Drought Conditions in Central Oklahoma

Water Resources Division
Association of Central Oklahoma Governments
November 30, 2018
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2018

http://xmacis.rcc-acis.org/
The climate divisions shown include statewide totals, central Oklahoma totals, and totals for the two divisions which have Canton Lake and Lake Atoka—major water sources for central Oklahoma.

http://climate.ok.gov/index.php/drought/last_30_days/
White areas are shown as EC (Equal Chance) on these maps represent areas where there are no strong climate signals from the climate tools to have skill in preferring one category over another. That doesn’t mean that there are equal chances of each of the categories occurring – it means that currently there is no skill in identifying the most likely category. In these areas, it is best to be prepared for all possibilities.
This graph shows the cyclical nature of wet and drought periods in Oklahoma. The black dots represent the annual precipitation for that particular year. The line represents the annual precipitation data smoothed over five years. This smoothed line shows well the wet periods (shaded green) and the drought periods (shaded brown). The drought cycles appear to average about five to eight years in length.
The Palmer Drought Index (PDI) maps show long-term (cumulative) meteorological drought and wet conditions. The maps show how the geographical pattern of the long-term (meteorological) moisture conditions has changed over the last 12 months. On these maps, the red shading denotes drought conditions while the green shading indicates wet conditions.
Abnormal dryness or drought are currently affecting approximately 127,000 people in Oklahoma, which is about 3% of the state's population.

### U.S. Drought Monitor

#### Oklahoma

Abnormal dryness or drought are currently affecting approximately 127,000 people in Oklahoma, which is about 3% of the state's population.

![Map of Oklahoma](https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OK)

<table>
<thead>
<tr>
<th>Week</th>
<th>None</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
<th>D4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>81.67</td>
<td>18.33</td>
<td>3.27</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Last Week</td>
<td>92.22</td>
<td>7.78</td>
<td>2.12</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>3 Months Ago</td>
<td>53.85</td>
<td>46.15</td>
<td>31.47</td>
<td>18.63</td>
<td>5.65</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Calendar Year</td>
<td>0.00</td>
<td>100.00</td>
<td>75.97</td>
<td>28.19</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Water Year</td>
<td>72.93</td>
<td>27.07</td>
<td>9.11</td>
<td>4.16</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>One Year Ago</td>
<td>27.12</td>
<td>72.88</td>
<td>39.90</td>
<td>20.80</td>
<td>0.78</td>
<td>0.00</td>
</tr>
</tbody>
</table>

U.S. Drought Monitor Nationwide Map

Map released: November 29, 2018
Data valid: November 27, 2018 | Author: Richard Helm, NOAA/NCEI

Intensity and Impacts

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

- Delineates dominant impacts
- S - Short-Term impacts, typically less than 6 months (e.g., agriculture, grasslands)
- L - Long-Term impacts, typically greater than 6 months (e.g., hydrology, ecology)

http://droughtmonitor.unl.edu
U.S. Drought Monitor

Monthly Drought Outlook Map

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

Valid for November 2018
Released October 31, 2018

Author:
Yun Fan
NOAA/NWS/NCEP/Climate Prediction Center

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

U.S. Drought Monitor
Seasonal Drought Outlook Map

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

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

Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center

USGS Streamflow Data

Friday, November 30, 2018 09:30ET

Thursday, November 29, 2018

Below normal 28-day average streamflow

https://waterdata.usgs.gov/ok/nwis/rt

https://waterwatch.usgs.gov/index.php?id=pa28d_dry&sid=w_map|m_pa28d_dwc&rr=ok
SOIL MOISTURE MAP

1-day Average 24-inch Fractional Water Index

http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture

http://www.mesonet.org/index.php/weather/map/24-inch_fractional_water_index/soil_moisture
CONSECUTIVE DAYS WITHOUT RAINFALL MAP

http://www.mesonet.org/index.php/weather/map/consecutive_days_with_less_than_0.25_inches_Rainfall/rainfall
Percent of Surface Water Conservation Storage
Central OK Reservoirs

The graph is the amount of water stored in five major lakes that supply water to central Oklahoma as a percent of capacity over the past year.


Lake Hefner and Lake Overholser are terminal storage for Canton Lake. Lake Draper is terminal storage for McGee Creek and Atoka Lakes.
Oklahoma Surface Water Resources
Reservoir Levels and Storage as of 11/26/2018

Reservoir Storage
(Percent of Normal Pool Storage as of 11/26/2018)

- > 100%
- 100% - 90%
- 89% - 80%
- 79% - 70%
- 69% - 60%
- 59% - 50%
- 49% - 40%
- 39% - 30%
- < 30%

Reservoir Levels

Positive number indicates the rise in feet above the normal pool elevation.
Negative number indicates the fall in feet below the normal pool elevation.

This map shows reservoir storage as a percentage of normal pool storage capacity. The source information was obtained from real-time lake stages monitored by the U.S. Army Corps of Engineers (http://www.phoenix.usace.army.mil/Basin:Basin_141106), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/monitor/?site_no=16000550). For more information, please visit the OWRB's website at (http://www.owrb.ok.gov).

Groundwater Levels
Spencer Mesonet Station

http://www.mesonet.org/index.php/weather/groundwater
ENSO Cycle
Recent Evolution, Current Status and Predictions

ENSO Alert System Status: El Niño Watch

- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near-to-above average across the east-central Pacific Ocean.
- El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~80% chance) and into spring (55-60% chance).

Summary