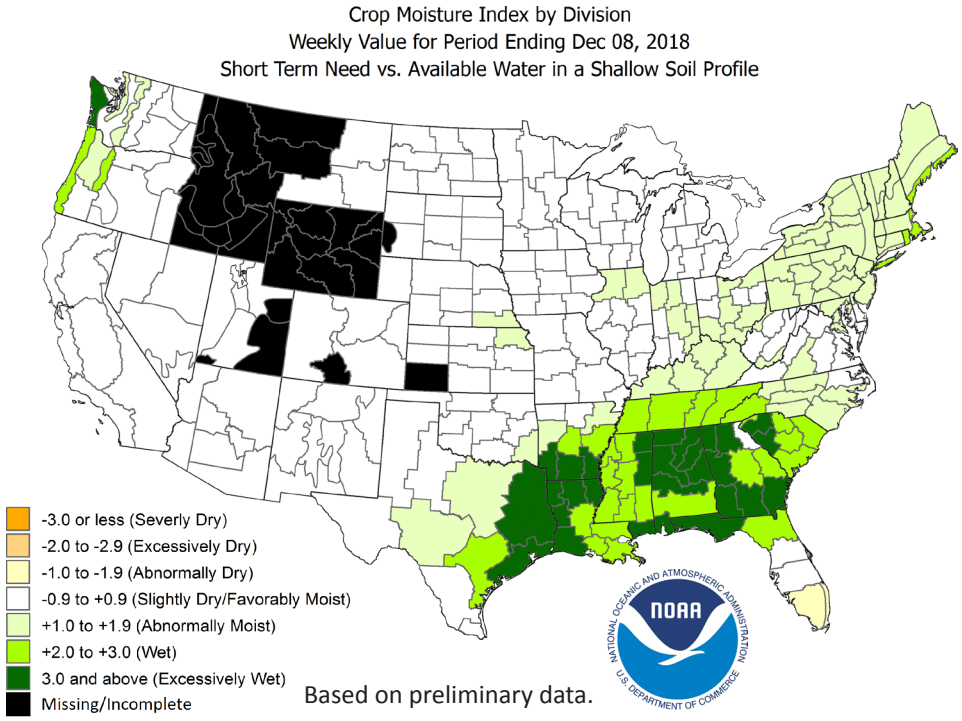
http://go.usa.gov/3eZ73

According to the latest seasonal drought outlook for the period of November 15, 2018, through February 28, 2019, there will be small patches persistent drought in the Northeast region, but the rest of the state should be unaffected by drought. However, drought is predicted to persist in many areas west of Oklahoma, including a huge area stretching from eastern Nevada through Utah and western Colorado, and a second large area covering almost all of Oregon except the west coast.

Crop Moisture Index

According to the NOAA Crop Moisture Index by Division, for the period ending December 8, 2018, the Southeast climate region was experiencing Abnormally Moist conditions (+1.0 to +1.9), while the rest of the state was experiencing Slightly Dry/Favorably Moist conditions (-0.9 to +0.9).

Derived from the Palmer Drought Severity Index (PDSI), the Crop Moisture Index reflects moisture supply in the short-term across major crop-producing regions. It identifies potential agricultural droughts. It is not intended to assess long-term droughts.

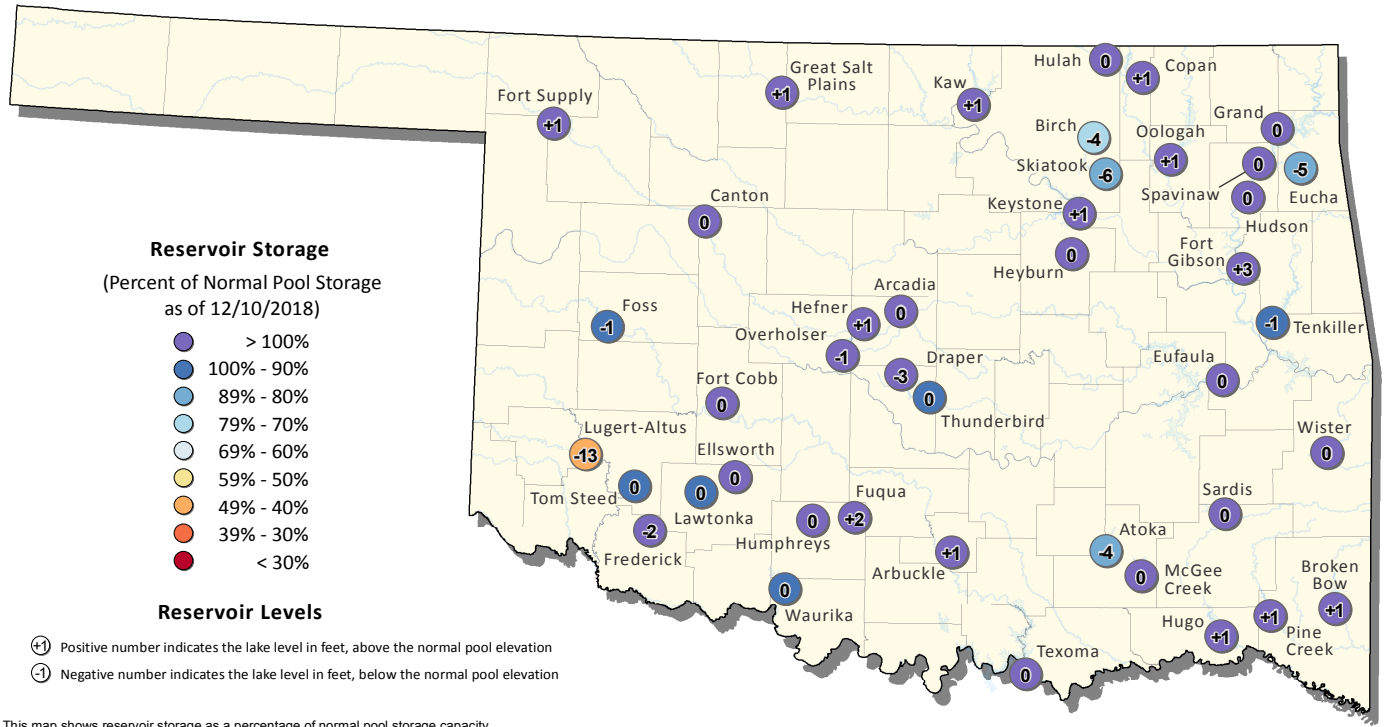


Based on preliminary data.

Reservoir Storage

Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 12/10/2018



This map shows reservoir storage as a percentage of normal pool storage capacity.
The source information was collected from real-time lake gages monitored by the U.S. Army Corps of Engineers (http://www.swt-wc.usace.army.mil/old_resvrept.htm), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_cd)
For more information please visit the OWRB's website at:
(http://www.owrb.ok.gov)

State of Oklahoma OWRB Water Resources Board the water agency

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