Drought Conditions in Central Oklahoma

Water Resources Division
Association of Central Oklahoma Governments
September 2, 2021
Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2021

Daily Temperature Data – Oklahoma City Area, OK

Accumulated Precipitation—Oklahoma City Area, OK

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.
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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.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/palmer_drought/wpdsouth.txt
Abnormal dryness or drought are currently affecting approximately 29,452 people in Oklahoma.

### U.S. Drought Monitor

<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>
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<tbody>
<tr>
<td>Current</td>
<td>2021-08-31</td>
<td>81.57</td>
<td>18.43</td>
<td>6.61</td>
<td>0.72</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Last Week</td>
<td>2021-08-24</td>
<td>88.12</td>
<td>11.88</td>
<td>4.74</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>3 Months Ago</td>
<td>2021-06-01</td>
<td>84.37</td>
<td>15.63</td>
<td>5.98</td>
<td>1.04</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Start of Calendar Year</td>
<td>2020-12-29</td>
<td>56.83</td>
<td>43.17</td>
<td>25.21</td>
<td>7.75</td>
<td>1.45</td>
<td>0.00</td>
</tr>
<tr>
<td>Start of Water Year</td>
<td>2020-09-29</td>
<td>66.79</td>
<td>33.21</td>
<td>17.71</td>
<td>11.97</td>
<td>1.55</td>
<td>0.00</td>
</tr>
<tr>
<td>One Year Ago</td>
<td>2020-09-01</td>
<td>72.39</td>
<td>27.61</td>
<td>20.56</td>
<td>12.45</td>
<td>1.66</td>
<td>0.00</td>
</tr>
</tbody>
</table>

U.S. Drought Monitor

Seasonal Drought Outlook Map

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

Valid for September 1 - November 30, 2021
Released August 31, 2021

UPDATE:
Based on Monthly Drought Outlook for September 2021

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
USGS Streamflow Data

Wednesday, September 01, 2021 11:30ET

Explanation - Percentile classes

<table>
<thead>
<tr>
<th>Low</th>
<th>&lt;10</th>
<th>10-24</th>
<th>25-75</th>
<th>76-90</th>
<th>&gt;90</th>
<th>High</th>
<th>Not-ranked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Much below normal</td>
<td>Below normal</td>
<td>Normal</td>
<td>Above normal</td>
<td>Much above normal</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tuesday, August 31, 2021

Below normal 28-day average streamflow

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

https://waterwatch.usgs.gov/index.php?id=pa28d_dry&sid=w_map1m_pa28d_dwc&r=ok
SOIL MOISTURE MAP

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
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 8/30/2021

Reservoir Storage
(Percent of Normal Pool Storage as of 8/30/2021)
- > 100%
- 100% - 90%
- 89% - 80%
- 79% - 70%
- 69% - 60%
- 59% - 50%
- 49% - 40%
- 39% - 30%
- < 30%

Reservoir Levels
1 Positive number indicates the lake level in feet, above the normal pool elevation
1 Negative number indicates the lake level in feet, below the normal pool elevation

This map shows reservoir storage as a percentage of normal pool storage capacity. The source information was collected from real-time lake gauges monitored by the U.S. Army Corps of Engineers (http://www.nwrc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/wl/current/?ftype=lake&group_key=Eash_dbl)
For more information please visit the OWRB’s website at: (http://www.owrb.ok.gov)

https://www.owrb.ok.gov/supply/drought/reservoirstorage.php
Groundwater Levels
Spencer Mesonet Station

http://www.mesonet.org/index.php/weather/groundwater
Recharge Charts
Central Oklahoma Aquifer System

ACCUMULATED RECHARGE 2021

MONTHLY AQUIFER RECHARGE

ACOG
ENSO Alert System Status: La Niña Watch

- ENSO-neutral conditions are present.
- Equatorial sea surface temperatures (SSTs) are near-to-below average across most of the Pacific Ocean.
- ENSO-neutral is favored for the remainder of summer (~60% chance in the July-September season), with La Niña possibly emerging during the August-October season and lasting through the 2021-22 winter (~70% chance during November-January).

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.ppt