



# **Drought Conditions in Central Oklahoma**

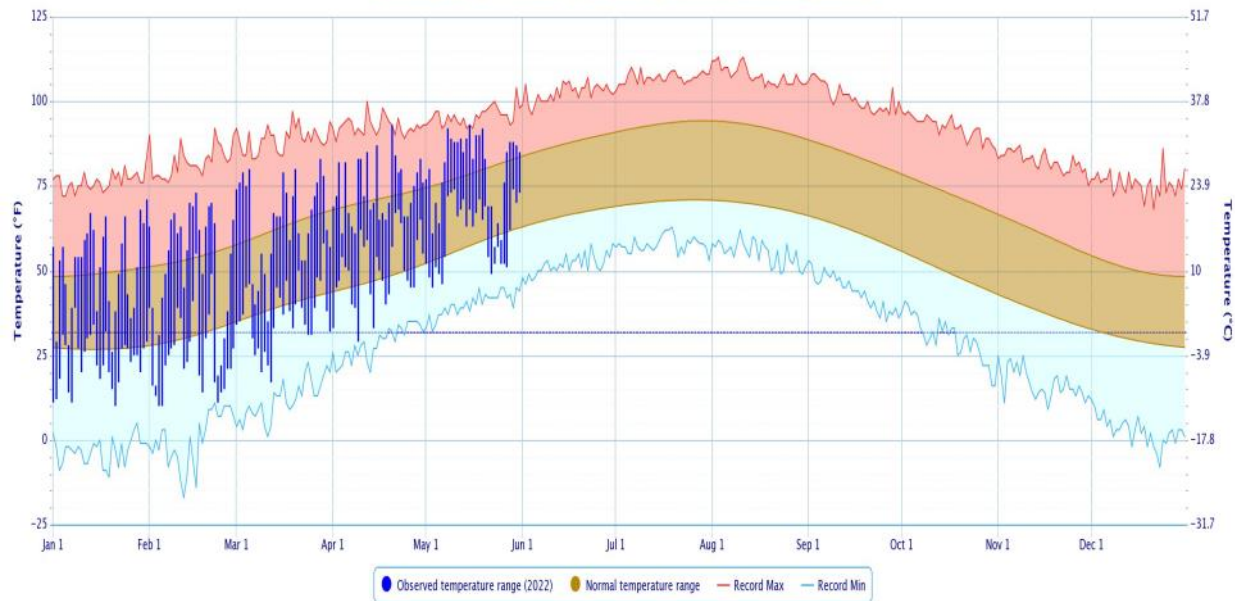
**Water Resources Division  
Association of Central Oklahoma Governments  
June 01, 2022**



# Temperature and Precipitation Plot for Oklahoma City, Oklahoma for 2022

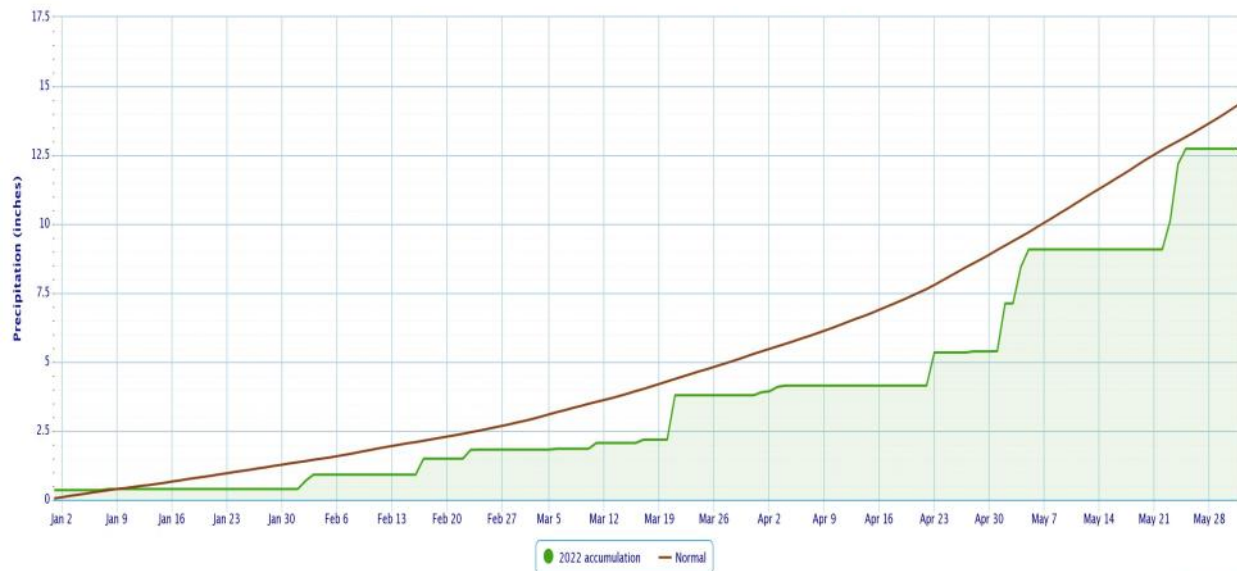
## Daily Temperature Data - Oklahoma City Area, OK

Period of Record - 1890-11-01 to 2022-05-31, Normals period: 1991-2020. Click and drag to zoom chart.

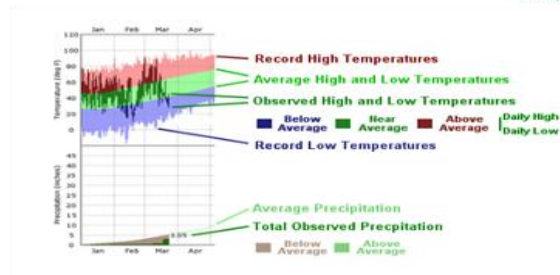


Powered by ACIS

## Accumulated Precipitation—Oklahoma City Area, OK



Powered by ACIS



<http://xmacis.rcc-acis.org/>

# Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2021 through 31-May-2022

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	7.21"	-3.60"	67%	17th driest	3.03" (1996)	21.03" (1957)
Central	16.30"	+1.49"	110%	29th wettest	5.45" (2014)	26.95" (1990)
S. Central	13.44"	-3.43"	80%	28th driest	8.28" (1996)	35.47" (1990)
Statewide	13.57"	-0.92"	94%	51st wettest	6.98" (1936)	25.55" (1957)

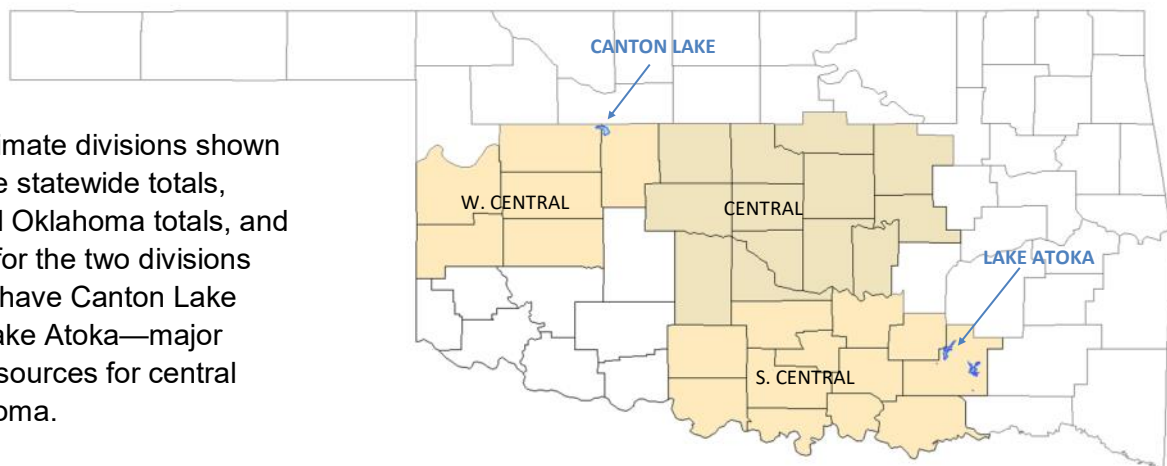
Water Year: 01-Oct-2021 through 31-May-2022

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	9.54"	-6.81"	58%	10th driest	5.29" (1995-96)	30.41" (2018-19)
Central	21.81"	-1.11"	95%	44th wettest	10.50" (1995-96)	36.01" (1984-85)
S. Central	18.64"	-7.92"	70%	18th driest	11.81" (1955-56)	41.85" (2015-16)
Statewide	19.12"	-3.45"	85%	37th driest	11.22" (1995-96)	33.29" (2018-19)

Spring Mar 01 through 31-May-2022

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	6.28"	-2.46"	72%	26th driest	1.84" (1971)	19.14" (1957)
Central	14.23"	+2.65"	123%	18th wettest	3.49" (2005)	22.51" (1957)
S. Central	10.88"	-1.65"	87%	42nd driest	4.60" (2005)	29.14" (2015)
Statewide	11.45"	+0.35"	103%	40th wettest	5.20" (2005)	22.34" (1957)

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/](http://climate.ok.gov/index.php/drought/last_30_days/)

OKLAHOMA  
CLIMATOLOGICAL SURVEY



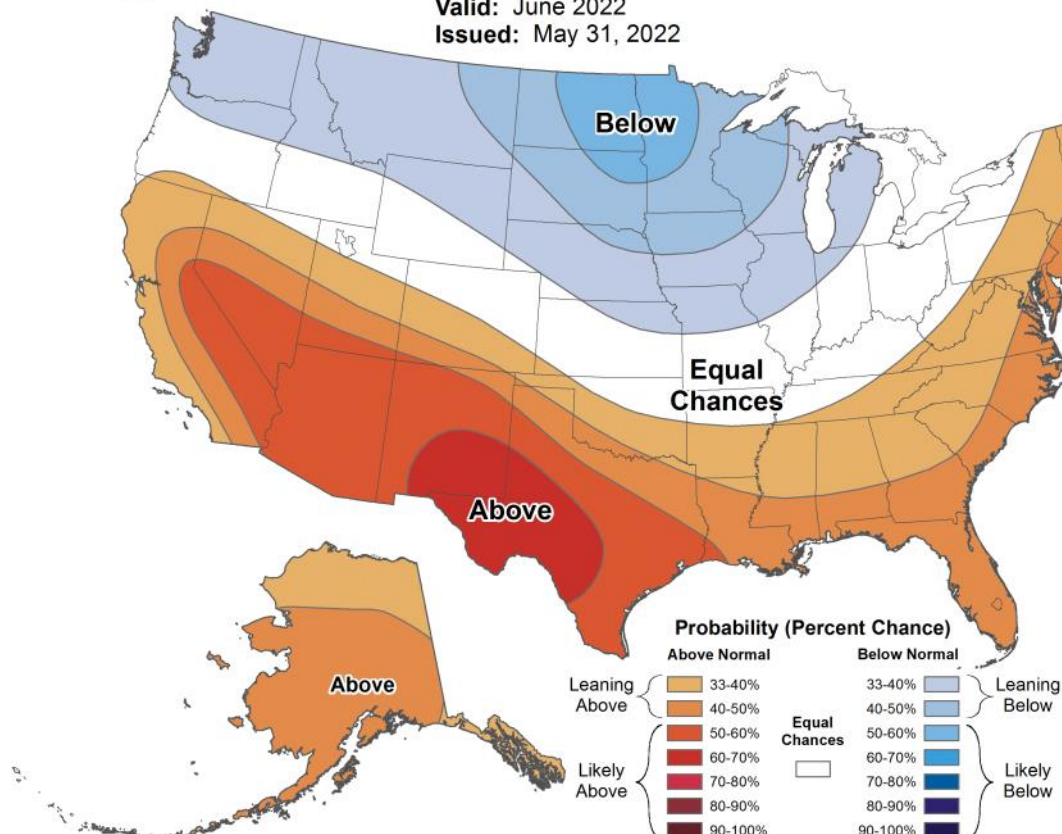
# NOAA One-Month Outlook



## Monthly Temperature Outlook



Valid: June 2022  
Issued: May 31, 2022



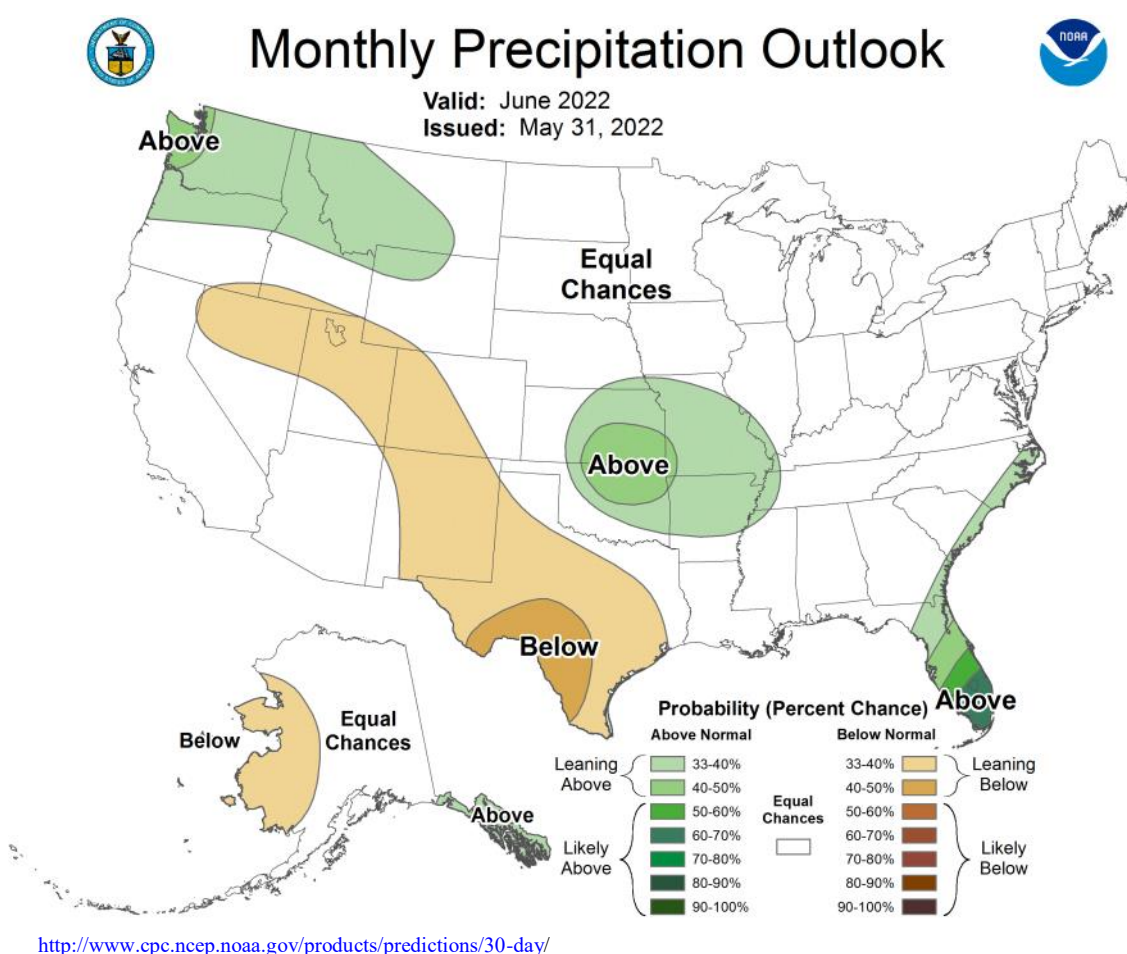
<http://www.cpc.ncep.noaa.gov/products/predictions/30-day/>

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.



# NOAA One-Month Outlook

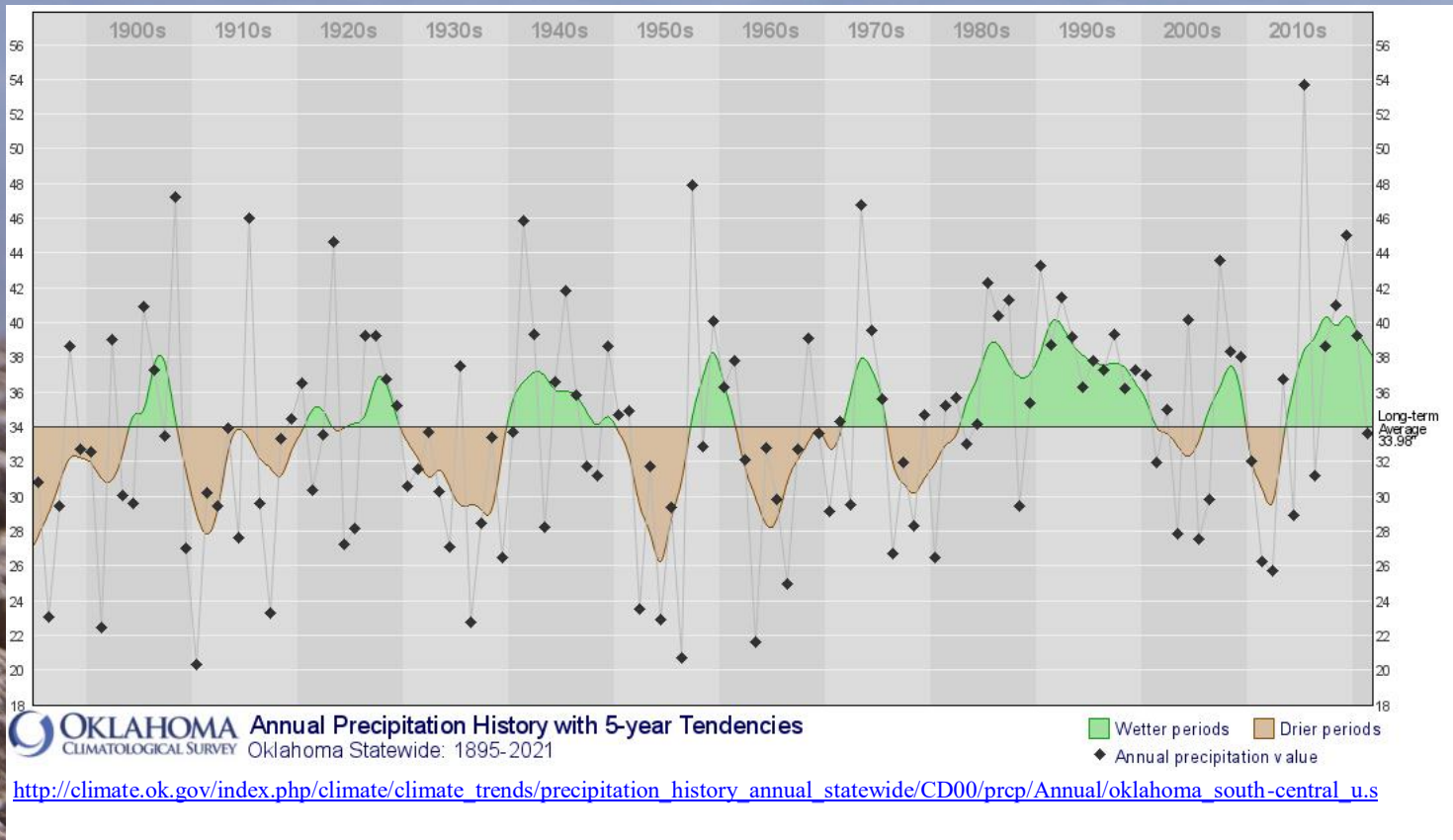


White areas are shown as EC (Equal Chance) on these maps represent areas where there are no strong climate signals from the climate tools to have skill in preferring one category over another.

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# Annual Precipitation History with 5-Year Tendencies



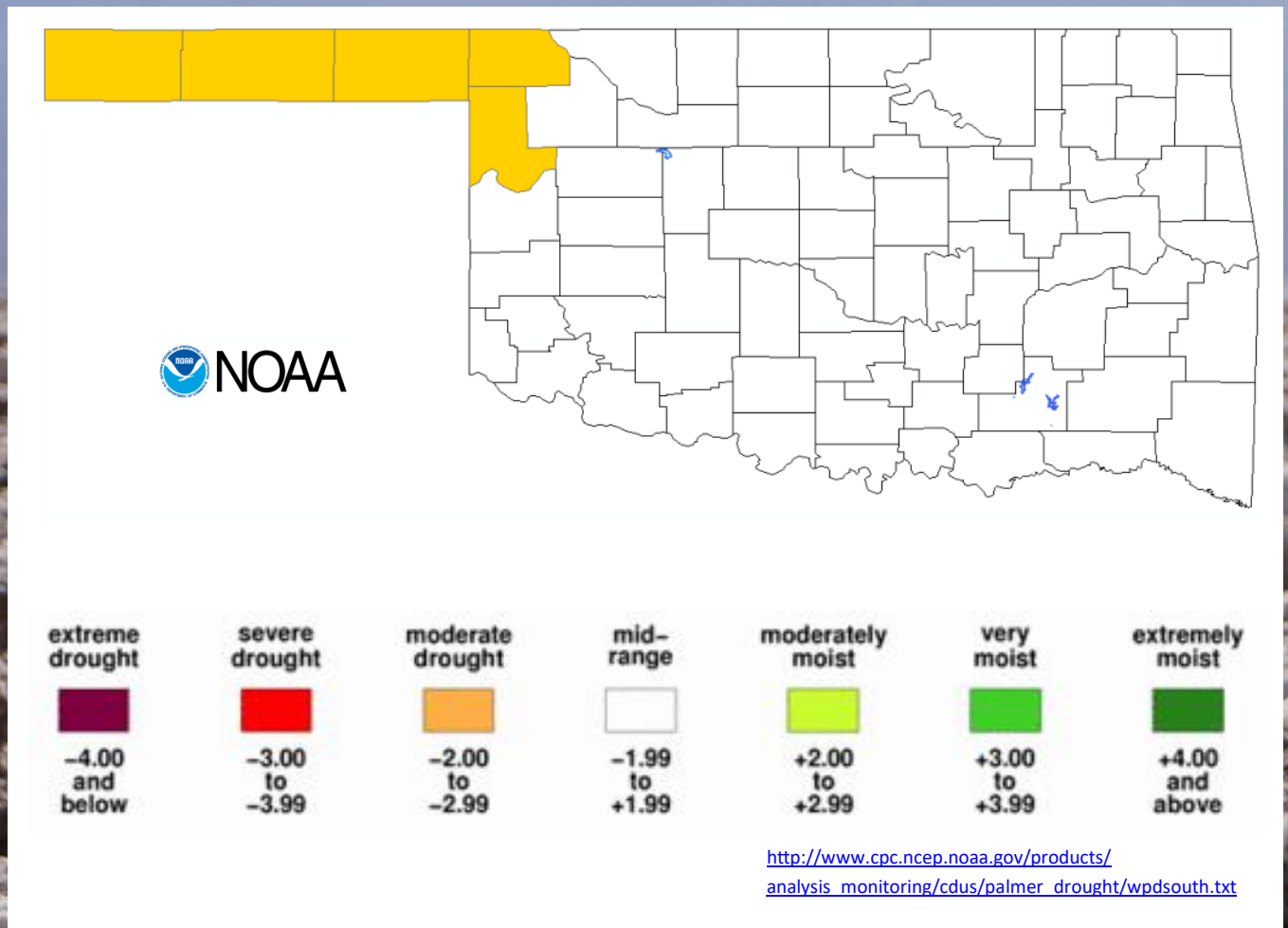
This graph shows the cyclical nature of wet and drought periods in Oklahoma. The black dots represent the annual precipitation for that particular year. The line represents the annual precipitation data smoothed over five years.

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 Value Ending 28 MAY 2022



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.

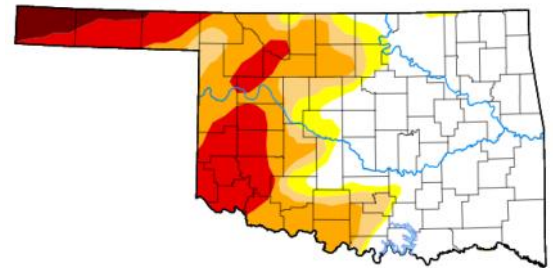
On these maps, the red shading denotes drought conditions while the green shading indicates wet conditions.

# U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	<a href="#">2022-05-31</a>	51.02	48.98	42.58	34.82	17.16	2.93
Last Week	<a href="#">2022-05-24</a>	46.90	53.10	43.63	35.97	18.25	2.93
3 Months Ago	<a href="#">2022-03-01</a>	7.72	92.28	86.65	74.04	52.05	3.05
Start of Calendar Year	<a href="#">2021-12-28</a>	4.92	95.08	90.17	72.51	22.62	0.00
Start of Water Year	<a href="#">2021-09-28</a>	6.45	93.55	73.23	23.72	2.65	0.00
One Year Ago	<a href="#">2021-06-01</a>	84.37	15.63	5.98	1.04	0.00	0.00

## U.S. Drought Monitor Oklahoma

Abnormal dryness or drought are currently affecting approximately 515,746 people in Oklahoma.



Intensity:

■ D0 - Abnormally Dry  
■ D1 - Moderate Drought  
■ D2 - Severe Drought

■ D3 - Extreme Drought  
■ D4 - Exceptional Drought

NATIONAL  
INTEGRATED  
DROUGHT  
INFORMATION  
SYSTEM



**Drought.gov**  
U.S. Drought Portal

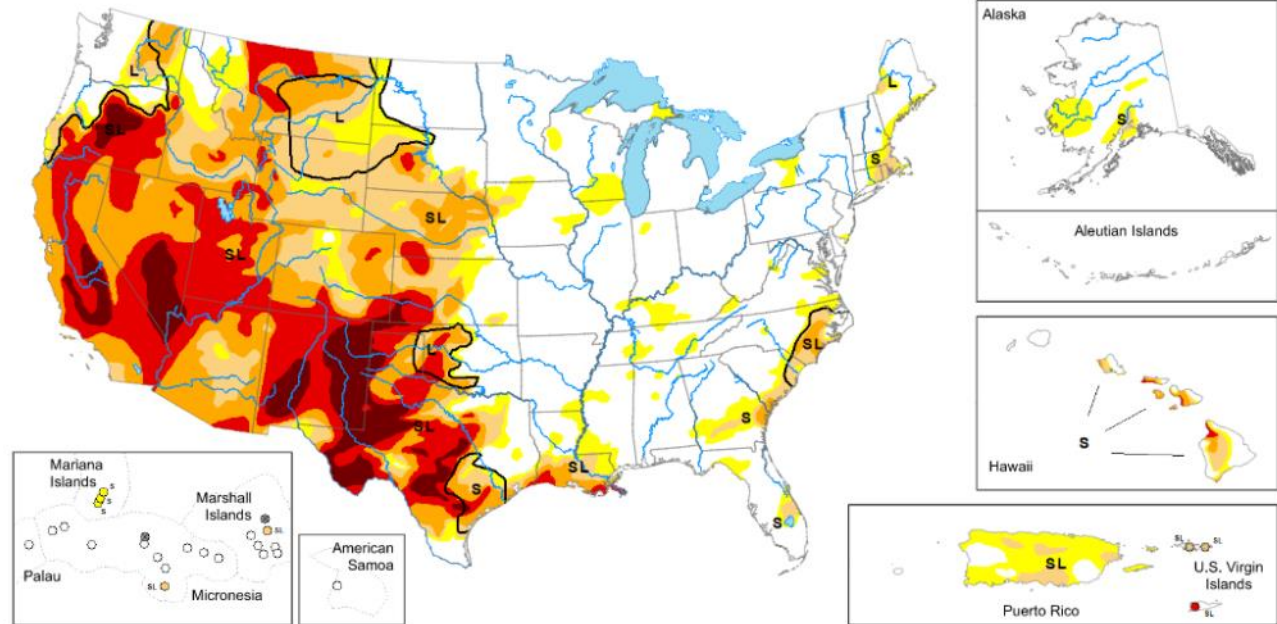
<https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OK>



# U.S. Drought Monitor Nationwide Map

Map released: June 2, 2022

Data valid: May 31, 2022



United States and Puerto Rico Author(s):  
**Curtis Riganti**, National Drought Mitigation Center

Pacific Islands and Virgin Islands Author(s):  
**Richard Tinker**, NOAA/NWS/NCEP/CPC

<http://droughtmonitor.unl.edu>

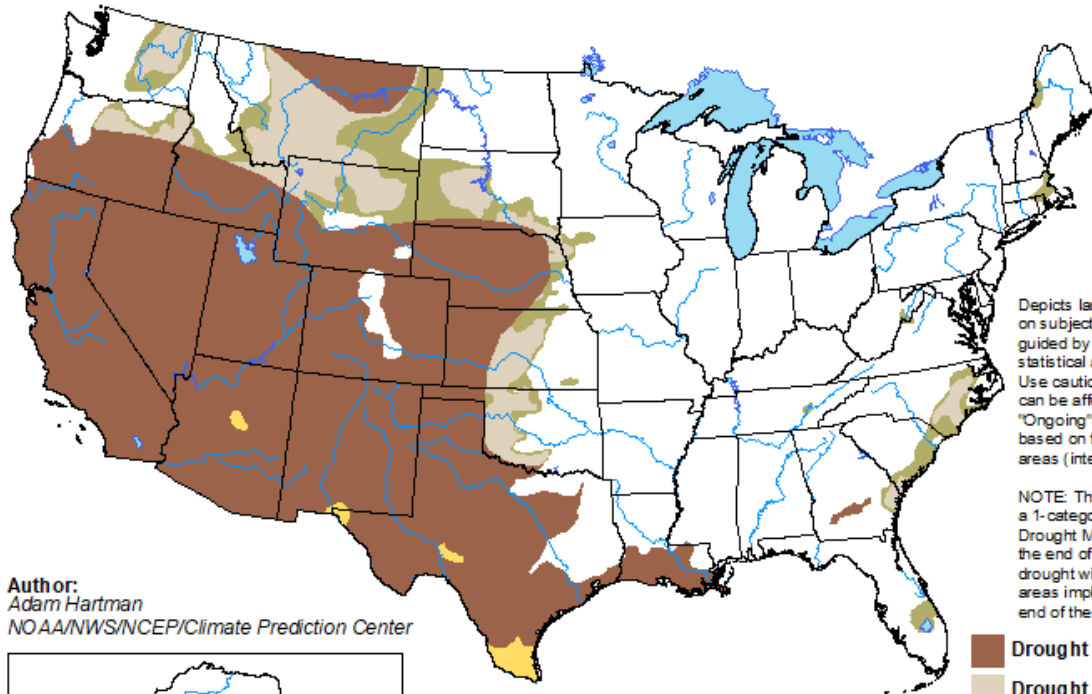


# U.S. Drought Monitor

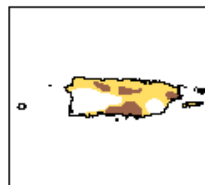
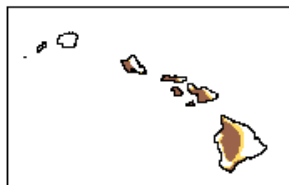
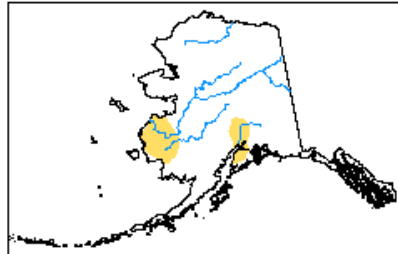
## Monthly Drought Outlook Map

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

Valid for June 2022  
Released May 31, 2022



Author:  
Adam Hartman  
NOAA/NWS/NCEP/Climate Prediction Center



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



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

[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/mdo\\_summary.php](http://www.cpc.ncep.noaa.gov/products/expert_assessment/mdo_summary.php)



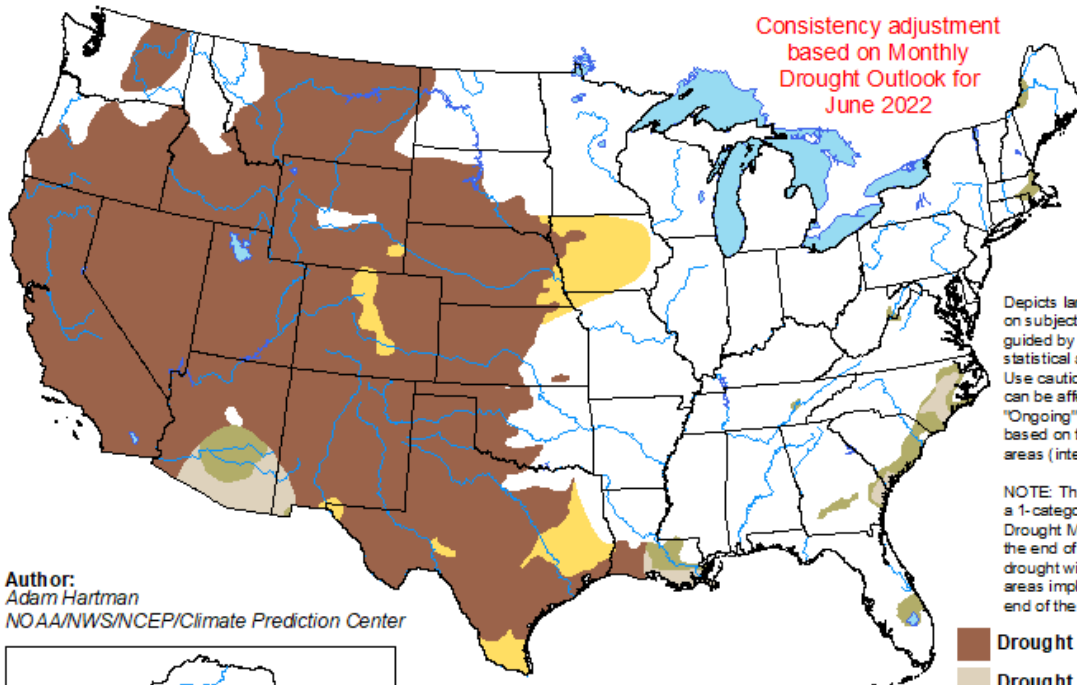
# U.S. Drought Monitor

## Seasonal Drought Outlook Map

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

Valid for June 1 - August 31, 2022  
Released May 31, 2022

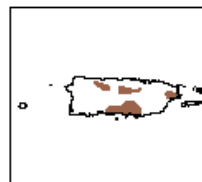
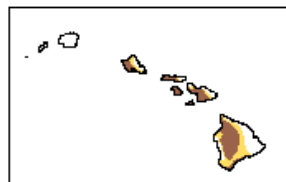
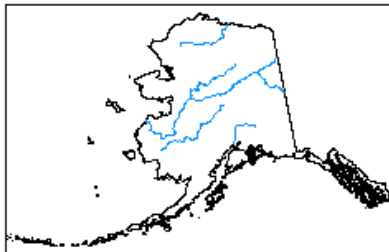
Consistency adjustment  
based on Monthly  
Drought Outlook for  
June 2022



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).

Author:  
Adam Hartman  
NOAA/NWS/NCEP/Climate Prediction Center



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



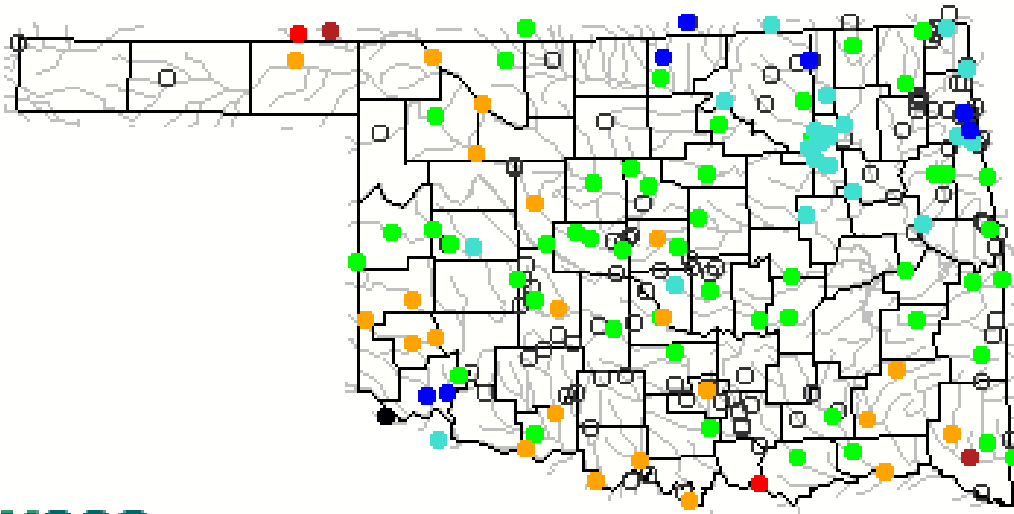
<http://go.usa.gov/3e273>

[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/sdo\\_summary.php](http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php)



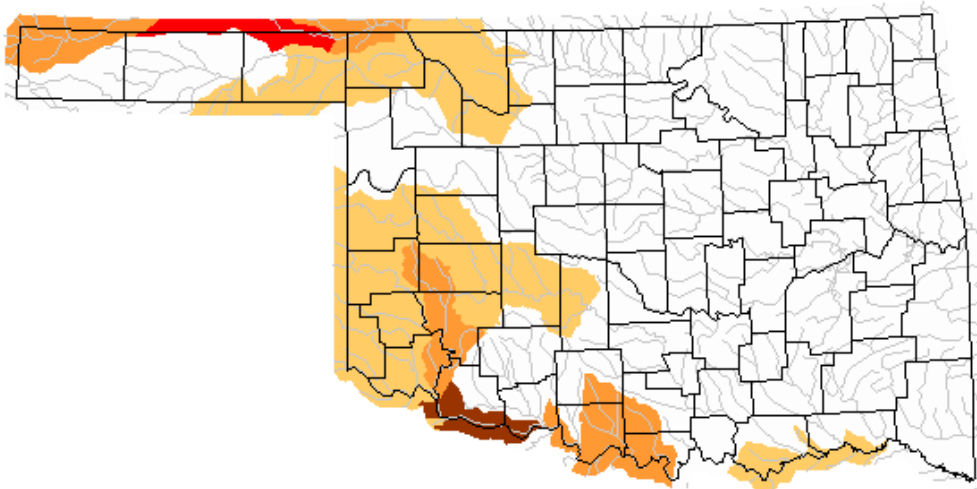
# USGS Streamflow Data

Wednesday, June 01, 2022 07:30ET



Explanation - Percentile classes							
<span style="color: red;">●</span>	<span style="color: red;">●</span>	<span style="color: orange;">●</span>	<span style="color: green;">●</span>	<span style="color: cyan;">●</span>	<span style="color: blue;">●</span>	<span style="color: black;">●</span>	<span style="color: black;">○</span>
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Monday, May 30, 2022



**Below normal 28-day average streamflow**

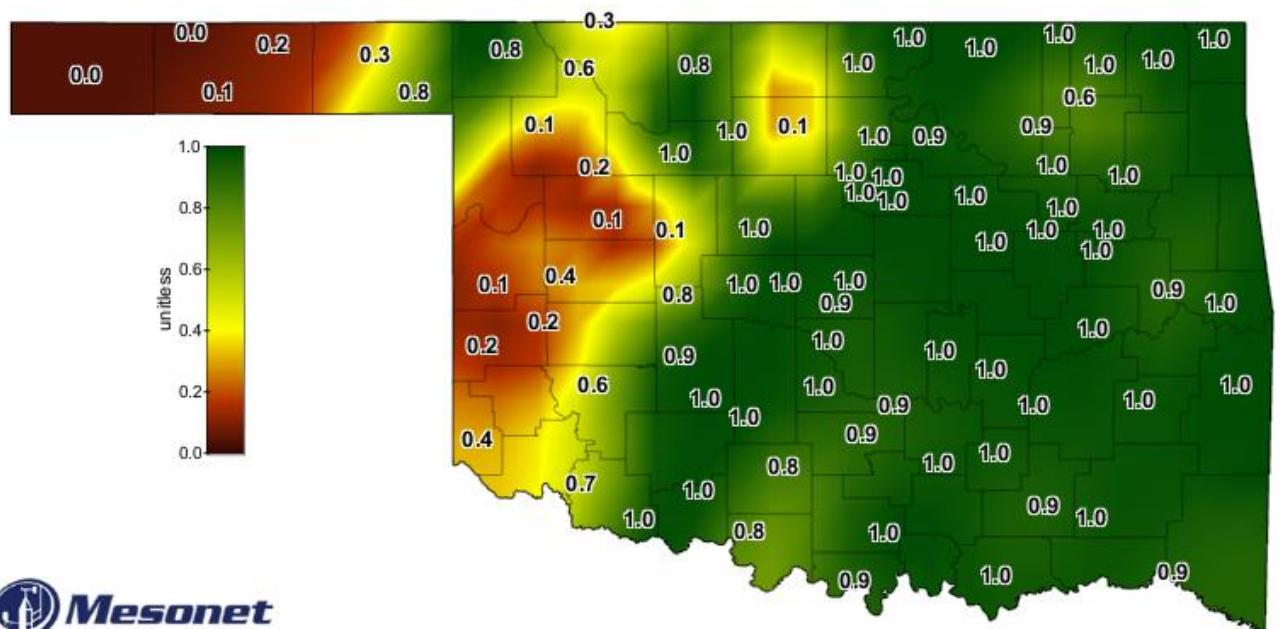
Explanation - Percentile classes				
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Low	<=5	6-9	10-24	Insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

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

[https://waterwatch.usgs.gov/index.php?id=pa28d\\_dry&sid=w\\_map|m\\_pa28d\\_dwc&r=ok](https://waterwatch.usgs.gov/index.php?id=pa28d_dry&sid=w_map|m_pa28d_dwc&r=ok)



# SOIL MOISTURE MAP



1-day Average 24-inch Fractional Water Index

May 31, 2022

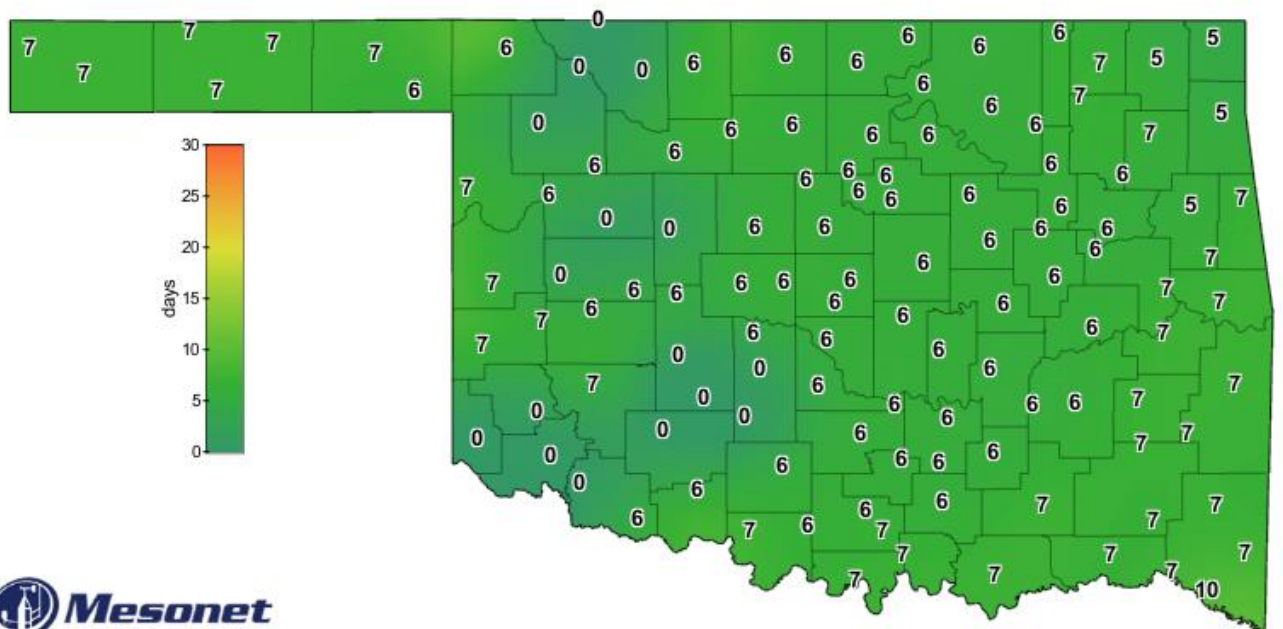
Created 7:30:14 AM June 1, 2022 CDT. © Copyright 2022



[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



Consecutive Days With Less Than 0.25" Rainfall

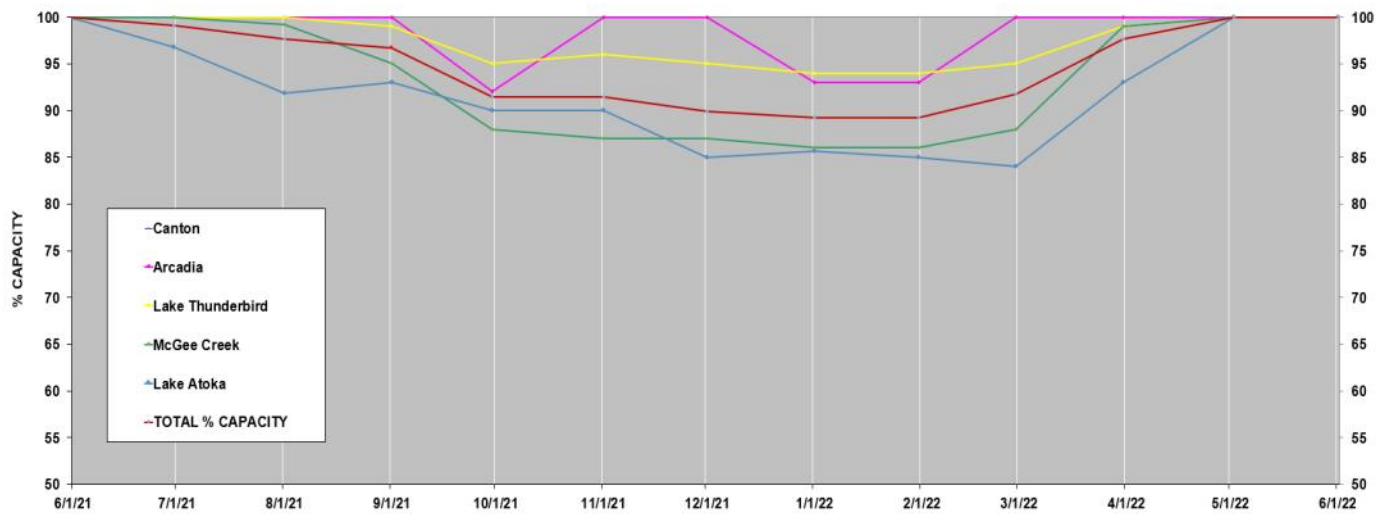
May 31, 2022

Created 8:15:01 AM June 1, 2022 CDT. © Copyright 2022

[http://www.mesonet.org/index.php/weather/map/  
consecutive\\_days\\_with\\_less\\_than\\_0.25\\_inches\\_Rainfall/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.

LAKE	% CAPACITY	% CHANGE FROM 5/2/2022
Canton	100.0	0.0
Arcadia	100.0	0.0
Lake Thunderbird	100.0	0.0
McGee Creek	100.0	0.0
Lake Atoka	100.0	0.0
TOTAL % CAPACITY	100.0	0.0

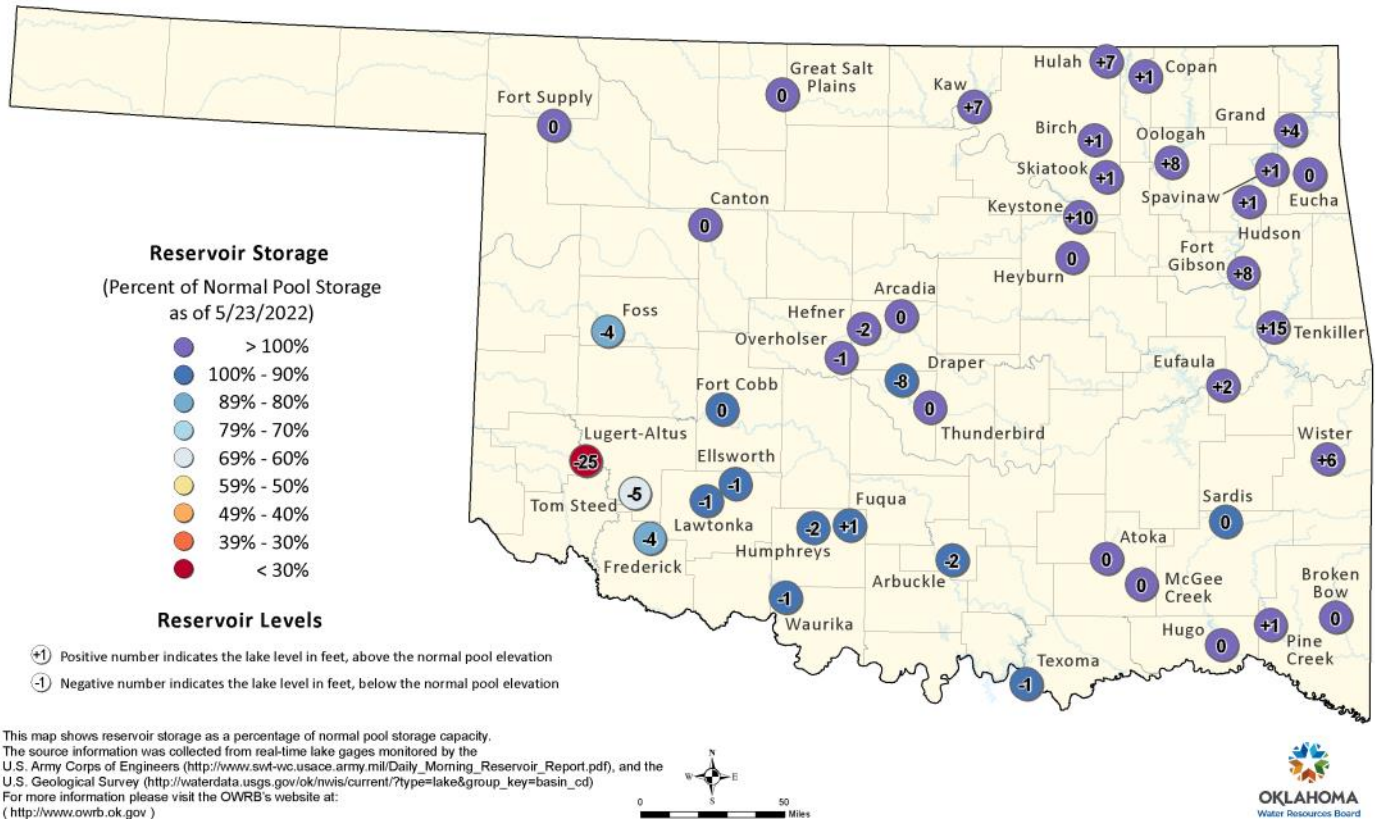
<https://www.owrb.ok.gov/supply/drought/reservoirstorage.php>

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

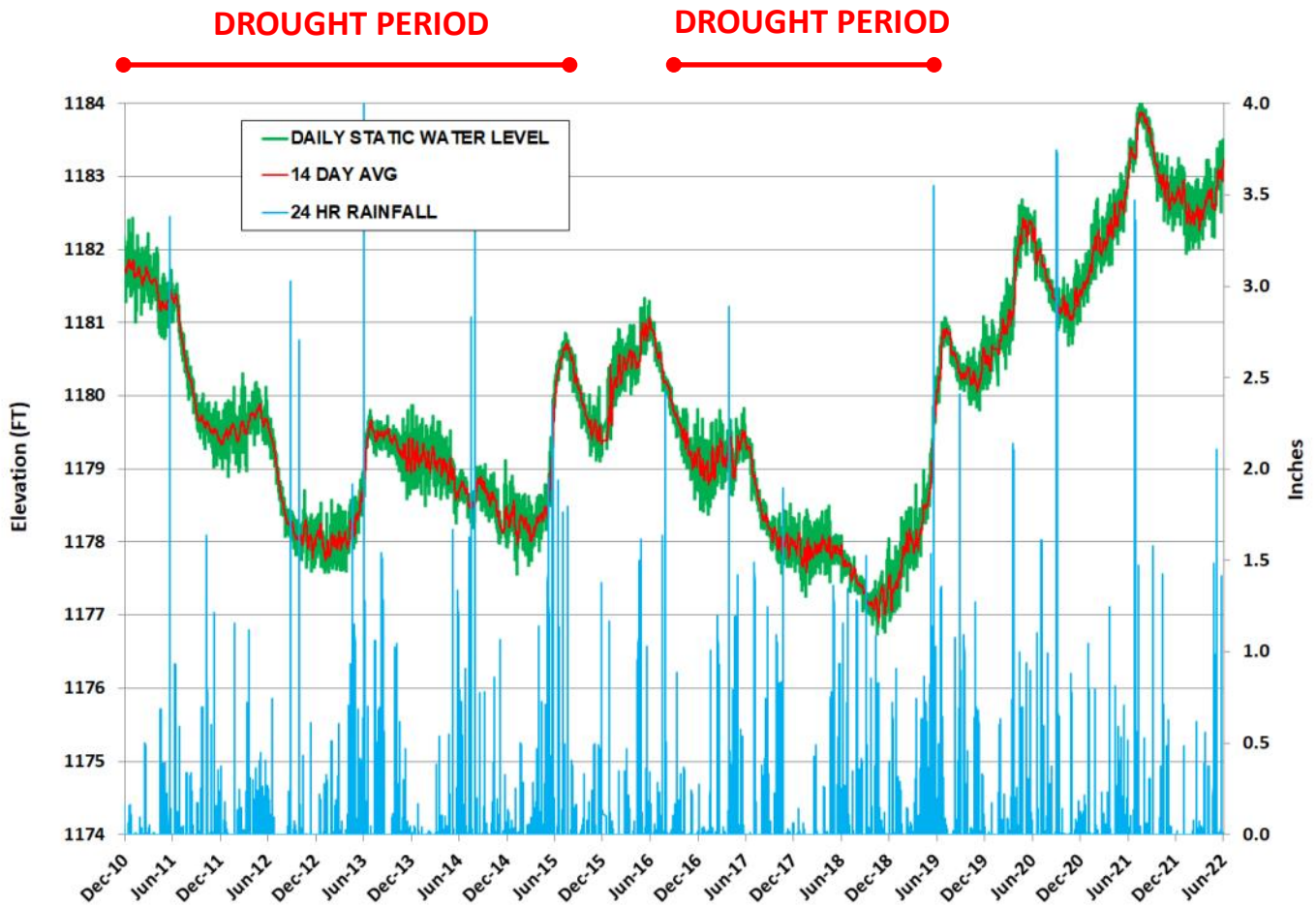
## Reservoir Levels and Storage as of 5/23/2022



<https://www.owrb.ok.gov/supply/drought/reservoirstorage.php>



# Groundwater Levels Spencer Mesonet Station



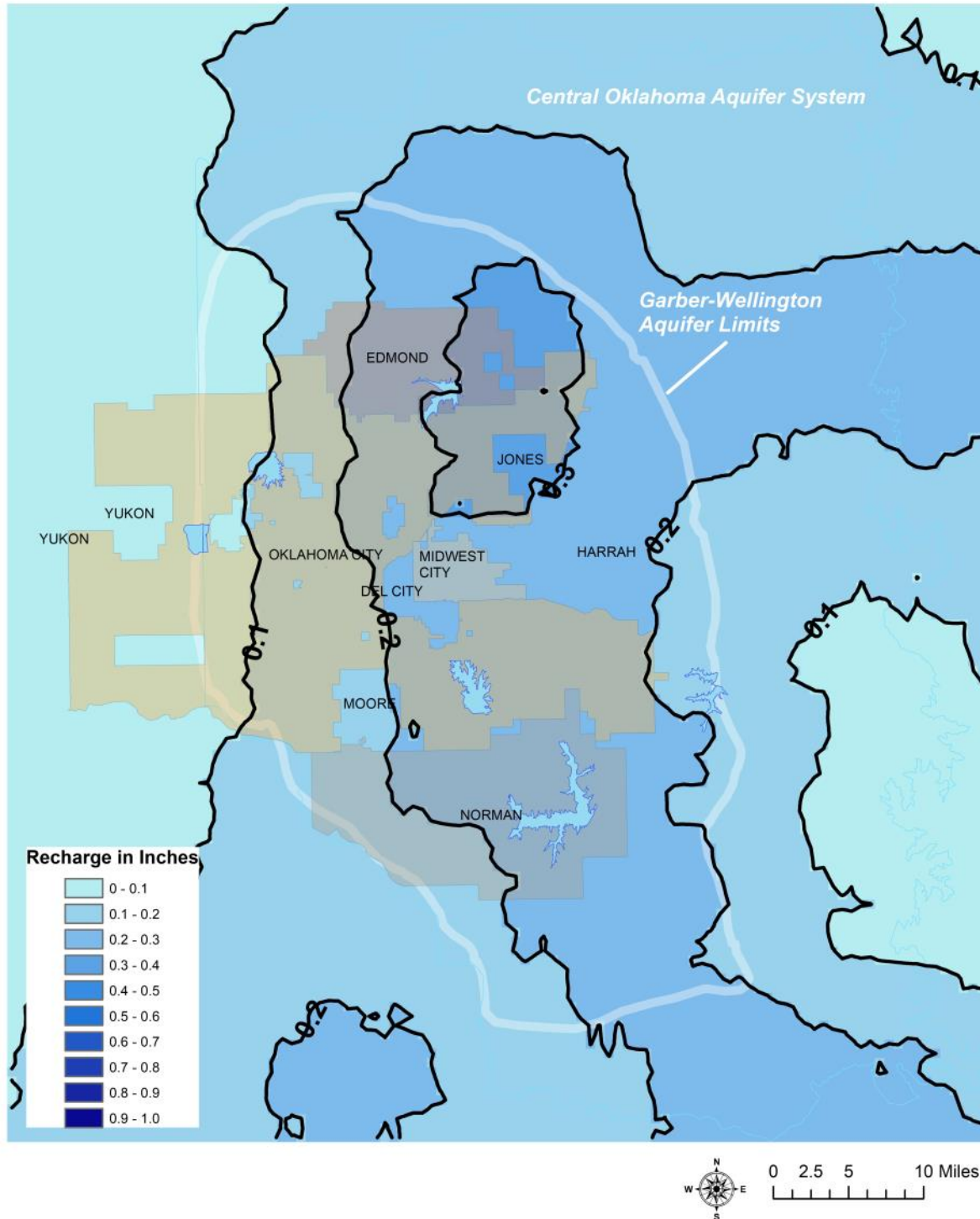
<http://www.mesonet.org/index.php/weather/groundwater>





# Recharge Map Central Oklahoma Aquifer System

AQUIFER RECHARGE MAY 2022

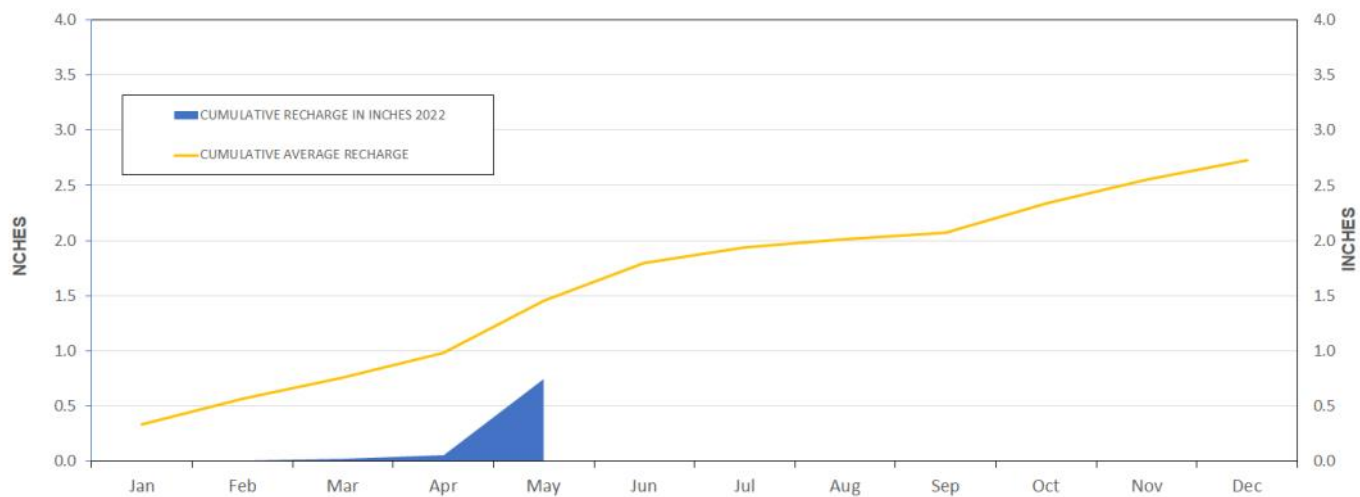




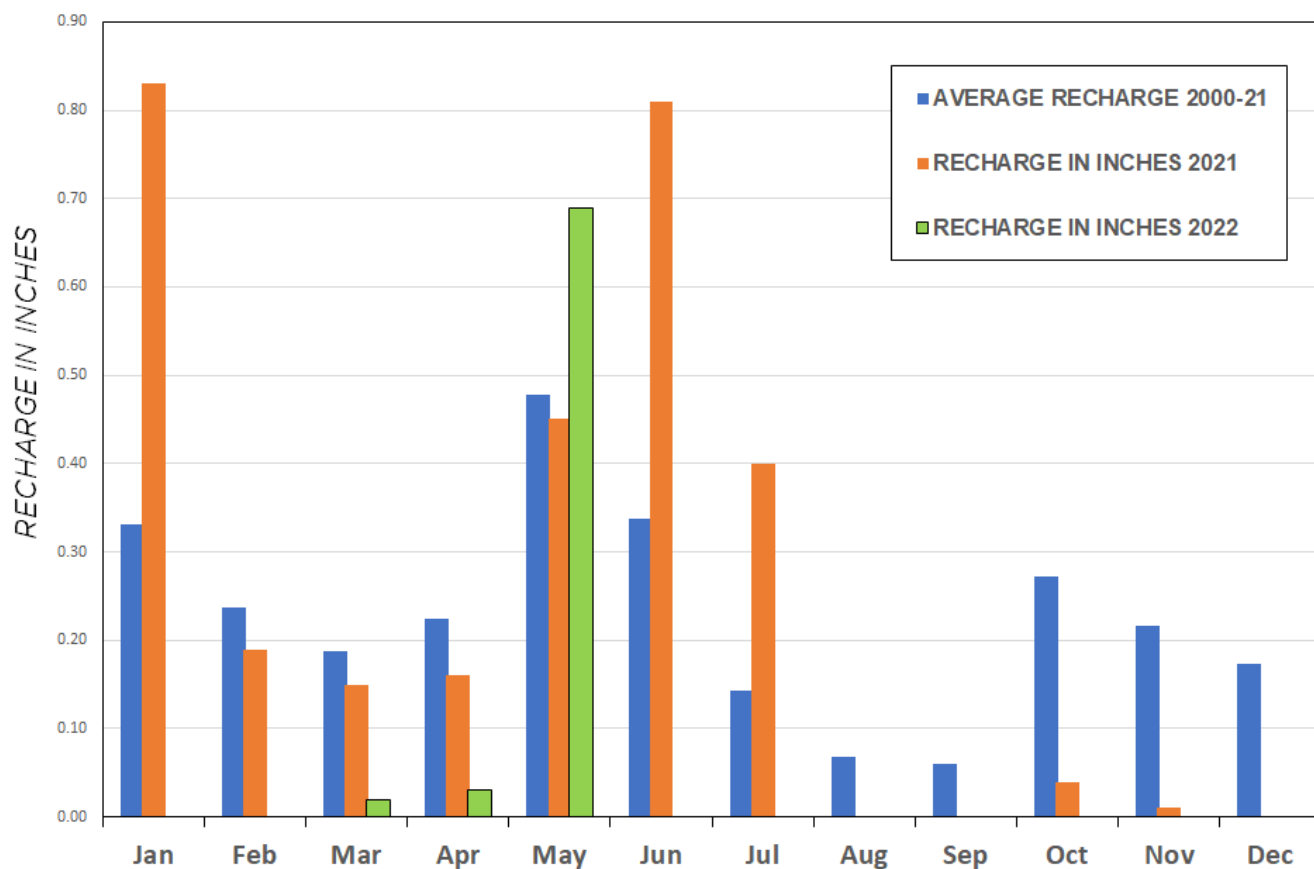
# Recharge Charts

## Central Oklahoma Aquifer System

ACCUMULATED RECHARGE 2022

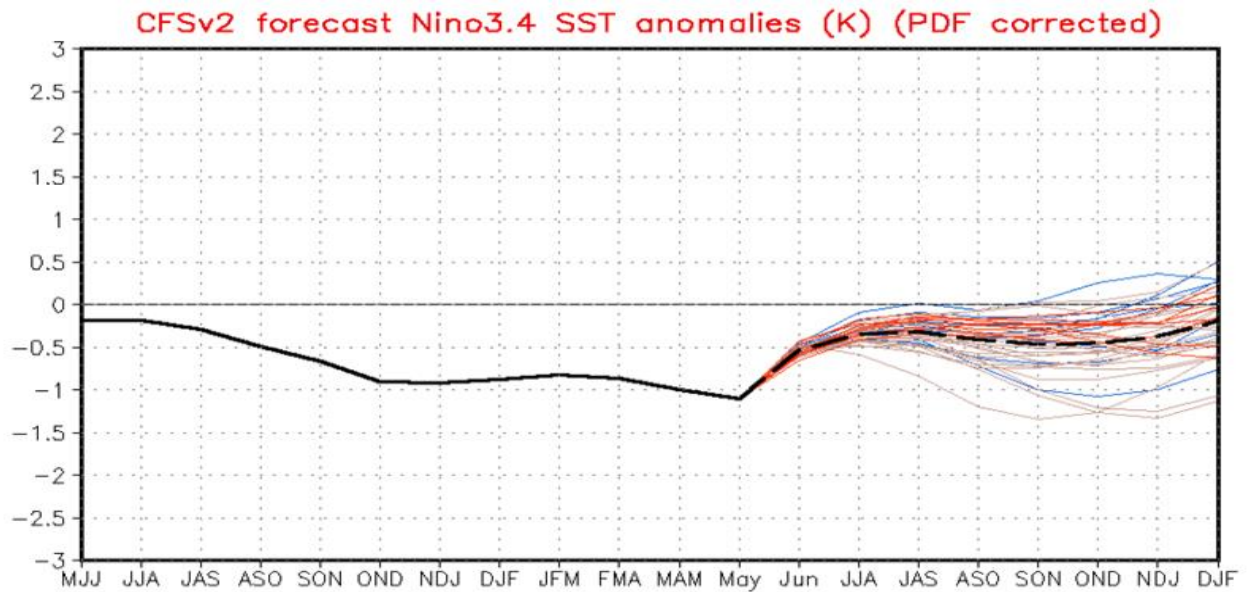


MONTHLY AQUIFER RECHARGE

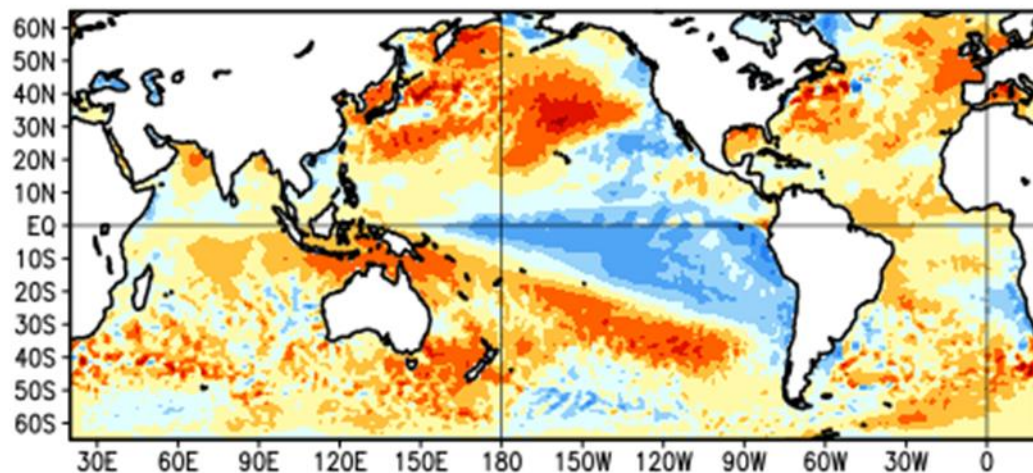


# ENSO Cycle

## Recent Evolution, Current Status and Predictions



Average SST Anomalies  
1 MAY 2022 – 28 MAY 2022



## Summary



ENSO Alert System Status: La Niña Advisory

- La Niña is present.
- Equatorial sea surface temperatures (SSTs) are below average across the central and east-central Pacific Ocean.
- The tropical Pacific atmosphere is consistent with La Niña.
- Though La Niña is favored to continue, the odds for La Niña decrease into the late Northern Hemisphere summer (58% chance in August-October 2022) before slightly increasing through the Northern Hemisphere fall and early winter 2022 (61% chance).

[https://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution-status-fcsts-web.ppt](https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.ppt)