Drought Conditions in Central Oklahoma

Water Resources Division
Association of Central Oklahoma Governments
April 28, 2017
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2017

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

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.
Statewide Precipitation Monthly Totals vs. Normal

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.
Drought Severity Index by Climate Division

Palmer Weekly Value for Period APR 2017

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.

For an animated gif of the long term PDI see http://www.ncdc.noaa.gov oa/climate/research/prelim/drought/pdiimage.html.
## U.S. Drought Monitor

### Regional Map Week of 25 APR 2017

<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 2017-04-25</td>
<td>66.53</td>
<td>33.47</td>
<td>16.81</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Last Week 2017-04-18</td>
<td>41.55</td>
<td>58.45</td>
<td>32.32</td>
<td>10.07</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>3 Months Ago 2017-01-24</td>
<td>4.49</td>
<td>95.51</td>
<td>79.90</td>
<td>30.95</td>
<td>3.90</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Calendar Year 2016-12-27</td>
<td>5.63</td>
<td>94.37</td>
<td>72.32</td>
<td>45.73</td>
<td>3.14</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Water Year 2016-09-27</td>
<td>57.82</td>
<td>42.18</td>
<td>19.04</td>
<td>3.05</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>One Year Ago 2016-04-26</td>
<td>56.23</td>
<td>43.77</td>
<td>10.30</td>
<td>1.65</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### U.S. Drought Monitor

**Oklahoma**

Estimated Population in Drought Areas: **423,894**

U.S. Drought Monitor Nationwide Map

http://droughtmonitor.unl.edu
U.S. Drought Monitor
Seasonal Drought Outlook Map

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

Valid for April 20 - July 31, 2017
Released April 20, 2017

Author:
David Makus
NOAA/NWS/NCEP/Climate Prediction Center

USGS Streamflow Data

Friday, April 28, 2017 10:30ET

Thursday, April 27, 2017

Below normal 28-day average streamflow

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

http://ok.water.usgs.gov/drought/
SOIL MOISTURE MAP

1-day Average 24-inch Fractional Water Index

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

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

Consecutive Days With Less Than 0.25" Rainfall

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

Lake Hefner and Lake Overholser are terminal storage for Canton Lake. Lake Draper is terminal storage for McGee Creek and Atoka Lakes.

<table>
<thead>
<tr>
<th>LAKE</th>
<th>% CAPACITY</th>
<th>% CHANGE FROM 3/31/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canton</td>
<td>99.8</td>
<td>-0.2</td>
</tr>
<tr>
<td>Arcadia</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Lake Thunderbird</td>
<td>100.0</td>
<td>3.8</td>
</tr>
<tr>
<td>McGee Creek</td>
<td>68.5</td>
<td>-1.5</td>
</tr>
<tr>
<td>Lake Atoka</td>
<td>66.0</td>
<td>-1.4</td>
</tr>
<tr>
<td>TOTAL % CAPACITY</td>
<td>83.5</td>
<td>0.1</td>
</tr>
</tbody>
</table>


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.
Oklahoma Surface Water Resources
Reservoir Levels and Storage as of 4/25/2017

Reservoir Storage
(Percent of Normal Pool Storage as of 4/25/2017)

- > 100%
- 100% - 90%
- 90% - 80%
- 80% - 70%
- 70% - 60%
- 60% - 50%
- 50% - 40%
- 40% - 30%
- < 30%

Reservoir Levels

- Positive number indicates the lake level is feet above the normal pool elevation.
- Negative number indicates the lake level is feet below the normal pool elevation.

The map above reservoir storage as a percentage of normal pool storage capacity. The source information was collected from real-time lake-gage monitored by the U.S. Army Corps of Engineers (http://waterdata.usace.army.mil/data/imap/index.jsp), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/realtime/?site_no=group=hydrologic). 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: Not Active
- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near-average across the central and east-central Pacific. They are above-average in the eastern Pacific Ocean.
- ENSO-neutral conditions are favored to continue through at least the Northern Hemisphere spring 2017, with increasing chances for El Niño development into the fall.

Summary