

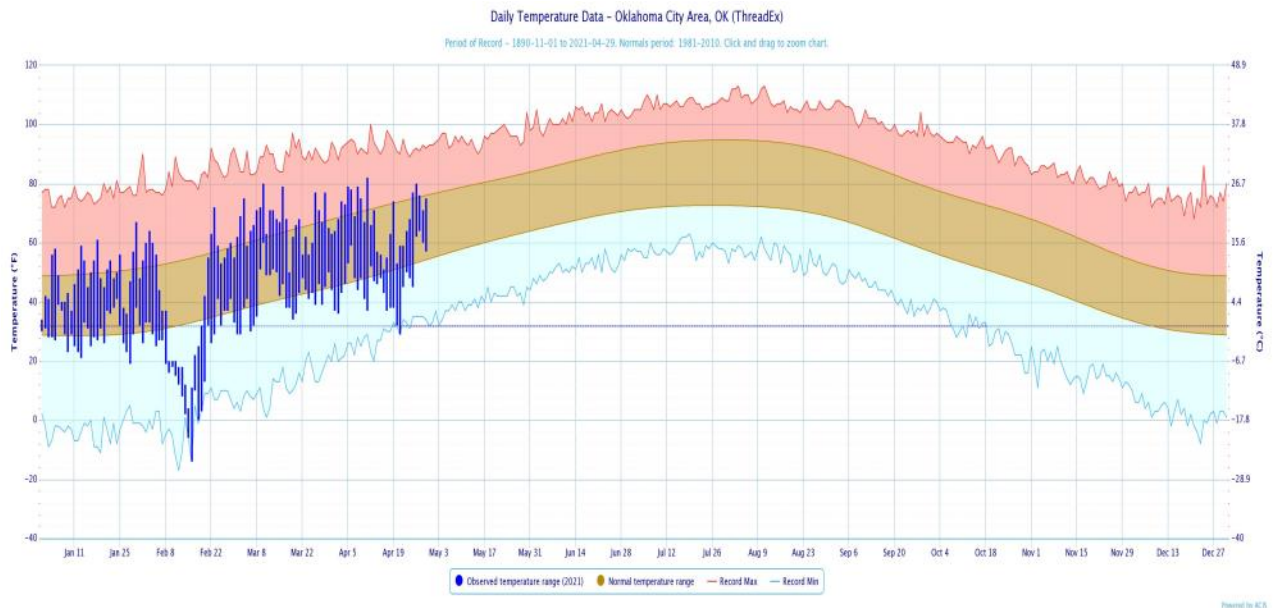


Drought Conditions in Central Oklahoma

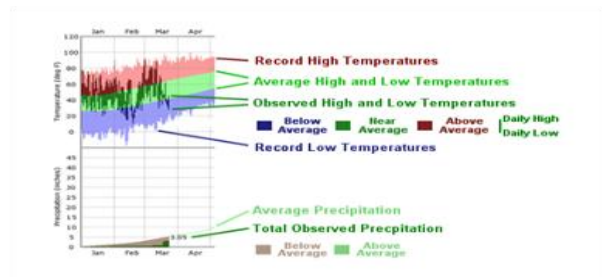
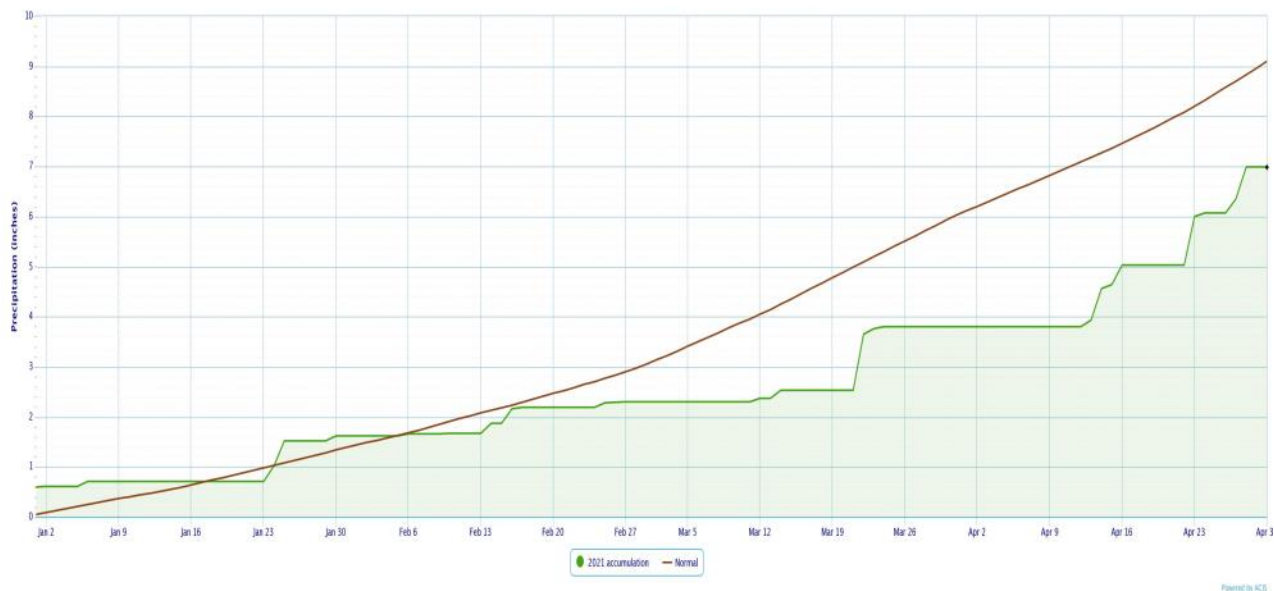
**Water Resources Division
Association of Central Oklahoma Governments
May 1, 2021**

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/>

Rainfall Summaries by Oklahoma Climate Division

Calendar Year 01-Jan-2021 through 29-Apr-2021

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	6.34"	-0.30"	95%	47th wettest	0.66" (1996)	13.07" (1997)
Central	9.01"	-0.57"	94%	43rd wettest	1.34" (1936)	20.88" (1990)
S. Central	10.94"	-0.39"	97%	39th wettest	3.40" (1936)	27.44" (1990)
Statewide	9.22"	-0.30"	97%	46th wettest	2.29" (1936)	18.72" (1990)

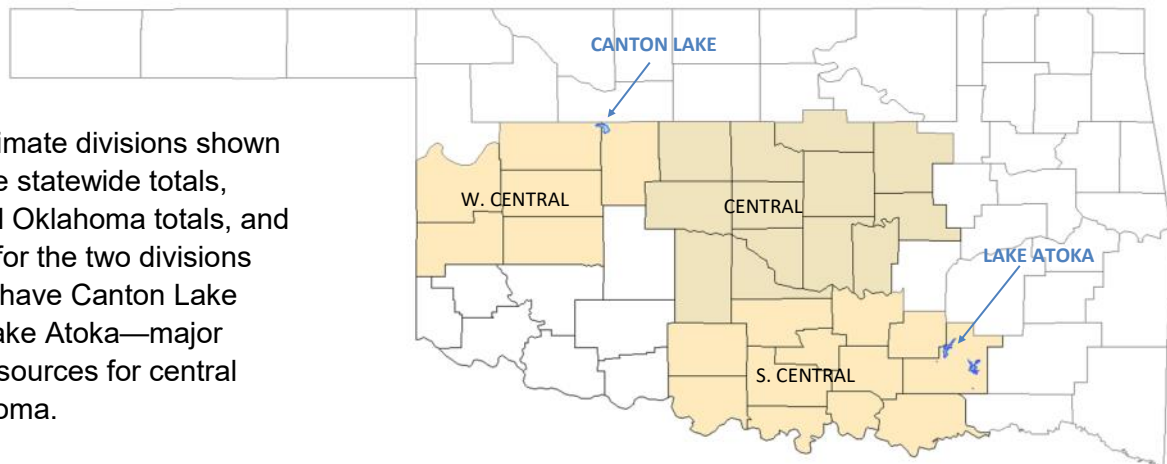
Water Year: 01-Oct-2020 through 29-Apr-2021

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	11.15"	-1.03"	92%	47th wettest	2.91" (1995-96)	20.82" (1998-99)
Central	17.12"	-0.57"	97%	38th wettest	8.01" (1958-59)	32.29" (1984-85)
S. Central	17.09"	-3.93"	81%	41st driest	7.25" (1955-56)	35.56" (2015-16)
Statewide	16.55"	-1.05"	94%	42nd wettest	7.93" (1955-56)	27.68" (1984-85)

Spring 01-Mar through 29-Apr-2021

Climate Division	Total Rainfall	Departure from Normal	Pct of Normal	Rank since 1921 (88 periods)	Driest on Record	Wettest on Record
W. Central	4.52"	-0.05"	99%	44th wettest	0.41" (1996)	10.25" (1973)
Central	6.37"	+0.02"	100%	43rd wettest	0.72" (1936)	14.66" (1990)
S. Central	8.52"	+1.53"	122%	21st wettest	2.07" (2005)	18.53" (1990)
Statewide	6.67"	+0.54"	109%	32nd wettest	1.51" (1936)	12.27" (1973)

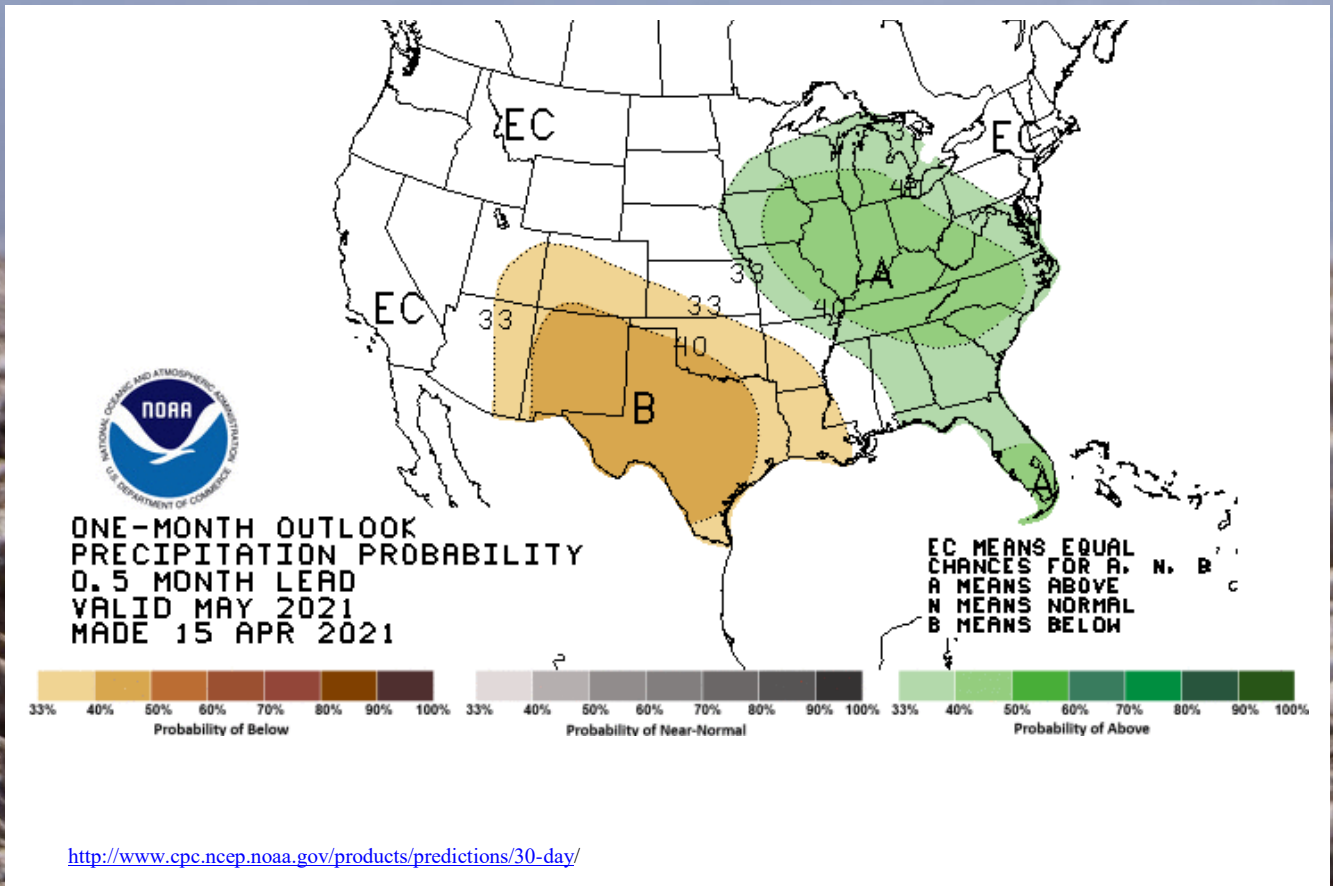
The climate divisions shown include statewide totals, central Oklahoma totals, and totals for the two divisions which have Canton Lake and Lake Atoka—major water sources for central Oklahoma.



http://climate.ok.gov/index.php/drought/last_30_days/

OKLAHOMA
CLIMATOLOGICAL SURVEY

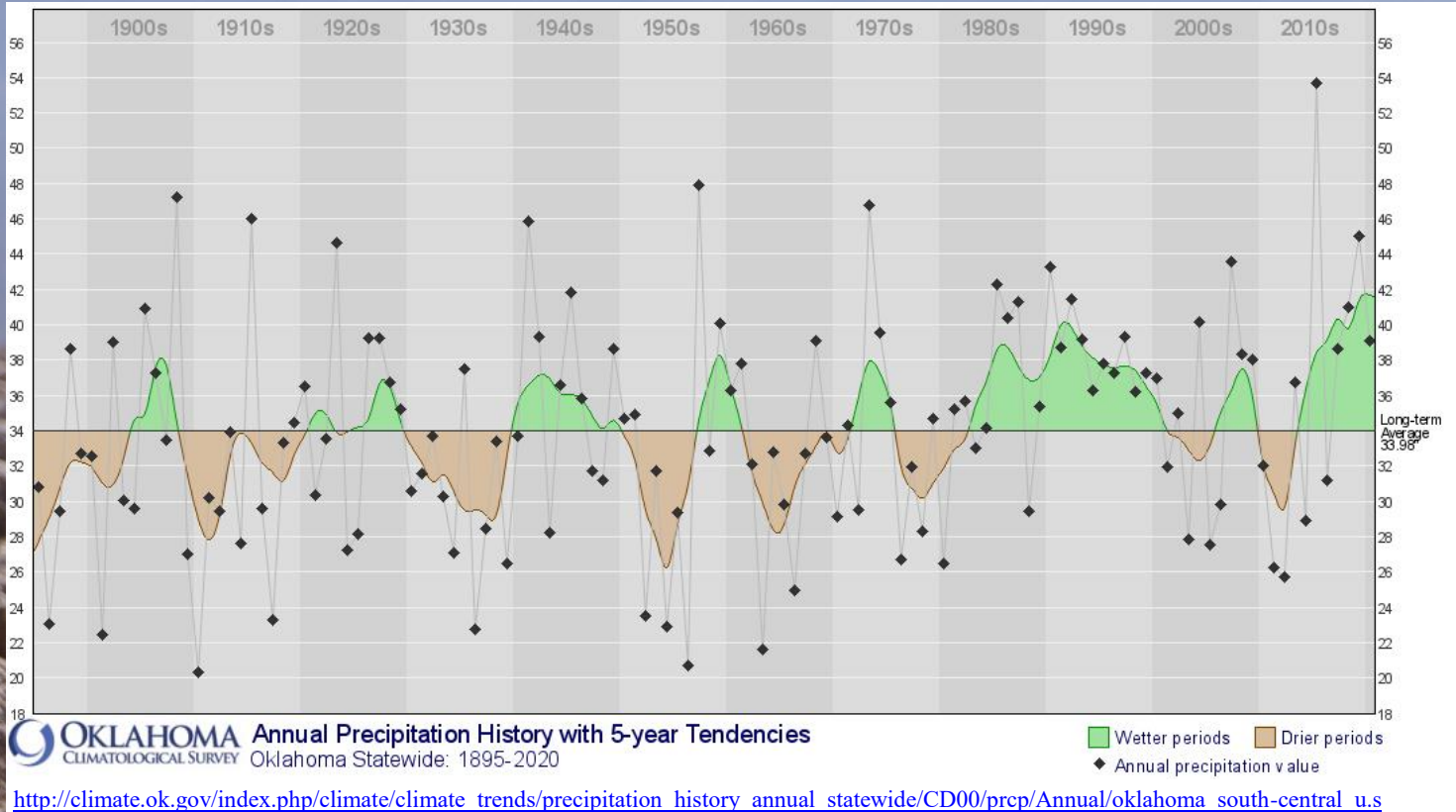
NOAA One-Month Outlook



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.

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.

Annual Precipitation History with 5-Year Tendencies

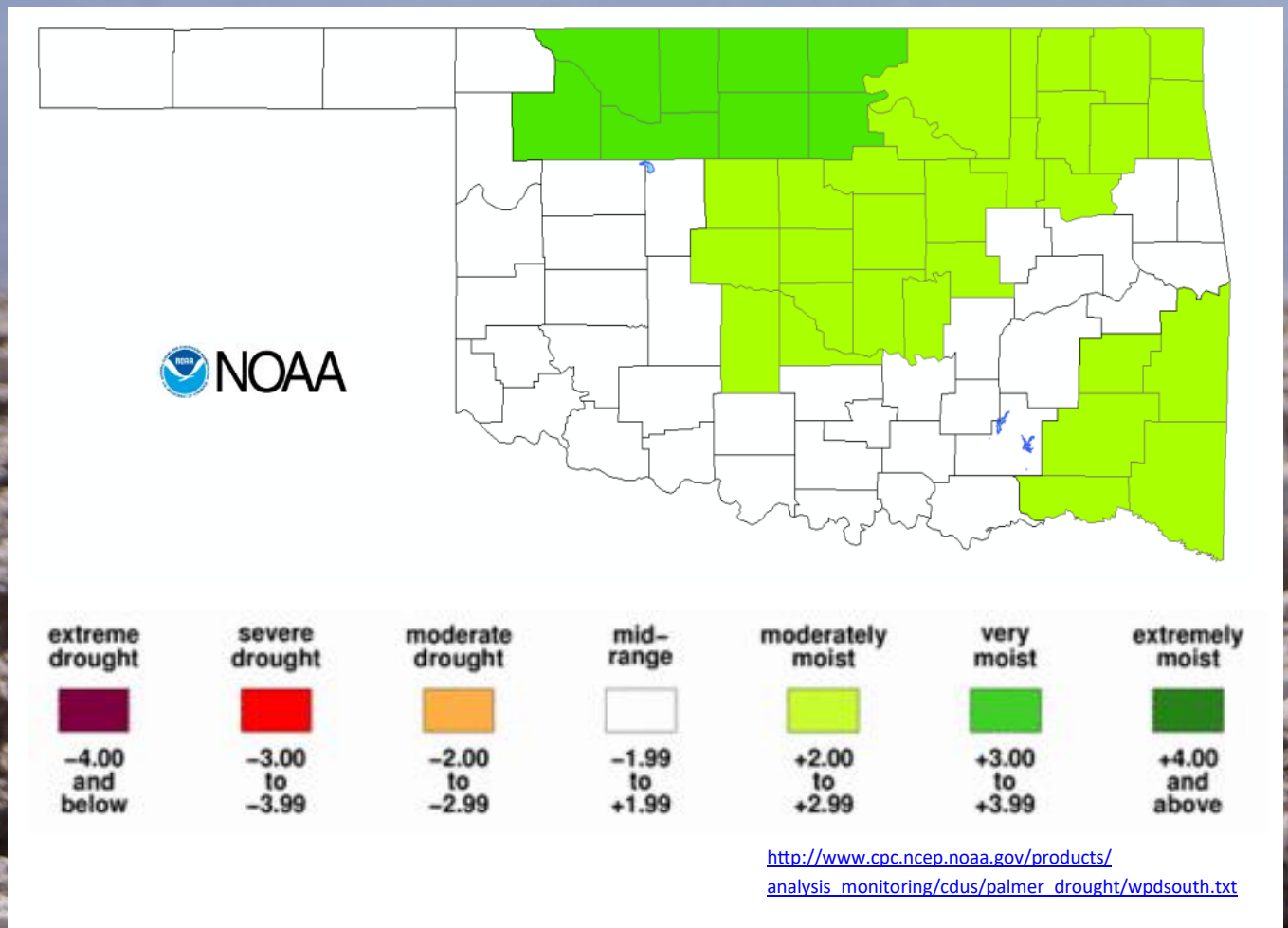


This graph shows the cyclical nature of wet and drought periods in Oklahoma. The black dots represent the annual precipitation for that particular year. The line represents the annual precipitation data smoothed over five years.

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 24 APR 2021



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.

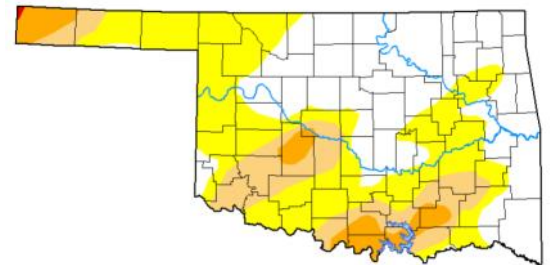
On these maps, the red shading denotes drought conditions while the green shading indicates wet conditions.

U.S. Drought Monitor

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2021-04-27	43.60	56.40	20.02	6.30	0.08	0.00
Last Week	2021-04-20	49.11	50.89	21.76	6.96	0.08	0.00
3 Months Ago	2021-01-26	75.15	24.85	10.93	4.05	0.23	0.00
Start of Calendar Year	2020-12-29	56.83	43.17	25.21	7.75	1.45	0.00
Start of Water Year	2020-09-29	66.79	33.21	17.71	11.97	1.55	0.00
One Year Ago	2020-04-28	85.96	14.04	3.94	2.27	0.00	0.00

U.S. Drought Monitor Oklahoma

Abnormal dryness or drought are currently affecting approximately 409,049 people in Oklahoma.



Intensity:

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

- D3 - Extreme Drought
- D4 - Exceptional Drought



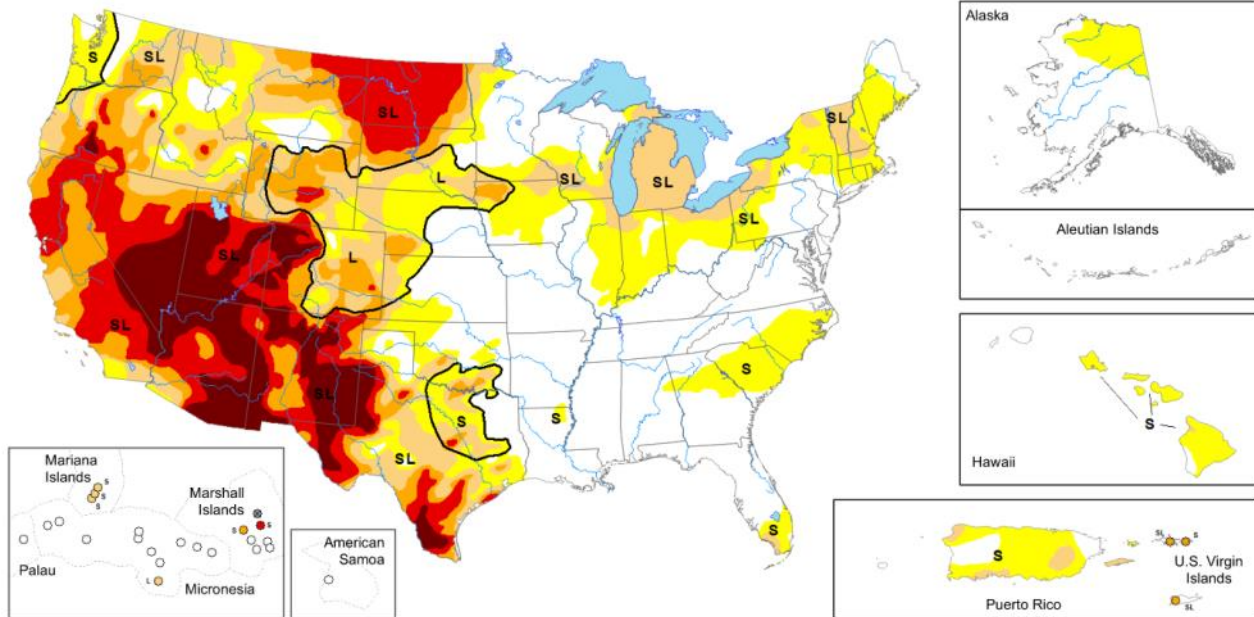
Drought.gov
U.S. Drought Portal

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

U.S. Drought Monitor Nationwide Map

Map released: April 29, 2021

Data valid: April 27, 2021



United States and Puerto Rico Author(s):
Richard Heim, NOAA/NCEI

U.S. Affiliated Pacific Islands and Virgin Islands Author(s):
Ahira Sanchez-Lugo, NOAA/NCEI

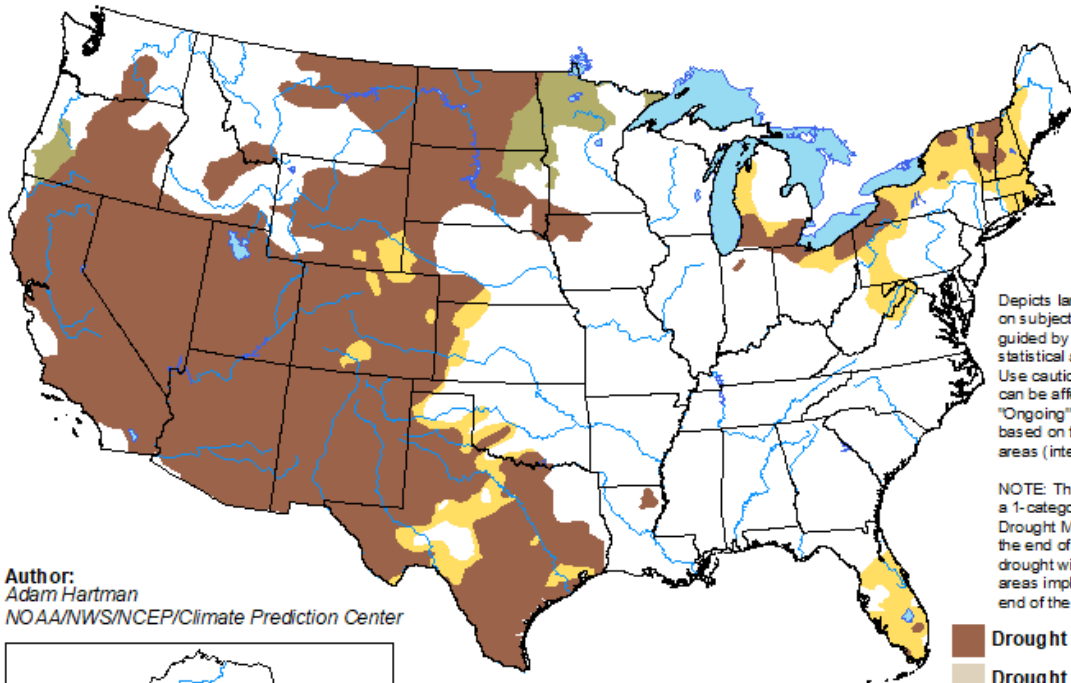
<http://droughtmonitor.unl.edu>

U.S. Drought Monitor

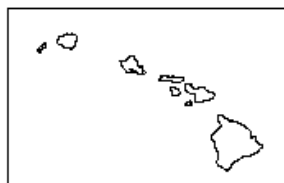
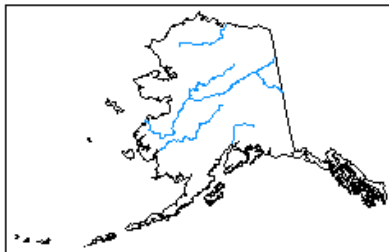
Monthly Drought Outlook Map

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

Valid for April 2021
Released March 31, 2021



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



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).

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



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

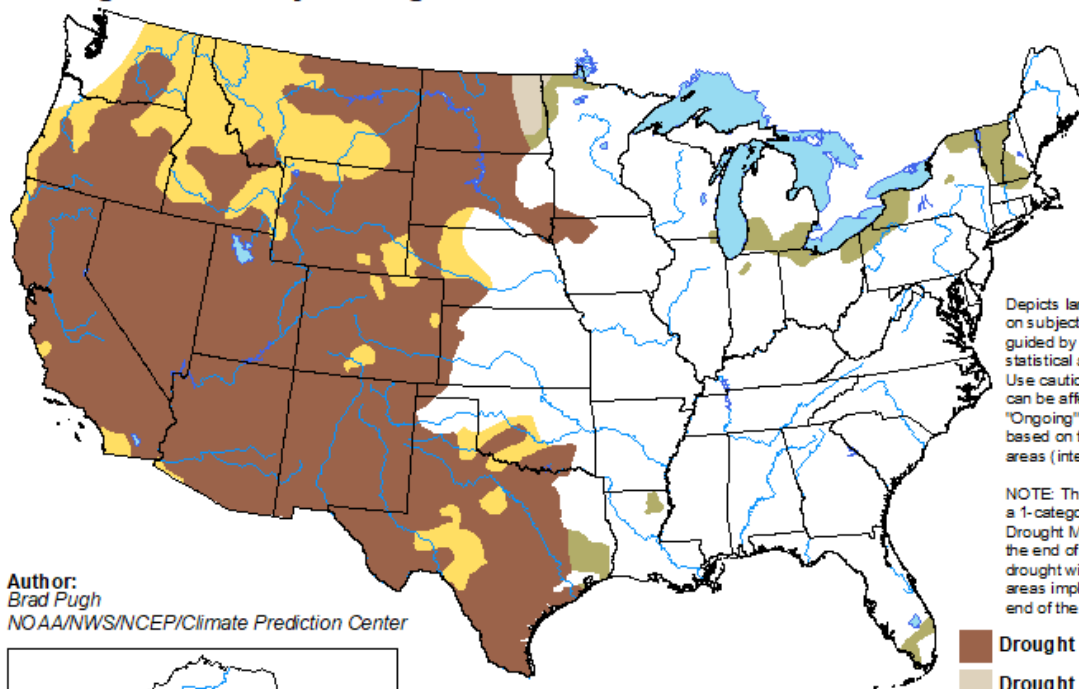
http://www.cpc.ncep.noaa.gov/products/expert_assessment/mdo_summary.php

U.S. Drought Monitor

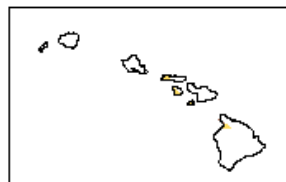
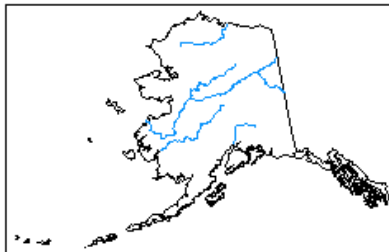
Seasonal Drought Outlook Map

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

Valid for April 15 - July 31, 2021
Released April 15



Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center



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).

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

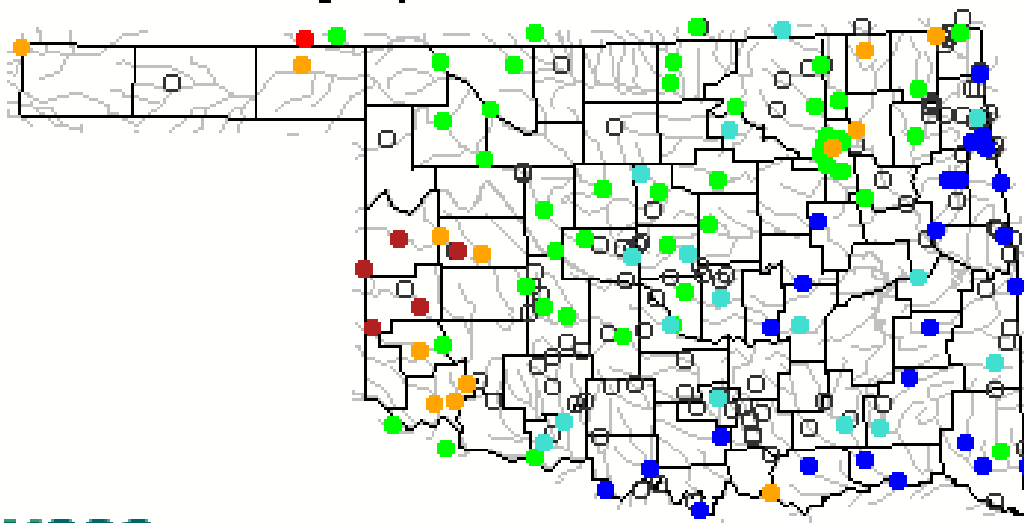


<http://go.usa.gov/3e273>

http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php

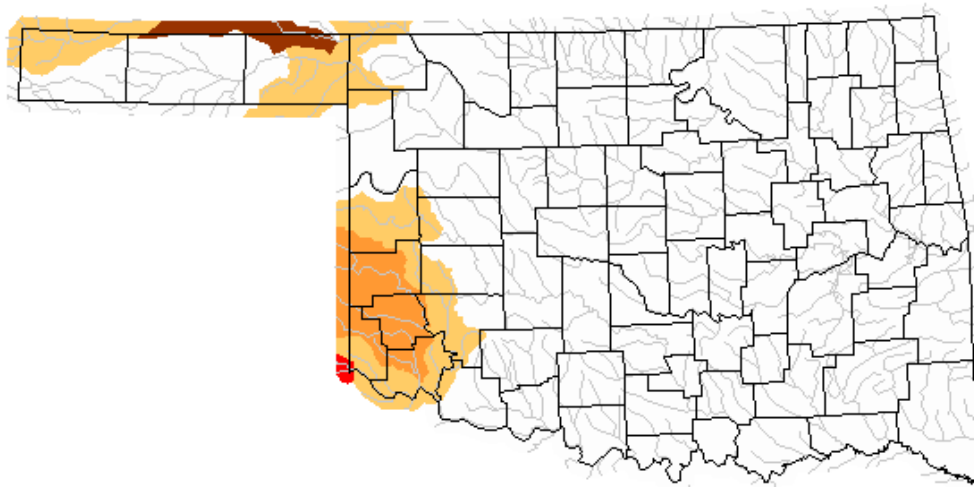
USGS Streamflow Data

Friday, April 30, 2021 09:30ET



Explanation - Percentile classes							
●	●	●	●	●	●	●	○
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Thursday, April 29, 2021



Below normal 28-day average streamflow

Explanation - Percentile classes				
				
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

SOIL MOISTURE MAP

Mesonet
1-day Average 24-inch Fractional Water Index

April 29, 2021
Created 7:30:14 AM April 30, 2021 CDT. © Copyright 2021

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

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



April 29, 2021

Created 7:30:14 AM April 30, 2021 CDT. © Copyright 2021



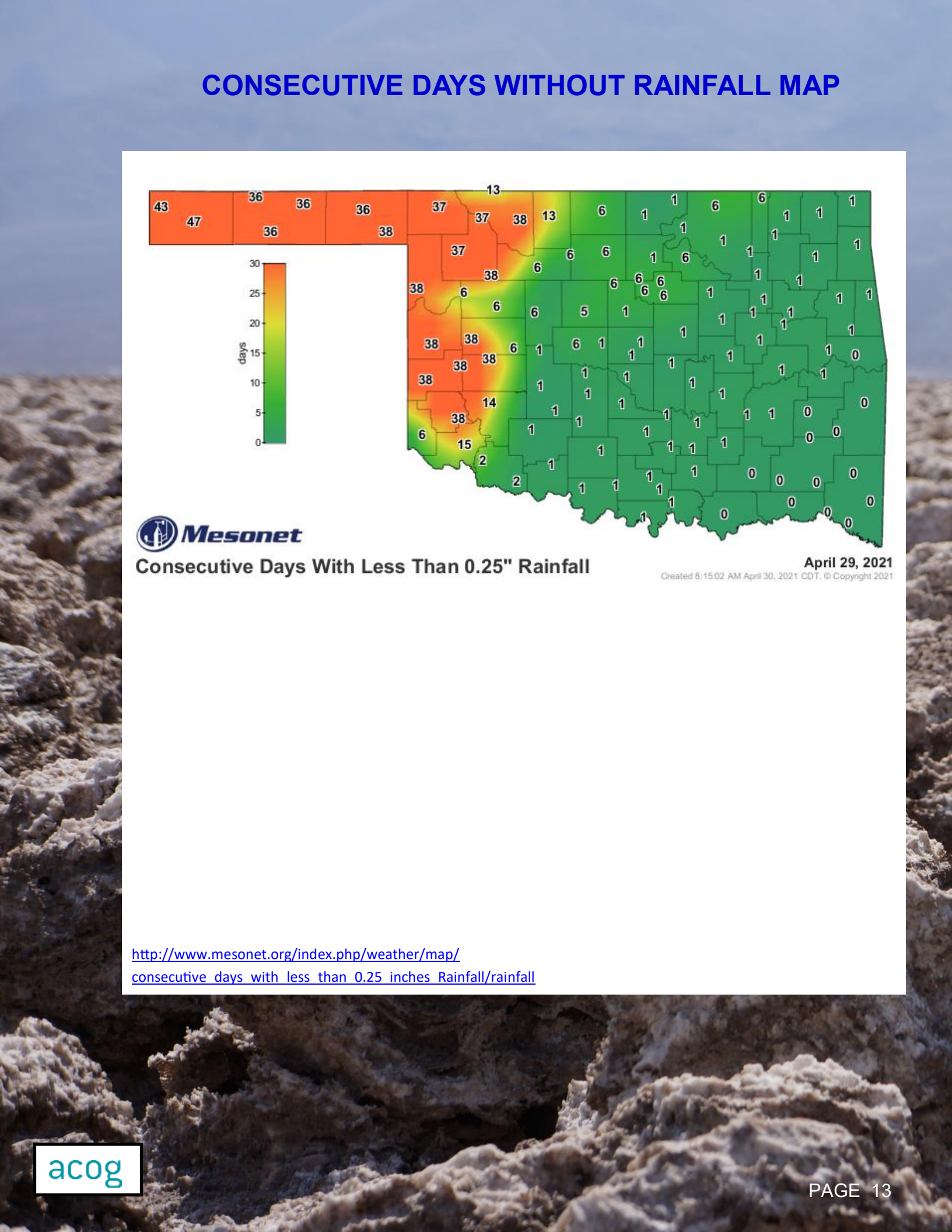
[http://www.mesonet.org/index.php/weather/map/24-inch fractional water index/soil moisture](http://www.mesonet.org/index.php/weather/map/24-inch%20fractional%20water%20index/soil%20moisture)

CONSECUTIVE DAYS WITHOUT RAINFALL MAP

Mesonet
Consecutive Days With Less Than 0.25" Rainfall

April 29, 2021
Created 8:15:02 AM April 30, 2021 CDT. © Copyright 2021

http://www.mesonet.org/index.php/weather/map/consecutive_days_with_less_than_0.25_inches_Rainfall/rainfall



CONSECUTIVE DAYS WITHOUT RAINFALL MAP

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April 29, 2021
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http://www.mesonet.org/index.php/weather/map/consecutive_days_with_less_than_0.25_inches_Rainfall/rainfall

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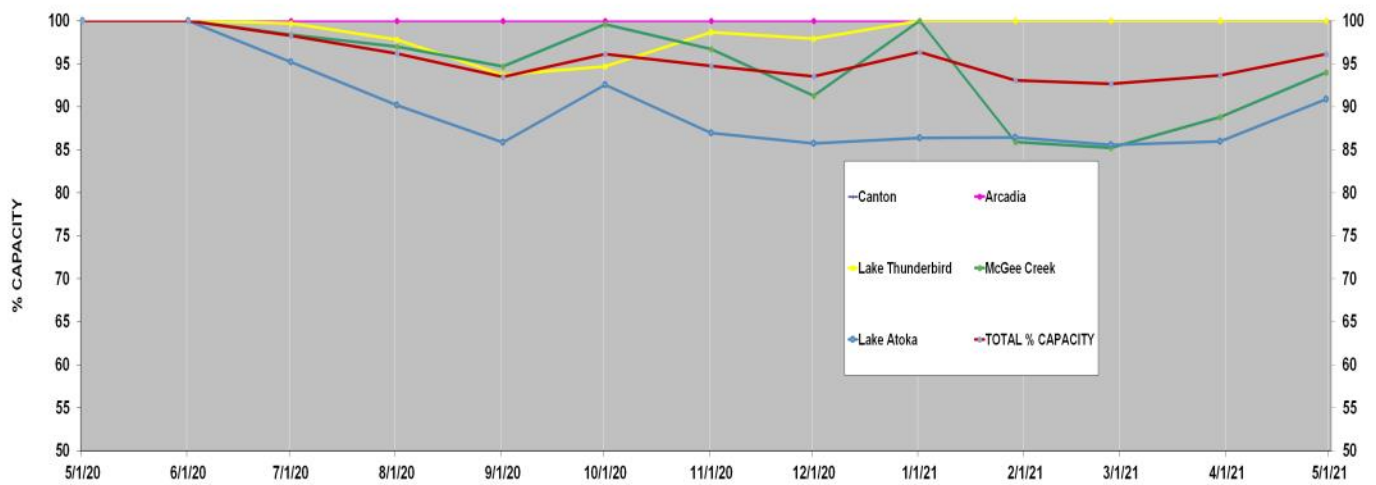
CONSECUTIVE DAYS WITHOUT RAINFALL MAP

Mesonet
Consecutive Days With Less Than 0.25" Rainfall

April 29, 2021
Created 8:15:02 AM April 30, 2021 CDT. © Copyright 2021

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 3/30/2021
Canton	100.0	0.0
Arcadia	100.0	0.0
Lake Thunderbird	100.0	0.0
McGee Creek	94.0	5.2
Lake Atoka	86.4	4.9
TOTAL % CAPACITY	96.2	2.5

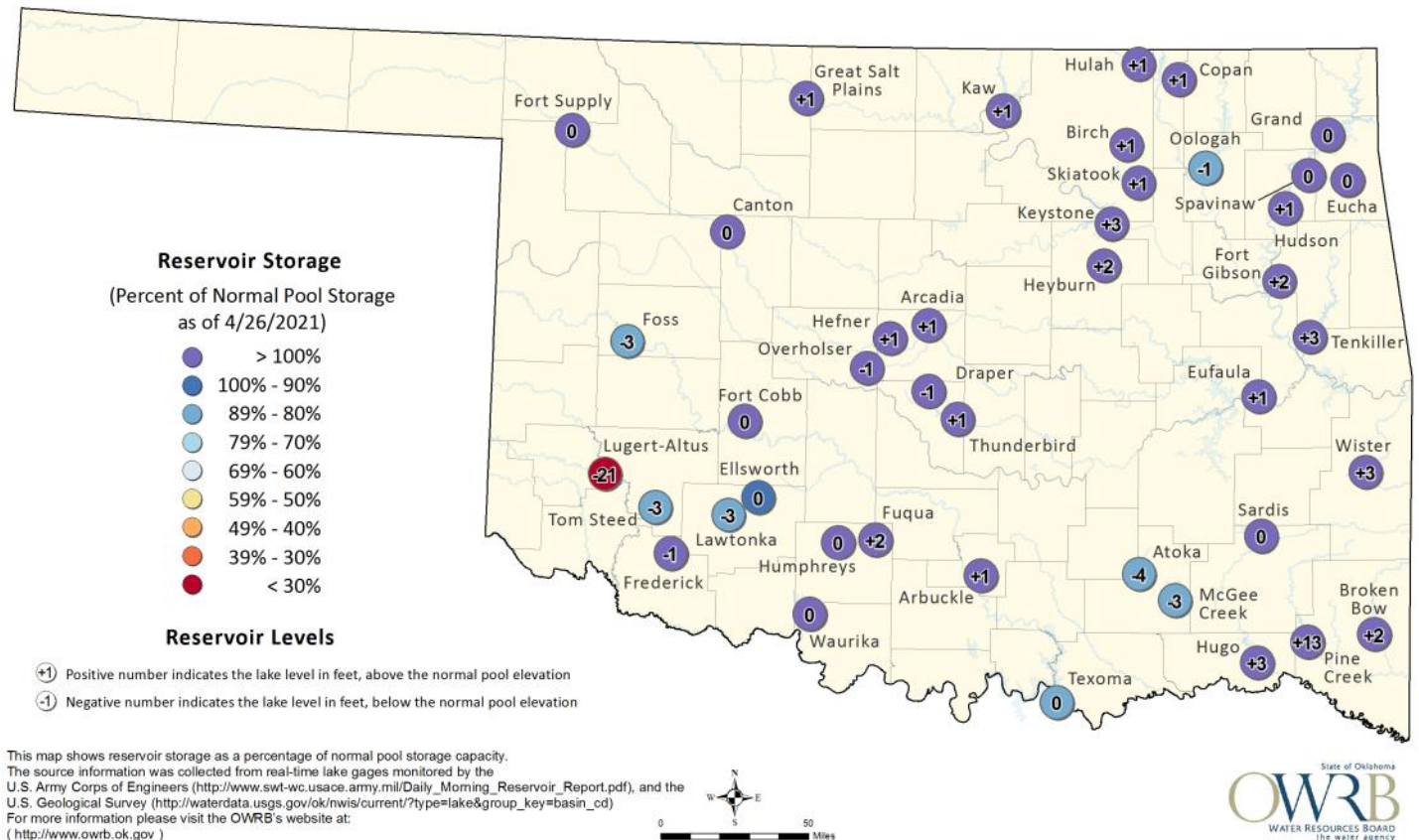
http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf

http://waterdata.usgs.gov/ok/nwis/dv/?site_no=07333010&agency_cd=USGS&referred_module=sw

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.

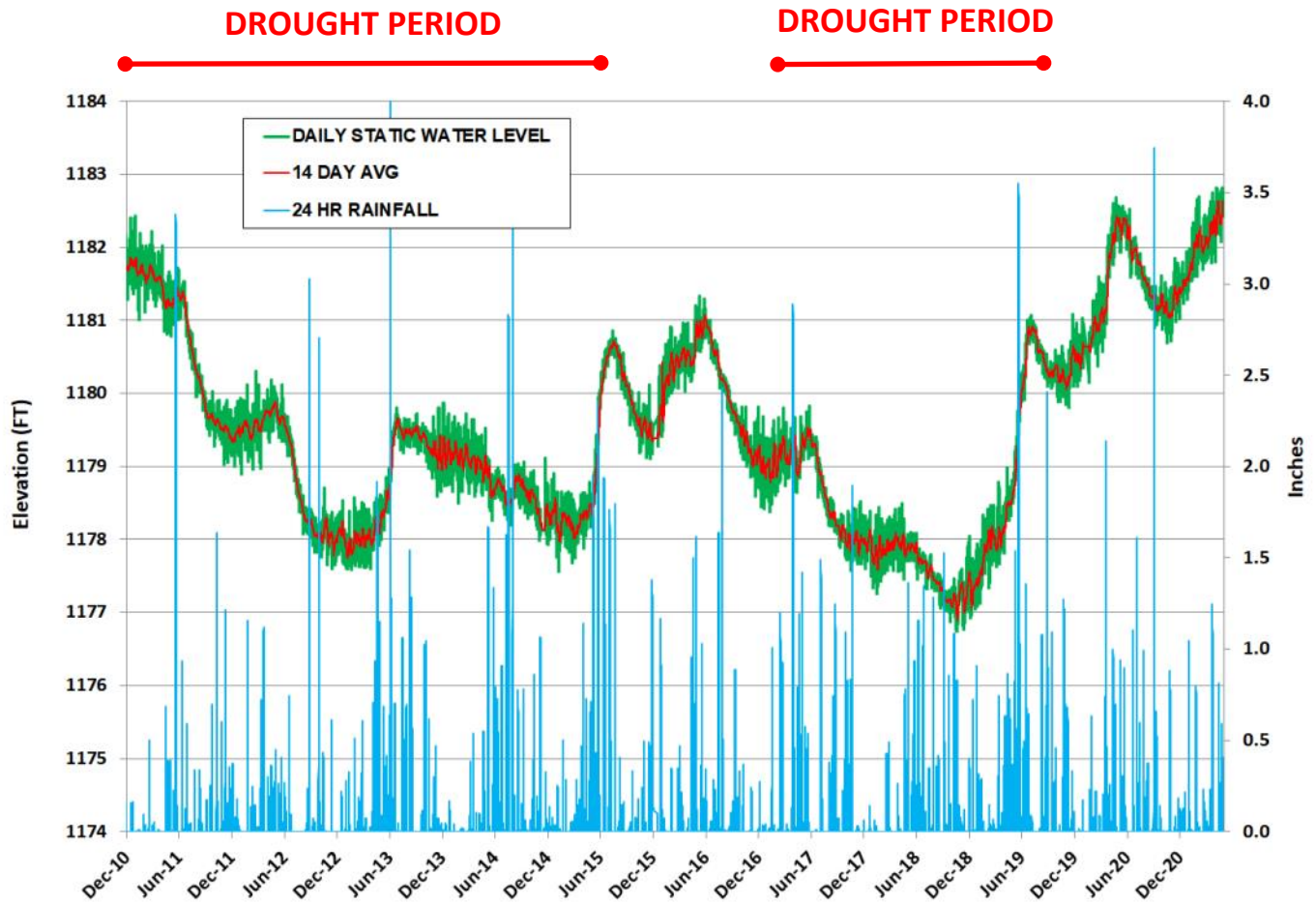
Oklahoma Surface Water Resources

Reservoir Levels and Storage as of 4/26/2021



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

Groundwater Levels Spencer Mesonet Station

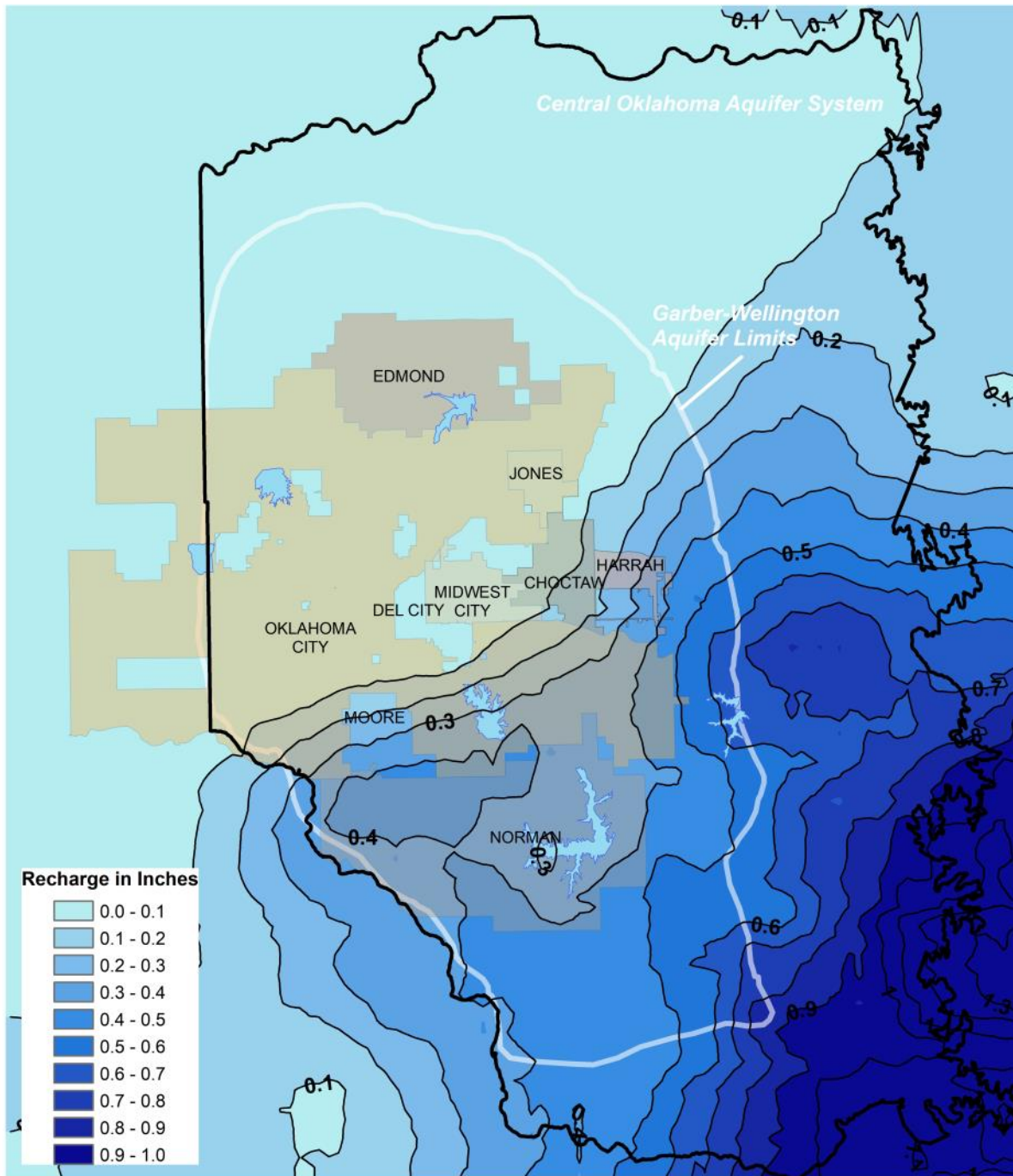


<http://www.mesonet.org/index.php/weather/groundwater>



Recharge Map Central Oklahoma Aquifer System

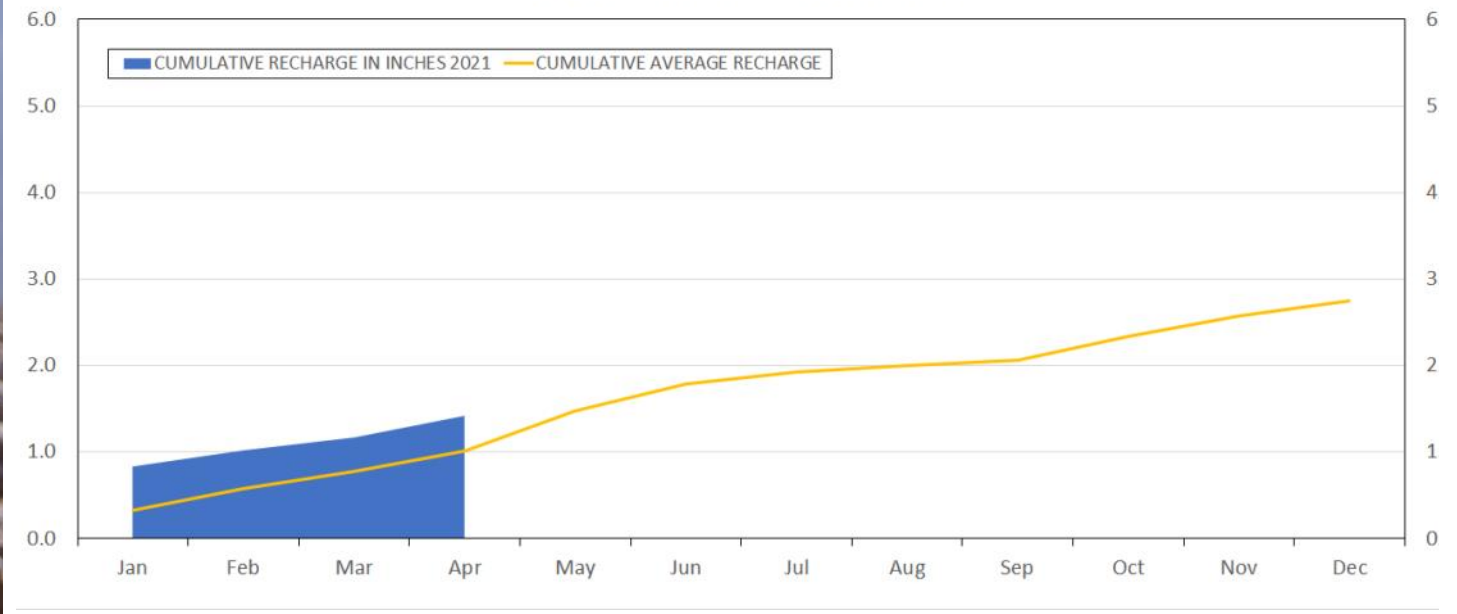
AQUIFER RECHARGE APR 2021



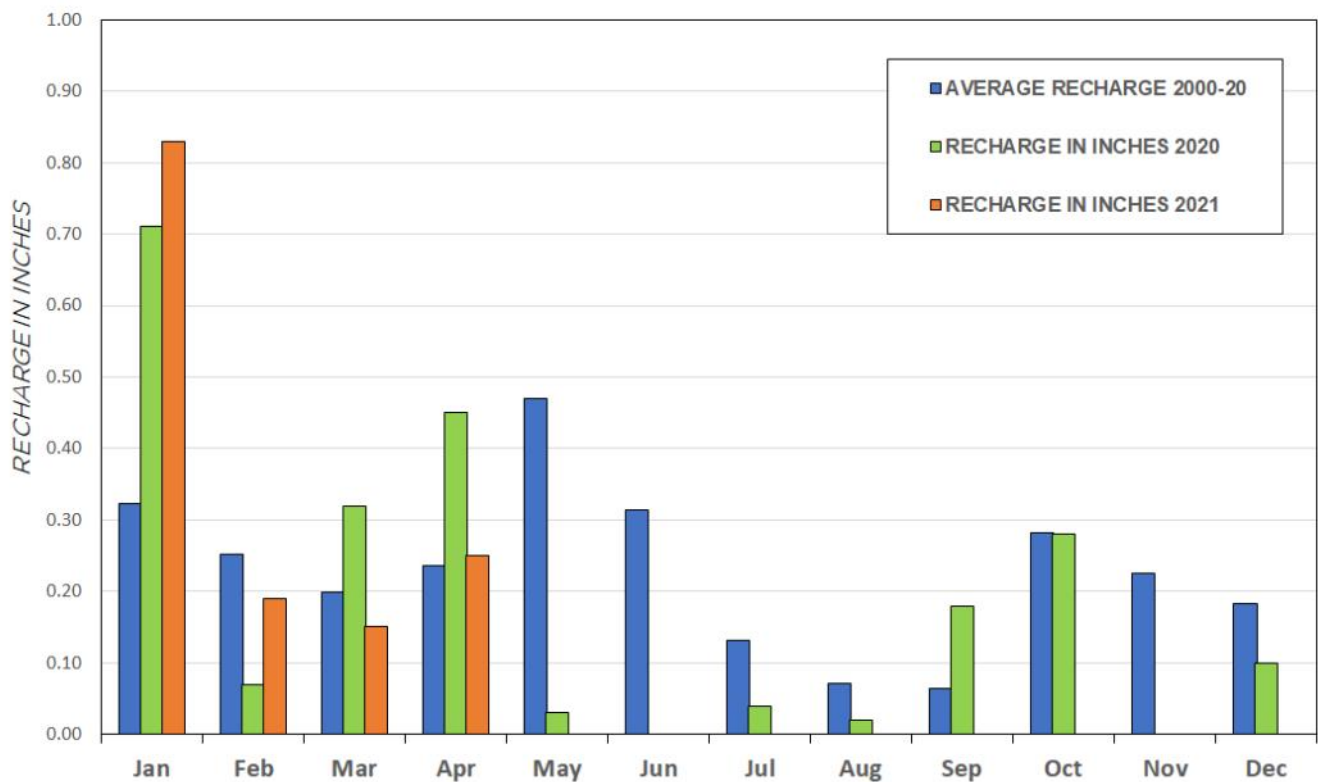
Recharge Charts

Central Oklahoma Aquifer System

ACCUMULATED RECHARGE 2021

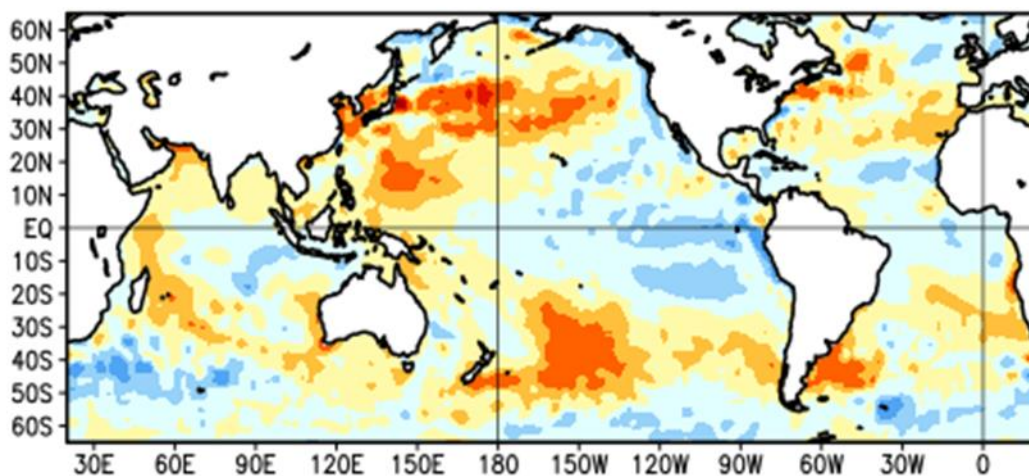
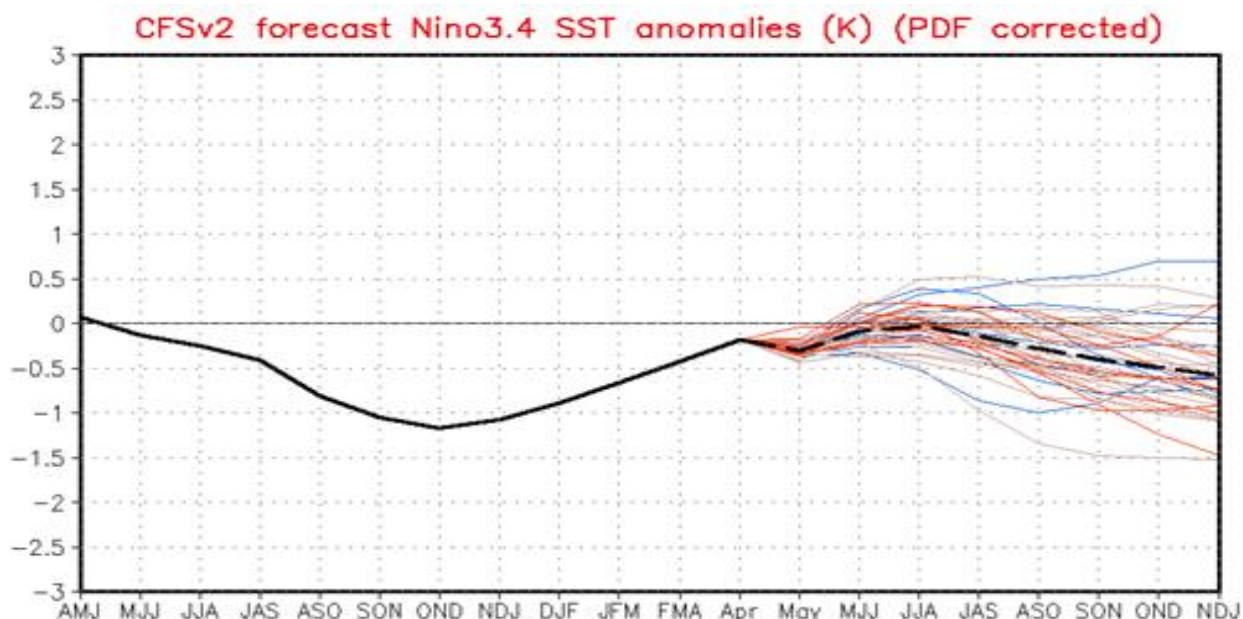


MONTHLY AQUIFER RECHARGE



ENSO Cycle

Recent Evolution, Current Status and Predictions



Summary

ENSO Alert System Status: La Niña Advisory

- La Niña is present.
- Equatorial sea surface temperatures (SSTs) are below average from the west-central to eastern Pacific Ocean.
- The tropical atmospheric circulation is consistent with La Niña.
- A transition from La Niña to ENSO-Neutral is likely in the next month or so, with an 80% chance of ENSO-neutral during May-July 2021.