Drought Conditions in Central Oklahoma

Water Resources Division
Association of Central Oklahoma Governments
February 1, 2018
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2018

http://xmacis.rcc-acis.org/
Rainfall Summaries by Oklahoma Climate Division

### Calendar Year: 01-Jan-2017 through 31-Jan-2018

<table>
<thead>
<tr>
<th>Climate Division</th>
<th>Total Rainfall</th>
<th>Departure from Normal</th>
<th>Pct of Normal</th>
<th>Rank since 1921 (88 periods)</th>
<th>Driest on Record</th>
<th>Wettest on Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Central</td>
<td>0.00&quot;</td>
<td>-0.95&quot;</td>
<td>0%</td>
<td>3rd driest</td>
<td>0.00&quot; (1986)</td>
<td>3.92&quot; (1949)</td>
</tr>
<tr>
<td>Central</td>
<td>0.25&quot;</td>
<td>-1.18&quot;</td>
<td>17%</td>
<td>15th driest</td>
<td>0.00&quot; (1986)</td>
<td>5.73&quot; (1949)</td>
</tr>
<tr>
<td>S. Central</td>
<td>0.39&quot;</td>
<td>-1.63&quot;</td>
<td>19%</td>
<td>12th driest</td>
<td>0.02&quot; (2003)</td>
<td>6.86&quot; (1932)</td>
</tr>
<tr>
<td>Statewide</td>
<td>0.48&quot;</td>
<td>-1.09&quot;</td>
<td>31%</td>
<td>14th driest</td>
<td>0.04&quot; (1986)</td>
<td>5.30&quot; (1949)</td>
</tr>
</tbody>
</table>

### Water Year: 01-Oct-2017 through 31-Jan-2018

<table>
<thead>
<tr>
<th>Climate Division</th>
<th>Total Rainfall</th>
<th>Departure from Normal</th>
<th>Pct of Normal</th>
<th>Rank since 1921 (88 periods)</th>
<th>Driest on Record</th>
<th>Wettest on Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Central</td>
<td>3.17&quot;</td>
<td>-3.32&quot;</td>
<td>49%</td>
<td>18th driest</td>
<td>1.11&quot; (1950-51)</td>
<td>13.41&quot; (1986-87)</td>
</tr>
<tr>
<td>Central</td>
<td>5.94&quot;</td>
<td>-3.60&quot;</td>
<td>62%</td>
<td>30th driest</td>
<td>2.41&quot; (1921-22)</td>
<td>17.26&quot; (1984-85)</td>
</tr>
<tr>
<td>S. Central</td>
<td>4.30&quot;</td>
<td>-7.41&quot;</td>
<td>37%</td>
<td>8th driest</td>
<td>2.14&quot; (1950-51)</td>
<td>22.55&quot; (2015-16)</td>
</tr>
<tr>
<td>Statewide</td>
<td>5.22&quot;</td>
<td>-4.43&quot;</td>
<td>54%</td>
<td>17th driest</td>
<td>2.48&quot; (1950-51)</td>
<td>15.88&quot; (2015-16)</td>
</tr>
</tbody>
</table>

### Winter: 01-Dec 2017 through 31-Jan-2018

<table>
<thead>
<tr>
<th>Climate Division</th>
<th>Total Rainfall</th>
<th>Departure from Normal</th>
<th>Pct of Normal</th>
<th>Rank since 1921 (88 periods)</th>
<th>Driest on Record</th>
<th>Wettest on Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Central</td>
<td>0.09&quot;</td>
<td>-2.08&quot;</td>
<td>4%</td>
<td>1st driest</td>
<td>0.26&quot; (1976-77)</td>
<td>5.26&quot; (1984-85)</td>
</tr>
<tr>
<td>Central</td>
<td>0.99&quot;</td>
<td>-2.43&quot;</td>
<td>29%</td>
<td>6th driest</td>
<td>0.50&quot; (2010-11)</td>
<td>9.20&quot; (1984-85)</td>
</tr>
<tr>
<td>S. Central</td>
<td>2.13&quot;</td>
<td>-2.48&quot;</td>
<td>46%</td>
<td>19th driest</td>
<td>0.93&quot; (1951-52)</td>
<td>11.10&quot; (1997-98)</td>
</tr>
<tr>
<td>Statewide</td>
<td>1.52&quot;</td>
<td>-2.12&quot;</td>
<td>42%</td>
<td>9th driest</td>
<td>1.00&quot; (1955-56)</td>
<td>7.61&quot; (1997-98)</td>
</tr>
</tbody>
</table>

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.
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.

# U.S. Drought Monitor

## Regional Map Week of FEB 01 2018

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>None</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
<th>D4</th>
<th>D567</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>2018-01-30</td>
<td>0.00</td>
<td>100.00</td>
<td>99.76</td>
<td>81.45</td>
<td>21.11</td>
<td>0.00</td>
<td>302</td>
</tr>
<tr>
<td>Last Week</td>
<td>2018-01-23</td>
<td>0.00</td>
<td>100.00</td>
<td>99.17</td>
<td>52.62</td>
<td>14.56</td>
<td>0.00</td>
<td>266</td>
</tr>
<tr>
<td>3 Months Ago</td>
<td>2017-10-31</td>
<td>77.85</td>
<td>22.15</td>
<td>2.75</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>25</td>
</tr>
<tr>
<td>Start of Calendar Year</td>
<td>2017-12-31</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>
<td>204</td>
</tr>
<tr>
<td>Start of Water Year</td>
<td>2017-09-26</td>
<td>64.46</td>
<td>35.54</td>
<td>0.77</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>36</td>
</tr>
<tr>
<td>One Year Ago</td>
<td>2017-01-31</td>
<td>4.44</td>
<td>95.56</td>
<td>79.46</td>
<td>30.95</td>
<td>3.00</td>
<td>0.00</td>
<td>210</td>
</tr>
</tbody>
</table>

## U.S. Drought Monitor

### Oklahoma

Estimated Population in Drought Areas: **3,745,446**

U.S. Drought Monitor Nationwide Map

Map for February 1, 2018
Data valid: January 30, 2018 | Author: Richard Heim, NOAA/NCEI

The data cutoff for Drought Monitor maps is each Tuesday at 7 a.m. EST. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

Intensity and Impacts

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (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. Drought Monitor
Seasonal Drought Outlook Map

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

Valid for January 18 - April 30, 2018
Released January 18, 2018


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

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

Legend:
- 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
CONSECUTIVE DAYS WITHOUT RAINFALL MAP

http://www.mesonet.org/index.php/weather/map/consecutive_days_with_less_than_0.25_inches_Rainfall/rainfall
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.
Groundwater Levels
Spencer Mesonet Station

http://www.mesonet.org/index.php/weather/groundwater
**Summary**

ENSO Alert System Status: La Niña Advisory

- La Niña conditions are present.
- Equatorial sea surface temperatures (SSTs) are below average in the central and eastern Pacific Ocean.
- La Niña is likely (~85-95%) through Northern Hemisphere winter, with a transition to ENSO-neutral expected during the spring.